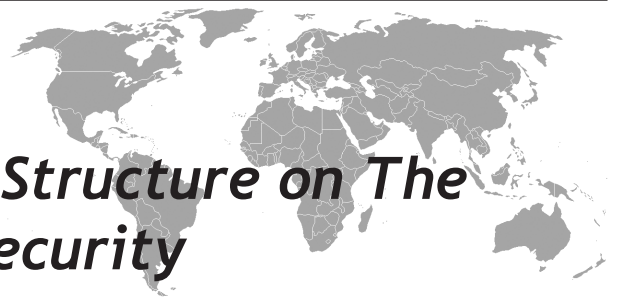


# The Role of Household Structure on The Prevalence of Food Insecurity



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## ABSTRACT

**Aim:** Food insecurity is common in both developed and developing countries affecting from 5% to 25% of the general population. Food insecurity has been found to have significant impacts on physical, social, and psychological status of individuals in communities suffering from that. The purpose of this study was to determine the role of household composition on the household food insecurity.

**Method:** This cross-sectional study was conducted on 2503 households selected from Qaresoo region in the northwest of Iran. Household food security status was measured by a validated short questionnaire including six questions. Chi-square and logistic regression were used for data analysis.

**Result:** Of 2503 households, 1012 (40.4%) were identified as food secure and the remaining 1492 (59.6%) were food insecure. There was a significant relation between family structure & size and household food security status ( $p < 0.005$ ). There was however, no significant association between household food insecurity and the number of children (under five) and the number of elderly individuals living at home.

**Conclusion:** Our findings indicate that food insecurity is prevalent in the area. This study showed that existing of young children (under five) in the family might increase the risk of household food insecurity. Financial support for new households, proper nutritional education programs especially for households with young children, can help to reduce the risk of food insecurity in the community.

**Key words:** Household, food security, prevalence, epidemiology

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### **Ev yapısının Gıda Güvensizliği Sıklığındaki Rolü**

**Amaç:** Gıda güvensizliği hem gelişmiş ve gelişmekte olan ülkelerde yaygın olup genel popülasyonun %5-%25 ini etkilemektedir. Gıda güvensizliği, etkilen toplumlarda bireylerin sosyal, fiziksel ve psikolojik durumları üzerinde önemli etkilere sahiptir. Bu çalışmanın amacı, ev gıda güvensizliğinde, ev bileşenlerinin rolünü saptamaktır.

**Metod:** Bu kesitsel çalışma İran'ın Kuzeybatısında Qaresoo bölgesinden seçilen 2503 evde uygulanmıştır. Ev gıda güvenliği durumu altı soru içeren onaylanmış kısa anket yoluyla belirlendi. Veri analizi için ki-kare ve logistik regresyon testi kullanıldı.

**Bulgular:** 2503 evden, 1012'sinin (%40,4) gıdası güvenli ve geri kalan 1492'sinin (%59,6) gıdası güvensiz olarak tanımlanmıştır. Aile yapısı-büyüklüğü ile ev gıda güvenliği durumu arasında anlamlı ilişki vardır ( $p<0.005$ ). Bununla beraber, ev gıda güvensizliği ile evde yaşayan çocuk (5 yaş altında) ve yaşlı kişi sayısı arasında anlamlı ilişki saptanmamıştır.

**Sonuç:** Bulgularımız bu bölgedeki gıda güvensizliğinin yaygın olduğunu göstermektedir. Bu çalışma, ailede var olan genç çocuk sayısının (5'in altı) hanehalkı gıda güvensizliği riskini arttırabileceğini göstermiştir. Yeni evler için finansal destek, özellikle küçük çocuklu evler için uygun beslenme eğitim programları toplumdaki gıda güvensizliği riskini azaltmaya yardımcı olabilir.

**Anahtar kelimeler:** Ev, gıda güvenliği, prevalans, epidemiyoloji

## **INTRODUCTION**

By definition food security means continuous ability of everyone (physically and financially) to access to sufficient amount of healthy, enough and nutritive food in order to maintain an active life (1, 2). It was estimated that in 2004, more than 800 millions of world population mostly from developing countries were suffering from food insecurity (3).

Research reports shows that about one-fifth of the population in Iran had energy deficiency and half of them suffered from micronutrients deficiency (4). A Study carried out in the northwest of Iran indicated that prevalence of food insecurity was 36.6 percent .Other studies have shown that household economic, social and cultural situation may have an important role on the household food security status(5). Beside adverse physical effects, food insecurity and starvation also has adverse effect on the social and mental health status of the community (6-9).

Some research have shown that there is an association between household food insecurity and socio-economic status. In one study (10), poor households had three times more probability than other households for food insecurity. Family income is also one of the most important factors on household food security. Findings of Current Population Survey (CPS) in the USA-1995 showed that 17 percent of households, which were below 50 percent of poverty line, experienced food insecurity during a year (11). In this study, we studied the role of the household composition and age groups on the prevalence of household food insecurity in the northwest of Iran.

## **MATERIALS AND METHODS**

This cross-sectional study was conducted at Qaresoo region in city (northwest of Iran). This area is located southeast of khoy city and consists of nearly 18,648 populations with 3700 household. Population in this area speak (An accent of Turkish language). The approval of this research was obtained from the research committee of the Urmia University of Medical Science. Two thousands five hundred and three households were enrolled in this study. A validated household food security short questionnaire (six questions) was used by trained interviewers to measure the food security status of the households in this population. Households that gave a negative response to five or more questions were classified in food secure group and households with two or more positive answers classified as food insecure group. For questions number one, three and four (yes), questions five and six (often or sometimes), question two (almost every month or some months) were positive answers. Other required data (i.e. number of children under five, elderly individuals etc) also were obtained alongside the validated questionnaire. Chi-square and logistic regression were used for data analysis.

## **RESULTS**

Of 2503 households, 1012 (40.4 %) were identified as food secure and the remaining 1492 (59.6%) were food insecure. In food secure group, 278 (27.47%) households had child (under five), and 172 (17%) households had elderly individual at home living with them. In food insecure group, 499 (34.46%) household had a child (under five) and 279 (18.71%) household had an elderly family member (Table 1). There was a significant relation

**Table 1.** Food security status and family structure

Food security status	secure	insecure	total	Food insecurity chance
<i>Family structure</i>				
<i>Without child and elderly</i>				
count	484	624	1108	1.28
% in row	43.7%	56.3%	100.0%	
<i>Only child</i>				
count	278	499	777	1.8
% in row	35.8%	64.2%	100.0%	
<i>Only elderly</i>				
count	172	279	451	1.6
% in row	38.1%	61.9%	100.0%	
<i>Both age group</i>				
count	78	89	167	1.14
% in row	46.7%	53.3%	100.0%	
<i>total</i>				
count	1012	1491	2503	1.47
% in row	40.4%	59.6%	100.0%	

between family structure and household food security status ( $p < 0.005$ ). In comparison with household without child and elderly, households with children (under five) 1.4 times had more chance of food insecurity ( $p < 0.05$ ). Households with elderly individuals at home and households with both groups in the family (children and elderly individuals) had not more chance for food insecurity (Table 2). Of 777 households which had children at home, 100 (13%) had at least two children and 677 (87%) had one child only. Households with one child compared to those with two or more children had not more probability for food security (95%CI: 0.814-2.009). Of 451 households which had elderly individuals at home, 295 (65.6%) had an elderly person and 156 (34.4%) had at least two or more elderly people at home. Odds ratio (secure/insecure) for households with one elderly person compared to households with two or more elderly individuals at home was 1.01 (95%CI: 0.667-1.508).

## DISCUSSION

This was a cross-sectional study aiming to estimate the prevalence of food insecurity in northwest of Iran. We also found a relation between household food insecurity in the region and the family structure. A similar finding by Nwez Nnakwe study showed that food insecurity prevalence among households with preschools children was 57 percent and among households without preschools children was 44 percent (12). Another study carried out by Bruce Furness showed that the living of children (under 18 years) in the family increase the risk of households' food insecurity by 1.8 times (13). Dastgiri et al study in Iran found an association between family food insecurity and household dimension, household food insecurity increase by household dimension increase (5). While results from this study shows improvement household food security status, reason might be that Dastgiri's study done at Tabriz suburbs (metropolitan city) and this study conducted in a rural area, which has the traditional culture (4). Studies show that there is a relation-

**Table 2.** Logistic regression for age groups & family dimension

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Children	0.363	0.097	14.013	1	0.000	1.438	1.189	1.738
Elder	0.183	0.115	2.535	1	0.111	1.201	0.959	1.506
Both age group	0.139	0.179	0.603	1	0.437	1.149	0.809	1.632
Family dimension	-0.082	0.018	19.734	1	0.000	0.921	0.889	0.955
Constant	0.636	0.105	36.372	1	0.000	1.889		

ship between preschools children food security status and mother's educational level. Food insecurity has adverse effects on children and parents' relationship, also brings about a kind of virulence with external environment for elderly individuals. Anxiety, negative sense of human being's values are other unsuitable effects (14). Studies indicate that food insecurity is effective for human's physiological functions in all stages of life, most of these events occur during pregnancy and lactation period (7). This Study shows that households with children (under five) 1.4 times had more chance of food insecurity ( $p < 0.05$ ).

Households with elderly individuals at home and households with both groups in the family (children and elderly individuals) had not more chance for food insecurity. In addition, one person's increase in the family was a protective factor against household food insecurity (Table 2). In rural area new households remains with their own parents, and we observed children's attendance beside elderly individuals at home, financial support from new households by parents and similar nutrition can be important factors for this result. Children's attendance at home increase household food insecurity chance more than elderly person's Presence at home (1.8 versus 1.6).

Our findings indicated that food insecurity is prevalent in the area. In rural area financial support from young households by parents, identify households, which have inactive age groups (children and elderly) and proper nutritional education programs especially for households with young children can help to reduce the risk of food insecurity in the community.

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