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The Socio-demographic Characteristics Associated with Food Insecurity among Vulnerable Households in a District of Tehran

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Abstract: *Food insecurity, as a multi-faceted problem with far-reaching health and societal consequences, is prevalent among disadvantaged households. Household food insecurity has made the notion operationally useful in the design, implementation, and evaluation of programs and policies. This study was to investigate the socio-demographic associates contributing to severity of food insecurity among vulnerable households under the coverage of a widespread relief program in Iran. The adapted Radimer / Cornell questionnaire was used to assess severity of food insecurity. The effect of the socio-demographic variables on the severity of the problem was evaluated using Polynomial Logistic Regression. This study was carried out among a sample of eligible households (n= 300) under the coverage of the Imam Khomeini Relief Foundation in a district of Tehran. The findings indicate that 98.6 percent of the sample had experienced food insecurity, while 67 percent were severely food insecure. Food insecurity at the household level was more severe than child level. Having a sick person in the families was the most significant contributor to the severity of the food insecurity. Gender of the household head, health status, education, employment status, and the household size were among other important independent variables. Briefly, even though the intensity of food insecurity varies among the family members, high rate of that among the mothers and children reemphasizes the higher priority that should be given to these groups. Plus, financial burden imposed by having a chronically sick person in the families, which are economically unstable, further exacerbates food insecurity.*

Keywords: *Food Insecurity, vulnerable households, health status, education, Tehran.*

Introduction

Household food security, as one of the most important issues, has only caught the attention of the researchers and policymakers in Iran. Many governments in the world, including Iran, in *World Declaration on Nutrition* pledged to strive towards the eradication of the Food Insecurity (FI) in their communities especially through giving priority to vulnerable groups by the year 2000. Despite such efforts, the number of malnourished people in the world is still high and more than one billion for the first time since 1970 (FAO 2009). In Iran, numerous nutrition studies have demonstrated that while the country suffers from several nutrition deficiencies, it has also faced the prevalence of diet-related chronic diseases such as obesity, diabetes, cardiovascular diseases and cancers in an alarming rate over the past decade. The spread of diseases caused by lack of hygiene and food security has also been alarming in Iran (Kimiagar and Bajan 2005). The report of the World Bank on income share in Iran shows that 45.0% of the total income belongs to highest 20% people, while the income share held by lowest 10% people is only 2.6% (World Bank 2008). Studies of income and food expenditure fluctuations during recent years indicate that while the food basket of the household has kept getting increasingly smaller, it has also experienced a significant qualitative shift from cellular fullness to just mere fullness (Ghassemi 1994, 1998; Ghassemi et al. 1996; Pajouyan 2005).

A study on the proportion of food expenditure in consumption basket of families in rural and urban areas of the country throughout 1982 to 2003 shows that in urban areas this proportion has decreased from 40% to 25%.

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However, this decrease is not due to the increase in families' income during this period, but it is due to the sharp decline in real food consumption of families in urban areas. Such conditions indicate the existence of serious problems in the economy and poverty level in the country and prevalence of FI among the families and households (Taghavi and Gharavi-Nakhjavani 2005).

While measuring FI at multiple levels (e.g. national, regional, community and household level) is potentially important for understanding the nature and components of the issue, there is in particular a need to develop appropriate policies and improve the tools and frameworks at household level for targeting various interventions especially for the vulnerable segments of a population The household FI is by definition a condition that results from insufficient household resources and existence of significant barriers in the household to achieve optimum resource allocation (Coleman-Jensen et al. 2011). Hence, household FI has made the notion operationally useful in the design, implementation, and evaluation of programs and policies. Hence, the objective of this study was therefore to investigate socio-demographic characteristics associated with food insecurity among vulnerable households under the coverage of a widespread relief program in the country, i.e., The Imam Khomeini Relief Foundation (IKRF) in one of poorest districts of Tehran metropolis (the distinct 20), Iran.

The Notion of Food Security and its Components

Food security is a valuable notion which has been used to mean different things and has evolved over time. Having a clear understanding of what it means, its limitations and implications, and how it interacts with behavior and non-food factors is central to explain and manage this notion. Food security provides a useful goal towards which the world should strive, being useful for monitoring an important aspect of the well-being of households and communities (Pinstrup-Andersen 2009). In the beginning of 1970s, during the world food crisis, The United Nation defined food security as *availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices* (UN 1975). Based on this description, food supply at the world level (macro level) is the main condition for providing food security. Nine years later the Food and Agricultural Organization (FAO) presented the following definition: *Food security is ensuring that all people at all times have both physical and economic access to the basic food that they need* (FAO/WHO 1983). This was a turning point which shifted description and analysis of food security from macro-level to micro-level i.e. from food production in a large scale to the individual/household level. In 1986, the World Bank also proposed a definition for food security as *access by all people at all times to enough food for a productive and healthy life.* This definition was subsequently amplified by the FAO to include the nutritional value and food preferences. Thus the definition agreed upon at the World Food Summit in 1996 is that food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for *a healthy and active life* (Pinstrup-Andersen 2009). This is currently considered as one of the most appropriate and complete descriptions ever given on food security.

The further development and evolution of the concept of food security is moved beyond meeting just the energy requirements, but also includes different psychological and socio-cultural aspects particularly on the topic of "food preferences". From this point of view, in addition to assurance of continuity, constancy in food access through socially and culturally acceptable ways and consistent with religious and ethical values, and emotional and psychological consequences of FI are also have been taken into account (Pinstrup-Andersen 2009; Vedadhir and Sadati 2011). With this definition, individuals with adequate proteins and calorie intake may be categorized as food insecure groups since they are not free of worries about acquiring enough food in socio-culturally acceptable ways in the future.

In line with this approach, a number of scholars at Cornell University proposed a new definition of hunger and FI based on the perspective of women who had experienced hunger themselves: *the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so* (Radimer et al. 1992; Radimer 2002; Ghassemi 1994, 1998; Zerafati-Shoae et al. 2007). The definition further expanded the meaning of hunger and food security. They also showed that food security at individual and household levels are separable. As shown in the Table 1, four different components (quantitative, qualitative, psychological, and social) can be identified for hunger in the two levels of individual and household. In the individual level what happens in regard to those for components include: insufficient intake, nutritional inadequacy, lack of choice and the feeling of deprivation, and disrupted eating patterns respectively. In the household level we see: food depletion, unsuitable food, food anxiety, and food acquisition in socially and culturally unacceptable ways, for the same components.
Severity of these aspects, at different levels, has also been taken into consideration. Rainville and Brink (2001) believe that the psychological component is the first and the weakest level of the food insecurity after which we

have the changes in food diet, a decrease in food quality, and the experience of hunger as the most severe levels of FI.

Table (1): Essential Components and levels of FI (Radimer et al. 1992)

Component	Levels	
	Individual	Household
Quantitative	Insufficient intake	Food depletion
Qualitative	Nutritional inadequacy	Unsuitable food
Psychological	Lack of choice and feeling of deprivation	Food anxiety
Social	Disrupted eating patterns	Food acquisition in socially unacceptable ways

Socio-demographic Factors contributing to the Household FI

There are few models referring to the socio-demographic factors affecting FI, which are mainly at the macro level. At the micro level, however, living conditions and resources of the families or households are taken into consideration. Factors such as family size, socio-economic resources of the household, power-relations in the family, receiving food stamps, food availability, and the level of literacy and knowledge of parents especially the mother, have been more pinpointed (Holben 2002; Olson et al. 1997). Among the socio-demographic factors, the gender of the household head and the presence of infants in the family have proved to have tremendous impact on the experience of food security within the household (Coleman-Jensen et al. 2011). In the same vein, some other scholars asserted that whether or not a household experiences FI and its consequences is determined by numerous factors. According to Rose's observation in the United State, Income is clearly one of the most important determinants of FI and hunger (Rose, 1999). Moreover, There is a plenty of evidence in the literature to support that higher probabilities of FI have been associated with low income, low asset levels, few ties to the labor force, not having health insurance, living in a single parent headed household, low education level, large household size, depression, limited access to social capital, domestic violence, illicit drug use, and being homeless (Martin et al. 2004; Sano et al. 2011).

Campbell (1991) explained factors provoking FI as risk factors. On the basis of his model, risk factors for food insecurity are therefore those that limit either the household resources (money, time, information, health, etc.) or the proportion of the resources available for food acquisition. Thus risk factors include those which limit employment opportunities, incomes, social assistance benefits or factors that increase inevitable nonfood expenditures including cost of housing and utilities, health care, taxes, child care, and likelihood of emergencies. Risk factors of FI start from a macro level and ultimately end in the quality of life and health. In this model, economic policies and social security in public, private and informal sectors affect employment opportunities, product prices, salaries, education and social services. These factors themselves are determinants of family resources (money, information, time and health). Families, according to sources at hand, manage expenses for food and non-food materials. When the non-food expenses (including unexpected ones) increase, the families' food security is thereby adversely affected. Some other factors also affect this process, such as aids received from families and friends. In this view, FI in the families first begins as worries of facing deficiency of food and preparing it. After that, it leads to the experience of hunger in individuals. All the family members also do not experience hunger at the same time; mostly the elders prevent children from feeling hunger. If FI persists, children too, will suffer from hunger. Improper nutrition of the individual affects his or her health (social, psychological, and mental well-being), which in turn impacts quality of life (Campbell 1991).

Wolfe and Frangillo (2001) assert that FI directly affect the ability to receive food and finally nutritional state and health of the individual. They maintain that, FI occurs differently among adults, children and families. Moreover, according to UNICEF's conceptual framework, another factor that causes or controls FI could be the mother of the family and the way she takes care of her children, or specifically mothers' education, knowledge and beliefs,

physical health, nutritional status, psychological health and self-esteem, independency and the power to control resources and receiving social aids (Engel et al. 1999). Scanlan's research on the relationship between mothers' social status, food security and development in 30 developing countries, showed that the gender equality has decreased the danger of hunger and deaths among children. Some forms of women's empowerment such as contraceptive prevalence rate benefited the process of development in less industrialized countries. Countries with gender-sensitive policies, and programming, have seen its benefit in industrial and social development, especially in relation to food security and infant mortality (Scanlan 2004).

Materials and Methods

Research Design

A quantitative research approach used to design the study and gather data and information (Blaikie 2010). This study was conducted among a sample of eligible urban households under the coverage of the Imam Khomeini Relief Foundation or Committee (IKRF/ IKRC) in a district of Tehran metropolis. The adapted Radimer/ Cornell questionnaire was used to assess the severity of FI. The effect of the independent variables, including the educational level, age, employment status for the head of the household on one hand, and migration status, family support network, and having a sick person in the family on the other, both on the severity of FI status of the household was evaluated through Multinomial Logistic Regression.

Target Population and Sampling Frame

The target population in this study included households in district 20 of the Tehran metropolis who are under the coverage of IKRF. According to Iran's 2006 census, the population of this distinct is 335634 (171100 woman and 164534 man), with about 71400 number of households (4.7 person/household). The district, which is geographically located in the south of Tehran, is among the most disadvantaged districts of Tehran and ranked as an area with the highest number of people under the coverage of IKRF. According to the Centre for Planning and Information Technology of the IKRF in 2011, out of all households, 3704 households in this zone were covered by the foundation or committee. This foundation was official established on 5th March 1979, to aid the underprivileged, alleviate poverty and improve self-sufficiently of needy people (IKRF 2011; Nicknam 2009). Sample size was determined, with 0.05 margin of error, using Cochran's formula of sample size estimation. Response to first qualitative item, concerning the experience of FI in the household, in pilot run was employed to determine the *p* and *q* proportions of the formula, which yielded the sample size of 300 households. Furthermore due to significant cultural and legal ramifications of existence of a man as husband in the household and in order to evaluate its effect on severity of food insecurity, it was decided to choose roughly 50% of the sample from those households that had a man as husband or head of the household and approximately 50 % from those who had no husband present as head (woman-headed household). Samples were selected through simple random sampling method from the list of the protected households.

Instrumentation and Data Collection

An adopted modified version of Radimer-Cornell questionnaire (1992) was used to measure different levels of FI. The validity and reliability of the modified questionnaire for use in Iranian subjects have been evaluated (Zerafati-Shoae et al. 2007; Mohammadi Nasrabadi et al. 2011). Moreover, socio-demographic and economic characteristics of respondents and their household were also collected by developing and using a questionnaire. All data were collected through face-to-face structured interview with the mothers of the household. The interviews were conducted by two trained sociologists at the household door. All interviews were conducted in Persian (Farsi) language with no special accent. The respondents' addresses were provided by the training committee of the IKRF. The average time for each interview was about 30 minutes. The research team made sure that the interview schedule and questions were simple enough and were understood and comprehended by all respondents. Interviewers explained the rationales for and objectives of the study and the fact that it did not contain any economic incentives and the information provided by the respondents would not affect any decision concerning their current and future food assistance or social benefits.

Data Management and Statistical Analysis

Based on the affirmative responses to the statements or items on the questionnaire, severity of the household FI was categorized into three categories or levels: food-insecure without hunger, moderate hunger, and sever hunger. All procedures of data management and statistical analysis were performed using the Statistical Package for Social Sciences (IBM SPSS Statistics), version 19 (IBM Corporation, Armonk, New York). Explanatory Data Analysis

(EDA) and descriptive statistics were conducted to explore core features of the data and to describe the information. Multinomial Logistic Regression modeling was principally used to identify and analyze factors affecting severity of the household FI among respondents and their respective household members in district 20 of Tehran, Iran.

Results

Respondents were 300 females with an average age of 43.1 years. Out of studied households, 74 percent had child/children under age 18. The mean of household size was 4.3. Most of the respondents had at least primary education (65.3%), while 33% were illiterate. General characteristics of the respondents and their food security status are shown in Table 2. As the Table shows, 98.6% of households have experienced FI in the statistical sample. 97.3% of mothers and 92.1% of children have experienced FI. Despite the high rate of insecurity among children, food insecurity was more frequent at the household and adult levels.

Table (2): Distribution of insecure vulnerable households in different dimensions of FI Based on the socio-demographic characteristics of the participants

Food security dimension (n)	Age (Mean)	Education level (Mean)	Household size (Mean)	No children under age 18 (Mean)
Household (292)	---	---	4.28	1.48
Adult (Mother) (284)	43.11	4.11	---	1.48

FI includes various levels in terms of intensity. The level of FI encompasses concern over providing food in the future and quantity, as well as reducing the quality of the food in the household. As shown in Table 3, about 96.3% of the households were concerned about provision of adequate food for the household, expressing worries about providing enough food in the future. More than 88% of the households had changed/reduced the quality of their food and 67.2% have experienced huger.

Table (3): Distribution of the vulnerable households based on the severity of FI in district 20 of Tehran

Severity of food insecurity	Components	Frequency	Percent (%)
Food-insecure without hunger	Psychological: anxiety about food	285	96.3
Moderate Hunger	Qualitative: Unsuitable food	261	88.2
Sever Hunger	Quantitative: Food depletion	197	67.2

To examine the effects of household head's socio-demographic variables including the education, age, the employment status, the migration status, extent of family support network, and existence of a sick member in the family on the severity of food insecurity, bivariates analysis of multinomial logistic regression was used to determine the individual effect of each variable on the severity of FI. The results these analyses are shown in Table 4. As Table 4 shows that having a patient with a chronic problem within the family significantly increases the probability of mild FI to moderate and sever FI 2.511, and 3.853 times, respectively. Female headed households were less likely to suffer from moderate FI and having a male household increased the chance of moving from low to moderate FI by 2.090 times; however, the chance of sever FI compared to mild level did not increase significantly in the male- headed households. Moreover, in households whose head were illiterate the likelihood to move from low to sever FI was 2.348 times higher. The Table also reveals that head of household's age, household's migration status and having familial support didn't significantly change the chance of moving from one level to other levels of FI. Unemployment of the household head increased the likelihood of moving from low to sever FI 2.684 times. Households with 1 to 4 members are more likely to move from low to moderate level of FI (1.875 times).

Table (4): Results of bivariate logistic regression modeling for the levels of FI using the socio-demographic characteristics of the head of vulnerable households (independent variables) in district 20 of Tehran

Levels of Food Insecurity (Dependent Variable)	Characteristics of the household head (Independent Variables)				%95 Confidence Interval for Exp (B)	
			Exp(B)	Sig.	Lower Bound	Upper Bound
Moderate	Gender	Male	2.090	0.012	1.177	3.713
		female (Reference)				
Severe		Male	1.230	0.494	0.680	2.224
		female (Reference)				
Moderate	Health Status	Existence of a chronic Patient in the house	2.511	0.003	1.373	4.590
		Without a chronic Patient in the house (Reference)				
Severe		Existence of a chronic Patient in the house	3.853	0.000	2.060	7.208
		Without a chronic Patient in the house (Reference)				
Moderate	Literacy Levels	Illiterate	1.356	0.300	0.763	2.411
		Literate (Reference)				
Severe		Illiterate	2.348	0.005	1.291	4.271
		Literate (Reference)				
Moderate	Age	23-40	0.654	0.223	0.331	1.294
		41-53	0.838	0.625	0.412	1.702
		54+ (Reference)				
Severe		23-40	0.757	0.442	0.372	1.541
		41-53	1.000	1.000	0.480	2.084
		54+(Reference)				
Moderate	Employment Status	unemployed	0.880	0.663	0.497	1.560
		employed (Reference)				
Severe		unemployed	2.684	0.003	1.392	5.175
		employed (Reference)				

Moderate	Migration status	Immigrant	0.864	0.616	0.487	1.531
		Nonimmigrant (Reference)				
Severe		Immigrant	1.188	0.575	0.651	2.165
		Nonimmigrant (Reference)				
Moderate	Familial Support	Without Familial Support	1.617	0.102	0.909	2.875
		Having Familial Support (Reference)				
Severe		Without Familial Support	1.600	0.125	0.878	2.915
		Having Familial Support (Reference)				
Moderate	Family Size	1-4 person	1.875	0.036	1.402	3.375
		5 or more person (Reference)				
Severe		1-4 person	1.102	0.746	0.613	1.979
		5 or more person (Reference)				

Furthermore, an appropriate multivariate probability model or analysis i.e. the multinomial logistic regression analysis was employed to determine the simultaneous effects of independent variables which had a significant bivariate effect on the probability of moving from low to moderate and sever FI. The results of this procedure are shown in Table 5. Based on Table 5, being a male-headed household, having a chronic patient within the household and lower family size (1-4 person) significantly increased the chance of moving from low to moderate level of the FI. Having a chronic patient, illiteracy and unemployment of the household head significantly increased the chance of moving from low to sever levels of FI.

Table (5): Results of Multinomial logistic regression modeling for the levels of FI using the socio-demographic characteristics of the head of vulnerable households (independent variables) in district 20 of Tehran

Dependent Variable (Food Insecurity)	**Independent Variables**				**%95 Confidence Interval for Exp (B)**	
			Exp (B)	Sig.	Lower Bound	Upper Bound
Moderate	Intercept			.0001		
	Gender of Household Head	Male	2.457	.0010	1.124	4.429
		Female (Reference)	.	.	.	.
	Health Status	Existing Unhealthy Person	2.231	.022	1.241	4.429
		Without Unhealthy Person (Reference)				
	Literacy Status of household Head	Illiterate	1.684	.0114	0.883	3.213
		Literate (Reference)	.	.	.	.
	Employment Status of Household Head	unemployed	0.101	0.594	0.318	1.107
		employed (Reference)	.	.	.	.

	Family Size	1-4 person	3.169	0.001	1.606	6.255
		5 or more person (Reference)	.	.	.	.
Severe	Intercept			.0001		
	Gender of Household Head	Male	.0771	.0575	.0311	1.911
		Female (Reference)	.	.	.	.
	Health Status	Existing Unhealthy Person	5.863	0.000	2.725	12.614
		Without Unhealthy Person (Reference)				
	Literacy Status of Household Head	Illiterate	3.020	.0001	1.539	5.927
		Literate (Reference)	.	.	.	.
	Employment Status of household Head	unemployed	3.556	.0003	1.544	8.190
		employed (Reference)	.	.	.	.
	Family Size	1-4 person	1.437	.0309	0.714	2.891
		5 or more person (Reference)	.	.	.	.

Discussion and Conclusions

The findings of this study suggest that a considerable percentage of the households have experienced FI in different levels, despite being various in terms of the severity. The severity of FI among "the households and adults (mothers)" has been more considerable than "the children". Out of all factors studied, "having a chronically sick person in the family", "family support", "family size" and eventually "educational status of the head" are seen as of paramount importance to the severity of FI.

The substantial number of households stricken by food insecurity indicates that findings confirm the accuracy of filtering indicators used by IKRF to select and cover the households in need. On the other hand, this study also suggests that IKRF has not achieved its goal of eliminating food insecurity. In an earlier survey in 2003-2004, Zerafati-Shoae and her colleagues observed that merely 16 percent of households living in the district of 20 in Tehran were food-secure (Zerafati-Shoae et al. 2007). Whereas this figure in the developed countries likes The U.S. and Canada, even among the most destitute strata, is far higher. For instance, Coleman-Jensen et al. reported that about 85.5 percent of American households were food secure, having access at all times to enough food for an active, healthy life for all members of the household, throughout the entire year in 2010. According to the report, the remaining households (14.5 percent) were food insecure at least some time during the year, including 5.4 percent with very low food security. In households with very low food security, the food intake of one or more household members was reduced and their eating patterns were disrupted at times during the year as the household lacked adequate resources including money for food (Coleman-Jensen et al. 2011).

As the findings of this study suggest, severity of FI among the households were different so that this is experienced more severely in the "household" and "adults (mother)" level compared with the "children." All insecure families first encounter anxiety, and when the household status deteriorates, the more advanced processes of FI are experienced. The same observations have been reported in earlier studies in the setting of Tehran as well (Zerafati-Shoae et al. 2007; Mohammadi-Nasrabadi et al. 2011). When a household is exposed by FI, mothers and adults prohibit the intensity on their children via reduction of the household quality as well as their share of food. Hence, as scholars such as KL Radimer and her colleagues constantly asserted, FI is a complicated managed process (Radimer et al. 1992; Radimer 2002; Ghassemi 1998). In this study considerable number of children experienced hunger while in some developed countries like the U.S. in which the government has provided free food program for poor children, they have been protected against hunger (Coleman-Jensen et al. 2011). Even though the severity of FI varies among mothers and children, due to the general high severity of FI in the households, it seems that the main priority should be improving the household food security as a whole.
According to the evidence of this study, having sick person or persons in the family plays the most significant role in the severity of FI. Being imposed by medical treatment expenditures of taking care of a sick member (Sauerborn

et al. 1996; McIntyre et al. 2006), the households which are economically unstable or under the coverage of the IKRF, have to cut back on their food expenses. This reduction will result in less qualitative and quantitative nutrients which eventually could jeopardize the health of the households' members, intensifying the FI, vulnerability of, and even poverty in these households. In a study done on poor rural households in the US it has been shown that worrying about medical expenses is one of food security risk factors among these households (Olson et al. 1997). Another study conducted in Canada shows that people with health problems, disabled or unable, are more faced with FI (Reinvill and Brink 2001). As a result, the households suffering from having a sick member, FI will be experienced more severely. Therefore it seems vitally important to protect these endangered families and put them in the top of the social security agenda through providing more appropriate and efficient medical services as well as food procurement programs.

Supports received from the family and/or relatives is one of the main resources of meeting the basic needs for those households in which the head lacks a permanent and stable income (Vedadhir & Sadati 2011). The more potent the family supporting network is, the less FI they experience. But as the results of the present study suggest, some more than half of the households hardly receive support from their family and relatives. One of the reasons to account for this is their limited social relationships or social capital, Lack of social support with these households may be related to the fact that they are more likely in touch with those in the same level as theirs. This takes place as households with more social capital are less likely to experience hunger (Martin 2004). Besides, literacy of the head of the household is significantly related to the severity of FI. The more the educational status of the family head, the less the FI and vice versa. A closer look at the literature shows that the level of literacy in conjunction with poverty and social inequalities make considerable contributions to exacerbating the FI (Rose et al. 1998; Dastghiri et al. 2006; Mohammadi-Nasrabadi 2011). Plus, some studies in Iran's setting revealed that the consumption pattern of the family will change when the head of the family or the parents promote their educational and occupational status (Ghassemi et al. 1996; Ghassemi 1994, 1998). Some scholars also argued that the occupational status of the head and the employment of the mother affect the FI at multiple levels (Olson et al. 2004; Shariff and Lin 2004). Because of critical, undeniable and multiple roles of women in improving food security and human well-being in developing countries (Jenkins and Scanlan 2001; Scanlan 2004; Coates et al. 2010), enabling households to manage and cope with FI is feasible just by considering women's concerns and lived experience and their ways of knowing and doing regarding the issue of FI. As a result, they should be seriously taken into account and integrated into the food policymaking and planning. The problem of hunger and malnutrition will never disappear if the burdens like poverty, social inequalities and illiteracy are not eliminated. Hunger and the lack of nutritious foods will endanger the people's health status. Imposing medical costs on these people will deteriorate their economic problems and eventually their nutrition status. Collectively they will dramatically hinder national macro socio-cultural, economic, and human development.

Given the limited body of evidence and information around the disadvantaged families and households living under the coverage of the IKRF in Iran, the study finding have potential to be of value to other thinkers or scholars in light of the recent endeavors in the literature to understand the issue of household FI through a socio-demographic perspective. Finally, the multidisciplinary approach used in this study seems to offer a valuable contribution to understand the process of intra-households resource allocation and the modes of food decision-making in communities in need with the traditional and religious rules of thumb. On the other hand, this was the first study to examine FI among particular people who are most in need and live under the coverage of the IKRF in Tehran, Iran. Therefore, the results of the present study may be helpful to all stakeholders of food and nutrition policy-making including food planers, politicians, the IKRF authorities, and dietitians in developing and implementing nutrition and health programs for these households living in Iran. A future study is suggested to investigate associations of the intra-household resource allocation strategies and levels of FI among the disadvantaged, low-income and women-headed households using the approach of intersectionality (Hankivsky et al. 2011; Hankivsky 2012) in the context of developing societies like Iran.

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