The Association Between Afghan Refugees' Food Insecurity and Socio-economic Factors in Iran: A Case Study of Khorasan Razavi Province

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Abstract

Afghan refugees are one of the most vulnerable migrant groups in terms of food insecurity status around the world. We aimed to investigate the association between Afghan protracted refugees' food insecurity and its socio– economic determinants in Mashhad, Iran. In a cross– sectional design, information was gathered through face– to– face interviews with 299 Afghan main income earners or his/her representative in Golshar district, Mashhad, Iran. In a quantitative approach, the association of socio– economic factors with food insecurity was assessed. The results showed that less than 1% of all the households were food secure, 69.2% of those with children and 47.5% of those with no child faced severe food insecurity. Class of households' income, residency status and personal dwelling were significantly associated with severe food insecurity of Afghan refugees. Determining effective socio– economic factors to formulate appropriate policies and practices is not only necessary but also inevitable to assure sustainable food security for refugees.

Keywords: *socio-economic determinants; Afghan refugees; food insecurity; public health; Iran*

Introduction

Persistent food security is one of the most formidable and overwhelming challenges nowadays, especially in the Middle East and African countries (Lori & Boyle, 2015). Providing food security for all vulnerable and poor populations such as refugees and asylum seekers is recognized as a fundamental right and a substantial purpose of development and food security initiatives of international organizations (Denny et al., 2017). There is no doubt that, nowadays, refugees are among the most vulnerable groups to extreme stressors, mental

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pressure, chronic diseases and social obstacles (Akinyemi, Owoaje, & Cadmus, 2016; Misra & Ganda, 2007; Pereira, Larder, & Somerset, 2010). According to the United Nation Refugee Convention, refugees are people who "…are outside their countries and unwilling or unable to remount and come back due to a well– grounded fear of persecution, a membership of a specified social group which acts against local government, poor economic conditions, on– going conflicts, racial discrimination, and political unrest or because the person's freedom or life would be threatened" (Liamputtong & Kurban, 2018; UNHCR, 2016). Upon resettlement, they often experience a significant difference in living standards due to their replacement and the new environment (Salman & Resick, 2015). They also must cope with the potential loss of their country, home, culture, language, profession, family, friends, and plans (Akinyemi et al., 2016).

Afghan refugees are one of the most vulnerable migrant groups due to several challenges they face prior to, during and after their resettlement from their homeland to countries that receive asylum seekers and refugees such as Iran. Most fled their homeland because of wars and civil unrest in Afghanistan. First, the April 1978 Saur Revolution in Kabul; second, the Soviet– Afghan War (USSR involvement, 1979–89); third, the Afghan civil war (collapse of the Communist Najibullah government during 1998– 92); fourth, the Afghan civil war (lead to the Taliban controlling most of Afghanistan, with the Northern Alliance controlling northern Afghanistan during 1992– 96); fifth, the Afghan Civil War (Taliban period, 1996–2001); and eventually, the invasion by the U.S. against the Taliban and al– Qaeda during 2001– 2014.

Iran, with a long history of accepting immigrants, refugees, and asylum seekers, annually admits Afghan asylum seekers more than other adjacent countries in this region due to its critical geographical position in the Middle East. Regarding the report of the Ministry of Refugees and Repatriations of Afghanistan (2016), at least 2,160,000 Afghan refugees have fled to Iran, and about 1,000,000 now have illegal and undocumented status or situations (MRRA, 2016). Afghan refugees and asylum seekers are hosted by more than 56 countries across the world (MRRA, 2016). Among them, about 46% of the Afghan refugees are in Asia, and Iran is the host to about 56% of all undocumented Afghan refugees (MRRA, 2016). According to the Iranian Statistical Center (ISC), there is only a small difference (6%) between the number of males (53per cent) and female (47%) Afghan refugees, indicating most of them have migrated to Iran as families. In Iran, they can live freely in three provinces (Alborz, Qom, and Tehran) and some regions of other provinces defined by the regulations.

In this study, the association between Afghan refugees' food insecurity and its socio– economic determinants was investigated in the Golshahr district in Khorasan Razavi, a northeast province in Iran. We selected this region as the study area owing to several reasons: first, this region as the easternmost area of Khorasan Razavi province has the shortest distance from Afghanistan; second, most dwellers in this region are Afghan refugees (about 90%). Findings on factors affecting refugees' food insecurity may contribute to the goals of governmental organizations dealing with refugees in host countries. It also benefits the humanitarian agencies and international institutions to address refugees' basic needs and to ease the burden of post– resettlement obstacles. Extant studies have illustrated that the factors determining food security are sophisticated and interrelated, encompassing political, socio– economic, and environmental issues from poverty and inequality to social rights protections and health, to name but a few (Denny et al., 2017). The resultsof these studies revealed that some factors have an inverse association with refugees' food insecurity in a specified study

location while, simultaneously, the same factors have a direct association with their food insecurity in other locations.

Well– designed studies are needed to identify factors associated with food security among refugees. The literature review for this study revealed the existence of only a limited number of studies related to Afghan refugees in Iran. The paucity of such studies may be related to several limitations, such as scattered refugee populations across the country as illegal status and undocumented refugees. It also may be due to the general sense of insecurity that exists among all refugees across the globe, including Afghan refugees, which creates hesitations for participating in specified research. Our study is designed to contribute to overcoming these limitations by addressing three main questions: What is the status of food availability, food consumption and food insecurity among Afghan refugee households with or without children? How and to what extent did various socio– economic factors would affect the food insecurity of Afghan refugees? Did the refugee registration policy by the host country help with the reintegration of the refugees?

Methodology

Study location

This cross– sectional study was conducted in the Golshahr district in Mashhad city, Khorasan Razavi province, Iran (Figure one). About 219,442 Afghan refugees are living across Khorasan Razavi as a northeast province (ISC, 2016) except for the restricted regions according to the regulations. Golshahr district, as our study location is in the easternmost part of the province in Mashad city, where most of the dwellers are Afghan refugees (Approximately 90%).

Study population

The sample comprises male and female Afghan refugee households in the Golshahr district in Khorasan Razavi in Iran. To select our sample, we relied on the list of Afghan refugees' possessed by health center of that province. We chose our sample randomly using the numbers of their official case documents. Once a refugee's household was selected for the survey, the survey was administered via face– to– face interviews to either the main income earner or another member of the household who could respond on behalf of the main income earner of the household.

### Measuring Afghan refugees' food insecurity

A single structured questionnaire was used to collect data and information. Food security status was scored and coded based on the USDA guidelines (Bickel, Nord, Price, Hamilton, & Cook, 2000). A household was considered to have a child for anyone less than 15 years of age for calculating the child food security score. Food insecurity categories were coded based on collapsing the food secure and moderate food secure group to one category and moderate and severe food insecure to a second category.

Interviewers' recruitment

Eight students of social sciences were recruited as interviewers to administer and enter responses into the questionnaires. We grouped the students into four teams of two persons. Two workshops were held for all interviewers to explain the principles and protocol of collecting data, how to administer the questionnaires and enter responses into the survey

questionnaires correctly, and how to behave towards Afghan refugees for gaining and increasing trust. In interpreting all items in the questionnaire, we recruited a project manager who was a specialist in the health sciences and public health as the head of interviewers.

Figure 1. The map of the study location
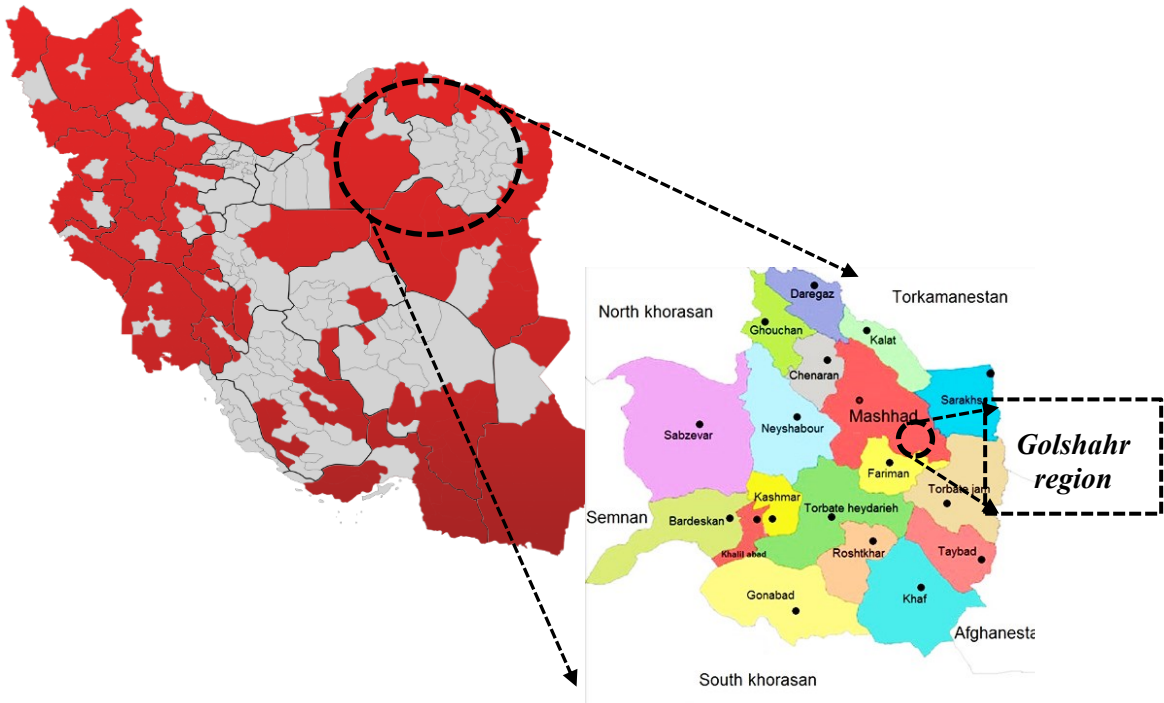
Note: The red points in figure one show the locations in which Afghan refugees have been prohibited by the government from living and working therein.

Data analysis

Qualitative data analysis included descriptive frequencies of the demographics of the Afghan refugee families residing in Iran, who participated in the survey, and a logit model was carried out. The descriptive statistics were reported as means (standard deviation) and frequency (percentage) for continuous and categorical variables, respectively. The chi– square test of independent variables and the Pearson's correlation was used to determine any association among variables. For all the models, an alpha level of 0.25 was adopted.

Variables

According to the literature, some scholars have identified the factors affecting refugees' food insecurity using structural equation modeling, a macro– comparative or cross– national approach in different ranges from individuals and households to communities, regions, countries, and groups of countries (Brady, Kaya, & Beckfield, 2007; Denny et al., 2017; Jenkins & Scanlan, 2001; Jenkins, Scanlan, & Peterson, 2007). Two different types of variables have been used to assess and monitor the factors affecting Afghan refugees' food insecurity in this study: continuous and discrete determinants. Most of the categorical demographic variables as discrete factors were collapsed into fewer categories to reduce sparseness:

Migration status was collapsed from the seven original categories in the questionnaire into four categories: 1. immigrants including immigrants with Amayesh, immigrant with a passport; 2. refugee that included the refugees with documents, refugee with no legal documents, 3. temporary residence or visa including temporary residency document, student visa, and not identified main income earner employment status was collapsed into three categories as full–time employment, part– time employment, unemployed from the original eight categories full time, part– time, casual, unemployed, student, retired, housewife, other)

Type of housing, class of household income, the main source of income, education of women of the household, and education of the main income earner were collapsed into two categories. The dependent variable is a binary factor, including 1 for mild food insecure category (high food security, marginal food security, and moderate food insecurity) and 0 for severe food insecure category.

Binary Logistic Regression

At the next step, we applied multivariate logistic regression model following the steps below: Step one: fitting univariate logistic regression model for each covariate; Step two: fit an initial multivariate logistic regression model with all covariates which are not associated with each other and that are significant in Step one at 25 per cent significant level; Step three: Check the step two model for variables that seized to be significant at 0.25 level in the presence of other significant variables. Variables were removed from step two if they were not significant and not a cofounder. Confounding was estimated at 15 per cent or more change in the parameter estimate of the remaining variables; Step four: covariates that meet the description in step three made up the original multivariate model. At this point, variables that were insignificant in the univariate analysis were added one at a time, and any variable that was significant at 0.25 level was included in the original model. This step gave the main effects model; Step five: the possible interaction effect of the main effects was explored, and the significant interaction term was included in the final model.

Results

Demographic characteristics

Detailed socio– demographic characteristics of the study sample is presented in Table one. A total of 299 Afghan refugee households with an average of 15.23 years (SD 6.5) of staying in Iran participated in the cross– sectional study. Some of the respondents failed to respond to some parts of the socio– demographic questions, and there were some responses to the child food security stage in households with no child or where the youth was over 15 years. In the latter, the affirmative responses were considered invalid. Apart from the child stage food security questions, the percentage of missing values in any variable was less than 5 per cent . Of the study sample, 227 (75.9%) households had children under the age of 15 years, and just one respondent (0.3%) did not respond to the food security part of the questionnaire. Most of the respondents were females (96.3%), married (80.9%), and native Farsi (Dari) speakers (95.7%), and lived in rented houses (86.0%). One hundred seventy– four respondents (58.2%) earned $3 or more per day, and 177 (59.2%) of the breadwinners had at least a primary school education.

The age of the respondents ranged between 15 and 75 years, with an average of 37.4 years (SD 13.1), and the average of the total number of members in a household was 5.2 (SD 2.0).

Over half of the respondents (n=172, 57.5%) were working part– time or casually, and the main source of income for approximately all the respondents were wages and salaries (wages, salaries, income from self– employment, income from other sources). A few of the respondents (n=34, 11.4%) claimed to be protracted refugees in Iran.

Table 1. Demographic characteristics of participants in Iran (n=299)

Variables	Statistical outputs	
Continuous	**Mean**	**Standard Deviation**
Age in years	37.4	13.1
Number of Individuals in HH	5.2	2.0
Years of Stay in Iran	15.23	6.5
Categorical	**Frequency**	**Percentage**
Respondent Gender a		
Female	288	96.3
Male	10	3.3
Marital Status		
Married	242	80.9
Never married	21	7.0
Divorced/Separated	10	3.3
Widowed	26	8.7
Current Migration Status		
Immigrant with Amayesh**1**	154	51.5
Immigrant with Passport	24	8.0
Refugee	34	11.4
Temporary residency card	82	27.4
Education Level of a woman in HH a,2		
Non-illiterate	147	49.2
Illiterate	148	49.5
Education Level of Breadwinner a		
Non-illiterate	177	59.2
Illiterate	116	38.8
Mother Language a		
Farsi (Dari)	286	95.7
Pushto	12	4.0
Income Class a		
Rich (≥$3/day)	174	58.2
Poor (<$3/day)	122	40.8
Main Source of Income a		
Wages and Salaries	280	93.6
Social assistance	12	4.0
Employment Status of Breadwinner a		
Full-time employment	55	18.4
Part time employment	172	57.5
Unemployed	66	22.1
Type of Housing		
Rented	257	86.0
Other	42	14.0

a: Variable has missing values as not all participants responded

Through this program, the information of the refugees is recorded in their official and identified documents contributing them to use some facilities which Iranian people use. This permission should be extended every year and needs to be paid for.

Non-illiterate includes all women those have education without attending to their level and degree; an illiterate woman is said to a female who does not have any education

Food Situation in Household

The second part of the questionnaire examined the food situation in households in the previous 12 months. Questions were asked about the availability (Table two), affordability, and consumption (Table three) of food in the household.

Food Availability and Consumption

Of the study sample, 18 (6.0%) claimed to "always have enough of their choice of food," and 91 (30.4%) respondents said, "they sometimes did not have enough food in their household to eat." Almost all the respondents (n=284, 95.0%) said they were worried that their household would run out of food prior to securing money to buy more food, and this was often true for 184 (61.5%) of the respondents. Although 128 (42.8%) of the respondents said they had enough food to eat in their household, 270 (90.3%) contended that their household ran out of food, and they did not have money to get more. About 95.7% of the respondents could not afford to eat balanced meals in their households and over two– thirds of the respondents (n=210, 70.2%) ate less than usual because they did not have enough money.

Table 2. The status of food availability among Afghan refugees in the study location

Which of these statements best describes the food eaten in your household in the last 12 months?			
18 (6.0)	128 (42.8)	91 (30.4)	33 (11.0)

a: Does not equal 299 because not all participants responded

Table 3. The status of food consumption among Afghan refugees in the study location

Questions	Frequency (%)	
	Yes	No
Adult Member[s]		
Eat less than would normally eat	218 (72.9)	76 (25.4)
Hungry but could not afford enough food	109 (36.5)	186 (62.2)
Lost weight	127 (42.5)	160 (53.5)
Did not eat for a day	84 (28.1)	212 (70.9)
Child Member[b]		
Child ate less than usual	130 (57.3)	94 (41.4)
Child skipped meal	70 (30.8)	155 (68.3)
Child was hungry but could not afford more food	62 (27.3)	163 (71.8)
Child did not eat for a day	27 (11.9)	199 (87.7)

a: Does not equal 299 because not all respondents answered

b: Does not equal 227 because not all household with child answered

Food Insecurity

Table four presents a detailed prevalence of the level of food insecurity among Afghan refugees in the study location. Less than 1 per cent of all the households were food secure,

regardless of having a child under 15 years of age or not. When there was at least one child in the household, their food security was harshly impacted. Whereas only two households (0.9%) with a child had marginal food insecurity, 14 (4.7%) of households with no child had marginal food insecurity. Also, whereas157 (69.2%) of households with a child, faced severe food insecurity 142 (47.5%) of households with no child encountered severe food insecurity.

Table 4. Prevalence of household food insecurity among Afghan refugees residing in Iran

Food Security Group	Households FS group (n=299)	A household with no children under 15 years (n=299)	A household with children under 15 years (n=227)
	Frequency (%)	Frequency (%)	Frequency (%)
High Food Security	1 (0.3)	2 (0.7)	1 (0.4)
Marginal Food Insecurity	8 (2.7)	14 (4.7)	2 (0.9)
Moderate Food Insecurity	96 (32.1)	140 (46.8)	67 (29.5)
Severe Food Insecurity	193 (64.5)	142 (47.5)	157 (69.2)

A binary model was estimated to extract the effective factors on food insecurity. For the fitted model, the Hosmer and Lemeshow test had a p– value of 0.14, a Nagelkerke R^2 value of 11 per cent and significant model coefficients (p=0.004) suggesting that the model fits the data reasonably well. The bivariate tests presented in Table five shows that the status of food insecurity among the refugees was related to several socio– economic variables. Severely food insecure respondents were more likely to be male, but the association between a respondent's gender and food insecurity status was not statistically significant (p =0.72). Widows were more likely to have severe food insecurity but the marital status was not significantly associated with the food insecurity status of the respondents (p= 0.61).

The likelihood of experiencing severe food insecurity was higher among respondents who currently held a temporary residency document (p=0.006), whose daily income was less than $3 per day (p=0.04), who were from the household with a main income earner who was working part– time or had casual jobs (p=0.04), and who were living in a rented house (p=0.07). Moreover, the likelihood of experiencing severe food insecurity was higher among households whose main source of income were from social assistance, aid organization or support from family, but the actual source of household income was not significantly associated with food insecurity status (p=0.58). On the other hand, mild food insecure households were more likely to have a woman with at least primary school level education (p=0.07), an educated main income earner (p=0.14) and their native language was Farsi (Dari) likely to (p=0.05). Following these steps, we arrived at an overall significant multivariable logistic model (Table six).

After adjusting for potential confounders, respondents whose native language was Pushto were more than 300% more likely to fall under severe food insecurity compared to those whose native language was Farsi (Dari), but this interpretation is true at the significant level of 17 per cent . Also, poor households, earning less than $3 per day were 51 per cent more

likely to be severely food insecure compared to those who earned $3 or more daily at the significant level of 12 per cent . Compared to respondents who were currently living in Iran as an immigrant with Amayesh ID card, those who were immigrants with a passport were 78 per cent less likely to experience severe food insecurity.

Table 5. Bivariate testing of food insecurity status by selected covariates

Variables	Frequency [a] (percentage)		P-value*
	Mild Food Insecurity	**Severe Food Insecurity**	*(Chi-square test)*
Respondent gender			
Male	3 (30.0)	7 (70.0)	
Female	102 (35.5)	185 (64.5)	0.72
Marital Status			
Married	83 (34.4)	158 (65.6)	0.61
Never married	10 (47.6)	11 (52.4)	
Divorced/Separated	4 (40.0)	60 (60.0)	
Widowed	8 (30.8)	18 (69.2)	
Migration Status			
Immigrant with Amayesh	52 (34.0)	101 (66.0)	0.006*
Immigrant with Passport	16 (66.7)	8 (33.3)	
Refugee	12 (35.3)	22 (64.7)	
Temporary Residency card	23 (28.0)	59 (72.0)	
The education level of a woman in HH			
Non illiterate	59 (40.1)	88 (59.9)	0.07**
Illiterate	44 (29.9)	103 (70.1)	
The education level of breadwinner			
Non-Illiterate	68 (38.6)	108 (61.4)	0.14***
Illiterate	35 (30.2)	81 (69.8)	
Mother Language			
Farsi (Dari)	103 (36.1)	182 (63.9)	0.05**
Pushto	1 (8.3)	11 (91.7)	
Income Class			0.04*
Rich (≥$3/day)	70 (40.5)	103 (59.5)	
Poor (<$3/day)	35 (28.7)	87 (71.3)	
Main Sources of Income			
Wages and Salaries	101 (35.3)	185 (64.7)	0.58
Social assistance	3 (27.3)	8 (72.7)	
Employment Status of Breadwinner			
Full time	27 (49.1)	28 (50.9)	0.04*
Part time	52 (30.2)	120 (69.8)	
Unemployed	24 (36.9)	41 (63.1)	
Type of Housing			
Rented	85 (33.2)	171 (66.8)	0.07**
Other	20 (47.6)	22 (52.4)	

[a]: Does not equal 299 due to missing responses

* Significant at 5% level, ** Significant at 10% level, *** Significant at 25% level

The probability of witnessing severe food insecurity reduced with the resettlement in Iran through passport compared to Amayesh ID card. Respondents who were living in houses without paying rent or in their own house or government– owned houses were 46 per cent less likely to be severely food insecure.

Table 6. Estimated Multivariate Logistic Regression Model Predicting the Probability that an Afghan Refugee Witnessed Food Insecurity

Variables	$\hat{B}$	Standard Error (S.E)	P-value	Degrees of Freedom	Odds Ratio (OR)
Constant	1.27	0.557	0.02	1	3.55
Respondent Gender					
Female	-	-	-	-	-
Male	0.18	0.724	0.81	1	1.20
Mother Language					
Farsi (Dari)	-	-	-	-	-
Pushto	1.45	1.066	0.17	1	4.26
Class of HH Income					
Rich (≥ $3/day)	-	-	-	-	-
Poor (< $3/day)	0.41	0.269	0.12	1	1.51
Current Migration Status					
Immigrant with Amayesh	-	-	-	-	-
Immigrant with passport	-1.52	0.496	0.00	1	0.22
Refugee	-0.62	0.504	0.22	1	0.54
Temporary residency card	-0.16	0.378	0.67	1	0.85
Duration of Stay in Iran*	-0.04	0.026	0.18	1	0.97
Type of House					
Rented	-	-	-	-	-
Other	-0.62	0.378	0.10	1	0.54

*Cofounding variable

Discussion

The results indicated a high level of food insecurity among Afghan refugees, and only 6 per cent of the total sample always had enough of the kinds of foods wanted. As the literature shows, food availability is one of the most important dimensions of food security (Denny et al., 2017) and not having enough food eventually will lead to an increase in the prevailing of chronic food insecurity. Limitations in food availability limit the adequate choice of food groups (Shamah– Levy, Mundo– Rosas, Flores– De la Vega, & Luiselli– Fernández, 2017) and as a result, the household cannot afford to maintain a healthy diet and lifestyle (Spees, Clark, Hooker, Watowicz, & Taylor, 2017). Our findings suggested that about 12 per cent of Afghan households who had a child, sometimes did not eat anything for a day. In addition, 27 per cent of them were hungry but could not afford more food. The issues availability and usage of healthy food can lead to malnutrition and health problems caused by a nutritionally deficient diet. Experiencing hunger also leads to large and long– term inverse consequences for both mental and physical health (Roseboom, Painter, Van Abeelen, Veenendaal, & De Rooij, 2011). Some scholars believe that children are especially more vulnerable to displacement issues and more predisposed to mental health issues than adult men and require considerable help (Hauff & Vaglum, 1995; Lori & Boyle, 2015). This situation may lead to an increase in the probability of prevailing food insecurity among refugee households who have

a child. Our finding is in agreement with some other studies (Hollander, Bruce, Ekberg, Burström, & Ekblad, 2013; Shaver, 1998; Simon, 1995).

To interpret the findings to how and to what extent did various socio– economic affect the food insecurity of Afghan refugees,' there is evidence that people who have lower socio–economic status are more likely to be exposed to poor diet and health outcomes (Pereira et al., 2010). A close look at the distribution of Afghan refugees' households by socio– economic characteristics of their breadwinner confirms that most of these refugees are around the active age (around 40), and providing support such as vocational opportunities will have a positive impact on their income and eventually their quality of lives. Most of these refugees are considered low– cost human resources in this region, and supporting them will assist in improving the living standard of the Iranian dwellers. The number of individuals within an Afghan household was 5.2, which implies on average dense families. Some of the studies confirmed that refugees' households usually have a large size, especially in developing countries (Azarnert, 2018; Eggenhofer– Rehart et al., 2018). Although more contributing members may contribute to more potential income, they are also creating further personal expenses if they are not contributing to income, are unemployed, or disabled.

The majority of our study sample were females (96.3%). This contributed to our ability to extract more accurate results for the interviews due to their familiarity with the household's diet status (Anriquez et al. 2013). Since the USDA questionnaire is a tool that relies heavily upon the memory of respondents and refugees, women and especially those who are housewives, were the best persons to answer the questions in detail (Pérez– Escamilla, Gubert, Rogers, & Hromi– Fiedler, 2017). The result of the estimated model suggested that refugee's household who were male– headed were not significantly different from those who were female– headed in terms of probability of prevailing food insecurity. However, the literature supports both direct and indirect association between the gender of head of the household and food insecurity (Abebaw, Fentie, & Kassa, 2010; Babatunde & Qaim, 2010; De Cock et al., 2013; Lokosang, Ramroop, & Zewotir, 2016; Migotto, Davis, Carletto, & Beegle, 2007; Ruben & Van den berg, 2001). For example, some of the respondents argued that the inverse association between female– headed households and food insecurity might be due to the essential role that most women play in the nutritional status of household members, particularly children (Heiman & Lowengart, 2014). However, other research pronounced a completely different association: male– headed households are more food secure (Akerele, 2011; Akin, Guilkey, & Popkin, 1983). These contradictory results may be associated with men's greater earning power and women's propensity to spend the income they have on their family's well– being. However, the results confirmed that both households (whose heads are male or female) faced a high level of severe food insecurity (According to table five, respectively 70% and 65%). A study contended the association between food security and gender of the head of household revealed that women commonly internalize their mental and health disorders such as depression and anxiety greater than their male peers, while men more commonly externalize the same disorders such as substance abuse and antisocial behaviour (Rosenfield & Mouzon, 2013). As a result, according to the precedent literature, the appearance of the severe food insecurity among Afghan refugee households despite the gender of their head, evidently rely on the context and societal anticipation (Rosenfield & Mouzon, 2013).

The result of the quantitative model suggested that there is no significant association between the mother's education level and household's food insecurity (less than the significant level of 17%), while other studies reported a significant association between the two. They contended that the education level of mothers could affect their lifestyle of different cultural behaviours, including distinct ways of cooking food (Dharod, Croom, & Sady, 2013). Also, due to the close similarity between Farsi (Dari) language of Afghan refugees and the vernacular language of Iranian dwellers (Persian), Afghan mothers could easily match their lifestyle with the local people and adapt their ways to prepare and cook the needed food through the autochthonous ingredients.

 The result of the binary model confirmed that the income of Afghan refugees was inversely associated with severe food insecurity (at the significant level of 12%), which is consistent with the precedent studies (Laraia et al., 2006; Peterman, Wilde, Silka, Bermudez, & Rogers, 2013). It is more likely that stress and depression are interlocked and interrelated with low food security, while low level of income can also contribute to increasing refugees' stress and depression and eventually their food insecurity (Alloush, Taylor, Gupta, Rojas Valdes, & Gonzalez– Estrada, 2017; Maharaj, Tomita, Thela, Mhlongo, & Burns, 2017; Peterman et al., 2013). In addition, consumption of certain foods is contingent on the household's income because lower– income households eat different kinds of foods compared to higher– income families (Shamah– Levy et al., 2017).

According to the descriptive results, the Afghan main income earners who had a part– time job were more likely to be severely food insecure (p=0.04) than those with a full– time job or who were unemployed. Based on bivariate analysis, this factor was not included as the efficacious independent variables in the final model. Other studies reported contradictory results. For example, researchers a study in the West African refugees in Nigeria argued that unemployment has a strong negative effect on mental health and eventually, food security (Akinyemi et al., 2016). They believed that refugee income earners with a full– time job experience less severe food insecurity compared to other groups because they may be confident; at the end of a month, they have the determined and fix income for purchasing their needed commodities such as food ingredients. This situation may be associated with decreasing stress and anxiety, which are two of the most significant issues of refugees in providing the needed food.

Living in a rented house/apartment was significantly and positively associated with severe food insecurity compared to living in an owned house/apartment. Due to the high rate of monthly rent in Iran, Afghan refugees who must pay a fixed rent have to reduce their other expenditures and save their budget for paying the rent. Households owning a house or apartments (often an indicator of wealth in Iran) were able to spend a larger portion of their revenue to food, consequently, severe food insecurity within these households was less likely. Also, owning a house/apartment contributes to decreasing their stress and anxiety of refugees paying the monthly rent, especially the latter part of the period leading to the end of the month.

Approximately half of the refugee respondents were living legally in Iran within the scope of the Amayesh ID card. To achieve the answer of the third query, whether the current refugee registration system help with the reintegration of the refugees, the results showed that more than half of those who immigrated by using this program faced severe food insecurity compared to those who immigrated by a passport which had a better status. This finding

confirmed that having a passport, which for those entitled to it shows citizenship of Afghanistan or Iran as safety resettlement, helps refugees to live and work with more confidence and less stress than other types of resettlements. Some studies suggested that social support is fundamental for refugees to survive the stress of life in exile and not surrender to low self– esteem due to stigmatization (Ghazinour et al. 2004). Amayesh ID card, as a supportive program, did not operate efficiently or effectively for Afghan refugee settlements based on the global conventions.

Looking deeper into the migration status and type, and gender comprehended ways of improving the food security of refugees with Afghan participants in this research. Analogous to the offers made by the participants in this study, preceding studies have recognized that investing in the education of their children, improving housing conditions, enhancing their access to legal permission, and providing rudimentary requirements have strikingly led to the improvement of their food security status and the quality of life (Akinyemi et al., 2016; Fazel, Reed, Panter– Brick, & Stein, 2012; Huijts, Kleijn, van Emmerik, Noordhof, & Smith, 2012; Kirmayer et al., 2011).

Limitations

While our study has novel findings, limitations exist as well. First, in order to assess food insecurity status, the validated USDA food security questionnaire, which was limited to only capturing income– related food security behaviour, was used. Food security is a multifaceted issue depending on many other casual factors, including psychological, social, environmental, physical health aspects and also, food– related policies protracted refugee families that have not been considered in this study. The data are self– reported and are likely subject to some degree of under or over reporting. Second, the cross– sectional nature of the study dose not allow causal interferences.

Conclusion

This quantitative study is the first step for future studies focusing on finding the magnitude of the food insecurity issue and associated casual factors among Afghan refugees. We found that only less than 1 per cent of all households were food secure. Low income, current immigration status and rented house/apartment were some of the substantial factors associated with this food insecurity situation. The findings of the study revealed the necessity of a multidisciplinary approach to assess and monitor factor affecting Afghan refugees' food insecurity addressing social, cultural, political supports, and past experience. The following recommendations on better policies and practices are provided based on the results of our study:

- Prioritize programs and policies to improve food access and availability of Afghan refugees.
- Enhance food assistance program for Afghan refugees' food security in Golshahr district.
- Consider the household size (number of children and extended families) in planning the supportive programs.
- Target root causes of food insecurity, including education, income etc.

- Adopt progressive policies and practices related to various needs such as affordable housing, and paying low interest or without interest loans for rental support.

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