A role of gender in food insecurity: findings from a nationally representative survey

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Abstract

Introduction: This study aimed to examine gender differences in food insecurity and association between gender determinants and food insecurity in Thai population.

Methods: The study used data from a nationally-representative sample survey of Thai households. The respondents age 15 years or older were asked about food insecurity, socio-demographic characteristics, and other food related factors. Binary logistic regression analysis was used to investigate the association between the variables and food insecurity.

Results: Of total 5,066 male and 6,060 female respondents, females experienced having more food insecurity (29.7%) than males (20.2%). The study found similar results in males and females. Strong associations with food insecurity in all genders were found in some socio-demographic characteristic such as age, place of residence, education and income. Food insecurity in all genders also associated with home gardening and family support, except for males being associated with community support. People who were the main household food provider were more likely to have food insecurity.

Conclusion: This study provide better understanding of the gendered dimensions of food insecurity. It highlights a need for targeted policies to address gender disparities in food insecurity that contribute towards achieving Sustainable Development Goal 5 (SDG5) on Gender Equality.

Introduction

Food insecurity can differ between men and women. Both men and women can experience food insecurity. Previous evidence shows that women are more likely to experience food insecurity compared to men (1, 2). In many countries and regions, women often face gender inequality that impacts their access to resources and opportunities for managing food and education, as well as their decision-making power (3). In some situations, women and children are more likely to be affected by food insecurity than men, as they are often responsible for managing and allocating food resources within the household (4) According to Food and Agriculture Organization of the United Nations report (5), women have faced higher levels of food insecurity (both moderate and severe) compared to men at certain times (from 2014 to 2021).

In Thailand some group of population still live with food insecurity (6). Although conditions that give rise to population-level food insecurity in Thailand increasingly understood, no studies had investigated a relationship between gender and food insecurity in the Thai population. There was no evidence that identified determinants related food behaviours that affect vulnerability to food insecurity. Unfortunately, combatting food insecurity by addressing gender issue has not been a priority for public policy intervention in Thailand.

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The aim of this study was to examine gender differences in food insecurity and association between gender determinants and food insecurity, using data from a nationally representative population-based survey in Thailand. Findings of this study will allow policymakers and program planners to have better understanding of gender influence and ensure appropriate development of policies and strategies to guarantee the equitable right to secure food. The findings should help guide the way toward accelerated achievement of Sustainable Development Goal 5 (SDG5) on Gender Equality (7).

Materials and Methods

Study design and population

This study used data from a nationally representative population-based survey on food consumption, food security, and food literacy in Thai population. The survey was designed with representation of age groups (15-29 years, 30-44 years, 45-59 years and 60 years or older). The survey sampling was conducted by the National Statistical Office (NSO) which applied a multi-stage sampling design.

Data Collection

Data were collected during April 2022 – March 2024 using Qualtrics offline survey application. A Food Insecurity Experience Scale (FIES), developed by FAO was used for measuring level of food insecurity. The FIES is experience-based measures of household or individual food security which comprised eight questions (5).

Study variables

Outcome variables

This study used food insecurity as an outcome variable. Each respondent was asked to give a "yes/no" response to each question of the FIES. Response to each question was assigned a potential score of one point. The respondent's score was the sum of the eight FIES questions, with a potential total ranging from zero to eight. The more questions which the respondent answered "yes" to, the more severe their food insecurity. A response of "no" since the first question was coded as "food secure."

Independent variables

Socio-demographic variables: Age was coded as age 15–29 years, age 30–44 years, age 45–59 years and 60 years or older. Place of residence was coded as urban and rural. Marital status was coded as married, single, or widowed/divorced/separated. Educational attainment was coded as currently studying, primary school or less, secondary school, and bachelor's degree or higher. Monthly income was coded as less than 5,000, 5,001-8,000, 8,001-12,000 and 12,001 Baht or above.

Food-related behaviours: Each respondent was asked four following questions: 1) "Grow vegetables and fruits in your garden for personal consumption?" 2) "Does your family help you

eat healthier food?" 3) "Does the community you live in help you eat healthier food?", and "Main food provider in the household?" Response to each question was coded as yes and no.

Statistical analysis

This study used descriptive statistics (i.e., frequencies and percentages) in describing the prevalence of food insecurity for the set of FIES questions, presence of food insecurity, gender and other socio-demographic characteristics, and food-related behaviours. To test for statistically-significant associations between food insecurity and respondent characteristics, binary logistic regression analysis was employed, regressing the bi-level individual food insecurity on the socio-demographic of the respondents. All analyses were conducted using SPSS version 22.

Results

Prevalence of food insecurity

Of total 5,066 male and 6,060 female respondents, both male and female reported having food insecurity (Table1). Female experienced more having food insecurity (29.7%). By socio-demographic characteristics high percentage of food insecurity was observed in people who were in age 45–59 years, lived in rural areas, married, obtained primary school or less education, did home gardening, and received family/community supports on healthier food consumption. Male and female respondents with income of 5,001–8,000 Baht had the highest prevalence of food insecurity (33.3% and 44.8%, respectively).

Table 1 Gender differences in food security/insecurity by socio-demographic characteristics and food-related behaviours (N=11,684)

Variables	Number	%	Food secure (score= 0)	Food insecure (score = 1–8)	Number	%	Food secure (score= 0)	Food insecure (score = 1–8)
	Male				Female			
Total	**5,524**	**100.0**	**79.8**	**20.2**	**6,160**	**100.0**	**70.3**	**29.7**
Age group (years)								
15-29 years	1,114	20.2	83.9	16.1	830	13.5	79.9	20.1
30-44 years	1,209	21.9	82.1	17.9	1,298	21.1	68.8	31.2
45-59 years	2,051	37.1	77.1	22.9	2,461	40.0	68.0	32.0
60 or older	1,150	20.8	78.3	21.7	1,571	25.5	70.2	29.8
Place of residence								
Urban	2,608	47.2	85.8	14.2	2,742	44.5	76.2	23.8
Rural	2,916	52.8	74.5	25.5	3,418	55.5	65.5	34.5
Marital status								
Single	1,278	23.1	84.7	15.3	877	14.2	82.3	17.7
Married	3,876	70.2	78.3	21.7	4,139	67.2	68.1	31.9
Widowed/divorced/ separated	370	6.7	78.6	21.4	1,144	18.6	69.0	31.0

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	Male				Female			
Total	**5,524**	**100.0**	**79.8**	**20.2**	**6,160**	**100.0**	**70.3**	**29.7**
Education								
Primary school or less	2,186	39.6	72.7	27.3	3,041	49.4	63.1	36.9
Secondary school	2,728	49.4	82.8	17.2	2,345	38.1	74.3	25.7
Bachelor's degree or higher	610	11.0	91.8	8.2	775	12.6	86.6	13.4
Income (Baht per month)								
Less than 5,000	2,188	39.6	76.9	23.1	3,642	59.1	67.0	33.0
5,001-8,000	382	6.9	66.7	33.3	385	6.3	55.2	44.8
8,001-12,000	1,124	20.3	78.4	21.6	800	13.0	70.8	29.2
12,001 or above	1,830	33.1	86.9	13.1	1,333	21.6	83.4	16.6
Home gardening								
Yes	1,429	25.9	72.7	27.3	1,821	29.6	59.7	40.3
No	4,096	74.1	82.3	17.7	4,339	70.4	74.8	25.2
Family support								
Yes	4,409	79.8	77.8	22.2	4,821	78.3	68.7	31.3
No	1,116	20.2	87.8	12.2	1,339	21.7	76.3	23.7
Community support								
Yes	1,761	31.9	73.2	26.8	2,180	35.4	65.4	34.6
No	3,763	68.1	82.9	17.1	3,980	64.6	73.0	27.0
Household food provider								
Yes	1,497	27.1	75.3	24.7	4,545	73.8	67.0	33.0
No	4,027	72.9	81.5	18.5	1,615	26.2	79.7	20.3

Regression of food insecurity on sociodemographic characteristic and food-related behaviors

Table 2 shows results from the binary logistic regression analysis that tested the association between various socio-demographic factors and food-related behaviors and food insecurity. The analysis found that sociodemographic factors were significantly associated with food insecurity.

Male respondents in younger age groups were more likely to have food insecurity than those in older person group. Male who lived in rural areas, had lower than Bachelor's degree, and had monthly income 12,000 Baht or less were more likely to have food insecurity compared to reference groups. This study observed associations between home gardening (p=0.001), and support from family (p=0.001) / community (p=0.001) and food insecurity. Male who were the main household food provider were 1.6 times as likely to have food insecurity as those who were not the principal food provider (p=0.001).

Female respondents showed similar results as male respondents. Strong associations with food insecurity were observed in female in younger age groups, living in rural areas, having lower than Bachelor's degree, and having 12,000 Baht or less income. Female who did home gardening (p=0.001), received support from family (p=0.01), and served as the main household food provider (p=0.001) were more likely to have food insecurity. There was no associations between marital status and community support, and food insecurity.

Table 2 Socio-demographic and food-related behaviors in food insecurity (N=11,684)

Variables	Male			Female		
	Exp (B)	Adjusted OR (95% CI)		Exp (B)	Adjusted OR (95% CI)	
		Lower	Upper		Lower	Upper
Age group (years) (Reference=60 or older)						
15-29 years	1.389*	1.036	1.863	1.589***	1.225	2.060
30-44 years	1.480**	1.151	1.902	2.026***	1.649	2.489
45-59 years	1.376**	1.128	1.678	1.254**	1.074	1.463
Place of Residence (Reference=Urban)						
Rural	1.356***	1.164	1.579	1.182**	1.044	1.338
Marital status (Reference= Single)						
Married	1.089	0.863	1.374	1.174	0.945	1.460
Widowed/divorced/separated	1.167	0.834	1.634	1.278	0.998	1.635
Education (Reference = Bachelor's degree or higher)						
Primary school or less	3.188***	2.292	4.434	3.178***	2.466	4.096
Secondary school	1.814***	1.321	2.491	1.674***	1.318	2.126
Income (Baht per month) (Reference =12,001 or above)						
Less than 5,000	1.712***	1.406	2.085	2.016***	1.689	2.406
5,001-8,000	2.309***	1.773	3.007	3.098***	2.391	4.014
8,001-12,000	1.606***	1.308	1.972	1.704***	1.369	2.122
Home gardening (Reference=No)						
Yes	1.355***	1.144	1.557	1.651***	1.457	1.871
Family support (Reference=No)						
Yes	1.532***	1.228	1.912	1.245**	1.061	1.460
Community support (Reference=No)						

Variables	Male			Female		
	Exp (B)	Adjusted OR (95% CI)		Exp (B)	Adjusted OR (95% CI)	
		Lower	Upper		Lower	Upper
Yes	1.521***	1.313	1.762	1.125	0.992	1.276
Household food provider (Reference=No) Yes	1.642***	1.407	1.916	1.729***	1.476	2.025
Cox & Snell R Square	0.068			0.087		

P value=*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.0

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