

Factors Affecting Migrants' Food Security in Tasmania: A Mixed Methods Study

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Abstract Background: For migrants experiencing a new cultural environment access to available and affordable food is vital. Factors such as geographical isolation, income and language influence migrants' experiences of and views about food security. **Methods:** A mixed methods study (questionnaires and follow-up interviews) examined the factors affecting the food security of migrants living in a regional area of Australia. The data was analysed using quantitative and qualitative methods. **Results/discussions:** The cultural background of the migrant is an important influence on food security. The study found statistically significant associations between the migrants' region of origin and their views on aspects of food security. Seven factors were identified that influenced migrants' food security: (1) cultural background; (2) language; (3) educational background; (4) geographical isolation; (5) income; (6) length of stay in Tasmania; and (7) household size. **Conclusion:** Factors affecting migrants' food security are strongly shaped by the socio-demographic background of the migrants.

Keywords: food security, migrants, mixed methods, regional

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1. Introduction

People from culturally and linguistically diverse (CALD) groups (including migrants) are categorised as vulnerable in terms of their food security. Many studies have reported that migrants have a higher risk of food insecurity than non-migrants [8,10,12]. It is believed that there are various factors that influence the food security of migrants, these include: language barriers, length of stay in the host country, socioeconomic status, geographical location and cultural factors [1,3,6,11]. The first challenges for non-English speakers when settling in an English speaking country are language and communication [11]. Language barriers can inhibit the access of migrants to food related information and services in the community, leading to a decrease in their food security. Other studies report on the relationship between food security for migrants and the length of time in the host country; the longer that migrants reside in the host country the greater their food security [3]. After a period of time in the host country, migrants exposure to the new food cultures which lead to an improvement in their English language proficiency and knowledge about food and skills in meal preparation, contribute to better food accessibility and security.

Income is a "detriment". Low income or lacks of economic resources negatively influence food security [1]. Food affordability and accessibility are affected when the power to purchase food is lacking. This is a main concern for low-income earners or those who are unemployed.

Geographical isolation has also been recognised as one of the factors affecting food accessibility [5]. People who live in regional areas or who are some distance from food shops may experience problems in accessing food. Cultural identity which is closely related to food practices can also be a barrier for some CALD group in food adaptation [6]. For example, South Asian people often use many different types of cooking oil when compared to Westerners and these oils may not be readily available in the host country.

This study was designed to identify and explore the factors that affect migrants' food security in a regional area of Australia, Tasmania.

2. Methods

The study was part of a wider research project exploring the experiences and views of migrants living in Tasmania [14]. A mixed methods approach was employed using a questionnaire and semi-structured interviews to collect quantitative and qualitative data. Ethics approval for this study was obtained from the University of Tasmania's Social Sciences Ethics Committee (H0012622).

2.1. Study Population and Settings

Tasmania is an island state with a population of 495,354 located off the south-east coast of mainland Australia [2]. 16.4% of the population of Tasmania were born overseas. The migrant population of Tasmania is concentrated in the four main cities: Hobart (the capital

city), Launceston (the largest regional centre), and two smaller centres of Devonport and Burnie. The selection criteria for inclusion in the study were: born overseas; live in Tasmania; aged 18 years or older; and have a reasonable understanding of English.

2.2. Quantitative Data Collection and Analysis

Hard copies of the questionnaire were distributed to 600 migrants in Tasmania with the assistance of the Hobart and Launceston Migrant Resource Centres, and various cultural associations (e.g., the Filipino Association of Tasmania, Chinese Community Association of Tasmania, and the Indian Cultural Society). One hundred nineteen hard copy questionnaires were returned (19.8% response rate). The questionnaire was also made available in an online format using Survey Monkey® and participants were recruited via social networking websites such as Facebook or Twitter. 182 online questionnaires were completed using this method making a total of 301 completed questionnaires. The questionnaire data were analysed using SPSS v. 20. Descriptive statistics such as frequencies and percentages were employed and inferential non-parametric tests such as Chi-square (X^2) tests and ordinal logistic regressions were used to determine the associations between social-demographic factors (such as gender, length of stay and region of origin) and migrants' experiences with or views of food security (dependent variables). Only statistically significant results ($p \leq 0.05$) are reported.

2.3. Qualitative Data Collection and Analysis

Semi-structured interviews were utilised to collect the insights from and views of migrants. Thirty-three participants were recruited via convenience and snowball sampling. The qualitative data were analysed using thematic analysis with the assistance of NVivo 10 software.

3. Results

3.1. Characteristics of the Participants

The demographic characteristics of the 301 questionnaire participants are shown in Table I. There were 78.8% of the participants from Asia; while, the remainder were from Europe, Africa, and America. Over half (66.1%) of the participants spoke a language other than English at home, whereas the remainder spoke English at home. There were 72.8% of the migrants were married; 22.3% were single; 2.7% were widowed; and 2.3% were divorced or separated. Over half (63.5%) of the participants were employed, while 36.5% were unemployed.

Thirty-three interviewees participated in the semi-structured interviews. The majority (90.9%) of the interviewees were from Asia. Almost 70% of the participants were living in Launceston and 42.4% had lived in Tasmania for more than three years. Levels of education were high, with 75% of the participants having a university degree. Only 30.3% of the participants spoke English at home, the majority speaking other languages

including Mandarin, Nepali, Cantonese, Vietnamese, Hindi, Bahasa Indonesia and Korean.

Table 1. Demographic of questionnaire participants

Characteristics (N = 301)	n (%)
Gender	
Male	122(40.5)
Female	179(59.5)
Age group (years)	
18-24	46(15.3)
25-34	78(26.0)
35-44	70(23.3)
45-54	47(15.6)
55-64	37(12.3)
65 and above	23(7.6)
English language proficiency	
Excellent	94(31.2)
Good	133(44.2)
Fine	74(24.6)
Residential areas in Tasmania	
Launceston (Northern areas)	162(53.8)
Hobart (Southern areas)	112(37.2)
Devonport (North West areas)	15(5.0)
Burnie (North West areas)	7(2.3)
Others	5(1.6)
Length of stay in Tasmania	
Less than 1 year	43(14.3)
1-2years	35(11.6)
Over 2-3 years	38(12.6)
Over 3 years	185(61.5)
Educational level	
No formal education	2(0.7)
Completed primary education	10(3.3)
Completed secondary school	44(14.6)
Some training (Vocational Education)	49(16.3)
University qualification	196(65.1)

3.2. Quantitative Findings

3.2.1. Views on Factors that Influence Food Security in Tasmania

The participants were asked to rate the importance of six factors that were likely to influence food security in Tasmania (Figure 1). All the six factors were considered important aspects of food security by over half of the participants, with food nutrition rated as the most important aspect. The accessibility of public transport was seen as the least important of the six factors.

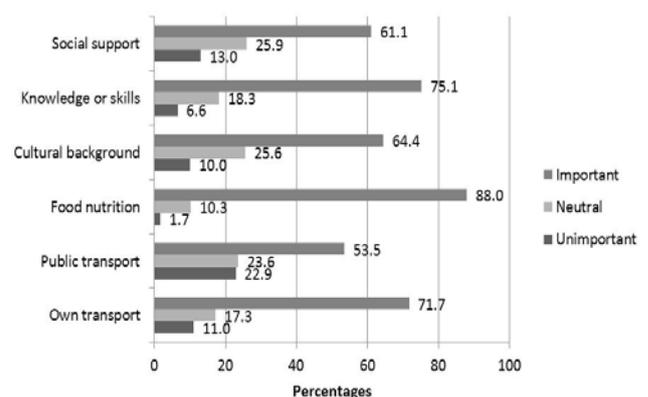


Figure 1. The importance of factors that influence food security in Tasmania (N=301)

3.2.2. Associations between Demographics and Views on Food Security

3.2.2.1. Associations between Region of Origin and View on Increasing Food Choices in Local Food Outlets

A participant's region of origin was significantly associated with the view that there needed to be an increase in food choices in local food outlets (Table 2). Those participants from Asia were 2.581 times more likely to agree that there needed to be an increase in the food choices in local food outlets than those from other regions.

Table 2. Ordinal logistic regression of region of origin and view on increasing food choices in local food outlets

Region of origin	OR	95% CI	Wald χ^2	df	p-value
Non-Asia	Reference				
Asia	2.581	1.427 to 4.668	9.838	1	0.002

3.2.2.2. Associations between Region of Origin and View on Increasing Traditional Food Choices for People from Different Countries/Culture

A migrant's region of origin was shown to have a statistically significant effect on their view about increasing traditional food choices for people from different countries/culture. Asian participants were shown to be 2.832 times more likely to agree with an increase in the traditional food choices than participants from other regions (Table 3).

Table 3. Ordinal logistic regression of region of origin and view on increasing traditional food choices for people from different countries/culture

Region of origin	OR	95% CI	Wald χ^2	df	p-value
Non-Asia	Reference				
Asia	2.832	1.619 to 4.953	13.327	1	0.000

3.2.2.3. Associations between Region of Origin and the Importance of Cultural Background

A migrant's region of origin was significantly associated with their view on the importance of cultural background as an influence on their food security (Table 4). Asian migrants had the view that cultural background was important as an impact on food security than migrants from other regions.

Table 4. Ordinal logistic regression of region of origin and the importance of cultural background

Region of origin	OR	95% CI	Wald χ^2	df	p-value
Non-Asia	Reference				
Asia	1.867	1.091 to 3.195	5.194	1	0.023

3.3. Qualitative Findings

Seven factors affecting migrants' food security were identified in the interview data: cultural background, language, educational background, geographical isolation, income, length of stay in Tasmania and household size.

3.3.1. Cultural Background

Cultural background has an impact on migrants' food security. Differences in cultural background result in

differences in the way food is handled and may adversely impact health if the food is not handled correctly. For example, a migrant from Indonesia changed the way she dealt with leftover food. In the past, she used to 'put like the cooked meat from morning to night, didn't put it in the fridge' (Migrant 5). She learned that the food may become rotten if it was not handled and stored correctly.

3.3.2. Language

English language is often a barrier for non-English speaking migrants when they enter an English speaking country like Australia. Interestingly, most of the interview participants reported they had no problem in communicating and understanding English. 'It is very important to know English because people do not understand your language. Sometimes when you do not know English, you have to keep quiet when people are talking' (Migrant 4). Some found understanding the Australian accent challenging.

Although I know English before I came, but the (Australia) accent is different and difficult to understand. (Migrant 17)

3.3.3. Educational Background

In general, the higher the education attainment of migrants, the better their knowledge about food and nutrition. For example, one participant with a medical background had a broad knowledge of healthy eating that influenced his behaviour to choose nutritious food.

When study in college or university, they will learn more about healthy food choices, other than those who do not. Like, I study nursing. In the university, my lecturer told me not to eat too much white chocolate because it contains high GI and fats. If you want to eat chocolate, choose dark chocolate. (Migrant 30)

3.3.4. Geographical Isolation

The distance between the migrants' residence and the main food shops determined the difficulty that they experienced when accessing food. In this study, access to food shops was not a problem for the majority of participants. 'It [supermarket] is near. I live next to Coles. Very close to me. I can go there by walking' (Migrant 16). They usually walked if it was a short distance and drove when there was a 'big' shopping.

3.3.5. Income

Income can be a factor influencing migrants' food choices and food security. Some participants in this study who were unemployed or depended on welfare supports faced greater challenges when budgeting and purchasing food. A well-planned food budget was needed to ensure all family members are food secure.

I have part time job now, not a full time one. So, it is enough for me to feed my family temporary. It is enough, but not more, just enough (Migrant 19).

3.3.6. Length of Stay in Tasmania

Migrants' adaptation to the new environment is influenced by the duration of stay in the host country. The longer the time of stay in Tasmania, the greater the food adaptation. 'I have been here since I was 17 years old. I used to their culture or styles... I think the longer you stay in Tasmania, safer your food security is, especially when

you are used to the culture here' (Migrant 22). Thus, the longer the stay in the host country, the better the food security is. It was common for migrants to experience some hardships at the beginning of their time in Tasmania. Due to the differences in food habits, some experienced difficulties in changing their diet to accommodate the specific Tasmania food culture. One participant experienced physical difficulties in diet transition within the first five months in Tasmania. 'I craved for rice... First few weeks, I had troubles with my tummy because the changes of diet. Because previously in Philippine, I have rice for three meals. However, here only have potatoes, and breads, so I not used to' (Migrant 24).

3.3.7. Household Size

Household size can be an element that influenced the food security level. This applied more to participants who were married and had large families; their living expenses and budget were required to be well-managed, especially on food. There were more concerns about the cost of food to feed family members.

There are six of us in the family. So, we have to find something that feed everyone... Such as two dollars for a can, I try to feed six people in bunch... We have limited budget, so we have to be very careful not to go over the budget. (Migrant 18)

4. Discussion

Seven factors were identified that influenced the migrants' lived experiences and views on food security in Tasmania. Over half (64.4%) of the surveyed migrants viewed cultural background as an important factor that influenced food security in Tasmania. Furthermore, Asian migrants had more explicit views on the importance of cultural background in terms of food security than migrants from other regions. It was notable that Asian migrants were more likely to desire an increase in the food choices, particularly traditional food choices. This may be due to the differences between Asian cultures and Western culture. Differences in cultural background have impacts on food preparation as indicated in interview data where an Indonesian interviewee handled the food differently from Australian way of food preparation.

Language has been recognised as one of the barriers in achieving food security among non-English speaking migrants [11]. Although the majority of migrants participating in this study spoke languages other than English at home, but their English proficiency was high. As a result, they had not encountered problems in communicating in English apart from challenges understanding the Australian accent. They also understood the importance of English proficiency for a better understanding on food information including reading food labels.

Migrants' educational background and prior knowledge about food and nutrition can enable them to obtain a better food and diet [9]. As indicated by the interviewees, a higher education attainment contributed to better knowledge of food and nutrition. Quantitative data also showed the importance of food nutrition, knowledge and skills in affecting food security of migrants in Tasmania.

Geographical isolation can be an issue for people living in remote areas and without transportation that would allow them to access food [5]. Having their own transport (71.7%) and access to public transport (53.5%) significantly influence migrants' food security in Tasmania. Despite the fact that Tasmania is a regional state, the majority of participants did not face any problems in accessing food. The short distances between their residences and the food shops facilitated the participants in food purchasing. This may be a result of the concentration of migrants in the major urban centres of Tasmania.

Money is required to purchase food. As reported in the interview data, better food choices can be a challenge for migrants who were unemployed and depended on welfare supports from the government [1]. Many low-income earners tended to reduce their food expenses to make sure they fulfilled their family members' needs.

Migrants who had longer stays in the host country had better information about food [7]. As indicated by an interviewee, the longer the time of stay in Tasmania, the greater the food adaptation which contributed to better food security although they had experienced difficulties in diet transition at the beginning of their time in Tasmania.

The last barrier to food security is household size which impacts the food security level, particularly for larger family size where higher living expenses are needed [4]. Food cost is a matter of concern when feeding a family of six people, as stated by an interviewee.

The data from this study provides a comprehensive view on the factors that affect their food security. The diverse cultural backgrounds and the differences in food preparation methods and food habits that migrants bring with them may be a disadvantaged to them as they try to adapt to the new cultural environment in their host country and may be needed to take into consideration in order to provide better food security for migrants.

5. Limitations

The participants came from only four areas in Tasmania, including Launceston, Hobart, Burnie and Devonport; therefore the study may not have included all the experiences and views of migrants in Tasmania in relation to food security. Yet, a high percentage of migrants are found to reside in Hobart and Launceston. So, it can be said the distribution is relatively representative.

6. Conclusion

This study examines the factors or barriers affecting migrants' food security and identifies seven factors: cultural background, language, geographical isolation, educational background, income, household size, and length of stay in the host country. Each factor can be an issue in inhibiting migrants to achieve food security which will indirectly affect their health and well-being in the host country. The insights gained from this study can be useful to inform migrant agencies and associations, and various governmental and non-governmental organisations regarding the importance of addressing and improving migrants' food security. Specifically in Tasmania, the

findings reinforce the evidence base for the implementation of the *Food for all Tasmanian: Food Security Strategy* [10] where accessibility and affordability are highlighted.

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