Relationship between household structure and food security of older persons

Authors

Nutnicha Loyfah[1] and Sirinya Phulkerd[1]

Abstract (200 words)

Abstract

Introduction: The aim of this study was to examine the relationship between household structure and food security of the older persons in Thailand.

Methods: This study used nationally representative survey data in population aged 60 years or older. Descriptive statistics were used to analyze socioeconomic-demographic characteristics, household structure, and eating behaviors among Thai older persons. Binary logistic regression was applied to investigate correlations between household structure and food security.

Results: Only 26.5% of older persons reported having food security. Logistic regression analysis indicates that respondents living with other older persons, children, and/or adolescents were more likely to be food secure compared to those living with working-age adults. Respondents with primary school education or lower (OR = 3.262, 95%CI = 1.789-5.945), and living in rural area (OR=1.568, 95%CI=1.294-1.899) were more likely to have food security. Respondents who were responsible for providing food tend to experience food security (OR=1.872, 95%CI=1.521-2.304).

Conclusion: The study highlights the impacts of household structure and food provision role on food security among older persons. These findings suggest the need for government assistance for older persons to help them manage their food security more effectively, taking into account household structure and role in the household.

[1] Institute for Population and Social Research, Mahidol University, Nakhon Pathom, Thailand

Introduction

Population aging is a growing concern in many nations around the world. At the same time, the older persons may face health problems such as non-communicable diseases and physical illnesses that may affect their access to food which is part of food security (1). Food insecurity is associated with lower overall diet quality (2) and increased risks of chronic health conditions such as hypertension and hyperlipidemia (3). Therefore, there is a need for public health and social efforts to identify older persons at risk of food insecurity and to alleviate food insecurity and promote healthy eating behaviors among older persons.

Agriculture and food are perceived as Thailand's national strength. Thailand is expected to produce more food than it needs for population consumption (4). However, it was observed that food is still not equally distributed at some community, household, and individual levels because of socioeconomic differences (5). Food security is a critical issue for all demographic groups, but it is especially significant for older persons. Since 2010, Thailand has been an aged-society with 12.9% of Thai population aged 60 years or order. Thailand is expected to enter a super-aged society in 2040 which more than 25% of the population are in this age group (6). Therefore, food security is a significant social and health concern for older persons quality of life and ageing in place in Thailand (7).

The research on older person’s food security and household structure is limited. Given the increasing complexity of households in Thailand, combined with presence of food insecurity during the last decade (8), a closer examination of this relationship is warranted. The aim of this study was to examine the relationship between household structure and food security of the older persons in Thailand, using a nationally representative population based survey data.

Methods

Study design and participants

This study used data from a Population-Based Survey on Food Consumption, Food Security and Food Literacy in Thai Population, conducted by Institute for Population and Social Research, Mahidol University. The survey data were a national representations of age group (0-5, 6-9, 10-14, 15-29, 30-44, 45-59, 60 years or older), sex (male and female, and place of residence (urban, rural). The survey was conducted during August 2022 – October 2024. However, a target age group for respondents in this study was 15 years or older who complete questions about variables related to food insecurity.

Dependent variable

In this study food security was a dependent variable. Food security data was obtained by using self-assessment questions developed by Food and Agriculture Organization, known as the Food Insecurity Experience Scale (FIES). The FIES questionnaire consists of 8 questions that range in severity from least to highest level. Each question was assigned to one point. Total score of each

respondent was grouped into two categories: “food security” (zero points) and “food insecurity” (one point or more).

Independent variables

Socio-demographic characteristics: Sex was included as a dichotomous variable, i.e., “male” or “female.” Marital status was classified into “single,” “married,” and “widowed/divorced/separated.” Place of residence were grouped into “urban” and “rural.” Socio-economic status: Education was divided into three groups: “primary school or less,” “secondary school,” “bachelor’s degree or higher.” For monthly cash income, participants who earned “less than or equal to 2,997 baht” and “more than 2,998 baht” were classified as being “poor” and “not poor,” respectively, according to Office of the National Economics and Social Development (9).

Household food environment: Each respondent was asked following questions about family support and food provision - “Does your family help you eat healthier food?” and “Are you responsible for providing or purchasing food for your household?” Response to each question was classified into “yes” and “no.”

Household structure: Household structure was grouped into five categories: older persons (age 60 years or older) who lived “alone,” “with older person(s),” “with working-age person(s) (age 15-59 years),” “with working-age person(s) and child(ren)/adolescent(s) (age 0-14 years),” and “with child(ren)/adolescent(s).” This study categorized the household structure by age group according to substantial evidence showing that generational differences have an influence on household members.

Statistical analysis

Descriptive statistics were used to analyze socioeconomic-demographic characteristics, household structure, and eating behaviors among Thai older persons. Binary logistic regression was applied to investigate correlations between household structure and food security. The associations were presented as odds ratios (OR) with 95% confidence intervals (with p-values). The threshold for statistical significance of correlations was set at $p < 0.05$.

Results

Population description

Sample characteristics are presented in Table 1. More than half of participants were female (57.8%), married (67.8%), with primary school education or less (80.3%), lived in a rural area (55.7%), food insecurity (73.5%), had a family that helps eat healthier food (80.5%), and did not have a duty to provide food to a household (51.0%). More of participants lived with child(ren)/adolescents (37.9%). Highest percentage of food security was found in female, widowed/divorced/separated, primary school or less, poor, living in rural, have a duty to provide food to a household, and lived with child(ren)/adolescents.

Table 1 Socioeconomic and demographic characteristics and household structure of the study sample and prevalence of food security (N= 2,695)

	Number	Percentage (%)	Live with food security (%)
Sex			
Male	1,137	42.2%	21.8%
Female	1,557	57.8%	29.9%
Marital status			
Single	118	4.4%	25.4%
Married	1,827	67.8%	26.0%
Widowed/divorced/separated	749	27.8%	27.9%
Education			
Primary school or less	2,164	80.3%	29.5%
Secondary school	398	14.8%	15.6%
Bachelor's degree or higher	133	4.9%	9.8%
Poverty status			
Poor	1,915	71.1%	27.4%
Not poor	780	28.9%	24.4%
Place of residence			
Urban	1,193	44.3%	20.0%
Rural	1,502	55.7%	31.6%
Family support			
No	524	19.5%	26.5%
Yes	2,170	80.5%	26.5%
Food provision			
No	1,374	51.0%	21.0%
Yes	1,321	49.0%	32.3%
Household structure			
Lived alone	140	5.2	25.7%
Lived with older person(s)	477	17.7	27.0%
Lived with working-age person(s)	143	5.3	21.4%
Lived with child(ren)/adolescents	1,021	37.9	41.3%
Lived with working-age person(s) and child(ren)/adolescents	915	34.0	29.8%
Food security			
food security	714	26.5	
food insecurity	1,980	73.5	

Correlation between household structure and food security

Results from the binary logistic regression analysis are shown in Table 2. Participants who lived with older person(s) (OR = 1.-ตถ, 95%CI = 1.068-1.822) or lived with child(ren)/adolescents (OR = 1.988, 95%CI = 1.360-2.904), lived with working-age person(s) and child(ren)/adolescents (OR = 1.458, 95%CI = 1.179-1.803) or all, were more likely to be food secure than those lived with working-age person(s).

Significant associations between some sociodemographic characteristics and food security were observed. Older persons with primary school education or lower (OR = 3.262, 95%CI = 1.789-5.945) were more likely to be food secure than bachelor's degree or higher. Older persons live in rural more likely to be food secure than older persons who live in urban.

Significant associations between household food environment and food security were observed. Older persons who are responsible for providing food to the household more likely to be food secure than older persons who are not responsible for providing food to the household.

Table 2: Correlation between household structure and food security

Variables	Food security (N= 2,695)		
	Exp (B)	Adjusted OR (95% CI)	
		Lower	Upper
Sex (Ref = Male)			
Female	1.080	0.871	1.340
Marital status (Ref= Single)			
Married	-0.889	0.563	1.403
Widowed/divorced/separated	-0.938	0.588	1.497
Education (Ref = Bachelor's degree or higher)			
Primary school or lower	3.262***	1.789	5.945
Secondary school	1.657	0.869	3.161
Poverty status (Ref = Poor)			
Not Poor	-0.834	0.680	1.022
Place of residence (Ref = Urban)			
Rural	1.568***	1.294	1.899
Family support (Ref=No)			
Yes	-0.986	0.777	1.249
Food provision (Ref=No)			
Yes	1.872***	1.521	2.304
Household structure (Ref = Lived with working-age person(s))			
Lived with older person(s)	1.395**	1.068	1.822
Lived with child(ren)/adolescents	1.988***	1.360	2.904
Lived alone	1.107	0.712	1.722
Lived with working-age person(s) and child(ren)/adolescents	1.458**	1.179	1.803
Cox & Snell R Square		**0.059**	

Ref = reference

P value=*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.

Reference

1. Hunter-Adams J, Battersby J, Oni T. (2019). Food insecurity in relation to obesity in peri-urban Cape Town, South Africa: Implications for diet-related non-communicable disease. Appetite, 137, 244-9.
2. Leung CW, Wolfson JA. (2021). Food insecurity among older adults: 10-year national trends and associations with diet quality. Journal of the American Geriatrics Society, 69(4), 964-71.
3. Seligman HK, Laraia BA, Kushel MB. (2010). Food insecurity is associated with chronic disease among low-income NHANES participants. The Journal of nutrition, 140(2), 304-10.
4. Organization) NIAP. Thailand Agtech Startup Ecosystem Development Whitr Paper 2021 [Available from: https://www.nia.or.th/frontend/bookshelf/Oz8szWeHuw1jZ/62d408cd0811f.pdf.
5. Piaseu N, Mitchell P. (2004). Household food insecurity among urban poor in Thailand. Journal of Nursing Scholarship, 36(2), 115-21.
6. 2021 TsoTe. Foundation of Thai Gerontology Research and Development Institute. (2021). Foundation of Thai Gerontology Research and Development Institute. Bangkok, Thailand; 2021.
7. Cheng Y, Rosenberg M, Yu J, Zhang H. (2016). Food security for community-living elderly people in B eijing, C hina. Health & social care in the community, 24(6), 747-57.
8. Phulkerd S, Thongcharoenchupong N, Chamratrithirong A, Gray RS, Pattaravanich U, Ungchusak C, et al. (2023). Socio-demographic and geographic disparities of population-level food insecurity during the COVID-19 pandemic in Thailand. Frontiers in Public Health, 10, 1071814.
9. National economics and social development. Poverty and Inequality Report 2022. 2022.