

Cross-Sectional Survey of Food Security Status for the Syrian Refugees Living in Hosting Communities in Jordan

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Abstract—Food Security status of Syrian refugees was scanned in different areas in Jordan, so as to evaluate the effect of food security on their living conditions. The aim was to link Food Security to other health issues, so as to draw the attention of Association of Aid to the status of these vulnerable people. To achieve this goal, a survey was conducted to measure food security status based on USDA scale by asking the individual refugees 10 questions from which the answers showed the level of their food security. After exploring food security status of Syrian refugees in Jordan, the second objective was to examine differences in food security based on refugees' demographical details such as areas of location, age and education.

Index Terms—food security, insecurity, Syrian refugees, Jordan, demographic

I. INTRODUCTION

The World Food Summit of 1996 defined food security as existing “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life”. This definition reflects their physical and economic access to food that meets people’s dietary needs as well as their food preferences. Food insecurity exists whenever food security is limited or uncertain. Risk factors for food insecurity include any factors that affect household resources and the proportion of those resources available for food acquisition [1]. Potential consequences of food insecurity include hunger, malnutrition, negative effects on health and quality of life. Issues such as whether households get enough food, how it is distributed within the household and whether that food fulfills the nutrition needs of all members of the household show that food security is clearly linked to health [2].

The appropriate measurement of food security is critical for targeting food and economic aid; supporting early famine warning and global monitoring systems; evaluating nutrition, health, and development programs; and informing government policy across many sectors. Large number of terms has been used in discussions of food security to cause difficulties in identifying what exactly, is being discussed, measured, or intervened upon,

due to the multi-disciplinary and multi-sectoral nature of food security.

Food security metrics may focus on food availability, access, utilization, the stability of food security over time, or some combination of these domains. These metrics may draw data at national, regional, household, and/or individual levels [3].

In 2006, USDA introduced the new description “very low food security” which indicates economic and social condition of limited access to food that may result from food insecurity [4]. The food security status of each household lies somewhere along a continuum extending from high food security to very low food security, which is chatecogized into four ranges. First level is High food security where Households had no problems, or anxiety about, consistently accessing adequate food. Second level is categorized as Marginal food security where Households had problems at times, or anxiety about, accessing adequate food, but the quality, variety, and quantity of their food intake were not substantially reduced. Third type is called Low food security, when households reduced the quality, variety, and desirability of their diets, but the quantity of food intake, while normal eating patterns were not substantially disrupted. The last category is considered Very low food security when eating patterns were disrupted one or more times during the year and food intake is reduced because the household lacked money and other resources for food [4].

Surveying food security is vital in areas suffering from increasing numbers of immigrants specially in areas of conflict or neighbouring, in order to define the intervention needed as a quick response to crisis such as war [5], [6]. Since the Syrian civil war started by beginning of 2011, thousands of Syrian refugees fled to the surrounding countries causing higher pressure on these countries, where aid is not enough to supply them with basic needs such as food and medical care. The number of refugees increased dramatically in the following years.

As of 5 February 2013, there were 243,000 Syrian refugees in Jordan, arriving at an estimated 1,100 refugees per day. By March, the estimation was 3,000 refugees per day. The figure was 260,000 by March, with an estimated 53,000 persons awaiting registration.

Female headed households, women, children and elderly are expected to be most at risk of food insecurity. In humanitarian emergencies these sectors typically represent the most vulnerable because they tend to have less access to social and economic resources to meet household food and health needs compared to other demographic groups. According to surveys in Irbid and Ramtha, the majority of refugees only received primary school education (61%, no disaggregation by age or gender). Around 30% held a secondary school or a university degree, while nine percent were illiterate. Many came from poor rural areas of Syria; 31.5% were of low income.

Refugees tend to settle throughout northern Jordan, near the border with Syria. They are mainly in east Amman, Irbid, Ma'an, Mafraq, Zarqa and Za'atri Camp. The majority of new arrivals came from Dara'a Governorate, the suburbs of Damascus and Homs, Idleb and Hama. A proportion was from rural communities and Bedouin tribes. Most were affected by the violence and the lack or frequent interruption of basic services. In January 2013, there was a sharp increase in the number of Syrian refugees crossing into Jordan and arriving in Al-Za'atri [7].

The mass arrival of Syrian refugees to Jordan induced both short- and long-term consequences to hosting countries. In the short run, violence, environmental degradation, and disease propagation are risks, with indirect implications for food security, while the long-run channels include changes in infrastructure, trade, and labor markets, as well as competition for resources. It has been documented that there is a strong correlation between the size of the refugee population and food security which stresses the call for a conceptual framework through which to analyze the consequences of population shocks on food security in hosting countries [8].

Food Security was studied previously on Iraqi refugee in Syria and Jordan, where there was a clear concern. As shown by a national cross-sectional cluster sample surveys of displaced Iraqi populations refugee in Jordan (October 2008) and Syria (March 2009). Clusters of ten households were randomly selected and interviewed about food security and receipt of humanitarian assistance. In Syria, 60% of households reported the household food situation had declined since the arrival period as compared to 46% in Jordan. Food aid receipt was reported by 18.0% of households in Jordan and 90.3% of households in Syria. In Jordan, 10.2% of households received cash assistance and in Syria 25.3% of households received cash assistanc [9].

A recent study by WFP on Syrian Refugees in Jordan measured food security index (FSI) which is based on evaluating the level of food security based on three key indicators: food consumption score, food expenditure and livelihood coping strategies. The study revealed that the districts with the highest percentage of food insecure households are Dair 'Alla (37.3%) in Al Balqa Governorate, Kofranja (17.1 %) in Ajloun Governorate, Qasabet Ajloun (16.0 %) Ajloun Governorate and

Qasabet Balqa (14.5 %) in Al Balqa Governorate. [10], [11]. Some governorates such as Al Balqa had both some of the highest concentrations of food insecure and food secure depending on the district of residence.

This aim of this study was to estimate the food security status of Syrian refugees in Jordan, in order to further study the link between their food security status and their demographic factors. So as to connect it to their health and level of aid needed or offered, and also to draw the attention of association of aid to the status of these vulnerable people.

II. METHODS

A. Cross-Sectional Study Was Utilized to Meet Study Objectives of This Study

A convenient sample of refugees was recruited. The sample size of the study was based on 95% confidence interval, 5% confidence interval and population size of one million as estimated. The power analysis indicates the need for sample of 385 refugees. However, researcher decided to have as much as possible numbers of Syrian refugees for the purpose of increasing the generalizability of the study results. Researchers approached six different geographical areas where refugees were resident in Jordan; Mafraq, Fuhais, Karak, Irbid, Madaba, and Amman, which represent the major geographical areas where refugees lived in Jordan.

Inclusion criteria for participants were; eighteen years and older, and willing to be part of the study. Refugees were approached by researchers during their attendance of one of the Caritas centres. Data was collected between November 2013 and June 2014. Data was collected by one of the Caritas team who got prior training on data collection procedures and objectives of the study. Initially, refugees were contacted, and were asked for willingness to be part of the study. Information sheet and study verbal and written explanations were provided to each refugee included study information sheet. Participants were asked to sign a consent form. Study pack included, food security questionnaire, and refugee demographics was given to each of the participants.

For evaluating food security status of the refugee, The USDA model [4] where the refugee samples were taken from Mafraq, Fuhais, Karak, Irbid, Madaba, and Amman, which represent the major geographical areas where refugees lived in Jordan. The individual refugees were asked 10 questions translated into Arabic and the survey was assisted by volunteers from Caritas working in the area. The Survey Questions Used by USDA to Assess Household Food Security were:

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?
2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?
3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months.

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)

5. (If yes to question 4), how often did this happen--almost every month, some months but not every month, or in only 1 or 2 months?

6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)

7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)

8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)

9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)

10. (If yes to question 9), how often did this happen--almost every month, some months but not every month, or in only 1 or 2 months?

Participants' demographics and food security questionnaire were used in the analysis. The results of the survey was collected and categorized according to USDA four categories of food security shown in Table I. Scores of each food security level were coded as follow: score of zero for high food security, score of 1 for marginal food security, 2 for low food security, 3 for food insecurity. For the analysis of the data, SPSS version 21 was used. Descriptive analysis was used to refugees' demographical details. In order to explore differences in food security and demographical details Mann Whitney u test was utilized. In addition, Kruskal-wallis test was used to examine the differences in food security based on geographical area.

TABLE I. CATEGORIES OF FOOD SECURITY ACCORDING TO THE 10 QUESTIONS OF USDA FOOD SECURITY SURVEY

Question no.	Description	Answer	Category	Score
1	Worrying about loss of food supply	Never	Food security	0
2, 3	worrying or not being able to afford eating balanced meal at some time	Sometimes, often	Marginal Food Security	1
4, 5, 6, 7	Cutting size of the meal or skipping meal because of not affording buying enough food	yes	Low Food Security	2
8, 9, 10	Changes in eating patterns and losing weight	yes	Very low food security (Food Insecurity)	3

B. Ethical Clearance

Prior to conducting research; an ethical approval was gained from the Caritas Jordan higher management. Each participant was provided with study information sheet,

consent form, and was informed for his/her right to withdraw from participation in the study at any given point.

III. RESULTS AND ANALYSIS

The number of refugees approached was 811, among them 773 were willing to participate in the study and signed the consent form. The final number of participants included in the study for analysis was 765 as the rest did not complete more than 50% of the study pack.

Data were obtained from the six cities as shown in Table II. The higher numbers were representation for City of Amman (n=250, 32.7%), and lowest for refugees residing in Karak (n=66, 8.6%), had age less than 50 years (n=658, 86%), had female gender (n=425, 55.6%), had residency less than one year in the time of data collection (n=458, 59.9%), married (n=648, 84.7%), lived with their family members (n=648, 84.7%), had primary school or higher education (n=668, 87.3%), unemployed (n=698, 91.2%), and did not have sufficient income (n=651, 85.1%).

Food security status results showed that 3.4% (n=26) had high food security, 7.8% (n=60) had marginal food security, 25.4% (n=194) had food insecurity, and the majority had low food security 63.4% (n=485).

The differences in food security based on the geographical area were examined utilizing Kruskal-wallis test.

As shown in Table II below, there was significant differences in food security status based on the geographical area that refugees lives in (p=0.040).

TABLE II. DIFFERENCES IN FOOD SECURITY CATEGORIES BASED ON GEOGRAPHICAL AREAS, KRUSKAL-WALLIS WAS UTILIZED

Location	High food security	Marginal food security	Low food security	Food insecurity
Amman	6	25	163	56
Madaba	2	12	48	35
Huson	2	2	70	38
Karak	3	8	48	7
Fhes	4	3	72	23
Mafraq	9	10	84	35
Total	26	60	485	194

The results indicate that refugees lived in Madaba and Mafraq cities had higher food security compared to the other four cities.

It is important to visualize how food security populations is dispersed geographically in order to define the level of aid needed in each area, and to be able to help them get better specially the areas of most in need [12]

TABLE III. DIFFERENCES IN FOOD SECURITY BASED ON REFUGEES DEMOGRAPHICS UTILIZING MANN WHITNEY U TEST

Mean rank	DF	Chi-square	P value
388.07	5	11.66	0.040
332.28			
390.38			
407.29			
412.75			
369.86			

The differences in food security based on refugees' demographical details was analysed using Mann-Whitney U test. As shown in Table III male and refugees lived since more than one year in Jordan had significant higher food security compared to female, and those lived since less than one year as refugees in Jordan. There was no significant difference based on the rest of demographics.

On the other hand, comparing food security based on age, marital status, living with family, income and educational showed minor difference in food security levels that was not significant.

These results revealed that main demographics that caused major difference in food security we strongly linked to the ability of refugees to get used and more stabilized as they stay longer than a year where they can start finding jobs and have better conditions. Food insecurity can be the result of lack of education, health or other basic capabilities that constitute people's wellbeing [13].

These results were in agreements with findings from the latest WFP report [10], where it was found that the main factors affecting the food insecurity of Syrian refugee in Jordan were Demographics, wealth, education and registration among other factors. It was found that widowed women were more likely to be food insecure, which was consistent with finding of this study where women were unlikely more insecure than men (Table III).

Inter-agency regional response report also revealed that women in Za'tari camp were reducing their consumption in order to feed their children. There was also a difference in the food security status between those living in the camp and those living outside camp, where those living outside camp have more difficulty in supporting themselves with enough food [14].

IV. CONCLUSION

The study showed that 25.4 % of the population lie at the level of food insecurity, which means that one forth of refugees are at the danger of food insecurity leading to changes in their food patterns losing meals for an entire day in the last twelve months. This as a result leads to more severe health problems and lower nutritional status. It is recommended to conduct more studies in order to detect the relationship between food insecurity and nutritional status assessment so as to find which food items can be more needed and which diseases may occur to help prevent it by increasing the aid, or awareness specially among vulnerable populations such as women, children and the elderly.

In Amman there were higher conditions of food insecurity, and as a conclusion it is expected that the crowded areas of higher competition for job and more expensive living conditions there are harder situations, specially for the new arrivals with less than 12 months which affects dramatically the food security conditions.

On the other hand living in Jordan for longer time showed better food security which means their living conditions and coping with the new status gets better by

the time, they can get a job or receive aid that supports their survival.

The study also showed that there was a strong connection between the gender and food security, where women were more vulnerable to food insecurity than men.

Refugees populations living in Amman had more difficulty in coping with increasing expenses leading to higher food insecurity.

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