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Children's Food Habits and Food Security among Households in Low and High Gender Equality in Indonesia

Kebiasaan Makan Balita dan Ketahanan Pangan Rumah Tangga di Daerah Kesetaraan Gender Rendah dan Tinggi di Indonesia

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ABSTRACT

Backgrounds: More women experience gender inequality even though they play a significant role in household food security. Women have more limited access to education and employment opportunities, thus affecting economic autonomy and lower bargaining power within the household. Gender inequality experienced by women has an impact on household food insecurity.
Objectives: To analyze differences in the eating habits of families and children under five and household food security among households with high and low gender equality.
Methods: This cross-sectional study was conducted in areas of low and high gender inequality in Indonesia. A total of 303 households with children under five participated in this study. Data collection included family characteristics, Household Food Insecurity Access Scale (HFIAS), and families and children's eating habits. The Mann-Whitney difference test examined the differences between variables in two areas.
Results: Food insecurity prevalence in low gender equality areas (moderately food insecure 45.6%, severe 23.8%), significant differences ($p<0.05$) within high gender equality areas (moderately food insecure 34.6%, severe 17.3%). Families in areas of high gender equality, more frequently eating three meals a day ($p<0.001$), eating together ($p=0.003$), husbands ($p<0.001$), and children ($p<0.001$), have a higher role as menu deciders. There were significant differences ($p<0.05$) in the eating habits of children under five in the two areas.
Conclusions: Households in low gender equality areas are more food insecure and have low-income family eating habits than high gender equality areas. Therefore, special attention is needed from the government to improve gender equality through increased education and women's economic empowerment.

INTRODUCTION

Gender is the roles and responsibilities of men and women shaped by psycho-social and cultural factors, so they are not universal. There is a possibility that there are differences in the roles and responsibilities of men and women in different cultures. Meanwhile, sex describes the biological characteristics that determine differences in the physiological characteristics of men and women and is universal in nature[1]. Gender refers to the social and cultural construction explaining the different attributes of men and women regarding their roles and responsibilities[2]. Attributes and social opportunities associated with being male and female are learned through socialization and adaptation of different behaviors so that gender roles can be identified[1,2]. Gender equality occurs when everyone, both men and women, has the same rights, obligations, and opportunities. Equality does not mean that women and men will be equal but that the rights, responsibilities, and opportunities of women and men will not depend on whether they are born male or female[3]. Equality between men and women is a human right and a precondition for sustainable development[2]. In 2017, Indonesia's gender equality score was ranked 104 out of 160 countries. West Java Province has a gender inequality index value above the national figure, but the disparity is relatively high, and the achievement of gender empowerment is below the national one.

Women have the potential to experience gender inequality because they have limited access to education and employment, thus affecting economic autonomy and low bargaining power in the household[4]. The position of women's bargaining power illustrates the magnitude of the role of women in household decision-making, feeding practices, food security, and nutrition, as well as those related to health and nutrition. When a financial crisis occurs, poor households experience a decrease in income and assets. Men have more access

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and social capital to escape the financial crisis, while women often experience a heavy burden considering their significant role in household food security. Women have a weak bargaining position in managing household income, so they often have to make coping strategies by reducing food expenditure, such as buying cheaper and less diverse food[5]. This condition shows that women do not have equal opportunities and decision-making in the household6. Changes in purchases of cheaper and less diverse food indicate a change in the availability of types of food at home. Food availability can affect household eating habits, including children's eating habits[6]. Changes in purchases of cheaper and less diverse food indicate a change in the availability of types of food at home. Food availability can affect household eating habits, including children's eating habits[7]. Changes in purchases of cheaper and less diverse food indicate a change in the availability of types of food at home. Food availability can affect household eating habits, including children's eating habits[7].

Children's eating habits are influenced by various factors that interact with each other. Parental eating habits and feeding strategies significantly determine children's eating preferences and behavior. These eating habits and preferences are related to socio-economic conditions and parental knowledge[6]. Mothers have a significant role in shaping children's eating habits. Mothers are often responsible for determining a child's food's amount, type, and timing. On the other hand, fathers also influence children's eating habits, even though fathers do not pay much attention to children's consumption and limit access to food[7]. Diana et al.'s study in food insecurity areas in East Java showed that children under five have good eating habits even though they are in food-insecure households[8]. Studies in several countries show that children under six get the same food distribution as other members[9]. Meanwhile, studies in China show that children under five tend to get more animals and fruit than other age groups[10].

Studies related to differences in food habits between genders, especially in school-age children and adolescents[11,12] and differences in household food security between female and male heads of household have been widely carried out in various countries[13]. However, few studies still compare the eating habits of children under five and household food security in areas with high and low gender equality. Therefore, this study aims to compare the eating habits of children under five and household food security in regions with high and low gender equality in Indonesia.

METHODS

Design, Research Location, and Sample

The research was carried out in two areas in West Java Province with low gender equality (Garut Regency) and high (Depok City), Indonesia, from September to December 2021, with a cross-sectional design. Simulation data from the results of a study by the Central Bureau of Statistics (BPS) show that the Gender Inequality Index (IKG) for Garut Regency is very high, 0.558 in 2019, and has not experienced a significant change from 2015 (0.589), while in Depok City the IKG is very low, namely 0.061 in 2019 and experienced a significant decrease from 2015 (0.146). Depok City ranks lowest in West Java Province. Apart from that, from an economic perspective, the percentage of poor people in Garut Regency is higher (8.98%) than in Depok City (2.07%). The IKG value is 0-1. The higher the index value, the higher the gender inequality[3]. Gender Inequality Index which covers three aspects: reproductive health (maternal mortality, adolescent fertility); empowerment (percentage of women and men sitting in parliament, percentage of women and men with at least high school education); and economic participation (percentage of the labor force women to the female population of working age)[14]. From the two regions with high and low gender inequality, two villages were taken each, bringing the total villages in this study to 4 villages, namely Tanjungsari and Sukamentri Villages from Garut Regency; Pancoran Mas Village and Duren Mekar from the city of Depok.

Selection of villages based on specific characteristics that fulfill one of the risk factors for food insecurity: high poverty rates, disaster risk areas, and/or high stunting prevalence rates. Calculation of the number of samples is based on the prevalence of stunting in 2019, which is 27.3%, so a minimum of 300 samples of households with toddlers plus 10 samples are needed to avoid dropping out. Samples were taken using the stratification method from the under-five household sample frame in selected villages/sub-districts from the results of weighing the local and regional health centers. The number of samples participating in this study was 310 households with children under five, but only 303 samples were included in the analysis because seven households did not have complete data. If two children are under five in a household, measurement and data collection are carried out on the youngest child under five so that a minimum of 300 samples of households with toddlers is needed, plus ten samples to avoid dropping out.

Data Collection

Data were collected through face-to-face interviews using Indonesian and a structured electronic questionnaire (CS Entry). Household food security was measured using the Household Food Insecurity Access Scale (HFIAS) questionnaire developed by the Food and Nutrition Technical Assistance (FANTA) project for cross-cultural use[15]. HFIAS has been validated in Indonesia[16]. The HFIAS consists of 9 questions with a four-week (30-day) recall period. Responses to each question were "yes" or "no." If the respondent answered yes, then they were also asked about the frequency of the incident: rarely (1-2 times/month), sometimes (3-10 times/month), or often (>10 times/month). Questions are divided into three domains, namely concern or uncertainty of food sufficiency (worry about food adequacy) and insufficiency of quality (including diversity and preference of food types) consisting of 3 questions (not eating preferred foods, less diverse foods, consumption of unpreferred foods), and the last domain is insufficiency of food quantity and its physical consequences consisting of 5 questions (reducing meal portions, reducing the

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frequency of meals, no food at home, sleeping on a hungry stomach, not eating all day).

Data on household socio-economic characteristics, eating habits, food security, and nutrition fulfillment were collected using a structured electronic questionnaire (CS Entry). Eating habits are seen from the frequency of main meals, shared eating habits, and frequency of consumption of staple foods, animal foods, plant foods, vegetables, fruit, and snack foods.

Data Analysis

Data cleaning was carried out after data entry using Statistical Product and Service Solutions (SPSS) Version 21. Descriptive analysis in the form of frequency and cross-tabulation was performed for categorical data. Mann Whitney further test analysis was conducted to analyze differences between variables in areas with low and high gender inequality. All variables with a p-value of less than 5% (0.05) indicate a significant difference.

Food security is qualitatively measured by HFIAS using nine questions. Respondents' answers were given a score of 0-3. A score of 0 indicates never, 1 indicates rarely (1-2 times in 4 weeks), 2 indicates sometimes (3-10 times in 4 weeks), and 3 indicates often (> 10 times in 4 weeks). Scores range from 0-27. The higher the score, the more severe the level of food insecurity. In this method, food security is categorized into four levels as follows[13]: 1) Food security if you do not experience food insecurity or are worried but with a rare frequency (answer yes to question no 1, while answering no to other questions no); 2) Mild level of food insecurity if you sometimes or often experience worries about not getting enough food, and/or not being able to eat the food you like and/or eating a diet that is monotonous/unliked with infrequent frequency (answer yes to questions 1-4, while the other question no is answered no); 3) Moderate level of food insecurity if you have reduced the quality of your diet more often, such as sometimes or often consuming a diet that is monotonous/unliked, starting to reduce the quantity of your diet by occasionally and often reducing the amount of food, and eating frequency (answer yes to question no 1-6, while the other questions no are answered no); 4) Severe food insecurity occurs if you often reduce the amount of food and the frequency of eating and or experience food shortages, go to bed hungry, and do not eat all day long (answer yes to all questions).

Ethical Clearance

Ethical clearance obtained from the Ethics Commission, Institute for Research and Community Service, IPB University (LPPM-IPB) with no: 507/IT3.KEPMSM-IPB/SK/2021. All respondents have received an explanation regarding the objectives and treatment that would be obtained during the study. Respondents signed informed consent before the interview was conducted. Respondents can refuse to participate and stop participating at any time without penalty.

RESULTS AND DISCUSSION

Household Characteristics

Table 1 shows the socio-demographic characteristics of the household. Most fathers and mothers are between the ages of 25-45 years, the mothers are not working, and the number of household members is <4 in both regions. Meanwhile, the education levels of fathers and mothers, as well as fathers' occupations, are pretty different in the two regions (Table 1). Regions with low gender equality have a younger proportion of fathers and mothers and lower levels of education than regions with high gender equality.

Table 1. Household characteristics of low (Garut Regency) and high (Depok City) gender equality families, Indonesia, from September - December 2021

Characteristics	Low Gender Equality n (%)	High Gender Equality n (%)
Father's age (years)		
<25	11 (7.5)	6 (3.8)
25-<35	69 (46.9)	63 (40.4)
35-<45	49 (33.3)	69 (44.2)
≥45	18 (12.2)	18 (11.5)
Mother's age (years)		
<25	36 (24.5)	22 (14.1)
25-<35	70 (47.6)	87 (55.8)
35-<45	39 (26.5)	42 (26.9)
≥45	2 (1.4)	5 (3.2)
Father's Education		
Graduated from elementary school	2 (1.4)	1 (0.6)
Graduated from junior high school	72 (49)	11 (7.1)
Graduated from high school	43 (29.3)	27 (17.3)
Graduated from vocational study	28 (19)	94 (60.3)
Graduated from undergraduate	1 (0.7)	8 (5.1)
Mother's education		
Graduated from elementary school	3 (2)	3 (1.9)

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Characteristics	Low Gender Equality n (%)	High Gender Equality n (%)
Graduated from junior high school	61 (41.5)	17 (10.9)
Graduated from high school	53 (36.1)	33 (21.2)
Graduated from vocational study	28 (19)	82 (52.6)
Graduated from undergraduate	0 (0)	7 (4.5)
Father's occupation		
Does not work	1 (0.7)	4 (2.6)
PNS/TNI/Polri/BUMN/D	0 (0)	2 (1.3)
Private employees	12 (8.2)	47 (30.1)
Self-employed	28 (19)	27 (17.3)
Farmer/farm laborer	40 (27.2)	1 (0.6)
Worker/driver/helper	57 (38.8)	57 (36.5)
Other	9 (6.1)	18 (11.5)
Mother's job		
Does not work	116 (78.9)	128 (82.1)
Private employees	1 (0.7)	2 (1.3)
Self-employed	12 (8.2)	16 (10.3)
Farmer/farm laborer	7 (4.8)	0 (0)
Worker/driver/helper	6 (4.1)	3 (1.9)
Other	5 (3.4)	7 (4.5)
Number of household members		
≤ 4 people	95 (64.6)	98 (62.8)
5-6 people	45 (30.6)	49 (31.4)
≥7 people	7 (4.8)	9 (5.8)

PNS (Civil Servants); TNI (Indonesian National Army); BUMN/D (State/Regional Owned Public Agency)

The educational level of fathers and mothers mostly finished junior high school (49%) and high school (29.3%) in areas with low gender equality. Meanwhile, the education level of fathers and mothers in areas with high gender equality mostly graduated with vocational studies (60.3% and 52.6%). Women who live in areas with high gender equality have more significant opportunities to achieve proper education than those with low gender equality, and conversely, higher education is a way to increase gender equality. Gender equality and education are positive relationships that influence each other[17].

In areas with low gender equality, low education impacts low access to health facilities, economic facilities, and other essential services. More than 50% of women with no school education have low access to health facilities and other essential services compared to women who attend school[18]. Women with low education have a lower life expectancy than women and men with higher education[19]. It is a manifestation that in areas of low gender equality, women's educational attainment is lower, and women's economic productivity levels are low, impacting women's bargaining positions. This condition is an unbroken circle unless an intervention improves women's education and empowerment[17].

The level of education is related to various aspects of household life and welfare, including the type of work as a source of household income. The level of education will determine the supply and demand for labor as well as the minimum wage that will be received. Higher education levels have more significant opportunities for more jobs and are better able to compete in the labor market[20]. This condition can be seen from the results of the research. In areas with high equality, the average father's higher education impacts the type of father's work, which is more varied, and his monthly per capita expenditure is higher (Table 2). From Table 2, it can be seen that the average expenditure per capita per month for households living in areas with high gender equality (IDR 1,188,370) is greater than the average expenditure per capita per month for households living in areas of low gender equity (IDR 837,076). Education and type of work are closely related to income[21], which will reflect the economic empowerment of the household. Likewise, when viewed from the proportion of food expenditure, households living in areas with low gender equality (67%) have a higher proportion of expenditure than areas with high gender equality (57%), reflecting the distribution of income among households in areas of high gender equality are more varied in non-food groups which are more secondary and tertiary.

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Table 2. Average per capita household expenditure (IDR) between low (Garut Regency) and high (Depok City) gender equality families, Indonesia, from September - December 2021

Expenditure	Low Gender Equality	High Gender Equality
Food production		
Staple food	58,939	64,953
Side dishes	146,626	220,289
Vegetable	40,275	107,687
Fruit	18,592	30,051
Cooking oil	24,235	23,518
Coffee, tea, sugar	23,056	24,339
Milk	18,476	45,871
Snacks	176,301	143,861
Sub-Total	506,501	660,568
Non-food expenditure		
Health/Medical	7,584	97,201
Cigarette	70,089	36017
Cleanliness	27,875	112,952
Fuel	27,458	31,764
Child education	9,496	24,367
Clothes	79,848	45,259
Credit	27,764	161,959
Installment/credit/social gathering	80,461	97,201
Sub-Total	330,575	527,803
Total	837,076	1,188,370

Households with low income tend to focus on allocating income to food needs compared to non-food needs[22], meeting non-food needs after their food needs are met[23], and having a low level of food diversity24 so that it can be stated that the level of income is closely related to food and non-food expenditure[24]. Regarding food expenditure, the two regions' expenditure on side dishes and snacks is the most significant. People in Indonesia spend their income on processed food and drinks[25]. The average spending on snack foods as a source of food that is low in nutrients is higher, while for vegetables, it is lower in households living in areas with low gender equality compared to areas with high gender equality. This condition represents that maternal education and literacy related to nutrition and health are related to selecting types of food[26].

On the other hand, for non-food expenditure, households living in areas of low equity spend more on cigarettes and clothing. This condition aligns with national data showing that cigarette consumption participation is 68.69%[25]. Women's weak position and bargaining power because they are always in the position of "sidekick winking" (friend behind their back), and there is economic inequality[27], causing women to lose opportunities to manage household income properly,

The condition of areas with low gender equality in sanitation is related to income and poverty levels; they are often located in slums[28]. Therefore, the share of food expenditure for sanitation is lower compared to areas with high gender equality. Apart from that, it can also be illustrated that the share of spending on pulses is lower compared to households in areas with high equity. The profile of areas with high gender equality illustrates the relevance to urban conditions where mobility uses smartphones to support daily activities, so the share of spending pulses is higher than in areas with low gender equality.

Household Food Security

This study found high food insecurity in both regions (≥69%). The proportion of food insecurity in areas with low gender equality is 83%, while in areas with high gender equality, it is 69.9%. Table 3 shows that the proportion of moderate (45.6%) and severe (23.8%) food insecurity in households living in areas with low gender equality is more significant than those living in areas with high gender equality (moderate food insecurity) 34.6%, severe food insecurity (17.3%). Households living in areas with low gender equality were significantly more food insecure (moderate and severe) than those with high gender equality (p=0.003). This finding is because education and the average per capita expenditure of households in high gender equality areas tend to be higher than education and the average per capita expenditure of households in low gender equality areas (Table 2). According to Placzek (2021)[29], household food security is influenced by socio-economic and demographic factors. In addition, regions with high gender equality show a better role for women in decision-making as household food gatekeepers[30]; this is indicated by the Gender Empowerment Index (IDG) in areas with high gender equality (76.53) higher than IDG in areas with low gender equality (64,87). IDG shows the active role of women in economic life and decision-making/politics[31].

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Table 3. Household food security between low (Garut Regency) and high (Depok City) gender equality families, Indonesia, from September - December 2021

Food Security	Low Gender Equality n (%)	High Gender Equality n (%)	p-value
Food security			
Food resistant	25 (17)	47 (30.1)	0.003*
Mild food insecurity	20 (13.6)	28 (17.9)	
Moderate level of food insecurity	67 (45.6)	54 (34.6)	
Severe food insecurity	35 (23.8)	27 (17.3)	
Worried about not having enough food			
Never	49 (33.3)	58 (37.2)	0.023*
Seldom	30 (20.4)	51 (32.7)	
Sometimes	32 (21.8)	28 (17.9)	
Often	36 (24.5)	19 (12.2)	
Unable to eat the food you like			
Never	60 (40.8)	79 (50.6)	0.044*
Seldom	36 (24.5)	37 (23.7)	
Sometimes	30 (20.4)	27 (17.3)	
Often	21 (14.3)	13 (8.3)	
Reducing the variety of types of food			
Never	58 (39.5)	79 (50.6)	0.017*
Seldom	28 (19)	28 (17.9)	
Sometimes	25 (17)	29 (18.6)	
Often	36 (24.5)	20 (12.8)	
Eat foods you do not like			
Never	88 (59.9)	91 (58.3)	0.745
Seldom	34 (23.1)	31 (19.9)	
Sometimes	9 (6,1)	24 (15.4)	
Often	16 (10.9)	10 (6.4)	
Eat smaller portions			
Never	69 (46.9)	104 (66.7)	0.001*
Seldom	37 (25.2)	25 (16)	
Sometimes	25 (17)	18 (11.5)	
Often	16 (10.9)	9 (5.8)	
Eat with reduced frequency in a day.			
Never	76 (51.7)	103 (66)	0.018*
Seldom	35 (23.8)	25 (16)	
Sometimes	24 (16.3)	18 (11.5)	
Often	12 (8.2)	10 (6.4)	
There is no food at all in the house.			
Never	141 (95.9)	148 (94.9)	0.664
Seldom	3 (2)	3 (1.9)	
Sometimes	2(1.4)	5 (3.2)	
Often	1(0.7)	0 (0)	
Go to bed hungry			
Never	124 (84.4)	134 (85.9)	0.733
Seldom	14 (9.5)	9 (5.8)	
Sometimes	3 (2)	12 (7.7)	
Often	6 (4.1)	1(0.6)	
Did not eat all-day			
Never	139 (94.6)	147 (94.2)	0.858
Seldom	7 (4.8)	3 (1.9)	
Sometimes	0 (0)	5 (3.2)	
Often	1 (0.7)	1(0.6)	

Mann-Whitney test; *) Significant difference if p-value <0.05

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Concerns about food insufficiency and reducing the quality and quantity of food consumed are experienced by many households living in the two regions. However, households living in areas with low gender equality experience it more frequently than areas with high gender equality. The results of the Mann-Whitney test on average food security data, as measured by HFIAS, show that households living in areas with low gender equality are more worried about food shortages (p=0.023), not being able to eat their preferred food (p=0.044), reducing diversity of food (p=0.017), and reduced portions (p=0.001) and frequency of meals (p=0.018) compared to households living in areas with high gender equality (Table 3). Food security is a situation when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life[32]. From this definition, the differences between food security variables in the two regions are due to differences in access to food, especially economic access. Measuring household food security in this study used the instrument The Household Food Insecurity Access Scale (HFIAS), which is an experience-based measurement of food security/food insecurity based on household economic access to food[15]. Thus, because the average per capita income for households in low gender equality areas is lower than the average per capita expenditure for households in high gender equality areas (Table 2), they will feel their frequent experiences of worrying about food shortages, as well as more systematic efforts to reduce food diversity, portions and frequency of meals. Thus, households in areas of low gender equality have lower food security.

Gender inequality is often associated with economic marginalization and stigmatization of women. This condition reduces women's economic autonomy and contributes to women's weak bargaining position in the household. Women work with a double burden, exacerbating their poverty because of their responsibilities in reproductive work and production activities. Women usually work longer than men, but most of their work is in the informal sector, including household or household production activities. This work is usually unpaid and is generally belittled and unrecognized. Girls often have less time to invest in education. Women usually achieve lower levels of education than men and so have fewer opportunities to work outside the home. The scarcity of job opportunities is often reinforced by discrimination in the labor market and prevents women from upgrading their qualifications. This reality can lead to negative prejudices about women's ability to look as good as men. In the end, gender inequality has an impact on household food insecurity. This cycle of gender inequality must be broken by increasing women's education and empowerment[6].

Eating habit

Eating habits are the expression of each individual in choosing food, which will form patterns of eating behavior that differ from one another and are influenced by determining factors, namely food availability, which is related to food production, food processing, food distribution, cooking, and equipment. Eating habits in this study were measured through several factors, namely the frequency of eating, the habit of eating with the household, and the determination of the household meal menu. Meal frequency is the number of times a person eats in a day, while household eating habits are the number of households that eat together. Determination of the household menu describes the role of household members in determining the menu, which can relate to how food is processed and prepared.

Households living in both areas have a habit of eating 2-3 times daily. The measurements in Table 4 show that more households living in areas with high gender equality have a habit of eating three times a day (66.7%) and eating together with the household (85.9%) compared to households living in areas with low gender equality low (frequency of eating three times a day 44.2%; eating with household 72.1%). The results of the Mann-Whitney test showed that eating three times a day was more frequent in areas with high gender equality than those with low (p<0.001). This finding can be caused by the involvement and control of women who participate in deciding and determining the purchase of food together with their husbands[35].

Table 4. Household eating habits of low (Garut Regency) and high (Depok City) gender equality families, Indonesia, from September - December 2021

Household Eating Habits	Low Gender Equality n (%)	High Gender Equality n (%)	p-value
Meal frequency (times per day)			
1	3 (2)	1(0.6)	<0.001*
2	77 (52.4)	49 (31.4)	
3	65 (44.2)	104 (66.7)	
≥4	2(1.3)	2(1.3)	
Eating together			
Yes	106 (72.1)	134 (85.9)	0.003*
No	41 (27.9)	22 (14.1)	
Eat leftovers			
Yes	99 (67.3)	105 (67.3)	0.994
No	48 (32.7)	51 (32.7)	
Household menu determinant (mother)			

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Household Eating Habits	Low Gender Equality n (%)	High Gender Equality n (%)	p-value
Yes	128 (87.1)	142 (91)	0.271
No	19 (12.9)	14 (9)	
Household menu maker (father)			
Yes	22 (15)	54 (34.6)	<0.001*
No	125 (85)	102 (65.4)	
Household menu determinant (child)			
Yes	22 (15)	53 (34)	<0.001*
No	125 (85)	103 (66)	

Mann-Whitney test; *) Significant difference if p-value <0.05

Likewise, the habit of eating together with the household was more often shared by households living in areas with high equity than those with low equity (p=0.003). This finding shows good social interaction between husband, wife, and children. Eating together with the household is an essential activity in a child's life because, at this time, social interaction occurs between household members and encourages good children's eating behavior[36]. A Norway study found that having dinner with the household more than four times per week is associated with increased consumption of vegetables, homemade cereals, milk, and water in children aged 1 year[37]. Several other studies have also shown a positive relationship between the household's eating frequency and the consumption of healthy foods such as fruits, vegetables, and foods high in calcium[36]. In addition, frequent eating together can also increase exposure to various types of food for children. Fathers and mothers have different attitudes toward children's eating habits. Fathers are usually less potent in controlling children's eating habits than mothers[36].

This study found that women have a significant role in determining the household diet in both regions. In areas with high gender equality, the proportion of husbands (34.6%) and children (34%) who participate in determining the household food menu is higher than in areas with low gender equality (husbands 15%; children 15%). The high role of husbands (p<0.001) and children (p<0.001) as determinants of the diet for households living in areas with high gender equality (Table 4) indicates that eating is a shared affair. Studies in America show that responsibilities related to food, including providing food for children, are joint responsibilities of parents (fathers and mothers) and are not exclusively the responsibility of the mother[38].

Eating Habits of Toddlers

In general, it can be seen from Table 5 that there are differences in the eating habits of children under five in the two regions, especially in the staple food group, animal food, plant food, and snack foods and drinks. In the staple food group, although they did not differ in consumption of rice and noodles, children under five who lived in areas with low gender equality consumed more cassava (p<0.001) and sweet potatoes (p<0.001), while children under five in areas with low gender equality taller gender consumed bread more often (p=0.049). In the protein-sourced food group (animal and vegetable food), even though children under five consume many eggs in both regions, other protein sources for children under five in areas of low gender equality consume more vegetable protein sources (tofu, p=). Children in areas of high gender equality are more likely to come from animal protein sources (chicken, beef, fish, shrimp, and milk). Several factors influence eating habits, including internal variables such as physiology and emotions, environmental factors such as food availability and cultural norms, and economic factors[39]. The average education and per capita income of households in areas of high gender equality are higher, so this will increase the quality of their food consumption at a higher price. Studies in developed countries show that parental education affects the eating habits of children aged 2-5 years[40]. In mothers who did not finish high school, their children consumed more fat and less protein, vegetables, and fruit than mothers with higher education[41]

Table 5. Toddler eating habits in low (Garut Regency) and high (Depok City) gender equality families, Indonesia, from September - December 2021

Child Consumption Patterns	Low Gender Equality		High Gender Equality		p-value
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Staple food					
Rice	147 (100)	0 (0)	156 (100)	0 (0)	-
Cassava	91 (61.9)	56 (38.1)	54 (34.6)	102 (65.4)	<0.001*
Sweet potato	85 (57.8)	62 (42.2)	37 (23.7)	119 (76.3)	<0.001*
Corn	66 (44.9)	81 (55.1)	97 (62.2)	59 (37.8)	0.003*
Mi	96 (65.3)	51 (34.7)	100 (64.1)	56 (35.9)	0.827
Bread	110 (74.8)	37 (25.2)	131 (84)	25 (16)	0.049*
Baby porridge/team rice	55 (37.4)	92 (62.6)	45 (28.8)	111 (71.2)	0.113
Animal food					
Chicken meat	58 (39.5)	89 (60.5)	89 (57.1)	67 (42.9)	0.002*

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Child Consumption Patterns	Low Gender Equality		High Gender Equality		p-value
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Beef	17 (11.6)	130 (88.4)	53 (34)	103 (66)	<0.001*
Heart	64 (43.5)	83 (56.5)	60 (38.5)	96 (61.5)	0.370
Egg	132 (89.8)	15 (10.2)	132 (84.6)	24 (15.4)	0.179
Fish	71 (48.3)	76 (51.7)	111 (71.2)	45 (28.8)	<0.001*
Shrimp	3 (2)	144 (98)	23 (14.7)	133 (85.3)	<0.001*
squid	4 (2.7)	143 (97.3)	12 (7.7)	144 (92.3)	0.054
Milk	78 (53.1)	69 (46.9)	110 (70.5)	46 (29.5)	0.002*
Vegetable food					
Know	124 (84.4)	23 (15.6)	112 (71.8)	44 (28.2)	0.009*
Tempeh	89 (60.5)	58 (39.5)	112 (71.8)	44 (28.2)	0.039*
Nuts	53 (36.1)	94 (63.9)	70 (44.9)	86 (55.1)	0.119
Vegetable					
Spinach	87 (59.2)	60 (40.8)	109 (69.9)	47 (30.1)	0.052
Spinach	69 (46.9)	78 (53.1)	22 (14.1)	134 (85.9)	<0.001*
Carrot	115 (78.2)	32 (21.8)	131 (84)	25 (16)	0.202
Cabbage/cabbage	54 (36.7)	93 (63.3)	22 (14.1)	134 (85.9)	<0.001*
Cassava leaves	8 (5.4)	139 (94.6)	10 (6.4)	146 (93.6)	0.722
Papaya leaf	0 (0)	147 (100)	1(0.6)	155 (99.4)	0.332
Bean sprouts	27 (18.4)	120 (81.6)	45 (28.8)	111 (71.2)	0.032*
Long beans	6 (4.1)	141 (95.9)	27 (17.3)	129 (82.7)	<0.001*
Mustard	31 (21.1)	116 (78.9)	48 (30.8)	108 (69.2)	0.055
Cucumber	40 (27.2)	107 (72.8)	46 (29.5)	110 (70.5)	0.661
Beans	48 (32.7)	99 (67.3)	45 (28.8)	111 (71.2)	0.473
Machete pumpkin	34 (23.1)	113 (76.9)	5 (3.2)	151 (96.8)	<0.001*
Chayote	46 (31.3)	101 (68.7)	37 (23.7)	119 (76.3)	0.140
Broccoli	33 (22.4)	114 (77.6)	62 (39.7)	94 (60.3)	0.001*
Fruit					
Banana	127 (86.4)	20 (13.6)	128 (82.1)	28 (17.9)	0.302
Pawpaw	81 (55.1)	66 (44.9)	84 (53.8)	72 (46.2)	0.827
Mango	85 (57.8)	62 (42.2)	98 (62.8)	58 (37.2)	0.375
Orange	105 (71.4)	42 (28.6)	105 (67.3)	51 (32.7)	0.438
Apple	55 (37.4)	92 (62.6)	54 (34.6)	102 (65.4)	0.612
Snake fruit	38 (25.9)	109 (74.1)	42 (26.9)	114 (73.1)	0.833
Watermelon	60 (40.8)	87 (59.2)	77 (49.4)	79 (50.6)	0.136
Melon	32 (21.8)	115 (78.2)	53 (34)	103 (66)	0.018*
Wine	36 (24.5)	111 (75.5)	60 (38.5)	96 (61.5)	0.009*
Food and snacks					
Meatball	102 (69.4)	45 (30.6)	118 (75.6)	38 (24.4)	0.223
Chicken noodle	21 (14,3)	126 (85.7)	35 (22.4)	121 (77.6)	0.068
Dumplings	28 (19)	119 (81)	54 (34.6)	102 (65.4)	0.002*
Fried food	90 (61.2)	57 (38.8)	71 (45.5)	85 (54.5)	0.006*
Cilok	69 (46.9)	78 (53.1)	69 (44.2)	87 (55.8)	0.637
Chiki	94 (63.9)	53 (36.1)	116 (74.4)	40 (25.6)	0.050
Soft drink	77 (52.4)	70 (47.6)	56 (35.9)	100 (64.1)	0.004*
Snack	110 (74.8)	37 (25.2)	130 (83.3)	26 (16.7)	0.069
Tea	62 (42.2)	85 (57.8)	76 (48.7)	80 (51.3)	0.254
Coffee	19 (12.9)	128 (87.1)	42 (26.9)	114 (73.1)	0.002*

Mann-Whitney test; *) Significant difference if p-value <0.05

The two regions' vegetable and fruit consumption habits of children under five differ significantly. The most consumed vegetables are carrots and spinach. Children under five who live in areas with low gender equality consume more kale, cabbage, and gourd than toddlers who live in areas with high gender equality. In contrast, the consumption of bean sprouts and broccoli was higher among children under five who lived in areas with high gender equality than those with low gender equality (Table 5). Likewise, fruit consumption in the two regions is relatively the same, except for grapes and melons. Bananas, oranges, papayas, and mangoes are the fruits most consumed by children under five in both regions. Children under five who live in areas with low gender equality consume fewer grapes and melons compared to children under five in areas with high gender equality (Table 5). The choice of types of food to be consumed is influenced by the availability of food under the local ecology and season so that food prices can be more affordable for households[42].

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Meatballs, chicken noodles, *cilok*, and tea are snacks and drinks consumed mainly by toddlers in both regions. The proportion of children under five who live in areas with high gender equality consumes more food and drinks, such as dumplings, *chiki*, snacks, and coffee. Meanwhile, children under five who live in areas with low gender equality are significantly more likely to consume fried foods and soft drinks than children under five in areas with high gender equality (Table 5). Eating habits with high consumption of fried foods and soft drinks in low gender equality areas indicate low aspects of food utilization, and this can be related to the low education of the mother, causing a lack of nutritional knowledge and literacy[41]. In addition, the consumption of high-sugar foods, especially in children, can cause cognitive function disorders[43]. Limitations in fulfilling aspects of food security, namely access, availability, and utilization in areas of low gender equality, can lead to food insecurity[32].

CONCLUSIONS

This study found a high prevalence of moderate and severe food insecurity in both regions. In addition, regions with low gender equality are more food insecure than areas with high gender equality. Eating habits in the dimensions of eating frequency, eating habits together, and selection of food menus can show areas of high gender equality better than areas of low gender equality. There were no significant differences in the eating habits of children under five in the two regions.

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