FOOD SECURITY STATUS AMONG VENEZUELAN ASYLUM SEEKERS AND MIGRANTS IN TRINIDAD AND TOBAGO

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CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CI	Confidence Intervals
DI	Democracy International
DMAD	Drama Making A Difference Company
ECLAC	Economic Commission of Latin America and the Caribbean
FAO	Food and Agricultural Organisation of the United Nations
FIA	Families in Action
FIES	Food Insecurity Assessment Scale
FPATT	Family Planning Association of Trinidad and Tobago
IOM	The International Organisation for Migration
IRT	Item Response Theory
LWC	The Living Water Community
NACC	The Nation Aids Coordinating Committee
NGOs	Non-Governmental Organisations
OAS	Organization of American States
OR	Odds Ratios
PADF	Pan American Development Foundation
PADF TT	Pan American Development Foundation Trinidad and Tobago Office
PRWG	Protection Response Working Group
RCS	Rape Crisis Society
RCS	Red Cross Society
RSD	Refugee Status Determination
SDG	Sustainable Development Goals
T&T	Trinidad and Tobago
TTD	Trinidad and Tobago Dollars
TTVSOLNET	The Trinidad and Tobago Venezuelan Solidarity Network
UNFPA	United Nations Population Fund
UNHCR	The office of the United Nations High Commissioner for Refugees
USD	United States Dollar
UWI	The University of the West Indies
WFP	World Food Program

EXECUTIVE SUMMARY

The surge in migration flows due in large part to the rise of people emigrating from Venezuela in response to the country's complex socio-political, and faltering economy is of major concern to Governments in the Region, civil society organizations and the international community. In the absence of asylum legislation, migrants who have fled persecution and irregularly entered the country, or who have overstayed their lawful entry, are subject to repatriation, detention, or deportation, as well as hefty fines. Consequently, many migrants seeking asylum live hidden lives, precariously housed and employed, without adequate food and nutrition. Studies conducted in developed and developing countries on asylum seekers and migrants report high prevalence of food insecurity among this population due to economic constraints, lack of knowledge about new foods, difficulties with shopping, skipping meals and developing new eating habits based on a survival strategy to live on as little money as possible, as well as challenges with a new language. However, little is known about the food security status of the Venezuelan refugees and asylum seekers in Trinidad and Tobago. Thus, this report provides an overview of the food security status of Venezuelan migrants and asylum seekers, an underrepresented group residing in Trinidad and Tobago. Snowball sampling was used to connect to migrants throughout Trinidad and Tobago based on their access to locally-based NGO service providers, and a convenience sample of (n=436 migrants), 18 years and over in Trinidad and Tobago consented to participate in the study. Food security was measured using the 8-item version of the FAO Food Insecurity Experience Scale (FIES). Food insecure participants were divided into three groups: food secure to mild food insecurity, moderate food insecurity, and severe food insecurity. Using binary logistic regression models, the association between food insecurity status and sociodemographic variables were observed using chi-square tests.

The results revealed greater participation by female respondents than males with 67% (n=290) female and 33% (n=143) male. Respondents were located across Trinidad and Tobago but predominantly resided in urban/semi-urban spaces in relatively close proximity to the capital of Port of Spain, namely Tunapuna/Piarco Municipality (19%), the Borough of Chaguanas (17%) and Diego Martin (12%). Overall, approximately 62% of respondents experienced behaviours characterized as severely food insecure. Severe food insecurity was more prevalent

with females (64%), persons who were not employed (68%), worked 3-5 days per week, earned a monthly income of less than $500 TTD per month (71%), paid rent (63%), belonged to households with 1 to 2 persons (70%), and had a chronic illness (72%). A doubling effect was observed across the scale for women, in that 12% experiencing food secure to mild food insecurity, 24% moderate food insecurity and 63% severe food insecurity.

The prevalence of food insecurity among Venezuelan migrants and asylum seekers was found to be high, and associated with employment, location and income. The findings of this research prompt further investigation into understanding the nutritional, social and cultural barriers that exist among this population, with activities specifically targeted to the youth and children whose parents have migrated or are at risk of migrating, in order to strengthen their resilience to crime and violence.

Food Security Status Among Venezuelan Asylum Seekers and Migrants in Trinidad and Tobago

1.0 Introduction

In 2015, the United Nations adopted 17 Sustainable Development Goals (SDGs). Countries around the world committed to these global priorities to be met by 2030 (United Nations, 2015). Goal 2 of the SDGs aims to reduce malnutrition and attain food security among all peoples. These conditions necessary for food security are defined as present when "all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (Food and Agriculture Organization, 1996). This definition recognizes food security as multi-dimensional, and a necessary condition for human survival, that involves a moral obligation on every state to ensure all those within its border, enjoy this fundamental universal right. This right was stated in Article 25 of the Universal Declaration of Human Rights of 1948 (adopted and proclaimed by General Assembly of the United Nations Resolution 217 A (III).

Conversely, food insecurity is described as the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (Francis-Granderson et al., 2018). A number of studies have found that most often food insecurity is due to a lack of financial resources, low levels of nutritional education, food preparation skills and limited availability of healthy and culturally appropriate foods, lack of mobility and or transportation and homelessness (Gorton et al., 2010; Loopstra and Tarasuk 2012; Whiting et al., 2010).

According to various studies, Hadley et al., (2007); Southcombe (2008); Hadley and Sellen (2006), a high prevalence of food insecurity has been observed among asylum seekers resettled in developed countries. Economic constraints, lack of knowledge about new foods, difficulties with shopping, challenges with a new language, as well as problems complying with various religious and cultural food norms in a new space are associated with the occurrence and severity

of food insecurity (Hadley et al., 2007; Southcombe 2008; Hadley and Sellen 2006; Terragni et al., 2014). Skipping meals and developing new eating habits based on a survival strategy to live on as little money as possible has been reported by Koc and Welsh (2001). A study conducted in Sweden showed that food needs of asylum seekers are often not met and that consequently, their intake may be insufficient from a nutritional standpoint (Linder, 2011). Further, a report on unaccompanied minor refugees showed that residents in Norwegian asylum centers tend to refrain from buying nutritious (more expensive) foods (Lidén, 2013). In Latin America and the Caribbean while reports on food security and migrants are few, there has been recent research titled "Food Security and emigration: Why people flee and the impact on family members left behind in El Salvador, Guatemala, and Honduras." Authors of this study, Barreto & Pisani (2016) reported that patterns of migration in the region appears to be motivated by poverty and hunger, and that "there is a clear link between food security and migration." While migration has multiple and complex causes, the study highlights four key links to food security in developing countries namely: violence, poverty, economic instability and climate change. According to Pacciardi, (2020), evidence shows that most of the migrants from Guatemala, Honduras and El Salvador came from rural areas and previously worked in the agricultural sector, as their primary source of employment and livelihood (WFP et al., 2017). These households generally and seasonally experience food insecurity. For example, according to the World Food Program's (WFP) Food Security Index, 47% of households are either moderately or severely food insecure, with undernutrition reaching a peak of 31% in Guatemala. Moreover, allocation of remittances sent by previously emigrated family members mostly go into the purchase of basic foodstuff and can therefore be seen as evidence of food scarcity in most households (WFP et al., 2017).

An underappreciated link is related to the food insecurity – violence nexus. One exploratory study conducted in 2016 by the Organization of American States (OAS), WFP and the London School of Economics suggests possible interplays between violence and food insecurity. Although both dynamics have triggered mass migration in various contexts, the correlation between the two has received little attention. Rural areas in Guatemala, Honduras and El Salvador are characterized by a limited presence of the State and this creates fertile ground for criminal gangs to control the territory. Families often lose their crops and livestock to theft, extortion or armed robbery (WFP et al., 2017). This is particularly alarming considering that most households completely rely on these resources for their survival. Criminal groups also control the movement of vehicles and people in and

out of rural areas, imposing taxes or bans on transportation of agricultural products. This results in higher prices as well as decreased availability and access to food. On the other hand, food insecurity is also recognized as a major driver of violence which itself becomes a common practice for those with limited means of survival. Several assaults to women receiving food-aid from the state are a case in point to the direct impact of gendered violence on food insecurity (Barreto & Pisani, 2016:26; Pacciardi, 2020).

On the food insecurity-poverty nexus in developing countries there is a clear, recognised relationship. In rural areas of Central America, life is largely centered around the agricultural sector. In these areas, food security, economic instability and poverty are strongly correlated. Typically, small-scale livelihoods in rural areas are characterized by high unemployment, limited and seasonal labor demands and irregularly paid wages (WFP et al., 2017). The budget of most households is almost entirely devoted to food and finding off-farm employment is quite difficult. Additionally, dependence on rain-fed production, and erratic climatic patterns lead to increasingly poor harvests that trigger both unemployment, food irregularity based on seasons and lack of food in these farming households. Geographic conditions aggravate the situation, since these countries are located along the dry corridor, which is characterized by irregular rainfall that alternate between prolonged periods of drought with tropical storms. As a result, these increasingly erratic weather conditions have devastating effects on livelihoods dependent on subsistence agriculture in the region. Since the economy revolves around primary production and most of the population heavily relies on agriculture to survive, related land degradation strongly disrupts food security and is a major motivator for out- migration (Pacciardi, 2020).

The fourth and related link is associated with the food security-climate change nexus in Latin America and the Caribbean. While this most recent report specifically speaks to the countries of Guatemala, Honduras and El Salvador and characterizes them as among the most environmentally vulnerable areas in the Americas, due to their geographical position; small island developing states have also been noted as climate change hot spots because of their location and small size. In the case of the three countries above, the devastating effects of the “El Niño” phenomenon in 2009, revealed the consequences of climate change over the area, further worsening the precarious conditions faced by rural communities (Vaqué, 2017). The increasingly frequent occurrence of extreme climate shocks deteriorates the quantity and quality of crops produced, making life unsustainable for many. The most

striking effects of climate change include land degradation and pest infestations that result in extremely high levels of food insecurity (Goode et al., 2018). Unable to provide enough food for themselves and their families, many peasants and farmers are left with few options and are pushed into leaving their communities and small farms (Pacciardi, 2020).

Other findings of the report include poor living conditions faced by communities living in the Dry Corridor of Latin America. These conditions may partly explain the increase of migrants moving northward and their use of particular coping strategies that give rise to, insecure rural livelihoods and poor food security status in developing countries of Latin America and the Caribbean. The study noted the following on their socioeconomic and food security status namely:

- 58% of these households interviewed before migrating spent more than two-thirds of their income on food, which shows that previously their households experienced a high level of economic vulnerability;
- 42% of the households interviewed in Guatemala showed worrying levels of food consumption with poor or borderline food security status;
- Violence played an important role as a trigger for migration in El Salvador, but less so in Guatemala and Honduras;
- 79% of migrants were men between the ages of 20 and 29; and,
- 50% worked in agriculture before leaving their home countries.

As one of the destination countries for migrants from Latin America, in recent years, migrant and refugee influxes into Trinidad and Tobago have grown. In 2016, there were unconfirmed reports of fewer than 100 refugees and migrants. As of November 2018, although under some dispute, estimates suggest that there has been a significant increase to more than 9,000 refugees and asylum seekers. Currently, unofficial estimates suggest that Trinidad and Tobago hosts over 40,000 Venezuelans migrants. Both anecdotal and official reports suggest that these numbers are on the increase as Venezuelans continue to flee to the Caribbean due to serious threats to their lives, freedom, safety and limited access to basic human rights, including health care, medicine, education and food (UNHCR, 2018; Tiff, 2018).

Trinidad and Tobago acceded to the 1951 Geneva Convention on the Status of Refugees and its 1967 Protocol in November 2000 (United Nations, 2019). While the Cabinet approved a

National Policy to Address Refugee and Asylum Matters in the Republic of Trinidad and Tobago (Refugee Policy) on June 2014, it has not been implemented. The 2014 Refugee Policy sets out a process that would transfer responsibility for Refugee Status Determination (RSD) procedures to the Trinidad and Tobago government. Until this takeover, the government has agreed to allow United Nations High Commissioner for Refugees (UNHCR) better known as the United Nations Refugee Agency to conduct RSD for asylum seekers, but does not recognize their right to work (Tiff, 2018).

While there is little to no data in this area, the UNHCR operates a cash-based intervention system that helps migrants with money for food. Other organisations such as IOM and TTVSOLENT also organized distribution drives where migrants are given food hampers. During COVID-19 lockdown, there was need for these drives and cash assistance programmes to be ramped up to support unemployed migrants. In 2017, UNHCR, the NGO Living Water Community (LWC), and the Refugee Unit of the Immigration Division agreed on standard operating procedures to facilitate the provision of humanitarian aid, access to legal assistance, learning, and other support services through its partner, Living Water Community. In addition, other initiatives aimed at empowerment and solidarity were conducted with academic, non-governmental and other groups, such as “Sticks in De Yard”. Additionally, a number of Non-Governmental Organisations (NGOs) are involved in protection responses on referral pathways such as FPATT, RSC, IOM, TTVSOLNET, FIA, etc. (Tiff, 2018).

In the absence of asylum legislation, migrants who have fled persecution and irregularly entered the country, or who have overstayed their lawful entry, are subject to repatriation, detention, or deportation, as well as hefty fines. The difficult circumstances faced in Venezuela that led migrants to leave their home country, means that they often subject themselves to difficult living and working conditions in order to remain in their host country. Registration with Living Water Community and the UNHCR does not prevent deportation from Trinidad and Tobago. Consequently, many migrants seeking asylum live hidden lives, precariously housed and employed, without adequate food and nutrition, and in fear of detection by state authorities. These conditions can be seen as suboptimal and result in migrants living in fear without access to basic human rights and has been described as being on the “frayed edge of the margins”. In an attempt to alleviate these growing humanitarian concerns, in June 2019, the Government of Trinidad and Tobago implemented visa requirements for Venezuelans via the 'Migrant Registration Framework, a work permit exemption policy (Office of the Prime

Minister, T&T 2019). The two-week registration exercise granted Venezuelan nationals a stay-permit which also allowed them to work for 6 months to 1 year. In spite of registration and the granting of stay permissions, obstacles persist as Venezuelan migrants seek to integrate in the Trinidad and Tobago society. Factors giving rise to these delays with integration include: language barriers and the lack of recognition of professional certificates and diplomas from Venezuela. Access to specialized health care is limited, and Venezuelan children and youth encounter state policies that pose barriers for them to access school placement within the local public education system. Migrants also face exploitation of their labour, sexual exploitation of women and girls, stigma and xenophobia. These challenging situations may have an impact on food security and require in-depth study especially on the daily living conditions faced by migrant women and girls (Tiff, 2018).

While there has been some amount of research investigating the link between food insecurity and migration in Latin America and the Caribbean (Barreto & Pisani, 2016), little is known about the food security status of the Venezuelan refugees and asylum seekers in Trinidad and Tobago. The nature of their food insecurity status appears to stem from a range of economic and cultural factors such as lack of employment, poor understanding of English, unfamiliarity with new foods and cooking methods or budgeting skills, and lack of social support. This report on Venezuelan migrants provides an overview of their food security status as an underrepresented group in Trinidad and Tobago, to understand the characteristics of their food insecurity, and contribute to the existing literature on food security among migrants and asylum seekers.

The objectives of this study are as follows:

1. To assess the food security status of Venezuelan migrants and asylum seekers living in Trinidad and Tobago;
2. To explore and quantify the existence of food insecurity among Venezuelan migrants and asylum seekers by location in Trinidad and Tobago; and,
3. To determine the use and suitability of the Food Insecurity Assessment Scale (FIES) as a newly developed experience-based food security tool used for this purpose.

METHODS

Research Design and Strategic Change

Initially, plans for this survey involved use of trained enumerators who would collect data covering wide ranging issues from migrants. It was expected that this data would inform cross-cultural and nutrition education activities planned as part of Life Span interviews through The UWI Open Hand Initiative. Initial plans for one-on-one interviews were designed to collect data on the living conditions, food and nutrition security status and background information of households. In March 2020, after the outbreak of Covid-19 and national lockdown, in the interest of safety, the decision was made to minimize exposure of migrants and enumerators by changing to a more rapid tool accessed through an online platform. A suitable food security experience-based tool was sourced and implemented to collect data from an online survey based on a convenience sample of migrants.

The shorter and more updated, FAO-developed FIES was selected as the most suitable tool. Additional questions on age, employment status, location, regularity of pay and wages were incorporated into the survey. Translation services were sourced and the survey was prepared in Spanish. The survey link was disseminated to migrants via e-mail and the mobile-phone based social media platform WhatsApp. The window for the online survey remained active from April 18th to May 15th 2020.

Sampling Method and Selection Criteria

In this cross-sectional analysis, data was collected from a convenience sample (n=436 migrants) in Trinidad and Tobago. As part of the planned response to Covid-19, the decision was made to use snowball sampling to connect to migrants based on their access to locally-based NGO service providers. The PADF Programme Manager initiated the link which was then shared with the various implementing partners, for onward sharing with their clients, who were asked to share with their contacts in the migrant community. As a result of this survey distribution method, the selection criteria used to identify or reach respondents was as follows:

1. Venezuelan migrants residing in Trinidad and Tobago;
2. User of services from implementing partners; and

3. A social contact of a Venezuelan migrant who accessed services from one of the identified NGOs

Primarily, several organizations directly connected to the Venezuelan migrant community in Trinidad and Tobago were contacted by the PADF TT team to support with the wide dissemination of the survey tool among target respondents. These organisations include and are not limited to:

- The International Organisation for Migration (IOM)
- The Office of the United Nations High Commissioner for Refugees (UNHCR)
- Drama Making A Difference (DMAD) Company
- The Trinidad and Tobago Venezuelan Solidarity Network (TTVSOLNET)
- The Living Water Community (LWC)
- The Nation Aids Coordinating Committee (NACC)
- Families in Action (FIA)
- Ryu Dan Dojo Empowerment Centre

Additionally, the survey tool was shared with the Protection Response Working Group (PRWG) platform convened by the UNHCR for increased dissemination among a wider network of organisations that assist Venezuelan migrants. Within this network, there are agencies such as Democracy International (DI), the United Nations Population Fund (UNFPA), the Rape Crisis Society (RCS), the Family Planning Association of Trinidad and Tobago (FPATT) and the Red Cross Society (RCS) of Trinidad and Tobago. Collectively, all organisations engaged in the dissemination of this survey tool allowed PADF TT to engage Venezuelan migrants across the North, South, East and West of Trinidad given the location of their main and satellite offices as well as the level of their community outreach and engagement with gatekeepers.

The tool: The Food Insecurity Assessment Scale (FIES)

FIES comprises eight questions placed in order of increasing severity of food insecurity experiences and the reference period covered the period of twelve months. The structuring of the FIES questions is intended to capture the latent trait of food insecurity. The latent trait is defined as a condition of not having adequate access to food needed to lead a normal and healthy life, due to a lack of money or other resources. This trait is assessed through the self-

capturing of respondents about their own experiences, behaviour and perceptions (such as uncertainty) related to not getting enough food as a result of the lack of resources (Ballard, Kepple & Cafiero, 2013; Nord, 2014).

The eight questions of the FIES are used to classify each respondent on the food security continuum scale, which ranges from "food secure" to "severely food insecure". The ranking given represents the sum of the affirmative (yes = 1) responses provided by the respondent. The ordinal integer variable that is the sum of responses to the items of the FIES is called the "raw score." The raw score was then transformed into a categorical variable based on the designation of responses into three classes. Respondents who responded in the affirmative to none of the questions was categorized as food secure. Respondents who answered in the affirmative to any of the questions were then ranked into three categories of food insecurity: mild, moderate and severe. Respondents who were food secure and those answered in the affirmative to food insecurity questions one to three were classified as experiencing "food secure"/"mild" food insecurity. Those who gave affirmative responses to questions four to six were categorized as experiencing "moderate" food insecurity. Last, respondents who answered in the affirmative to questions seven to eight were categorized as experiencing "severe" food insecurity (see Figure 1). These categories of mild, moderate and severe food insecurity have been aligned with various food security domains of uncertainty and anxiety about food running out, inadequate intake of food quality and, insufficient intake of food quantity.

Scale items	Domains of the food insecurity construct	Assumed severity of food insecurity
You were worried you would run out of food because of a lack of money or other resources?	Uncertainty and worry about food	Mild
You were unable to eat healthy and nutritious food because of a lack of money or other resources?	Inadequate food quality	Mild
You ate only a few kinds of foods because of a lack of money or other resources?	Inadequate food quality	Mild
You had to skip a meal because there was not enough money or other resources to get food?	Insufficient food quantity	Moderate
You ate less than you thought you should because of a lack of money or other resources?	Insufficient food quantity	Moderate
Your household ran out of food because of a lack of money or other resources?	Insufficient food quantity	Moderate
You were hungry but did not eat because there was not enough money or other resources for food?	Insufficient food quantity	Severe
You went without eating for a whole day because of a lack of money or other resources?	Insufficient food quantity	Severe

Figure 1: Food Insecurity Experience Scale (Source: Ballard et al., 2013)

Statistical Analysis

The FIES was used as the dependent variable. Responses of the FIES questions were coded into binary categories, with affirmative responses given a value of one and negative responses coded as zero. Raw scores of the FIES and categories were defined as follows: food secure to mild food insecurity (raw score 0 – 3), moderate food insecurity (raw score 4 – 6) and severe food insecurity (raw score 7 – 8). Sociodemographic factors were used as the principal independent variables. Descriptive analyses, and binary logistic regression were conducted. Odds ratios were presented and associations between food insecurity and sociodemographic variables were observed using chi-square tests.

For the purposes of the binary logistic regression analyses presented, binary measures of individual severity of food insecurity were utilized. The measure, food insecurity, was coded as one if an individual experienced moderate or severe food insecurity within the past 12 months; zero otherwise.

The primary explanatory variables for the analyses were some of the common food insecurity determinants, including individual, household and socioeconomic characteristics. Location of residence, employment status, number of work days per week, monthly income, payment of rent, presence of chronic illness and sex, were all considered.

Analyses were conducted using SPSS version 22.

Rasch model: Internal validity test

The Item Response Theory (IRT) measurement model approach was used to analyse the quality of FIES data. Rasch model is a statistical approach commonly used for assessing the internal validity of experience-based food insecurity scales by establishing the psychometric characteristics of the items in the FIES (Cafiero et al., 2018).

This means that in Figure 2, items A and B (for each question based on FIES raw scores) have the same discrimination power and are independent of the severity of the respondent's condition. In this hypothetical example, item C has a different discrimination power and does not fulfil the equal discrimination assumption.

Rasch model was programmed in R statistical package and MS Excel.

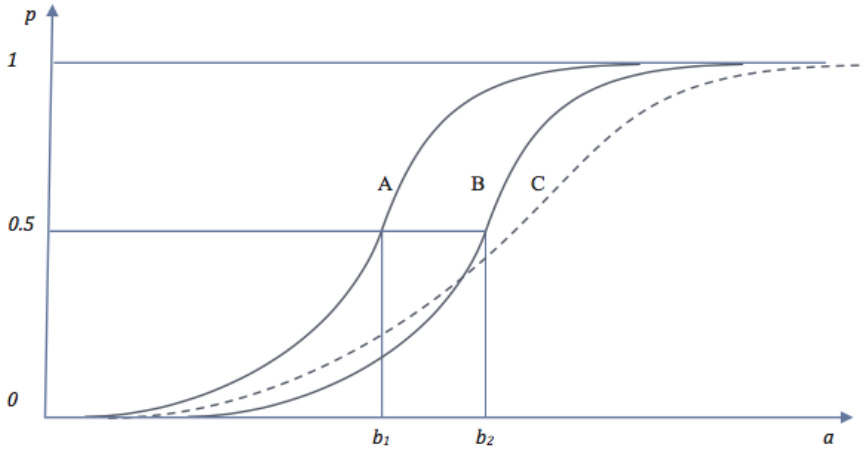


Figure 2: Item characteristics curves (Cafiero et al. 2018)

Rasch model assumptions

The Rasch model framework involves three assumptions used to examine consistency of the data generated by the FIES. They are as follows: 1) items discriminate equally; 2) items are conditional independent for respondents with the same level of food insecurity; and, 3) items measure the same construct of food insecurity. The first assumption of equal discrimination is evaluated by an INFIT statistic using a chi-square-type statistic. Each item (based on the FIES raw data that matches the question) should register the value of 1, however, acceptable INFIT values range from 0.8–1.2, with 0.7–1.3 recognized as broadly acceptable (Cafiero et al. 2018). Conditional independence is measured by calculating the relative item severity parameter by extracting the correlation matrix of items. This identifies any gap in the item's structure in the scale assessed by looking at the difficulty of each question with each respondent's food insecurity level (Hackett, Melgar-Quiñonez, & Uribe, 2008). This means a food secure respondent will answer affirmatively to less questions than one experiencing mild, then moderate and then severe food insecurity (Ballard et al., 2013). Severity values look at position of the raw scores by using the natural log of the odds of probability within the food security questionnaire on a logit scale. If the value is low, it implies that the category is in the mild domain, and when high, the category tends toward the severe domain (Na, Gross, & West, 2015).

RESULTS

Characteristics of Study Population

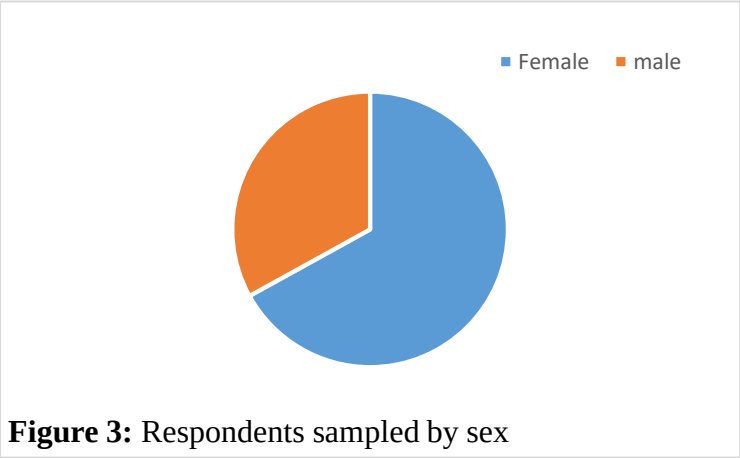


Figure 3: Respondents sampled by sex

Table 1 summarizes demographic and socioeconomic characteristics of the sample. It showed greater participation by female respondents than males with 67% (n=290) female and 33% (n=143) male (see Figure 3). Respondents were located across Trinidad and Tobago but predominantly resided in urban/semi-urban spaces around the north western section of Trinidad. The top three regions found where they were located lie in relatively close proximity to the

Table 1. Sociodemographic and economic characteristics of respondents (n = 436)

Variable		n	%
Sex	Female	290	66.5
	Male	143	32.8
	Non-responders	3	0.7
Location[1]	City of Port-of-Spain	38	8.7
	City of San Fernando	40	9.2
	Borough of Arima	28	6.4
	Borough of Chaguanas	72	16.5
	Diego Martin	51	11.7
	San Juan/Lavantille	29	6.7
	Tunapuna/Piarco	84	19.3
	Couva/Tabaquite/Talparo	24	5.5
	Penal/Debe	35	8.0
	Other[2]	29	6.7
	Non-responders	6	1.4
Employment	No	117	40.6
	Yes	240	55.0
	Non-responders	19	4.4
Work days/week			

[1] Area of residence was classified based on municipalities

[2] Borough of Point Fortin, Mayaro/Rio Claro, Sangre Grande, Princess Town, Penal/Debe, Siparia, Tobago

* Monthly income did not take into consideration donations in the form of clothing, shelter or food assistance

	1 – 2 days	53	12.2
	3 – 5 days	178	40.8
	>5 days	51	11.7
	Non-responders	154	35.3
Monthly income*	<$500 TTD	56	12.8
	$500 - $1000 TTD	94	21.6
	$1001 - $1500 TTD	38	8.7
	$1501 - $2000 TTD	53	12.2
	>$2000 TTD	58	13.3
	Non-responders	137	31.4
Pays rent	No	14	3.2
	Yes	414	95.0
	Non-responders	8	1.8
Household size	1 – 2 persons	87	20.0
	3 – 5 persons	248	56.9
	>5 persons	93	21.3
	Non-responders	8	1.8
Presence of chronic illness	No	376	86.2
	Yes	60	13.8

capital city Port of Spain. These areas included the Tunapuna/Piarco Municipality (19%), the Borough of Chaguanas (17%) and Diego Martin (12%) (see Figure 4). As expected, household size was large with the median response consisting of three to five members (57%), and 20% of households contained more than five members. Respondents described themselves as generally healthy with an overwhelming majority (86%) declaring themselves free of any chronic illness.

Figure 4: Food insecurity status of respondents by location across regions in Trinidad and Tobago

Most respondents were employed (55%), and paid rent (95%). The expected benefits to Venezuelan migrants from their employment status, might be low since many respondents appeared to be working for low wages. 13% earned less than $500 TTD per month, and more than one-fifth of respondents (21%) earned a monthly income of $500 - $1000 TTD. 9% reported they received wages from $1001 to $1500 TTD monthly and 12% earned $1500 to $2000 TTD monthly. As expected due to the sensitivity of this question on income, approximately 30% of respondents did not answer. Working hours showed wide diversity with 12% of respondents working 1 to 2 days each week, 41% working 3 to 5 days and approximately 12% working more than 5 days each week.

Raw Food Security scores of Respondents on each question of the FIES

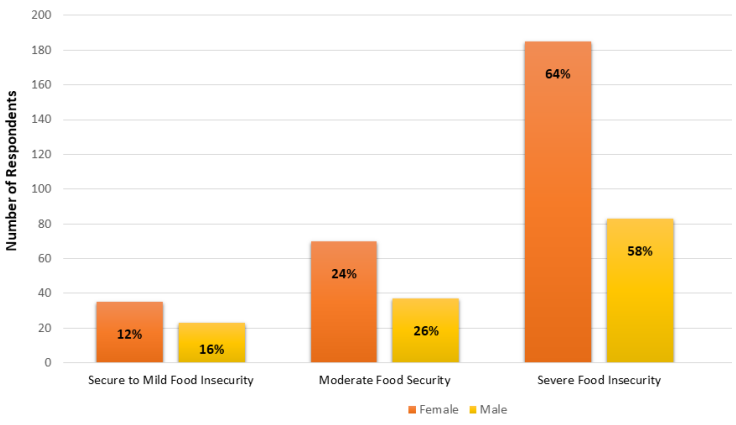
Looking at raw scores from respondents on each question of the FIES, the vast majority indicated having eaten only a few kinds of foods because of a lack of money (94.5%) and having eaten less than they thought they should because of a lack of money (90.6%), and 45.6% went without eating for a whole day because of a lack of money (Table 2).

Table 2. Raw Score showing responses by ALL respondents to FIES Questions (n = 436). During the last 12 months, was there a time when …

No.	Food Insecurity Experience Scale (FIES) Questions	n	%
1	You were worried you would run out of food because of a lack of money?	346	79.4
2	You were unable to eat healthy and nutritious food because of a lack of money?	352	80.7
3	You only ate a few kinds of foods because of a lack of money?	412	94.5
4	You had to skip a meal because there was not enough money to get food?	354	81.2
5	You ate less than you thought you should because of a lack of money?	395	90.6
6	Your household ran out of food because of a lack of money?	334	76.6
7	You were hungry but did not eat because there was not enough money for food?	335	76.8
8	You went without eating for a whole day because of a lack of money?	199	45.6

Prevalence of Food Insecurity

Table 2 shows prevalence of food insecurity. Overall, approximately 62% of respondents experienced behaviours characterized as severely food insecure. Severe food insecurity was more prevalent with females (64%) (Figure 5), persons who were not employed (68%) (Figure 6), worked 3-5 days per week (Figure 7) earned a monthly income of less than $500 TTD per month (71%) (Figure 8), paid rent (63%)



(Figure 9), belonged to households with 1 to 2 persons (70%) (Figure 10) and had a chronic illness (72%) (Figure 11).

Figure 5: Number of respondents sampled by sex

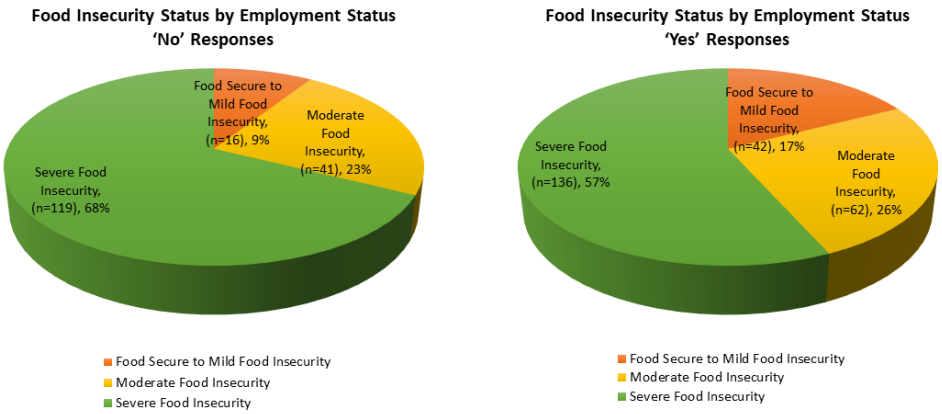


Figure 6: Number of respondents sampled by employment status

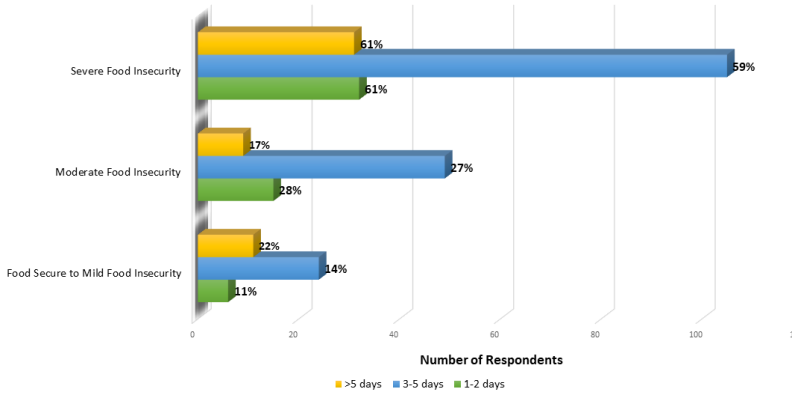


Figure 7: Food insecurity status by number of days worked per week

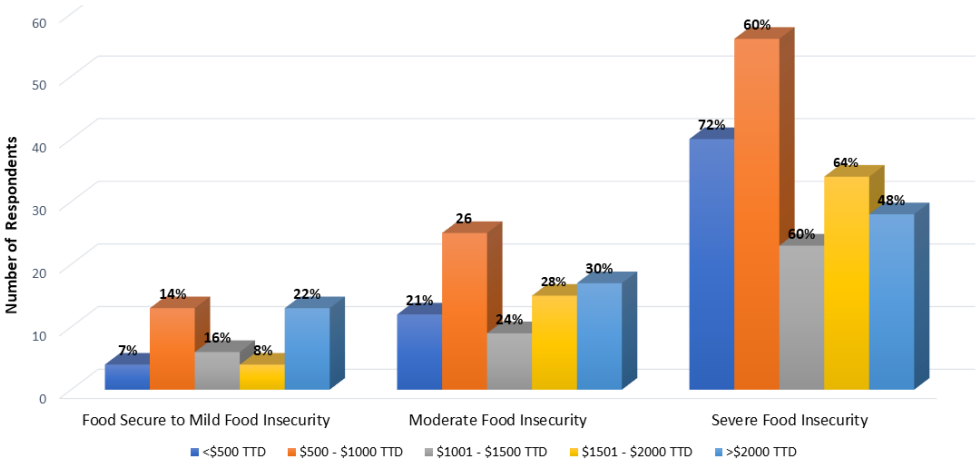


Figure 8: Food insecurity status by monthly income

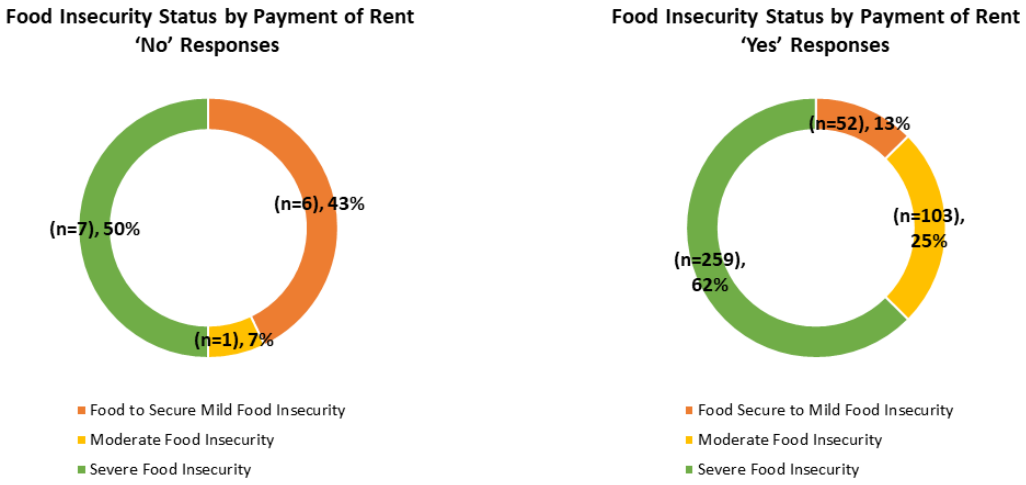


Figure 9: Food insecurity status by rent payment

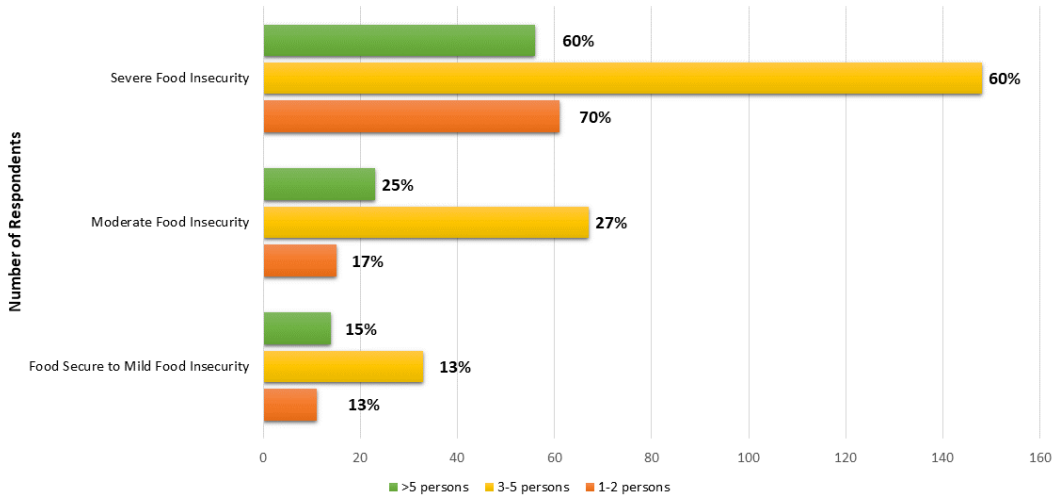


Figure 10: Food insecurity status by household size

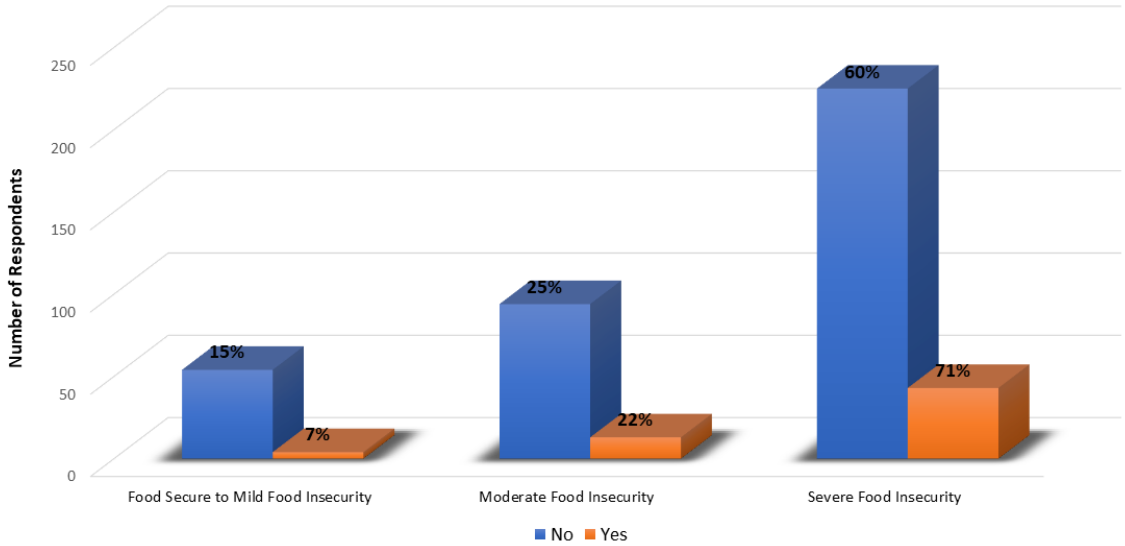


Figure 10: Food insecurity status by self-reported chronic disease status

Women appeared to be severely affected by food insecurity. Results show an almost doubling effect across the scale with 12% experiencing food secure to mild food insecurity, 24% moderate food insecurity and 63% severe food insecurity (Table 3).

Table 3: Proportion of women respondents showing the three categories of food insecurity

During the last 12 months weeks, was there a time when…**women**				Yes
Item 1	You were worried you would run out of food?	**Mild Domain FI**	**Worried**	**12% (n=35)**
Item 2	You were unable to eat healthy and nutritious food?		**Nutritious**	
Item 3	You ate only a few kinds of foods?		**Few kinds**	
Item 4	You had to skip a meal?	**Moderate Domain FI**	**Skip meal**	**24% (n=70)**
Item 5	You ate less than you thought you should?		**Ate less**	
Item 6	Your household ran out of food?		**Runout**	
Item 7	You were hungry but did not eat?	**Severe Domain FI**	**Hungry**	**63% (n =185)**
Item 8	You went without eating for a whole day?		**Whole day**	
				n=290

A significant association was observed between food insecurity status and whether or not an individual was employed (p-value = 0.025). There were greater proportions of employed individuals who were food secure to mildly food insecure (18%) compared to those unemployed (9%); and unemployed individuals who were severely food insecure (68%) compared to those who were employed (57%) (see Table 4).

Table 4. Proportion of food insecurity experience scale according to sociodemographic and economic factors

	Food Insecurity Experience Scale						**Total**	**p-value**
	Food Secure to Mild Food Insecurity		**Moderate Food Insecurity**		**Severe Food Insecurity**			
	n	%	n	%	n	%	n	
Overall	58	13.4	107	24.7	268	61.9	433	

Sex	Female	35	12.1	70	24.1	185	63.8	290	0.410
	Male	23	16.1	37	25.9	83	58.0	143	
Location	Port-of-Spain	6	15.8	10	26.3	22	57.9	38	0.581
	San Fernando	2	5.0	7	17.5	31	77.5	40	
	Arima	7	25.0	5	17.9	16	57.1	28	
	Chaguanas	9	12.5	21	29.2	42	58.3	72	
	Diego Martin	8	15.7	14	27.5	29	56.9	51	
	San Juan/Lavantille	5	17.2	4	13.8	20	69.0	29	
	Tunapuna/Piarco	13	15.5	21	25.0	50	59.5	84	
	Couva/Tabaquite/Talparo	2	8.3	8	33.3	14	58.3	24	
	Penal/Debe	2	5.7	11	31.4	22	62.9	35	
	Other	4	13.8	5	17.2	20	69.0	29	
Employment	No	16	9.1	41	23.3	119	67.6	176	0.025
	Yes	42	17.5	62	25.8	136	56.7	240	
Work days/week	1 – 2 days	6	11.3	15	28.3	32	60.4	53	0.417
	3 – 5 days	24	13.5	49	27.5	105	59.0	178	
	>5 days	11	21.6	9	17.6	31	60.8	51	
Monthly income	<$500 TTD	4	7.1	12	21.4	40	71.4	56	0.248
	$500 - $1000 TTD	13	13.8	25	26.6	56	59.6	94	
	$1001 - $1500 TTD	6	15.8	9	23.7	23	60.5	38	
	$1501 - $2000 TTD	4	7.5	15	28.3	34	64.2	53	
	>$2000 TTD	13	22.4	17	29.3	28	48.3	58	
Pays rent	No	6	42.9	1	7.1	7	50.0	14	0.004
	Yes	52	12.6	103	24.9	259	62.6	414	
Household size	1 – 2 persons	11	12.6	15	17.2	61	70.1	87	0.417
	3 – 5 persons	33	13.3	67	27.0	148	59.7	248	
	>5 persons	14	15.1	23	24.7	56	60.2	93	
Presence of chronic illness	No	54	14.5	94	25.2	225	60.3	373	0.158
	Yes	4	6.7	13	21.7	43	71.7	60	

Associations of sociodemographic characteristics with food insecurity

Associations of sociodemographic characteristics with food insecurity are summarized in Table 5. As expected there was an association with food insecurity and employment. Migrants who were employed had a lower chance of reporting moderate to severe food insecurity (OR 0.194; 95% CI 0.023-1.653) compared to those who were unemployed.

There was an association with location and food insecurity. It was found that individuals residing in the more rural areas such as San Fernando (OR 1.796; 95% CI 0.234-13.813), Couva/Tabaquite/Talparo (OR 1.165; 95% CI 0.092-14.827) and Penal/Debe (OR 1.968; 95% CI 0.163-23.780) had a higher chance of reporting moderate to severe food insecurity compared to those living in the city of Port-of-Spain, the reference category.

Surprisingly the association with number of days worked weekly increased the severity of food insecurity experienced. While it would be expected that increased days of work would result in increased income and reduced food insecurity, results showed that respondents who worked 3 to 5 days each week had a higher chance of reporting moderate to severe food insecurity (OR 1.791; 95% CI 0.520-6.170) compared to those who worked 1 to 2 days each week.

Also, respondents who earned a monthly income of $1501 - $2000 TTD had a higher chance of reporting moderate to severe food insecurity (OR 1.530; 95% CI 0.238-9.836) compared to those working for less than $500 TTD monthly. This was also the case for migrants paying rent (OR 8.896; 95% CI 0.317-249.777) compared to those who do not pay rent, individuals from a household with more than five persons (OR 1.266; 95% CI 0.298-5.377) compared to those from 1 to 2-person households, and migrants with a chronic illness (OR 2.788; 95% CI 0.600-12.962) compared to those without an illness (Table 4).

Rasch Model: Fit statistics and overall reliability of FIES

The Rasch model analysis was conducted on the eight items of the FIES scale to assess differences in the experiences of food security reported by female and male respondents. Table 6 shows that infit statistics for both females and males are within the broadly acceptable range of 0.7 – 1.3. This range is generally considered as adequate based on the assumption of equal discrimination. This means that the FIES measured the same underlying trait across both sexes. Table 6 also shows outfits. None of the outfit statistics were considered high (>2.0). Therefore, this suggests that responses recorded by males and female respondents align with predictions

Table 5. Associations of sociodemographic characteristics with food insecurity in terms of odds ratios (OR) and 95% confidence intervals (CI).

Variables		**Food Insecurity (Ref: Food Secure to Mild Food Insecurity)**	
		OR	**(95% CI)**
Gender	Female[3]		
	Male	0.912	(0.413-2.202)
Location	Port-of-Spain[3]		
	San Fernando	1.796	(0.234-13.813)
	Arima	0.218	(0.041-1.170)
	Chaguanas	0.937	(0.181-4.848)

[3] Reference category

	Diego Martin	0.650	(0.127-3.333)
	San Juan/Lavantille	0.658	(0.081-5.333)
	Tunapuna/Piarco	0.848	(0.186-3.864)
	Couva/Tabaquite/Talparo	1.165	(0.092-14.827)
	Penal/Debe	1.968	(0.163-23.780)
	Other	0.832	(0.083-8.317)
Employment	No[3]		
	Yes	0.194	(0.023-1.653)
Work days/week	1 – 2 days[3]		
	3 – 5 days	1.791	(0.520-6.170)
	>5 days	1.058	(0.257-4.362)
Monthly income	<$500 TTD[3]		
	$500 - $1000 TTD	0.696	(0.153-3.157)
	$1001 - $1500 TTD	0.581	(0.105-3.205)
	$1501 - $2000 TTD	1.530	(0.238-9.836)
	>$2000 TTD	0.345	(0.069-1.725)
Pays rent	No[3]		
	Yes	8.896	(0.317-249.777)
Household size	1 – 2 persons[3]		
	3 – 5 persons	0.844	(0.293-2.436)
	>5 persons	1.266	(0.298-5.377)
Presence of chronic illness	No[3]		
	Yes	2.788	(0.600-12.962)

from their responses to other questions. Furthermore, overall Rasch reliabilities, which describes the proportion of total variance accounted by the female and male models, were 0.653 and 0.672, respectively, and can be considered acceptable. Finally, assessment of the items' conditional independence only showed significant correlations of greater than 0.4 for item pairs: "worried" and "healthy" for females, "worried" and "healthy" and "worried" and "whole day" (which measures the most severe experience of respondents going without food for the whole day) for males (results are not shown). There were no other indications of problematic correlations.

Rasch Model: Ordering of FIES items

The item severity parameters ranged from -2.777 to 3.511 (Table 6). In the ordering of the FIES item severity parameters results indicated that only items 6, 7 and 8, those measuring more severe food insecurity, performed as expected. This means that the item, "whole day", measured the most severe food insecurity consistently and performed as expected as it was the

least likely to obtain a response of "yes" (Table 6). On the other hand, the predicted order of item difficulty for items 1 through to 5 on the FIES showed difference in ordering from their actual question order. This result indicates disordering of the items. This is observed in Table 6. For items measuring less severe food insecurity, although there were inconsistencies in their severity parameters, their proportions of affirmative responses were still generally lower than those of items measuring more severe food insecurity (Table 6). Approximately 45% of females and 48% of males reported going a whole day without food, whereas around 84% of females and 72% of males reported worrying they would not have enough to eat.

Rasch Model: Prevalence of severe food insecurity

This step in the analysis explores whether items worked similarly among men and women. FAO recommends a Wald-type test to check whether item severities are the same across genders. In the case of significant discrepancies in item severity between men and women, this may imply the presence of gender-based differences in how they assign different levels of severity to a given food security experience. Figure 11 shows the item severity of males plotted against the ones of females and (see Table 7) Wald test p-values. In this case, the null hypothesis implies the equality of item parameters in the two groups. It can be observed that only one item (worried) shows statistically meaningful difference between males and females (p-value = 0.006). This difference is small enough to not introduce substantial bias in the prevalence comparison. Overall, 88% of females were classified as moderately to severely food insecure, and 85% of males respectively.

Table 6. Proportion of affirmative responses to FIES items, item severity parameters and item fit statistics, grouped by sex

Female				
Item	**Affirmative responses (%)**	**Severity ± SE**	**Infit**	**Outfit**
Worried	83.8	-0.227 ± 0.225	0.954	1.613
Healthy	84.1	-0.271 ± 0.226	0.889	1.065
Few food	95.9	-2.569 ± 0.407	1.061	0.551
Skipped	81.4	0.064 ± 0.219	0.943	0.624
Ate less	91.7	-1.414 ± 0.278	0.932	1.453
Runout	78.3	0.415 ± 0.213	1.179	0.981
Hungry	77.6	0.491 ± 0.213	0.984	0.801
Whole day	44.8	3.511 ± 0.286	1.018	0.60
Male				

Item	Affirmative responses (%)	Severity ± SE	Infit	Outfit
Worried	72.0	0.784 ± 0.287	1.036	1.042
Healthy	75.5	0.429 ± 0.296	0.872	0.655
Few food	93.7	-2.777 ± 0.626	1.137	0.537
Skipped	82.5	-0.383 ± 0.326	1.221	1.248
Ate less	90.2	-1.652 ± 0.431	0.930	1.987
Runout	74.8	0.502 ± 0.294	0.999	0.803
Hungry	76.9	0.278 ± 0.301	0.707	0.505
Whole day	48.3	2.818 ± 0.320	1.134	1.246

Table 7. Wald test applied on item parameters for the sex disaggregation

Items	Wald test p-values
WORRIED	0.006
HEALTHY	0.061
FEW FOOD	0.781
SKIPPED	0.255
ATE LESS	0.643
RUNOUT	0.810
HUNGRY	0.564
WHOLE DAY	0.107

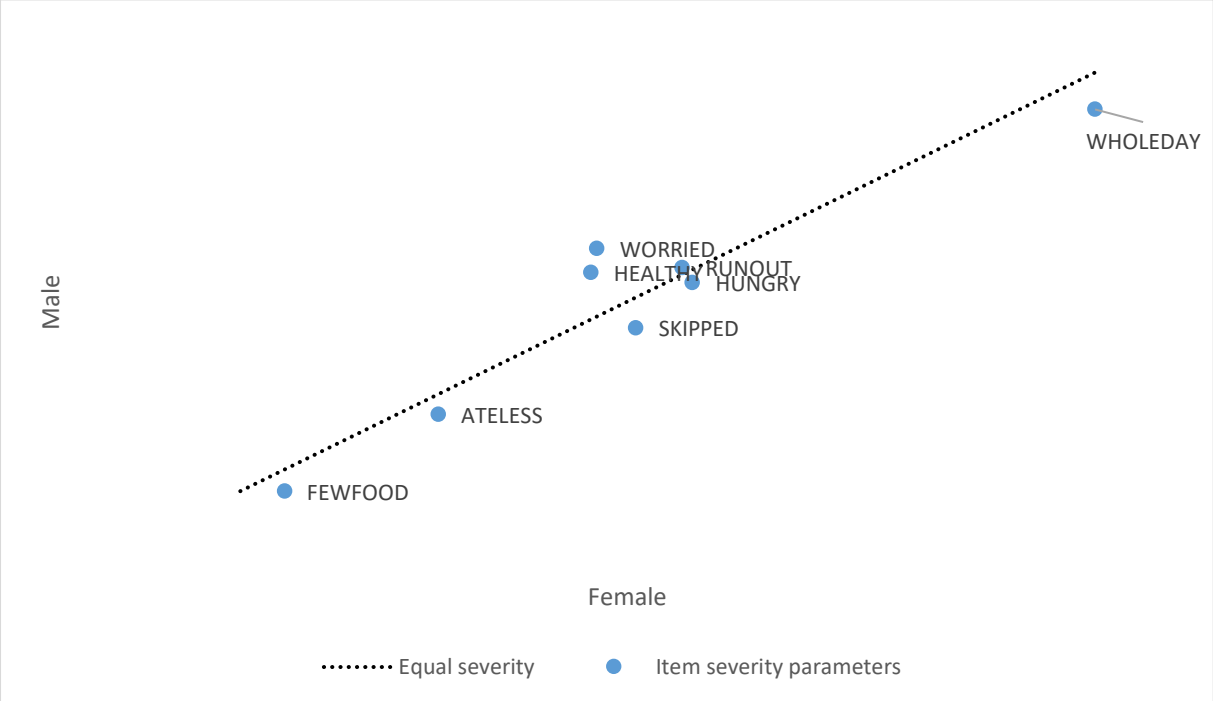


Figure 11. Item severity differentiated by males and females

DISCUSSION

The high prevalence of severe food insecurity found in this convenience sample of Venezuelan migrants confirms findings by other studies that have found high food insecurity among asylum seekers resettled in developed countries (Zodhiates and Sellen, 2007; Southcombe, 2008; Hadley and Sellen, 2006). Overall, approximately 62% of all respondents reported experiences of severe food insecurity which included being hungry and not eating and not eating for a whole day. While more-in-depth research is needed to understand the reasons for these findings, varied factors have been given to explain why so many migrants are hungry and not eating, and going a whole day without food. These factors include the following: economic and financial constraints involved with migration to a new country and limited access to monies to purchase foods, knowledge gaps by migrants about new foods versus familiar foods that are easily available in the new setting, difficulties with shopping for fresh foods and food deserts found in urban, low-income housing areas, challenges with language that limit ease of communication, as well as problems complying with various religious and cultural food rules (Zodhiates and Sellen, 2007; Southcombe, 2008; Terragni et al., 2014.

While there may be other factors might be at play, findings suggest that financial constraints are the primary factor explaining increased food insecurity. The relationship between income and food insecurity did not work as expected since it was found that respondents who worked 3 to 5 days each week had a higher chance of reporting moderate to severe food insecurity (OR 1.791; 95% CI 0.520-6.170) compared to those who worked 1 to 2 days each week. This counter-intuitive association may be explained by relatively low monthly income levels for those jobs where migrants are employed for extended periods, compared to higher level daily pay rates for migrants working only 1 or 2 days per week. Additionally, the opposite relationship was seen between income levels and food insecurity.

Respondents who earned a monthly income of $1501 - $2000 TTD had a higher chance of reporting moderate to severe food insecurity (OR 1.530; 95% CI 0.238-9.836) compared to those working for less than $500 TTD monthly. This was also the case for migrants paying rent (OR 8.896; 95% CI 0.317-249.777) compared to those who do not pay rent. While the survey did not ask questions about household income and dynamics or who paid rent in the

household, if not the respondent, the household size (3-5 persons) might suggest that there may be social dynamics of households that are not well understood. It might be that those persons with higher income are tasked with paying rent while those receiving less income living under the same roof with their lesser incomes were able to cover their food needs unlike persons earning more but responsible for paying rent. Further research is needed to better understand the social relationships and obligations between working adults in the household vs. non-working members and caring of children. The coping strategy reported by respondents of going the whole day without food and being hungry and not eating have been noted in other studies as survival strategies of migrants because they are trying to use as little money as possible. (see Koc and Welsh, 2001).

Consistent with other studies, severe food insecurity was found to be more prevalent among women (64%). The sample showed greater participation by female respondents 67% (n=290) compared to 33% (n=143) male respondents likely because women are more frequent in accessing services provided by partnering NGOs such as language and translation, family planning, child care, and empowerment programmes. Higher food insecurity by women, is an issue not only for migrant women but has been noted as linked to structural gender inequalities in Latin America and the Caribbean. A report from the Gender Equality Observatory for Latin America and Caribbean (ECLAC, 2015) identified that the wage gap is significant in the region. Women earned 87 cents on each USD earned by men in 2013. While this research did not include such a question on household heads, this wage gap means women-headed households (migrant and non-migrant) are more economically vulnerable. Despite this wage gap, employment was found to be a protective factor. A significant association was observed between food insecurity status and whether or not an individual was employed (p-value = 0.025). There were greater proportions of employed individuals who were food secure to mildly food insecure (18%) compared to those unemployed (9%); and unemployed individuals who were severely food insecure (68%) compared to those who were employed (57%).

Overall, other studies have found that because of their role as care givers women often deprive themselves to protect and buffer their children from food insecurity and for these reasons, women-headed households may also experience social vulnerability (Bocquier et al., 2015; Carter et al., 2010). Further, in economic downturn and during times of migration and social upheaval these household may become dependent on the income of men, and face increased social vulnerability at these times.

The situation with migrant women is even more tenuous because of the impermanence of their legal status, psychological issues associated with the situation, limited social and community support which increases their dependence on the income of a few household members. A meta-analysis that looked at studies using experienced-based scales to assess household food insecurity showed that women respondents were 40% more likely to experience food insecurity than men (Jung et al., 2016). This study showed that household food insecurity was 75% higher when women were the head of the household, in comparison to male-headed households (Jung et al., 2016). Further research should be conducted and include questions on household heads to better understand the connection between gender and household responsibilities especially child care.

There was an association with location and food insecurity. It was found that respondents residing in the more rural areas such as San Fernando and Penal/Debe had a higher chance of reporting moderate to severe food insecurity compared to those living in the city of Port-of-Spain. This finding is in keeping with the low incomes associated with agricultural labour because of the low skills involved and the potential for losses due to seasonality when crops are rainfed. Sinclair et al. (2017) showed that in the Global South, women had higher likelihood of being food insecure and that women living in rural areas were the most vulnerable of all locations.

While the ordering of responses by respondents did not perfectly align with the common understanding of food insecurity as managed process that goes through definitive stages, where change in diet quality is preceded, by worry and followed by reductions in quantity and then ultimately severe hunger (Radimer et al., 1992), questions 6 – 8, which measure the more severe food insecurity, performed as expected. Question 8 (item, "wholeday", which measures the item question "You went without eating for a whole day?") measured the most severe food insecurity consistently and performed as expected as it was the least likely to obtain a response of "yes". This is consistent with other studies that have found the most severe items have been generally universally accepted. This has resulted in FIES item severity parameters items 6 – 8 being proposed for use as global anchors (Cafiero et al., 2018).

There were a few exceptions where the questions in their theoretical sequence did not follow

the expected food security continuum based on responses. The predicted order of item difficulty for items 1 – 5 was different from their actual order of difficulty, which indicated disordering of the items. Results from a pilot study in Malawi that utilized the FIES may help explain this finding where the severity of item *nutritious (i2)* was found within the moderate domain instead of mild domain of food insecurity (Brunelli and Viviani, 2014). Qualitative research conducted revealed that question 2 which asks the individual whether they are unable to eat healthy and nutritious food was misunderstood as "food that gives energy" related to farming activities. Additionally, due to linguistic differences involved in the local translation of FIES questions from English to Spanish and difference in food cultures (Nord et al., 2016).

Policy implications

These findings provide a rapid assessment that can be used to galvanize international, national and community-level stakeholders to devise responses to assist migrants experiencing challenges related to food security. Second, measures like the FIES can help develop/oversee in-country programs especially in developing countries where resources are scarce and efficient use of these resources is essential. Last, rapid assessments from measures like FIES and other experience-based food security measures can help to identify locations and characteristics of migrants that are at greatest risk to ensure that these vulnerable groups are identified by the PADF and implementing partner NGOs for better targeting of planned interventions. In this case this would be migrants residing outside of urban areas, those who are employed monthly and women.

The high prevalence of food insecurity (62%) in our study population may be explained by the fact that in addition to compromising on the quantity of food due to economic constraints, quality and acceptability may also be highly compromised in our study group due to social and cultural barriers. The findings of this research prompt further investigation into understanding the nutritional, social and cultural barriers that exist among this population. Design activities specifically targeted to the youth and children whose parents have migrated or are at risk of migrating, in order to strengthen their resilience to crime and violence, particularly recruitment by gangs or reliance on illicit activities for survival or to reduce pressure to migrate.

CONCLUSION

This study demonstrated usefulness of the recently developed experience-based scale FIES as part of a rapid online assessment of individual food security situation of migrants in Trinidad and Tobago. This study provides one of the few examples in the Caribbean region of a working example on the use of FIES as an experience-based food security measures to a rapid assessment of a marginalized group in a timely manner. An innovative tool, FIES measures the understudied access dimension of food security. It is the first study in Trinidad and Tobago to document the food security status of Venezuelan migrants and their families

Limitations

While the survey contributes to a better overview of impacts, the data is not representative, and the use of a web-based questionnaire limits inputs from migrants who were located in the more rural areas with minimal access to service providers, NGOs and referral agencies. Additionally, there would have been limited input from migrants those without access to a mobile phone or an internet connection.

The survey did not ask include a question to determine when the migrant had arrived. As a result the " 12-month" reference period used with the FIES questions might include the period of time when there were in Venezuela.

The survey did not explore details on the dietary and food purchasing habits, and housing status of the migrants, thus further research is needed to address their food security status.

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