

NOURISH ME

A MISSION TOWARDS NOURISHING PEOPLE WITH HEALTHY
AND NUTRITIOUS FOOD

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Abstract

This research aims to fill the knowledge gap with regards to food insecurity with a specific focus on food bank. Food banks are in a prime position to support low income communities with rescued surplus food. More focus should be placed on how their clients are helping themselves eating healthy meals utilising food bank supplies. The research takes an emancipatory approach to better understand and identify the knowledge gaps in the area of food insecurity and healthy meal preparation among low income community and new immigrants who recently migrated to Canada. This study examines research participants' coping strategies they used in their households and experiences with local Food banks that they visit on regular basis. The foci of the study are to determine what factors contribute to lack of food in household and to explain the ways in which the participants can deal with healthy eating minimising the food waste. The study also identifies immigrants' perceptions of how they feel the food bank organisation can improve in order to better facilitate the immigrants' induction into the ethnic food cultural milieu. The mixed method study revealed participants' experience, challenges dealing with food insecurity and their envision on improved food bank services. The participants for this study were chosen through a survey within people who regularly visit Citadel Salvation Food Bank in Scarborough. A total of 10 participants were chosen to participate in interview and co-design session. Each of the participants selected has been identified as having some degree of food insecurity after migrating to Canada. The most significant discovery of this research was that participants' limited knowledge in Western food supplies and the lack of support tool from the food bank to help participants in this matter.

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Chapter 1

Food Waste and Hunger

Food waste is a global problem that occurs at all stages of the supply chain, from the farm to the consumer and post-consumer. Food is produced in a highly industrialized manner for mass population which causes significant environmental impact. Food wastage produces greenhouse gases emitted from the dumpsites at farms and industrial processing facilities. There is also considerable wastage at all stages of the food supply and use. What is more, consumers behaviour that snubs oddly shaped fresh fruits and vegetables also add to food wastage. It is estimated approximately 2.2 million tonnes of domestic household foods are wasted every day (Brown et al., 2014, p. 364). As a result, a certain group of people cannot access the adequate amount of fresh as well as nutritious food.

Fresh food products typically are perishable, they have limited shelf lives, have health risks if they are not stored or refrigerated properly. Although the establishment of the "Use by and Best before dates" information labels were created to address these risks, these same labels have been one of the significant causes of food waste. The confusion between "use by" and "best before" designations is present in both people's homes and supermarkets. 'Use by date' is quite important and is regulated by food safety and hygiene reasons. However, there is no regulations for 'Best before' labelled food items, that each food manufacturer deciding how long the food will stay exactly the same from retail point of view.

In Canada, the labelling on the food product is related to the durable life of a product which is defined as "the anticipated time that an unopened food product, when store under appropriate conditions, will retain its freshness, taste, nutritional value or any other qualities the manufacturer claims." A

'best-before' date shows when the shelf life of a product ends. After that, the product can still be safe to eat, but a 'best-before' date does not guarantee product safety. According to Food and Drug regulation "use by date" may replace the "best before" in pre-packaged fresh yeast only (Jackson, 2015, pp. 1-3).

An expiration date must be shown on formulated liquid diets, foods represented for use in a very low-energy diet, meal replacements (a formulated food that, by itself, can replace one or more daily meals), nutritional supplements and human milk substitutes (infant formula). In Canada, a "use by" date has limited applications and behaves similarly to "best before" dates. [inspection.gc.ca]. The label 'best before' simply refers to the quality. The consumer may not enjoy the product after the best before date has passed which may have depreciated slightly in quality but it is still safe to eat depending on the food. This whole idea of best by or use by labelling can easily confuse consumers. The truth of the matter is that unless a food is contaminated most spoiled foods, while they may not taste very good are not particularly hazardous to health. For years, the shoppers have been trained to mind the variety of expiration dates on their food products.

Majority of consumers misinterpret the date labels and throw away the prematurely that contributes to food waste. Food banks rescue surplus food including food that are close to expiry dates and distribute to their members; consumer education plays a significant role when it comes to reducing food waste, especially around use-by and best-before dates. Food banks also can help their members educating more on food labelling to reduce food waste at household level.

At the household level, lack of food is often and unfairly oversimplified as poor income management, either in terms of acquiring income or in budgeting resources. Food waste contributes to poverty, the persistence of social inequity and environmental degradation.

According to the Household Food Security Survey Module on the Canadian Community Health Survey 1 in 8 households in Canada suffer from food insecurity equating to over 4 million individuals, including 1.15 million children who are residing in household, struggling to obtain food for regular daily consumption (utoronto.ca, 2018). According to their survey module, food insecurity amongst low income community in Canada results can be segregated into three categories: marginal food insecurity, moderate food insecurity, and severe food insecurity. The marginal food insecurity includes worrying about running out of food as well as limited food selection as a result of lack of money for purchasing food items. Moderate food insecurity refers to requiring compromises in the quality as well as quantity of food as a result of lack of money for food consumption. Severe food insecurity includes missed meals, reduction in food intake and in most extreme cases, surviving without consuming any food materials.

Canadian Feed The Children is an international development organisation and relief charity that focuses on helping children in Canada, Bolivia, Ethiopia, Ghana and Uganda overcome poverty. Their report indicates- Poverty, geography and environment as the three main reasons why someone both in Canada and around the world could experience food insecurity. The household food insecurity is strongly linked to poverty (Canadian feed the children, n.d.). Seventy percent of the households who are found to rely on social assistance, suffers from food insecurity, although it also affects a significant portion of the Canadian workforce. 60 percent of the food insecure households are found to rely on

the wages as their main sources of income. Families working low wage jobs are found are be unable purchase sufficient high-quality food items. Food insecurity is more likely to be relevant in households where the chief sources of household income includes social assistance and employment insurance (Huisken, Orr, S.K., Tarasuk, 2016). Lack of appropriate social assistance results in lack of ability to buy good quality food items. It should be stated that the highest rate of food insecurity has been found amongst the indigenous population.

Food insecurity disproportionately affects the immigrants in Canada (Tarraf, Sanou and Giroux, 2017). Considering the fact that they most often initially occupy the lower socio-economic spectrum of the society, the immigrants are one of the main sufferers of food insecurity in the nation.

This research study focuses on food bank users who have diverse ethnic backgrounds and recently migrated to Canada and users who are not being served culturally appropriate food by the food banks. The study will also suggest some possible measures for the users and how to utilise them. All the information has been collected from Second Harvest food rescue organization Ontario and Citadel Salvation Army Food Bank, Scarborough, Ontario.

Food charities such as the Citadel Salvation Army Food Bank and other food banks play a growing role in supporting immigrant and low-income communities. Food banks directly serve to clients with donated surplus food, who are the most disadvantaged community members, including migrants, people experiencing homelessness and the working poor.

Citadel Food Bank serves a wide range of ethnic group of people, from single mother to family of five or more. The food bank serves mainly canned food items which are not easily identified by the users who are not entirely familiar with certain items.

Cultural food plays an important role for the migrant community. Specifically, for immigrants and their children, food can be a way to remain connected to their sending or ancestral culture, or to assert an acculturated identity (Valliantos & Raine, 2008; Guendelman, Cheryan, and Monin, 2011). However, lack of knowledge in foreign food culture in a new country has major impacts immigrants' lives and this is an area of concern for immigrants, who are starting in a new country and new circumstances (Koç and Welsh, 2002):

'For immigrants who go through a dramatic cultural and spatial transition, not only the familiarity of cultural experiences and consumption patterns, but also rights, entitlements and quality of life make important points of comparison between past and present, as these will have immediate effects on health and well-being of immigrants and their families (Williamson, 1998). When we talk about food and foodways, we need to examine, not only familiarity, but also accessibility as an issue of identity formation. The feeling of belonging or identification with the host society cannot be achieved without full membership or integration. For this reason, food security, like other basic rights, needs to be conceived as an important analytical tool in evaluating how immigrants perceive their membership, and reconstruct their identity and integrate successfully.... (p. 4)'

Moreover, this high level of food insecurity generally results in poor diet, an increased occurrence of obesity, chronic and acute diseases and negative health outcomes. The key objective of this study is to develop effective strategies for immigrants and low-income community who can best utilise the foreign food items in more cultural manner.

Research objectives

This research study will primarily investigate the culturally appropriate food for recent immigrants to Canada who are being underserved by their local food banks. As food banks are heavily occupied by rescuing, organising and storing food, improved understanding on how to better serve different clients who come from diverse cultural backgrounds is required. Determining if and why food bank members should be supplied with healthy meal plans where securing donations of cultural food are limited. This research will be designed to use both qualitative and quantitative methods to generate the necessary data, filling the current gap in the literature.

Research questions

The research questions help in identifying the ways which will help in adequately mitigating hunger in low income community served by the local food banks. Research on the topic focused on the following questions:

- What groups of individuals from specific ethnic background are underserved by the food banks and why?
- What practical interventions can the food banks provide to support healthy eating or meal planning for new-comers to Canada who are unfamiliar with the donated food items?

Chapter 2

Problem Statement

Food is basic physiological need. However, regardless of large-scale food production throughout the world, there are various parts of the population who are still not able to get access to the abundant supplies of food (Osabohien, Osabuohien & Urhie, 2018). The aim of this chapter is to critically evaluate the problem that is associated with food scarcity that exists in the low-income community in Canada.

The gross domestic product of Canada has grown at a moderate rate over the past several decades), including a significant growth in food production (Hayden & Wilson, 2016). There has also been considerable amount of food waste associated with this growth. About one-third of the total production is discarded as food waste (Hayden & Wilson, 2016). In order to identify the proceedings that take place in the Canada. A study by National Zero Waste Council found that the almost 60% of the food that is wasted in the country can be used for consumption purposes (Love food hate waste Canada, n.d.). This amounts to approximately 140 kilogram per person, which is the equivalent of approximately \$1,100 per year (Love food hate waste Canada, n.d.). Food waste is classified into several categories: vegetable waste, fruit waste, leftovers, bread and bakery, dairy and eggs (Love food hate waste Canada, n.d.).

Food insecurity among low-income communities and recent immigrants is a rising concern in Canada. In 2012 it was estimated that 1.7 million Canadian households – or 13% of Canadian households live with some level of food insecurity, reflecting an increase of 300,000 households since 2007. Poverty and socio-economic disadvantage are closely tied to food insecurity due to insufficient purchasing power to obtain fresh food and most importantly culturally appropriate

food. Food insecurity can lead to some mental health conditions like depression, stress, sadness and a sense of hopelessness. Diseases may rise also due to lack of nutrition such and malnutrition such as Marasmus, Kwashiorkor and muscle wasting.

Food rescue organizations and their functions:

In Canada, struggling families often turn to the nearest food bank system to supplement rather than meet all their food needs. Food banks are non-profit organizations which collect and distribute food through local neighbourhood hunger-relief charities. The work of food banks is determined by several factors such as facility size and some members. Food banks are entirely dependent on volunteers and donors. The main function of food banks is providing safe food to the needy people for reducing hunger level by maintaining higher coordination level. The functions of a food bank are categorized into three stages which are (1.) securing food, (2.) storage & shipping, (3.) distribution of food to the people who are active members of food banks.

Second Harvest is Canada's largest food rescue charity supporting 253 agencies in Toronto. Majority of the food items are also being rescued from farmlands directly. Every month they can collect up to million pounds of fresh produce. Over the last five years, they have focused on distribution centres, cold storage facilities, manufacturers. Their focus is nutrient dense perishables including protein, produce and dairy. Second Harvest secures donations from national food manufacturers, shippers, retailers, growers, packers, governmental agencies, and other organisations. The food that they deliver is transformed into hot meals at shelters, children's programs, drop-in centres, seniors' programs and neighbourhood food banks. Second Harvest distributes fresh/frozen food only to agencies with adequate refrigerator/freezer storage space and conditions. All food is stored at

Second Harvest's temperature-controlled freezer and cool room in warehouse. The registered recipient agencies or the neighbouring food banks are supported by Second Harvest. Second Harvest ensures, that at least one agency representative/chef at each recipient agency is Safe Food Handling certified. They also focus on recipient agency kitchens that are regularly audited by a Second Harvest staff member for their food safety practices. To handle food safely, Second Harvest organizes free workshops twice annually for staff and volunteers from their recipient agencies that include safe food handling training taught by a public health representative [secondharvest.ca].

Collection of food donations

When a business has surplus food available for donation, they list their items on FoodRescue.ca stating the type, amount and a time slot available for pick up by the food rescue charities like Second Harvest. On the other hand, food banks act as food redistribution centres, collecting food donations from the private sector and redistributing them back to individuals in need. Food banks sort their collected food items based on shelf lives. Non-perishable food items are stored in shelves like canned tuna, pasta, rice, oil etc and perishable items like milk, yogurt, dessert are stored in refrigerator. Majority of the food banks prefer to collect non-perishable food or less-perishable food like canned food that can be stored for more extended period. Food banks have often focused on food quantity, with less concern on the overall quality of the donated foods or culturally appropriate food they accept and provide. Many food banks also operate community kitchens where they bring community members together. Community kitchens provide workshops on cooking skills focused on food literacy [foodbankscanada.ca]

Current situation

The study reached out to Citadel Salvation Army food bank in Scarborough to learn more about their challenges they experience while serving the vulnerable communities. The food bank has central warehouse at Lawrence and Don Valley where their team members are involved with logistics and collecting donations. Citadel is mainly dependent on their Central warehouse. They get four skids of donated items from this central warehouse once a week with limited items that allow them to serve their members once a month. They primarily receive dry canned goods rather than fresh produce. They currently have shortage of dairy and protein. Therefore, variety is an issue. Citadel has seen a wide variety of immigrants since last three years. Their clients are of Middle East, South Asian, East Asia, Africa and Eastern European backgrounds. Citadel is open to donations from any individuals. The management of Citadel Food Bank also shares information on their clients living situation. Majority of their clients live in rooming house with shared facilities with other people. They have very basic cooking appliances. Their clients rely on canned food because they need minimum preparation. However, their clients would appreciate a meal program or community kitchen which could serve them by preparing better meals on small budgets.

New immigrants are often challenged to find well-paying employment, affordable housing and affordable food in urban environments such as Toronto. The food that the communities rely on are canned food that dependent on canned food (Broton & Goldrick, 2018). For example, South Asian countries like India, Bangladesh and others in Southeast Asia have access to fresh produce all year around. Whereas the need of canned food is in demand in places like European countries where climate condition does not enable year around vegetable cultivation. The idea of frozen peas, canned tomato, corn and such came to preserve the produce for leaner times.

As such, the food provided by food banks are typically culturally inappropriate for a significant portion of their users. This means that the food that is being offered to a specific group or community is not familiar for certain ethnic backgrounds especially who do not have any demand for preserved or canned food items. Food banks regularly serve several different immigrant groups. For example, consider minorities groups from South East Asian countries and another from Central American countries who are new to the multi-cultural environment of Toronto. Members of one group might not understand the food foreign food and canned food items that are provided by the food banks and as a result they are not best utilizing those food items, which could end up being wasted. Furthermore, majority of the minority communities are non-English speakers who have difficulties in seeking information regarding unfamiliar food items.

In conclusion, it can be said that the wastage of food is a serious problem that is being faced in Canada. There are immigrant communities who are underserved in the food bank system and are unable to find support system which could help them understand consuming Western food items or cooking with food items that they are not familiar with.

Chapter 3

Methodology and Procedure

The purpose of this study is to document the perceptions of recent immigrants with low income who currently cannot afford enough quality food through regular retail purchases after paying other household bills in Canada on what factors contribute to food insecurity, culture shock, how to cope with food insecurity, and what local food banks can do to help vulnerable and struggling people.

The study used both qualitative and quantitative methods although the main focus for the development of an inclusive design outcome was the use of emancipatory qualitative research. Qualitative research was utilized to gather insightful interpretations of the actions, of people's beliefs, values, experience with food banks.

Literature review

In order to understand the issue of lack of access to culturally appropriate food by the food banks members, several online resources have been reviewed. The terms food security, immigration and cultural food, food banks, food supply, low budget meals, healthy eating among immigrants were mainly used for searching relevant articles. The articles were all written in English and discussed about food insecurity for immigrants in countries like Canada, the United States, the United Kingdom who have a large population of culturally diverse immigrants. The references of the selected articles were scanned based on language and subject matter criteria. In reviewing the literature on food security in Canada, this paper focuses on most common problems faced by the immigrants – particularly culturally appropriate food and lack of knowledge in foreign food products.

Sequence of data collection and co-design

The research study collected data through multiple methods including interviews of food banks providers and users, and focus group activities and discussions. The user-focused methods provided dynamic participant interactions that stimulated critical thinking and criteria for the design of better services from the perspective of the participants. Quantitative data was also obtained from 10 questionnaire filled out by the research participants. A one-on-one interview for questionnaire data collection was done at food bank in a private room to ensure participant's privacy.

A qualitative research method was used in this study in order to access, at a meaningful and personal level, the experiences that a group of people had after recently migrating to Canada. Following the interview stage, a co-design session with multiple participants was used to gather further information as well as ideate actions that would improve their food bank experience.

The study was conducted in accordance with the OCAD University Research Ethics Board (file No: 101577)

Interviews

Interview data was collected in two stages: 1) a questionnaire and 2) one-on-one interviews.

For the purpose of this research study, the study focused on a small area where a wide range of people live who come from diverse cultural backgrounds. at the Citadel Salvation Army Food Bank in Scarborough, Toronto. The study included interviews with the Food Bank manager and staff members.

After visiting several food banks in Toronto, Citadel Salvation Army Food Bank in Scarborough was selected since they had strong volunteer support and adequate size to accommodate the

research activities. The goal was to engage with food bank members in a friendly manner over a set time frame. Participants were aware they were being recorded and had signed the appropriate consent forms before participating in this part of the research. They had also been asked on the invitation letter if they would be willing to be interviewed in a second stage of the study. This also allowed them to decide freely without any pressure and in an entirely voluntary manner if they would like to take part in the interviews. The interview questions were also designed to be as consistent as possible.

This study involved a total of 10 participants who came from different ethnic background living in Greater Toronto Region. Permission was obtained from the manager of the food bank, as well as the community and family services worker, in order to conduct this research. The participants were recruited in two ways, [1] purposive recruitment and [2] volunteer and staff assisted recruitment. The purposive recruitment was based on recognisable traits [ethnicity] and was done in order to promote cultural diversity and gain insight into the diversity of experiences amongst the member population. Potential individuals were purposively recruited while they were waiting in line to collect food from the food bank. Food bank staff members also spoke with their clients about my research study and encouraged them to partake in the study. There were 3 males and 7 females between the ages of 30 to 55 years. The multi-cultural make-up of the participants at Citadel was as follows: 2 Bengalis, 2 Indians, 1 Native-Canadian, 4 Africans, 1 Middle Eastern. All but one participant was identified as Canadian born and rest of the participants had been living in Canada for relatively short lengths of time, ranging from 2 months up to 2 years, since they had immigrated to Canada as refugees.

The participants were treated as homogenous groups despite their gender, various ages, language proficiency and ethnic backgrounds. Their participation was entirely voluntary. The recruitment for participants interviews was done through on the invitation letter itself, which asked if they would be willing to be interviewed. If the participant checked yes, he/she would then write his/her contact information and then they were followed up.

Exclusion criteria for participation included members who were under the age of eighteen, had extremely limited ability to communicate in basic English, or had impaired mental capacity where informed consent was unable to obtain.

Questionnaire design

A questionnaire was designed consisting 10 questions. The questionnaire aimed to obtain perspectives about food insecurity. The questions were based on definitions and overviews of the hunger issues and access to ethnic food culture with an emancipatory approach.

Questionnaire

1. Have you ever experienced food insecurity, which is not knowing where your next meal is coming from, or involuntarily eating less than you need, on a regular basis, for a period of time lasting more than 2 days?

Yes

No

Do you have anything to add about your answer? _____

2. At what age range(s) have you experienced food insecurity for 2 days or longer?

0-12

13-18

- 18-25
- 26-40
- 41-65
- 65 and older
- N/A

Do you have anything to add about your answer? _____

3. Did you feel concerned about visiting foodbanks?

- Yes
- No
- N/A

What is the concern? _____

4. How often do you visit foodbanks? _____

5. Please check any of the following services that you have used at the age of 18 OR OLDER:

- A food bank in your community
- Food assistance available from a church in your community
- Food assistance available from another organization in your community
- School breakfast program

Other services or comment on your answer to this question_____

6. On average, in the past month, how many servings of seasonal vegetables that are less costly at the grocery stores have you consumed daily?

- 0
- 1-2
- 3-4
- 5 or more

Comments on your answer to this question_____

7. Does the cost of food affect nutrition in your food choices?

Yes

No

Comments on your answer to this question_____

8. Do you like to see any particular type of food available at your local foodbank?

Yes

No

Please mention the type of food_____

9. Please select any of the following statements that you feel apply to you:

I do not know how to prepare nutritious meals for myself.

I am physically unable to prepare meals for myself.

I can cook, but nutritious foods are too expensive.

I am too busy to prepare nutritious meals for myself.

I am not sure whether my meals are nutritious or not.

None of these statements apply to me.

Comments on your answer to this question_____

10. Are you open to using mobile apps for food choices/news/local grocery market deals and so on?

Yes

No

Comments on your answer to this question_____

The questionnaire did not include any questions about sensitive issues such as specific age, income, state of health, marital status, educational background, social standing, criminal behaviour, bad habits etc. The questionnaire took 15 minutes or less to complete by the participants. The data collected

from the questionnaire was suitable for analyses. Participants with limited English-speaking skills were assisted by me by simplifying the questions in their own languages.

Interview questions

One-on-one, semi-structured interviews were used to collect data regarding opinions on participant's experience with food banks. The goal of the interviews was to further explore participants' own experience about their struggles with accessing culture cuisine in a foreign country, in more depth. The researcher developed an interview question guide for this stage of the study. The question guide was as follows:

1. Tell me about yourself: your family, your concerns, how you are managing during difficult times?
2. Do you/spouse have a job? If so, what is it?
3. How many people in your household do you feel responsible for? (Children? Grandchildren? Elderly parents?)
4. How close does your income come to meeting your financial needs?
5. What are your greatest challenges at the most difficult times for you and your family?
6. If you needed help in just one or two areas, what would those be?
7. Have you or your family ever had to go without food? If so, for how long? How did that make you feel? Please expand on how difficult it is to get enough food.
8. Have you or your family ever gone to bed hungry?
9. How often do you visit the food bank?
10. How do you get here? Car? Walk? Get a ride with others?
11. Do you ever bring other people with you -- perhaps a neighbour, a senior, or someone else who might need the services of a food program, but has no means of transportation? If you do, tell me how it makes you feel to help others who are also in need.
12. Do the resources that you find here sufficiently meet your dietary and nutritional needs?

13. Where do you usually search for deals on special food items? E.g.: Apps/Flyers
14. What specific foods do you and your family need most?
15. What is the longest period of time you had to go without food? [Optional]
16. What are your concerns about nutrition? How important is getting nutritious food to you and your family?
17. How would you describe your experience working/interacting with food bank personnel?
18. What would your life be like without the resources available at the food bank?
19. When you receive food you do not need; do you share it with others? If so, do the people you share with express their thanks to you?
20. Do you have any questions, comments, compliments or complaints?

It was noticed that participants were responding very precisely to these original interview questions without elaborating their answers. In order to gather more spontaneous answers beyond and the questions were asked in a more personalised manner to achieve more free responses. “Interviews are personalised and therefore permit a level of in-depth information-gathering, free response, and flexibility that cannot be obtained by other procedures. The interviewer can probe for information and obtain data that have often not been foreseen” (Seliger & Shohamy, 2008, p. 166).

To promote higher completion rates, the researcher assisted two groups of participants with English-reading skills. Interviews were conducted face-to-face in a private room at the Citadel Salvation Army Food Bank.

These interviews were recorded using mobile phone voice recorder.

Co-design Session

Co-design as a design research method, involves engaging end-users in the design process, and designing with them in order to satisfy their needs (Sanders, 1999). A co-design session was held with

10 participants at Citadel Food Bank premises. This co-design session encouraged the end-users to be involved in understanding their perspectives, needs and behaviours and engaging is a design process to suggest improvements to the food bank experience and system. Research participants were given two simple activities which took approximately 20 minutes each. Informed by the data collected from interview, the co-design session was structured into two separate activities for the research participants. Activity 1 asked the participants to make several recipes using given food items without adding any extra food items. The purpose of this activity was to observe, whether the participants are familiar with the ingredients and make simple recipes using those ingredients. Whereas, activity two asked the participants to make recipes using same ingredients as activity one and they are encouraged to add their choice of any food items to make a complete recipe. The reason for this particular activity was to observe how participants create recipes and what kind of additional ingredients they introduce that are close to their own cultural food. The activities were prepared based on current situation of the Citadel Food Banks' food distribution among its' clients. For first activity the participants were not allowed to take any advices from other participants, which was intended for this particular activity [see appendix]. For Activity 2, participants were allowed to talk more openly about their meal preparation ideas [see appendix]. After completing the activities, the participants were encouraged to share their thoughts and ideas. The entire session took 1 hour and participants were compensated for their time.

The activities for the participants in participatory design session were designed to give specific example of factors contributing to lack of accessibility to cultural or ethnic cuisine and our discussion topics covered how users can cope with meal preparation with limited supplies from food bank, what participants think the food banks and other charities can do to help them who are experiencing

difficult times obtaining cultural cuisine. This co-design session gave the participants the opportunity to express any other ideas or feeling they have regarding being new immigrants in Canada.

Chapter 4

Data Analysis

In this chapter, the data analysis is presented in two sections. Section A presents quantitative data analysis from participants questionnaire and summarizes with the findings, and Section B presents qualitative data analysis and summary of findings based on one-on-one interviews with research participants.

Section A

Quantitative data analysis

This section discusses the quantitative data from the questionnaire and analyses of each question. It will cover the overall results of participants at Citadel food bank. This will then pave the way for answering the identified research problem, objectives and questions using evidence-based research in the succeeding chapter on 'Discussion' (Gruba & Zobel, 2017). The aim of this chapter is to thus present and analyze in detail the key responses which were obtained from each participant with regards to each of the 10 questions included in the survey questionnaire. All questions were assessed by the research ethics board to ensure appropriateness of question selection and wording for the population of interest. This chapter will also provide insights into the possible associations between the documented responses and existing evidence-based literature.

Overview of questionnaire

A 10-item questionnaire was used, comprising of close-ended questions with multiple choices. The questions were mostly centered on enquiring participants on their experiences with food insecurity,

the role of income on their food selection and consumption practices, the reasons which impact their procurement of food from food banks and the changes which they would wish food banks to include in the future. Such a questionnaire was chosen since it demonstrated congruence to the identified research problem of assessing the effect of food insecurity on low income group populations (Hulland, Baumgartner & Smith, 2018).

Close ended questions were used due to their ability to provide specific, objective responses as compared to subjective, open ended questions which often yield confusion across participants (Kim, Kim & Kang, 2017). Multiple choice questions for the purpose of allowing participants to choose from a wide variety of options and thus provide a more diverse response. To further improve opportunities for participants to share specific and unique responses, a separate comment section was provided under certain questions (Knoke, Marsden & Kalleberg, 2017).

Quantitative data analysis from questionnaire

This section discusses the quantitative data from the questionnaire and the analyses of each question. It will cover the overall results of participants at Citadel Food Bank. This section focuses on opinions about various components such as participant's experiences within food bank services and access to cultural cuisine and also opinions towards an example of potential future prototype. Questions sought to learn about participant's household size, food preparation, experiences and preferences in regards to food provisions. All questions were assessed by the research ethics board to ensure appropriateness of question selection and wording for the population of interest.

For the purpose of allowing participants to record specific or detailed responses, separate sections for comments were included below certain questions of the survey (Okan, Stone & Bruine de Bruin, 2018). Written responses which seemed similar in content were grouped and arranged in tabulated form. This method was chosen due to its ability to inform the researcher and readers on the unique preferences and opinions of each participant. This method also allows participants to share personal experiences briefly which paves the way for improved rapport between participants and researchers (De Vaus, 2016).

Eighty percent of the questionnaire respondents have experienced food insecurity as defined in the questionnaire, which is not knowing where your next meal is coming from, or involuntarily eating less than you need, on a regular basis, for a period of time lasting more than 2 days.

The second question of the questionnaire aimed to enquire from participants the specific age range during which they experienced incidences of food insecurity for a minimum of two days or more. From the figure 1 above, the most affected age group were between 18 to 25 years and least affected group were between 0 to 12 years of age who have experienced some degree of food insecurity in their households.

Question 2: At what age range(s) have you experienced food insecurity for 2 days or longer?

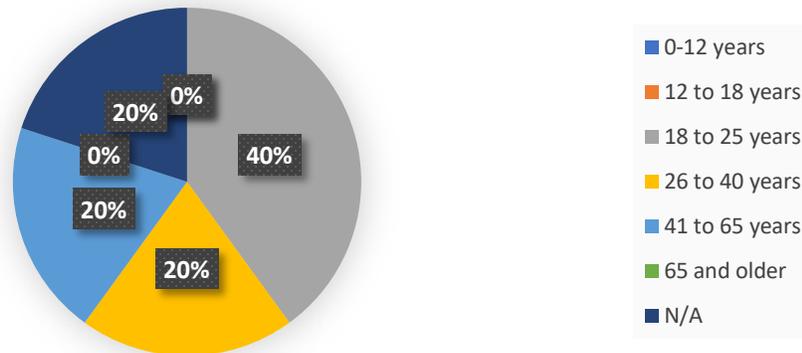


Figure 1: Figure showing participants food insecurity experienced in different age groups

The third question of the questionnaire enquired from the selected participants on the prevalence of any concerns or issues with regards to availing the food products and services provided by the food bank. Responding to this question showed, every participant had some concern, complaint or issue with regards to the availing of food and services from local food banks. Majority of participant complaints were centred on three issues: the prevalence of expired or poor food quality in food banks, the prevalence of prolonged waiting times when availing food from food banks and the lack of food complaint to the diverse ethnic identities of individuals when visiting food banks. The identification of such complaints thus demonstrates the prevalence of limitations in terms of organizational and food quality delivered by the local food banks which will be highlighted in the succeeding sections.

The fourth question asked participants regarding the frequency with which they visit to obtain food from the local food banks. Responding to this question shows, all participants were limited to visiting

their local food banks only once a month. Two participants have travelled a great distance to multiple foodbanks from time to time to procure more food since they have larger family.

The fifth question aimed to enquire from the participants on the type of services and opportunity they usually revert during the time of acquiring food in times of food insecurity. Fifty six percent of participants reverted to the services offered by food banks located in their community for the purpose of availing cost-effective food during crisis. Rest of the participants would go to the food assistance services provided by religious institutions like the Church in their community.

The sixth question of the survey questionnaire aimed to enquire from participants on the number of servings of cost effective seasonally available vegetables which they procured for daily consumption since the last month. All participants responded to this question stating between two to three servings of fresh fruits and vegetables regularly that are cost effective, seasonal or some reduced items found at their local grocery stores. Such consumption patterns are much less as compared to the nationally recommended consumption of 7 to 10 servings of vegetables and fruits as per Canada's Food Guide (Health Canada, 2018).

Question seven enquired from the survey questionnaire was associated with asking participants on whether the nutritional content of their food choices is impacted by the cost of the food they procure. All ten participants recruited in the study agreed to the fact that the nutritional content of their food choices was heavily impacted by the cost of the food items being procured. As per the responses, it is concerning that a number of participants feel that their diet's nutritional content is being compromised due to the high price of food items prevalent across grocery stores and supermarkets.

Such responses, reflect the role of income or financial resources as the social determinant of poor nutritional consumption, nutritional inadequacy and risk of nutritional deficiency across participants belonging to low income groups (Gubert et al., 2016).

Question eight aimed to enquire from participants on whether they wish to find any particular food to be present while availing serviced from their local food bank. All participants agreed to their preference of finding specific food items at the resources available from their local food bank. For improved understanding, participants were provided the opportunity to specify the type of food which wish to find in food banks. The most common items noted by the participants were- food additives or dry spices, flour, rice, oil, pasta, eggs, milk, fish, lentil or legumes, fresh fruits and vegetables, meat, soup powder etc. Identifying and examining such responses are thus reflective of the possibility of poor cultural competence and absence of variety in the foods available across local food banks (Gipson-Jones, Davis & Harris, 2019).

Question nine asked participants on common issues and problems they face during the preparation of their own food. Majority of participants felt unsure of the nutritional content of their foods, food rich in nutritional content were expensive. Participants also felt that they lacked adequate knowledge on personal skills of food preparation especially with foreign food ingredients and that they lacked adequate time or were too busy to engage in food preparation by themselves. Such responses are thus reflective of not only the decreased knowledge of nutrition across participants but also of the role of time and convenience in participant's consumption of nutritious food selection and consumption (Douglas, Machray & Entwistle, 2020). To further understand the presence of any specific issues which impacted food preparation, participants were provided the opportunity to record additional

information as a part of responses to question 9. The responses highlighted issues like the availability of canned foods and the lack of sufficient cooking skills were some of the key problems which participants faced when procuring food from local food banks. Such responses thus demonstrate the need to educate citizens on basic cooking skills as well on the correct usage of canned foods to meet their dietary needs (Lee et al., 2018).

The last question of the survey questionnaire aimed to understand participant's present level of usage of digital technology or application or online offers associated with food procurement and cost-effective food selection. Participants between the age group of 18 and 25 replied being aware of mobile app 'Flipp' providing deals. 'Flipp' app is free to download on mobile phone devices and this app helps its' audience with showing latest flyers and deals that are available in grocery and retail stores [flipp.com]. Rest of the participants would visit different grocery stores to check on reasonable prices or visit the stores that offer price matching services. The prevalence of online services by food banks may be useful in encouraging cost effective and nutritious food selection by individuals belonging to low income groups (Martel et al., 2018).

Overview of results

Thus, the above detailed and comprehensive set of results indicate the range of issues and impacts faced by participants belonging to low income groups in terms of food insecurity. One of the biggest contributors to hindering participants ability to acquire nutrition foods were found to be the high price of foods available at local grocery stores and supermarkets. Populations living in poverty and low levels of employment and income, are often unable to procure nutritious food products (Loopstra, Reeves and Tarasuk, 2019). This in turn, compels them to procure food products which are

inexpensive but high in calories, fats and sugars (Holben and Marshall, 2017). While such food choices are not reflected in the survey, it is however evident that participants were unable to consume sufficient servings of low cost, seasonal vegetables. The establishment of food banks providing cost effective have been evidenced to be one of the most efficient solutions to tackle the issue of food insecurity (May et al., 2018). However, as per the responses, it is evident that factors like poor food quality and limited availability of fresh foods impacted participants ability to visit food banks. In criticism however, it has been evidenced that limited funding largely contributes to limited food availability and storage facilities across food banks. The provision of greater funding to food banks by the government is thus imperative (Bacon & Baker, 2017).

Additionally, the results reflected that participants lacked sufficient food preparation skills and did not find culturally competent food across food banks. Limited funding and cultural competency skills across the public health workforce are key contributors to limited food availability (Moffat, Mohammed & Newbold, 2017). Lack of accessibility to educational resources results in food insecurity across low income groups. There is thus a need to establish community health campaigns and workshops to address the same (Hanbazaza et al., 2016).

Section B

Qualitative data analysis

After completing one-on-one interview with participants, a verbatim transcription of the interview was prepared [see Appendix 2]. The transcripts were coded using manual coding process, highlighting content relevant to the pre-determined research objectives. Line-by-line analysis was used to further categorise content into main codes and sub-level codes according to similar ideas in participant narratives. The manual coding process was iterative and aimed to establish, add, and revise codes that developed from all interview transcripts from 10 participants. After the coding had passed through multiple iterations, axial coding was used to identify relationships between codes, which were then organised into common themes reflected throughout the data. Based on the coded data a concept maps were created which addresses some common factors that contributes to participants food habit, cultural cuisine, and strategies for survival.

“Our perception of foreign cultures is usually based not on their complex reality, but on the simplified image they project. The clearer and more sharply defined that image is, the more convinced we will be that we are intimately acquainted with it: it is a mere outward confirmation of knowledge we already possess.”

-Juan Goytisolo

(Damen, 1987, p. 189)

Questions from the interviews were used to determine the feelings and attitudes of this diverse group of people during their stay in Canada, which might impact on their greater or lesser success in healthy being. The conversation from the interview was analysed and interpreted in order to answer the research questions. This Qualitative data will identify the participants' thoughts on what they feel

leads to food insecurity and how they deal with it. It will also identify what they think the food banks or other charities can do to help them better adjust to their new cultural milieu.

The following statements reflect the main hardships expressed by participants in the interviews:

1. "It is very hard for me because I do not speak the language and I cannot ask for help".
2. "I wish food banks would have more cultural food for us".
3. "Visiting once a week, isn't enough so I travel quite far and go to other food banks. Because you know, I have a big family. I have 4 kids and I am a single mother, no job".
4. "The waiting period is so long and I don't like how they prioritise only certain ethnic backgrounds"
5. "After paying all bills we barely have anything for food and to feed the family"
6. "Now if they give me all these stuff, that I don't know how to use them, you tell me what should I do? I can't speak English and I don't know who should I ask for help"
7. "I don't like coming here but what choice I got? I can't find work because I can't speak English".
8. "I wish they have halal meat because they are very expensive to buy outside".
9. "I know I am not eating healthy enough because I am giving it all to my family".
10. "I am busy with school and I don't know how to cook. So most of the time I take whatever they give me here".

From all these remarks provided by the participants of the study, I was able to distil the following definition of food insecurity in low income community which is: 'lack of access to culturally appropriate food in unfamiliar society or environment that results, depression, stress or negative attitudes.'

Factors contributing to food insecurity in low income community:

From the interview data, four main causes of food insecurity were found to be common among the participants. According to these participants, the main causes that lead to food insecurity are:

1. Personal factors such as -unemployment, language barrier, physical ability
2. Travel factors such as - cost of tickets, travel time, travel distance
3. Organisational factors such as- number of times allowed to visit, prioritise certain ethnic groups, waiting period
4. Quantity and quality factors such as- limited number per item, visit frequency, shelf life, food safety

1. Personal factors:

The differences between the cultures of the participants' own country of origins and that of Canada was stated as the major reason leading to lack of culturally appropriate food from food banks. As Participant A from South Asia stated, she experienced cultural shock while receiving certain food items. The following describes one event in which she experienced such misunderstanding:

“One day I got this peanut butter from food bank. I didn't know what it was exactly. Because everything was written on the jar was in English and I don't speak English well, neither can read or write. I didn't have enough oil at home that day. So I thought I could use this peanut butter to cook rice. I had no idea, why rice got awfully stuck to peanut butter. I can't waste so much rice because I cooked for

family of four. I served to my family with fried eggs. They all hated it and said, 'what happened to you? Did you forget how to cook good food?' No one finished the meal that day. I tasted it and it was bad. I had to throw it out, and I threw the entire jar of peanut butter out. I am not that type of person who would waste food because we don't have enough to waste to start with. That day I felt really sad and wished someone could tell me how could I use this food in other way”.

In this situation the participant is helpless because of her limited knowledge in foreign food items. According to her opinion, fresh produce was the only type of food available where she was living in remote part of the country, back in her country of origin. Another example of this cultural difference was reported by same participant A. The situation is as follows:

“I cooked the canned tuna for lunch next day. And I wanted to make fish curry like we do back home. I opened the can and discovered the fish are all mashed up. I never saw fish like that without bones. I cooked curry sauce and put tuna in it. I put in a lunch box some fish and rice for my son, his school lunch you know. That canned tuna is just enough for one person. So I didn't have any more left over. My son came back after school and he was very angry also hungry because that meal I made, he couldn't eat it. I didn't know what to do! I saw picture of fish on the can so I thought of making fish curry. How else can I cook this fish?”

Participant B reported an incident on cultural difference that happened at his home. The following event occurred:

“My wife is doing nursing school and school is too far to commute. By the time she gets home, she doesn't have energy to cook so I cook whatever I can. I saw in the pantry some canned foods that she got from the food bank. I don't know how to cook much and I saw this label of beans. I tried to cook with some spices and turned out pretty gross. Not sure what went wrong. But I couldn't eat it and threw it away. Perhaps my wife would know how to cook it”.

Participant C shared:

“I do not recognise most of the items that I get in my supply bag. I don't speak, read or write English. Being an Arabic speaker, it is hard for me to understand what is this exact canned food. I can't look up on internet because I don't know how to use internet or where to start. I am too old for this”.

When asked how they deal with any difficulties with the language and how they communicate with food bank staffs, one participant stated:

"I use body language if I can't communicate. And do my best, and then even though I do my best if that person cannot understand...it's difficult you know”.

Another participant reported that the language causes stress and embarrassment at times. He stated the following:

“Hmmm, I am kinda afraid to talk to them because I don't want to make them uncomfortable but then again I can't explain to them about my needs. It's frustrating and also stresses me out because they don't have all day for me to try to understand, what I want to say, you know. It's very embarrassing and I don't feel good inside”.

In these situations, the conflict resulted from the cultural differences in ethnic cuisines between Canada and South Asian cuisine. These situations put pressure and stress on the participants and made them back away from the situation and almost in a sense hide from the experiences due to knowledge gap. While immigrants may choose to add foreign food items to their diets, acceptability and proper use of food item is still a concern. Cultural food plays a major role in forming and expressing own cultural identities. It can be quite frustrating and alienating when people have difficulties accessing food that suits their tastes and dietary requirements as one participant stated her effort of preparing canned tuna following traditional recipes.

2. Travel

The second factor identified by the participants was traveling to and from food banks to their own residence which caused a great deal of inconvenience among them. As one participant stated:

“Because I have to take public transport to commute and I have some disabilities, it's hard for me to carry all the food on my own to my home without any help. And half of them if I can't use it, what's the point of me going all the way to the food bank? That just frustrates me”.

When asked how they deal with cost of buying tickets for public transport, one participant stated-

"Well, it's ok that I take the public transport to get to food bank for food but the waiting period is way too long. It takes me around 45 minutes to get to food bank and 45 minutes to get back home. And the waiting period is sometimes over 1 hour. With presto I only get 2 hours free transfer limit. That means I would have to pay again to go to my home".

Another participant added:

"When the waiting period is too long, sometimes I would just get up and peek inside the staff room, hoping I could get served faster and go home. But they don't like that and ask us to wait".

Although the main purpose for the participants to visit food banks is to receive donated food, there are times when the processing could take longer than expected which could cause delays to and in result participants will have to buy a return transport ticket to go home. All participants have stated that they have to commute minimum of 45 minutes from their residence to food bank. Carrying bulky food items without any assistance is problematic especially for those members who have limited mobilities.

3. Quantity and Quality factors:

The participants in interview identified quality and quantity as another factor leading to food insecurity. When asked in what way these factors contributed to this feeling, one participant reported the following:

“I am very grateful that we have the support from food bank with food and other small household stuff. But the amount of food we receive its barely enough for my family”.

Another participant added:

“I travel almost an hour just to get here, and going home with so little it's not enough for my big family. I wish there was more”.

The participant was then asked, what was the most difficult time dealing with limited food supply at home? She stated the following:

“I do this from time to time, we don't have enough to feed the entire family. After I feed everyone, I put loads of water to my portion so I can have little bit of daal and rice. To me it's the worst taste, almost like eating plain rice with water but what else can I do”.

When asked if she had other experiences with stretching her meals. She reported the following:

“Yeah, I make one egg omelette with added veggies and water so I can feed that to my two kids for lunch. I feel bad. My kids are not getting proper

nutrition and both are very skinny. I would love more protein or milk, they would be lot better for my kids”.

One participant also added about quality of food. She stated:

“The food bank gives us lot of expired food or some are close to expiring. Are they even safe to eat? I am worried and I don't want to give that to my kids! Look at this jar, it says it will expire in three days and I am not planning to cook with this anytime soon. If I take it home, it would expire and I won't eat it and just dump it. I don't like to waste food but this is too bad”.

Another participant added:

“I always cook at home because I only eat Halal food. I would rather eat vegetarian if food banks can't provide Halal food”.

Reviewing all participants' opinions, it is seen that some members would manage costs by substituting ingredients, travelling long distance for cheaper prices, spending time studying ads. In all these situations, it is the fact that their diet is compromised because the quality of the food are given to the participants. Food bank also could play a central role to support the dignity of their members by educating them about expired food items.

4. Organisational factors:

The second aspect of the study was to identify the ways the participants try to cope with lack of access to cultural cuisine and food insecurity. Each member was asked to explain how they deal with problems or uncomfortable situations they have encountered since they migrated to Canada. The participants of the one-on-one interview stated the following:

Participant one:

“I have borrowed a number of things from my neighbours and my relatives to survive. Food was one of them. Because visiting food bank only once a month is not enough for me to get by”.

Participant two:

“I am part of this Canadian culture and I get very frustrated when my food bank only calls the Mexicans first and by the time when it's my turn, I see most of the good items are gone. I have anxiety and I am old. I don't deal well in this situation. I feel depressed”.

Participant three:

“I came to Canada only two months ago. I am on welfare. And I decided to come to food bank because I find prices of food here at the supermarkets too expensive. I am willing to find work but because I can't speak English well, I can't find job. I like coming to food bank but the type of food I get here I don't know how to cook them. I take them home anyway but they probably would end up in the bins”.

Participant four:

“I only come out of necessity. They often give food that is between close to expiry to long past expiry dates. I wish I could explain them but language is big barrier for me”.

Participant five:

“Not enough food from my culture. I take them home and try to cook but it's hard to know for me what is what. I don't know how to use internet so I could look it up on internet. Or could ask someone...I don't know.”

Participant six:

“I know beggars can't be choosers but it'd be nice if some of the food wasn't mouldy or few months past the best before date. I feel bad to take them home and give it to my family.”

Participant seven:

“Although it's a great thing they're helping people there and they do have a good selection of food do not take any kind of dairy items they're all expired and so is some of their food.”

Participant eight:

“This is the only food bank close to my home. But they are all western food. Not that I don't like western food but would be good if there were more cultural food for us.”

Participant nine:

“Visiting only once a month is not enough. They give us lot of canned stuff, I never cooked back home so I do what I can with these canned food. They do last a while on shelf. I would like to see some recipe attached to the supply bags which could help people like us who are new to cooking.”

Participant ten:

“They give you almost expired food and say its safe to eat. Are they, really? Also how can we stretch using those limited canned food that they give us? If I only knew how to cook with what they give me, would be good.”

All participants were able to express their own unique way of dealing with the stress and pressure of living in the new environment. They already are aware of having coping strategies are true to human nature. The main factor in dealing with difficulties is communication, limited knowledge in Western food culture. In all the cases stated by the participants of the interview, the main concern is the lack of understanding of the participants' cultural background. Another concern was the quality and quantity of food items they receive. Other concerns mentioned by the participants were lack of services offered to them. They all would appreciate if there was any type of assistance available

helping them with meal preparation, especially for someone who is new to Western food culture or has busy lifestyle.

Users are the starting point of co-design project. Users have a need for better service that the co-design activities will try to solve; hence the need is the purpose of this project. The planning of co-design session needs to be based on desired outcomes. When all questionnaire and one-on-one interviews and data analysis were complete, three main aspects were noted before designing a co-design session for research participants. The first one being the co-design activities. The activities should be designed based on profile of research participants. The second aspect is motivation. It is necessary to know what motivates the research participants and it is also important to be aware of individual's expectations. The last aspect to note the importance of clear communication. To run the session smoothly, the researcher identified the participants beforehand with limited English-speaking skills so she could assist them to complete the tasks in co-design activities.

Conceptual framework

Drawing on the participants' opinions described above, the analysis provided a means to develop a conceptual framework for providing food supply for recent immigrant food bank users based on three main critical dimensions: economic and financial context, food insecurity in ethnic backgrounds and coping strategies. Figure 2 shows the relationship between these dimensions in shaping the framework for addressing lack of access to food for low-income recent immigrants with non-Eurocentric cultural backgrounds. The top rectangle represents the financial barriers that participants experience and that leads to their decreasing food consumption behaviours. The circular

shapes represent the factors that contribute to lack of access to food in ethnic backgrounds followed by a number of coping strategies that they apply in order to fight hunger.

In this framework, food insecurity has shown as an experience and a process, comprising of a sequence of events. Financial accessibility represents the greatest challenge to food security for new settlers in Canada. Recent immigrants experience face difficulties in securing employment due to language barriers. Which results, immigrants are relying on social benefits from the government. With fixed allowance from the government, these immigrants are falling far short of affording basic necessities week to week. Several factors add to the financial context, when immigrants and low-income community are relying on income support. Household that are food insecure, try to get employment and plan small budget to obtain food usually buying in bulk and stocking up when food items are on sale. Those with large families, tend to skip meals or make small meals which results anxiety, low of energy and hunger when meals are skipped. Immigrants often face challenging situation when it comes to choosing foreign food and lack of knowledge in foreign food products lead them to preparing meals that the quality or quantity of food may have been compromised.

Coping strategies comes in place as shown in framework in last stage of food insecurity in ethnic backgrounds. To collect more food immigrants are visiting multiple food banks, also some families are borrowing food through social networking like relatives or neighbours. People are also consuming food by lowering the quality or quantity or using substitution for meal preparation. Other coping strategy that is prevalent in traditional low-income families is, access to food that is shared or transferred between family members. For instance, the mothers always feed the children and other family members first, reducing her own intake or stretching a meal with added

substitutions. All these factors and circumstances shed lights on food consumption patterns and food management practices in low income and immigrant households.

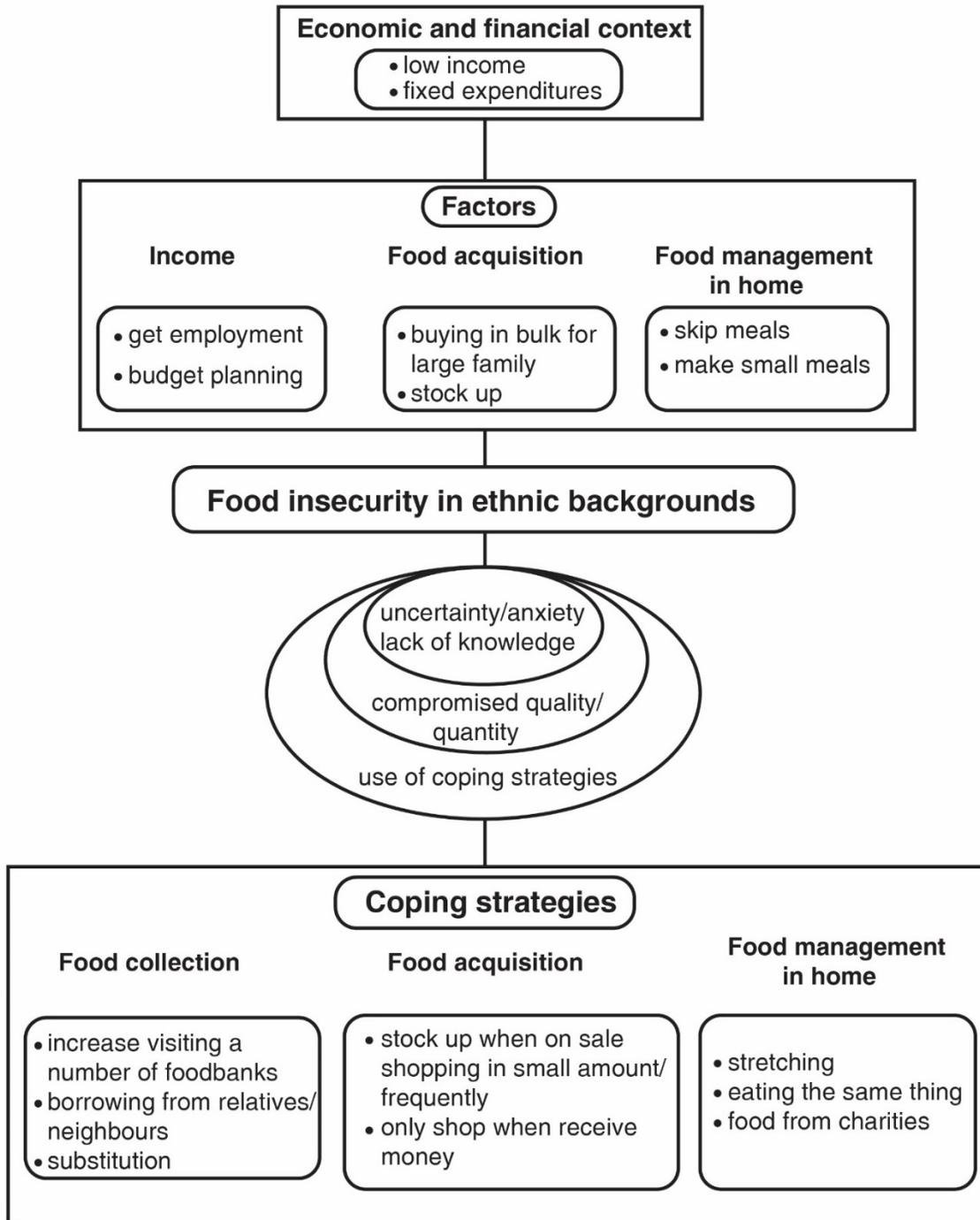


Figure 2: Framework showing food insecurity is experienced by ethnic communities

Chapter 5

Participatory Design

Inclusive design

The purpose of inclusive design is recognising the exclusion and recognising what that looks like in the products that we create often can only be achieved by spending time with people who are using them, understanding what barriers they encounter, what kind of opportunities we could create to make the experience work better for them. It is understanding who could be excluded from a product or service and designing with that in practice. The main thinking behind inclusive design is that the ability to use a feature or functionality in a design may vary from person to person. Without the practice of inclusive design, we often end up with products that designed for a specific gender, age, physical abilities, tech literacy or language ability. Products created like this often exclude whole groups of people because they are based around the designer and their individual environment. Understanding how and why people are excluded gives us actionable steps to take towards designing with a wider variety of people. However, inclusive design is not a process for meeting all accessibility standards rather it is understanding who could be excluded from a product or service and designing with that in mind. The key aspect of inclusive design is that the ability to use a feature or functionality in a design may vary from person to person. Inclusive design involves designing for permanent, temporary or situational disabilities. For instance, a hearing disability can be permanent such as deafness or can be temporary such as ear infection or even situational such as a commuter on a loud train. In each of these instances not having closed captions on a video for the user would make it difficult if not impossible to understand the content.

Participatory Design [PD] session

Participatory and co-design as a research and design method founded in the engagement of the individuals who are going to be the end-users of the product that is being designed. To create effective design, the designers needs to engage people on their own terms, discover what is important to them and discover what their perspective is because, it is almost certainly different from designers' perspective. While engaging the people with the design process, it is vital to ask them the right questions. The right questions depend on who is involved, what the issues are, what the client thinks they are trying to achieve. Very often the most important parts of the information gained with side conversation with people. Participatory design allows the design researcher to understand what our users place value on in order to design solutions more suited to their needs.

For this research study, a participatory co-design session was held at Citadel Food Bank premises with ten participants. This session was aimed to achieve a design of a system that would be beneficial to participants, end-users and food bank. The workshop was designed to creatively develop ideas through discussion and active participation by the research participants. In this chapter the data analysis has been presented from the design workshop.

The entire PD session was 1 hour, 20 minutes each for 2 activities and 20 minutes for discussion with the participants. Not all responses were detailed and practical and some did not follow instructions precisely. However, these responses provided a clear picture as to which direction participants were performing the activities and what conclusions could be drawn from articulated responses. It is import to state the diversity of feedback, as most of the responses were completely individual and devoid of possible similarity.

Activity 1

Activity 1 was designed for participants to understand how they use most common food items in their household. The objective was to observe the volume of missing ingredients that each participant would list during the activity. Another purpose of this activity was to understand whether each participant would recognise the items and should they fail to recognise a particular item, how they would use it in their recipes, would they consult with another participant for ideas, would they resort to searching online for looking up information or totally discard it.

A detailed description of the activities is presented in Appendix 1. Activity 1 instructs the participants to create few recipes using a list of random items that they would usually receive from food bank. Participants with limited English were shown the visuals of the items. The restriction was put on this Activity 1 that participants are not allowed to use any added items to the list yet must create complete recipes using only the listed items. The intention was to observe how each participant would complete the exercise without asking for any help. A summary of participants activity completion rate showed in Table 1.

Table 1 # Activity 1 – Participant Responses					
Participant	Recipes created	Completed	Items recognized	Items not recognized	Note
A	2	Yes	Recognizes each item		Limited ideas on making recipes using all items
B	0	No	Eggs, yoghurt, milk, rice, oil	Canned pineapple, canned tomatoes, frozen vegetables, pasta, soy sauce, jar pesto, Asian cooking sauce, butter, peanut butter, mayonnaise, honey	Had no ideas on making recipes
C	0	No	Eggs, milk, rice, oil	Canned pineapple, canned tomatoes, frozen vegetables, pasta, flavoured and plain yoghurt, soy sauce, jar pesto, Asian cooking sauce, butter, peanut butter, mayonnaise, honey	Had no ideas on making recipes
D	1	Yes	Recognizes each item		Limited ideas on making recipes using all items
E	1	Yes	Canned pineapple, canned tomatoes, frozen vegetables, pasta, flavoured and plain yoghurt, butter, peanut butter, mayonnaise, honey	Asian cooking sauce, soy sauce, jar pesto,	Limited ideas on making recipes using all items
F	2	Yes	Recognizes each item		Limited ideas on making recipes using all items
G	1	Yes	Recognizes each item		Limited ideas on making recipes using all items
H	0	No	Eggs, yoghurt, milk, rice, oil	Canned pineapple, canned tomatoes, frozen vegetables, pasta, soy sauce, jar pesto, Asian cooking sauce, butter, peanut butter, mayonnaise, honey	Had no ideas on making recipes
I	2	Yes	Recognizes each item		Limited ideas on making recipes using all items
J	1	Yes	Recognizes each item		Limited ideas on making recipes using all items

Using every single item from Activity 1, there could be up to four possible complete recipes. However, 3 of the 10 participants failed to write any recipes and rest were able to come up with 2 complete recipes yet not in the best version. Those 3 participants were able to recognise few items and the rest recognised all of them however, did not know how to use them to create a complete recipe. It was also noticed that some participants tried to quick Google search for information, however they could not find anything that could be helpful for them to use in this activity. When asked what were some of the keywords they used to look on Google search, they stated as below:

1. Egg milk rice recipe
2. Pesto recipe
3. Pasta recipe
4. Can tomato
5. Eat yoghurt

From those keywords searched by the participants for recipe ideas, it shows that no one searched for any exact dish name, hence why Google search result did not generate appropriate recipe ideas. During the first interview with the manager and staff members of the food bank, they addressed that the variety being a challenge while serving different ethnic backgrounds. From the participants' performance on this activity, it is clear that at Citadel, the distribution of food does not always match the cultural distribution of demand. Activity 1 demonstrated, that participants have limited knowledge of meal preparing ideas with most common and recurring supplied food items that they receive from their food bank. When asked the participants about what was needed to improve the

service, they wanted more fresh produce or proper meal plan that suits with supplied food items. Planned menus are fundamental aspects to the provision of a safe, nutritious and appropriate food service, therefore a reliable source of food supply is essential.

Activity 2

Activity 2 was designed for participants to understand how they use most common food items in their household along with their own cultural food ingredients. My intention was here to focus on how the participants utilise Western food items and turn them into something that is related to their own cultural cuisine. Another purpose of this activity was to discover what other ingredients they introduce to the menus that suits individuals' palate.

Activity 2 instructs the participants to create some recipes using exact same ingredients as activity 1 but in this activity the participants are encouraged to add any ingredients as they wish and make complete recipes. By giving them more choices, they were more comfortable using their choice of ingredients and they stated that it was important so they could create more recipes that are suitable to their own cultural cuisine. Below is a summary of participants activity completion rate showed in Table 2.

Table 2: Participants task completion record					
Participant	Recipes created	Completed	Ingredients added	List of items used from the activity	Note
A	3	Yes	Carrots, cabbage, coriander, cucumber, bread, sugar, vermicelli	Rice, oil, peanut butter, milk, egg	Created recipes adding choice of ingredients
B	2	Yes	Onion, ginger, garlic, coriander	Rice, oil, egg	Only used 3 items from the list
C	2	Yes	Onion, carrot, green beans, eggplant, potatoes	Rice, oil	Only used 2 items from the list
D	2	Yes	Mushroom, garlic, salt, chicken, black beans,	Pasta, rice, oil, soy sauce, eggs, canned tomato	Created recipes adding choice of ingredients
E	2	Yes	Black beans, garlic, ginger, onion, paprika	Rice, canned tomato	Only used 2 items from the list
F	2	Yes	Bread, carrots, potatoes	Egg, butter, honey, yoghurt	Created recipes adding choice of ingredients
G	2	Yes	Eggplant, zucchini, carrot, flour, salt, chick peas	Pasta, canned tomato, oil, rice, egg	Created recipes adding choice of ingredients
H	2	Yes	Salt, onion, coriander	Eggs, rice, oil	Only used 3 items from the list
I	2	Yes	Bread, pumpkin, potatoes	Peanut butter, honey	Only used 2 items from the list
J	1	Yes	Frozen ready-made pizza	Canned pineapple, canned tomato	Only used 2 items from the list

Most participants revealed a general lack of knowledge in supplied food items by the food bank. Participants all were able to complete this activity. Six participants used less ingredients than the rest since they found those items are not culturally appropriate to their own individual cultures. participants were asked how do you think this feeling of not knowing or frustration of preparing

delicious meal can be avoided with the items you are not generally familiar with. Participants indicated a willingness to experience a barrier-less customer journey, and that increasing the resources to minimise the knowledge gap within supplied Western food ingredients by food bank.

One participant suggested:

“I don’t know anyone else but for me, I would like something quick to look up. I have three children that go to school. I also have to look after my elderly parents. I barely have time to find out what I can make quickly with these foods when I don’t know them”.

Another participant added:

“My concern is some food going bad you know? We often get near expired food or something almost rotten. I often try to salvage them. But would be good if I could find some guidelines on how can I make something real quick with those half rotten/expired food or preserve them so I don’t waste”.

After the completion of both activities, I told the participants that from Activity 1 using every single item from the list I could make up to 4 different recipes: 2 mains, 1 snack and 1 shake/drink. And second activity could produce more than 10 different recipes adding some preferred ingredients. All participants expressed their interested in learning this cooking method with ingredients that they are not familiar with. From participant’s opinions, it is evident that their food bank needs to work on supporting their client’s needs by providing them with correct meal plans especially when they have limited supply on cultural food products.

Participants also asked three open ended questions after completing two exercises. They were encouraged to discuss among themselves. This section also related the answers to some of the questions on the questionnaire and interviews. The questions were as below:

1. Write down 3 important aspects of your experience that could make your life better.
2. How much do you roughly spend on weekly grocery shopping?
3. If someone asked you how to make something very quick and easy using the least amount of ingredients that is close to your culture, what would be your advice?

Participants were asked about what three main aspects of their lives could make their experience better. A total of 10 answers were gathered from the participants identifying common answers such as: food, employment and accommodation.

Question 2 was designed to get a general idea of participants' estimate expenses on grocery bills: 'How much do you roughly spend on weekly grocery shopping?' The amount ranged between \$50 for 2 members in the family and \$100 for up to 5 members in the family. This calculates to approximately \$3.55 each day per person for preparing their meals that indicates their strict budget limit. While it may be difficult to create a variety of meals within small budget, but it is possible when shop strategically following meal plans yet incorporating some healthy food ingredients.

The third and final open-ended question for the participants was: 'If someone asked you how to make something very quick and easy using the least amount of ingredients that is close to your culture, what would be your advice?'

This question was concerned with adding to the cultural meal on a more general level. South Asian participants used only 3 items to prepare very simple meals and common added ingredients were: onion, ginger, garlic, coriander. African and Arabic participants used up to 5 ingredients like mushroom, chicken, black beans, paprika, chickpeas, etc to create hearty soup-based dishes and rest used 3-4 ingredients to prepare oven baked vegetables and pizza using fresh seasonal vegetables and herbs.

Conclusions to research findings:

Limited budget, financial constraints, short for food were the main three reasons for ongoing food bank use, discussed by the participants during co-design session. Participant narratives revealed experiences of low incomes from underemployment and unemployment, or insufficient government social assistant rates to meet their basic needs. The group discussions included conversations regarding the type of food items, with the experience of unmet need being described by one participant, as – ‘the food should be recognisable’. Her comments perhaps suggest that it is not considerate to offer food that people are not familiar with. Another reason for providing clear instructions for food bank members on how to prepare certain food items in difficult times when it could solve immediate hunger.

These results are encouraging for immigrant and locals as all the participants shared some interesting meal preparation strategies. The co-design Participatory Design workshop was particularly revealing in identifying the need for honest and immediate care for participants/end users and in the food bank members' service initiative possibly insinuating that members' have some level of control and

educated perceptions. A key observation was that participants were lacking knowledge in Western cuisine. This could be obviously an important area to focus on and organise. But it needs to be taken in to account before the members are being served by the food banks either by writing down the proper meal preparation guidelines or asking the food bank management service for labels or have a platform where the members can have free access to meal preparing options. The conclusions and recommendations emanating from this interpretation of the findings to these research questions appear in following chapter.

Chapter 6

Prototype- Blogsite

This chapter discusses about how the key findings from the research were gathered and transitioned into prototyping of a blogsite.

Overview of findings

It is quite clear from previous chapters' participants' interviews and co-design activities that food insecurity does not mean lack of food only, but more about broader social circumstances that lead a newcomer to the state of being food insecure. The three key findings to this study revealed first, that newcomers who are able to access food at their local food banks, are not always culturally appropriate. Second, it is difficult for members who come from a diverse culture, to feel at home as they try to invent new ways cooking with unfamiliar foods; matching food provided at local food bank with their own approach to cultural cuisine can result in almost inedible dishes. Third, even with supplied food from the food bank, members often feel in despair as there are no support tools available to learn how to use the food items that they are unfamiliar with.

It is undeniable fact that food banks cannot always collect culturally appropriate food for its members (Tarasuk et al., 2014). As stated by the manager of Citadel that "variety is an issue". Thus, member's experience of the food bank systems and their visions on these services still remain an area of limited research. The study now will look at the key findings and requirements and the goal is to design a Blogsite as a platform and tangible solution to address members' immediate needs for the time that would try to resolve accessibility issues within unfamiliar food items.

Finding 1: Unfamiliarity with supplied food

A growing number of newcomers are using food banks on regular basis (UFCW, 2018). From the information gathered during co-design session and one-on-one interviews, this study revealed that local food banks are offering food items that tend to be unfamiliar to with the participants. As one participant stated [showing a number of items]:

“Look here, I show you what I got today in my bag. I always go through my supply bag before leaving the food bank. If I don’t like or don’t know something I leave it here. What is this, mayonnaise? I don’t know what can I make with mayonnaise.”

Another participant mentioned:

"I do not recognise most of the items that I get in my supply bag. It is hard for me to understand what is this exact canned food. I can't look up on internet because I don't know how to use internet or where to start. I am too old for this."

From those responses, it is evident that, members’ understanding of certain food items is limiting their ability to use the food provided. With a list of ingredients and what type of food can be prepared using those items, could help individuals. Especially for members who stated that they have limited knowledge in searching for information using internet. This makes it challenging for the members who do not have access to information about food they are not familiar with.

Features for blogsite

Based on finding 1, several features have been designed for blogsite:

1. List of names and visual of unfamiliar food items that are commonly supplied to the food bank members

2. Brief description of common or typical ways the food is used or eaten in different cultures
3. Video link for cooking demonstration
4. Specific recipes that use the item with a variety of options to suite a diverse cultural cuisine

Requirements for blogsite

1. Simple actions [for example scrolling up and down, sliding left to right or right to left and use of minimal sub-menus] to view content those who have limited working knowledge of technology in a non-native language.
2. Optimise for mobile devices
3. Clickable recipe buttons under each food items for viewers that takes them to external video links where viewers can play videos of a cooking method using the item

Finding 2: Unfamiliarity in ways to prepare meals with supplied food ingredients

From interviews, it is apparent that food is an important element in any culture, the following two strategies were generally identified as ways to cope with hunger within their cultural context. They include:

1. Stretching meals and
2. Keep eating same food in smaller portions

These two aspects of hunger were voiced by the participants in this research. From the data collected, it shows that limited knowledge exists in preparing meals with provided food among participants and the techniques used in stretching meals that is not the best option for balanced diets.

In order to address the need for better recipes ideas a set of clear instructions preferably using video demonstrations using the provided ingredients is recommended. It is necessary to include a brief description of the major food ingredient and then display a video cooking instruction using that ingredient along with few other items. During interview and co-design activities, it was also noticed that all participants owned mobile devices and some tried to complete the tasks using Google search, hoping for some helpful recipe ideas. However, it is difficult to find a recipe if proper terminology is not used. For example, a member receives flour, frozen chopped vegetables and oil wants to create a meal using the ingredients but does not know what the name of dish that could potentially use all these three ingredients. Therefore, it would be difficult to generate a recipe in Google search system without any reference to particular name of the dish. A simplified listing of using visuals of food items along with its usage with other ingredients showing a video demonstration of cooking could help the members.

Features for blogsite

Based on finding 2, the features below have been designed for blogsite:

1. Separate section providing complete meal recipes and wide range of cultural food choices using the most common ingredients that food bank members receive
2. Visual references of meals
3. Video link for cooking demonstration

Requirements for blogsite

1. Simple actions for browsing meals swiping the screen left to right and vice versa
2. Meals accompanied by text that is visible after the user clicks on the item- for example, meal name will appear when user clicks on the thumbnail item

3. Second click on the meal item to activate the video link where viewers can watch cooking demonstrations

Finding 3: Limited working knowledge in technology

During interview session, most participants showed very basic working knowledge with mobile devices. They all have expressed common interests in getting quick access to information without the hassle of typing out specific sources for information. As one participant stated:

“I don’t know anyone else but for me, I would like something quick to look up. I have three children that go to school. I also have to look after my elderly parents. I barely have time to find out what I can make quickly with these foods when I don’t know them.”

Another participant shared:

"I do not recognise most of the items that I get in my supply bag. I don't speak, read or write English. Being an Arabic speaker, it is hard for me to understand what is this exact canned food. I can't look up on internet because I don't know how to use internet or where to start. I am too old for this."

To assist the food bank members who have limited working knowledge around mobile devices, it is recommended that they access the website by scanning QR code that would lead the users straight and quickly to the information without typing into Google search. The following Figure 3 can be used as instructions on Android phones for the members on how to download, install and

scan the QR code as noticed during co-design activity members were all seen using android phones.

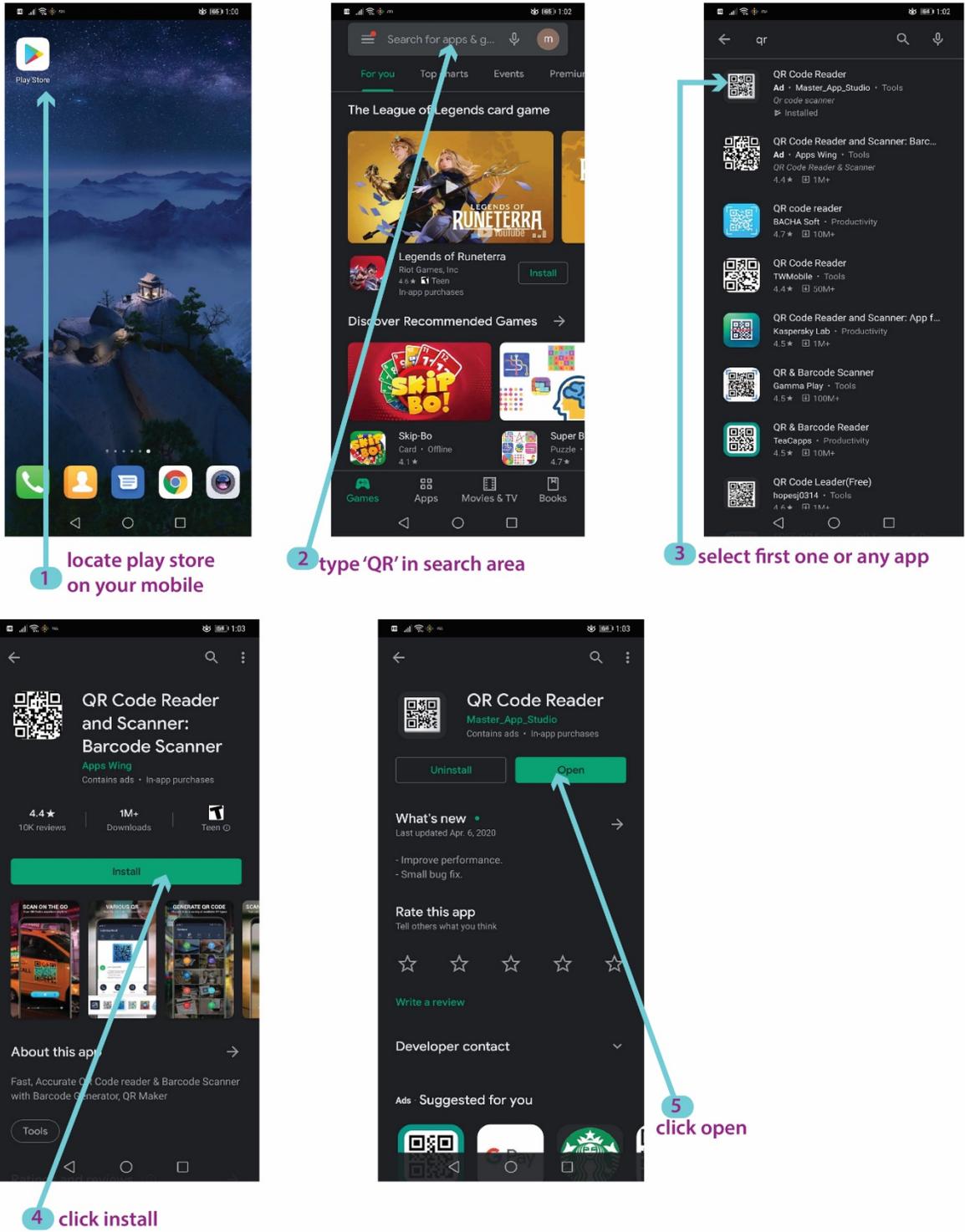


Figure 3: Download and installation process of QR code reader app

QR Code

One of the most highlighting and unique features of the blogsite is QR code, or Quick Response code that are considered to be a trademark for a particular type of matrix barcode. A barcode is a machine-readable optical label that includes information about the particular product that it is attached to (Tiwari, 2016, p.39-44). Thus, it can be stated that it contains information for an identifier, locator and tracker that directs to a particular website or application. Thus, a QR code utilizes four standardised encoding modes known as numeric, kanji, alphanumeric and byte or binary that help in storing in an efficient manner and extension can be used. The QR system is one of a popular method for retrieving data because it has a fast readability component and the greater capacity of storing data in comparison to the standard UPC barcodes (Cheng, Fu and Yu, 2018).

It is recommended to attach this QR code and printed copy of instructions as Figure 3 and 4, to food supply bag for the food bank members. The purpose of having this QR code is, the users do not have to type the entire blogsite address or URL in the search tab as in case of other websites. Figure 3 instructs users how to download and install QR code scanner app on Android mobile devices and Figure 4 shows the process of scanning the QR code with installed code scanner app.

Download and installation of QR code scanner app process

To download and install the QR code app first the user should locate Play store on their Android mobile. Then type QR into the search area as shown in step 2 in Figure 3. After typing QR, the user will see a list of suggested app. Here the user can choose any app or the very first one. The next step is to click on install button shown as step 4. Once the app is installed the user can now open the app shown in step 5 in Figure 3.

Scanning process to access the blogsite

After installing the QR code app following Figure 3 instructions, the user can now scan the QR code. To do so, user has to locate the QR code scanner shown as step 1 in Figure 4. Once the app opens, mobile device needs to be positioned in front of the QR code [step 2, Figure 4] that is attached to food supply bag. The app will now generate the code and redirect the user to the blogsite shown in step 3 in Figure 4.



Figure 4: Scanning process using QR code scanner to access blogsite

Features for accessing blogsite and contents of blogsite

Based on research finding 4, the features below have been designed to access the blogsite and its contents for the users:

1. Attached QR code to the food supply bag with instructions for the users showing how to access the blogsite shown in Figure 3 and Figure 4
2. Simple menu options
3. Simple submenu design
4. Use of multiple languages as the blogsite becomes more developed and programmed in future

Requirements for accessing blogsite and its contents

1. Use of visuals as step by step guideline on QR code scanning process to access the blogsite
2. Simple actions [for example scrolling up and down, sliding left to right or right to left and use of minimal sub-menus] to view content those who have limited working knowledge of technology in a non-native language
3. Optimise the blogsite for mobile devices using simple terms that are easy to read and understand

Conceptual diagram of blogsite- Nourish Me

On the basis of the data collected using both qualitative and quantitative data collection methods from the specified participants and the generation of the specific requirements, a blogsite was created in order to address the accessibility issues among food bank members who have limited knowledge in cooking with unfamiliar food ingredients. During the interview session, all participants were seen using smart phone devices and they had very basic knowledge of browsing simple websites, video

watching platforms etc. In this particular research, the layout and scenario were established in an iterative manner with the conceptual diagram. This conceptual diagram was created to show the structure and organisation, mapping the pathway that a user could undertake to navigate the blogsite (shown in Figure 5 below). The blogsite is at its infancy stage and requires more development to be used by its audience later in the future, the available components are being presented in the diagram in order to conceptualise the picture and help in the development of the content.

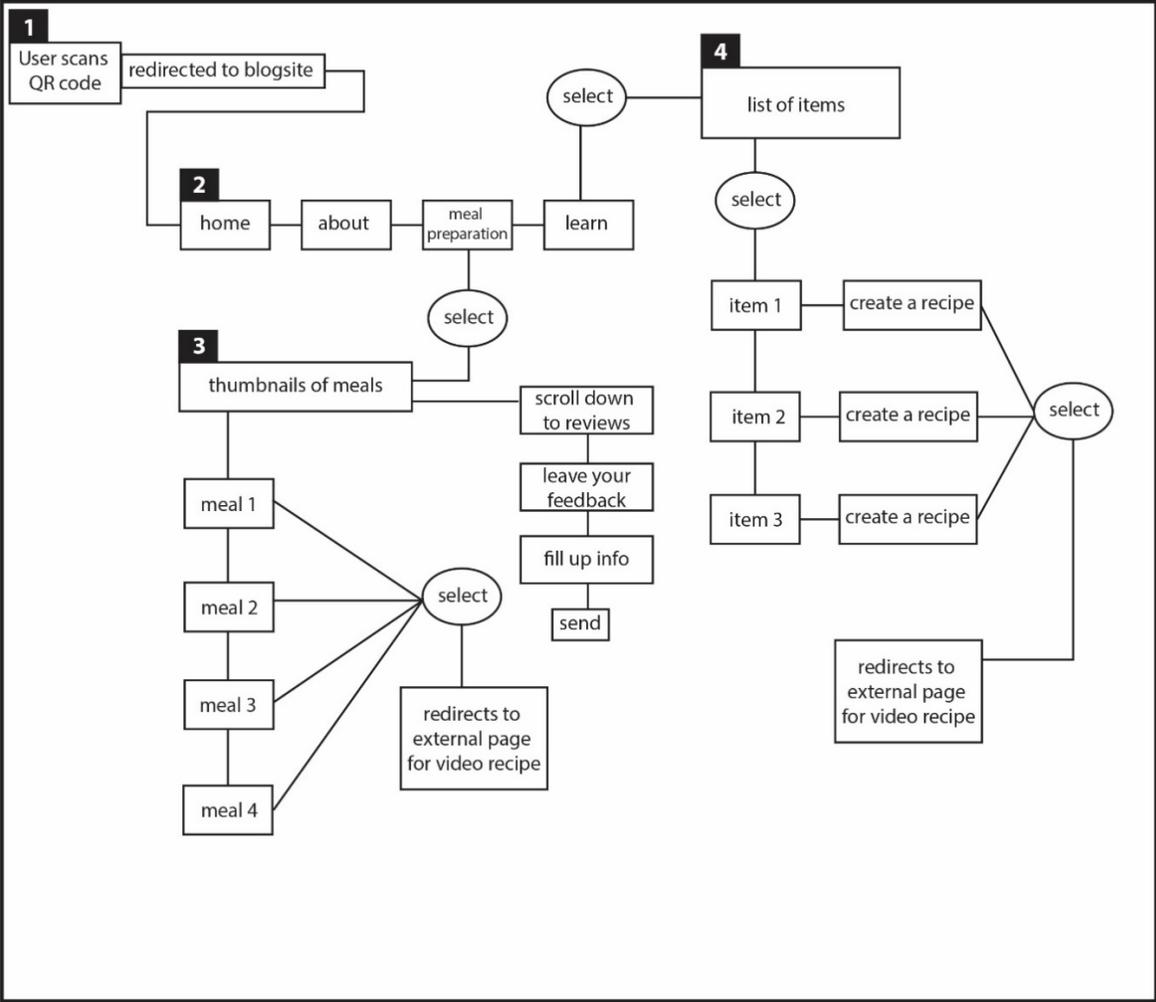


Figure 5: Conceptual Diagram- shows the layout of blogsite and how a user can access to different contents of a page

Scenario 1: Find a desired meal option from Meal Preparation section

Scenario 1 activates the steps of generating meal plan that is simple and quick to make with less expensive ingredients that would serve more than just one family member.

Jamila wants to prepare lunch for her son using a can of tuna. She wants to achieve the flavour that is close to her own cultural cuisine. After she scans the QR code, the page is redirected to the blogsite. Under Meal Preparation she finds a wide range of options for recipes. She notices Tuna Kebab. On click on each of the picture, the name of the recipe will appear [shown in Figure 6].

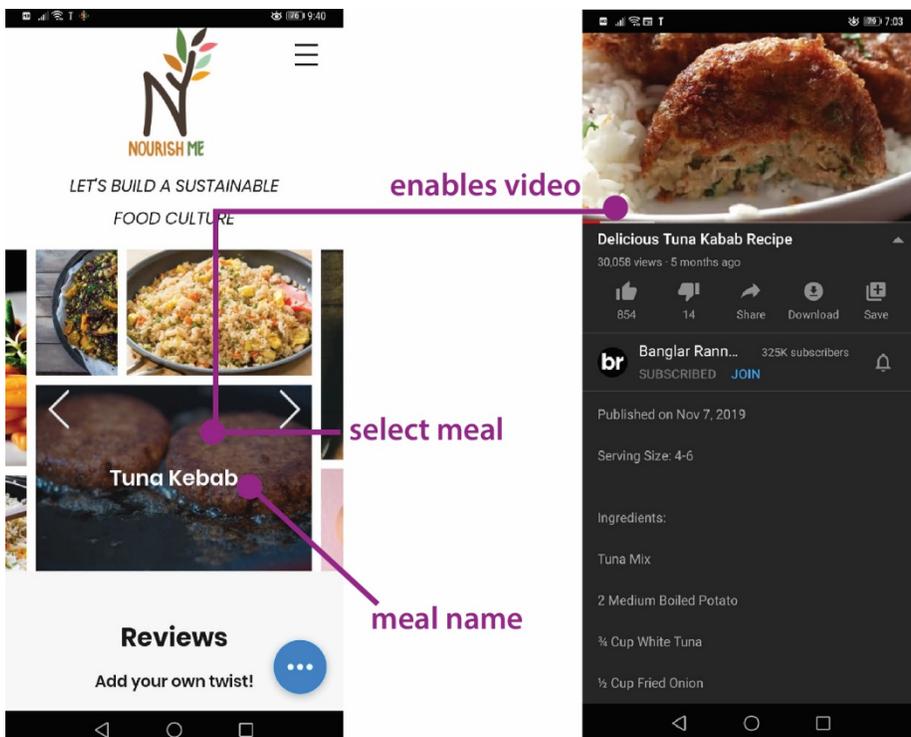


Figure 6: Showing meal selection and video instruction of meal preparation

As she clicks on the picture of a meal, she is redirected to the embedded page, which is a YouTube video or other pages where a video and written recipe is available with respect to the recipe [Figure 6]. From this page, she can easily access the recipe through the audio-visual content or through the description box that offers written information such ingredient required, recipes in a step-wise manner and serving as well as time required.

From the blogsite, the users can easily assess the nutritious meal items that can be made easily and with few ingredients that can be afforded by the intended group of people. The menu preparation has been made by keeping in mind the objective of the different themes identified from interview data prior to creating the blogsite. For example, a recipe was added showing how to make Tuna Kebab using canned tuna following traditional Bengali cuisine, how to make bean salad using very affordable ingredients. Most of these meals can be made from simple and common items such as tuna, chickpea, yoghurt, eggs and beans which are widely provided to food bank members.

Scenario 2: Find an unknown item from Learn section

Scenario 2 activates the steps of learning about an unfamiliar item and how to cook or prepare a meal plan following a video instruction using that item.

After a long day at work, Meera wanted go home and prepare a quick meal. She finds canned diced tomatoes in her cupboard. She does not know how to use canned tomato. She decides to find a recipe quickly. She is aware of how Nourish Me blogsite works.

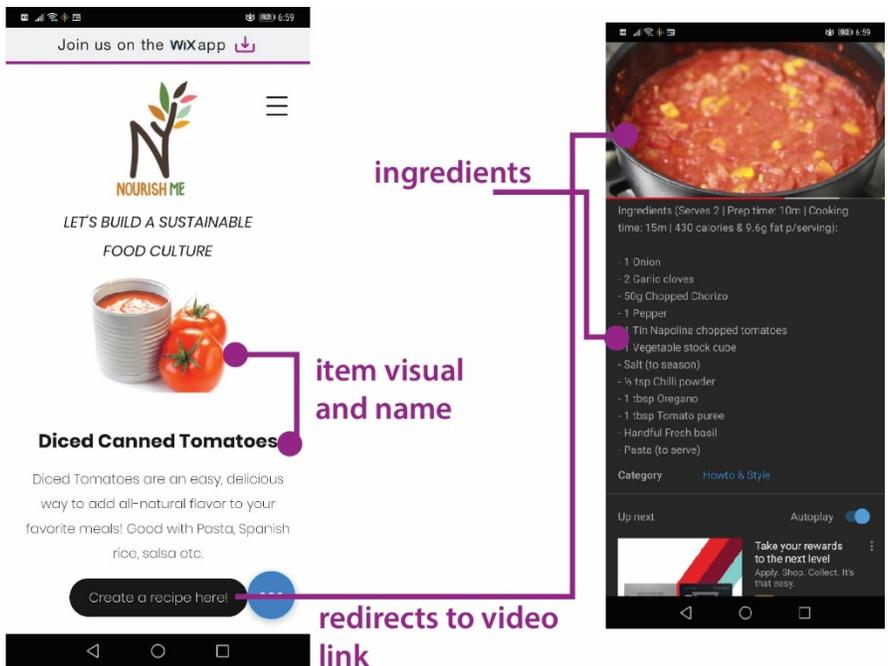


Figure 7: Showing food item selection and video instruction of meal preparation

She scans the QR code and selects Learn tab from menu option where she finds diced canned tomatoes. She reads a brief description on about the item and ways it can be used in different cooking. She clicks on the 'Create a recipe here!' button that takes her directly to Youtube video instruction of how to cook pasta with canned tomato.

Description of blogsite prototype:

In this section the four menu options – ‘Home, About, Meal Preparation and Learn’ of blogsite and how the users can access to different contents of the blogsite are presented.

1. Home

The Home section is the first page of the blogsite that introduces the blogsite to the users. It also includes menu options on top right corner that has 4 options: Home, About, Meal Preparation and

Learn [Figure 8], each of which has a different purpose and help in offering basic information related to food for the minority population living in the country (Graphicmotion87.wixsite.com, 2020).

User actions

A user can select any element from the menu bar option to view or input data. The blogsite has a total of four menu items- Home, About, Meal Preparation and Learn [Figure 8 & 9]. When user clicks on dashed lines on top right corner a list of submenu will pop up.

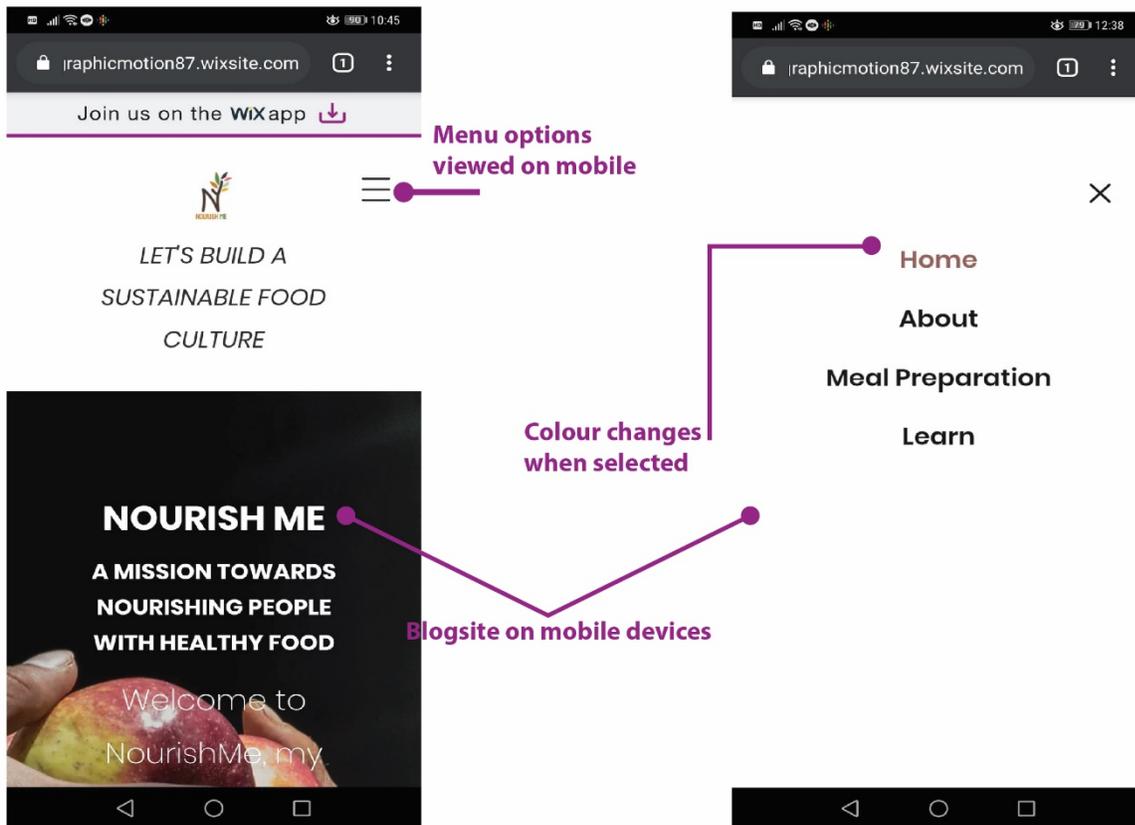


Figure 8: Home page and menu options of Nourish Me blogsite shown on mobile device

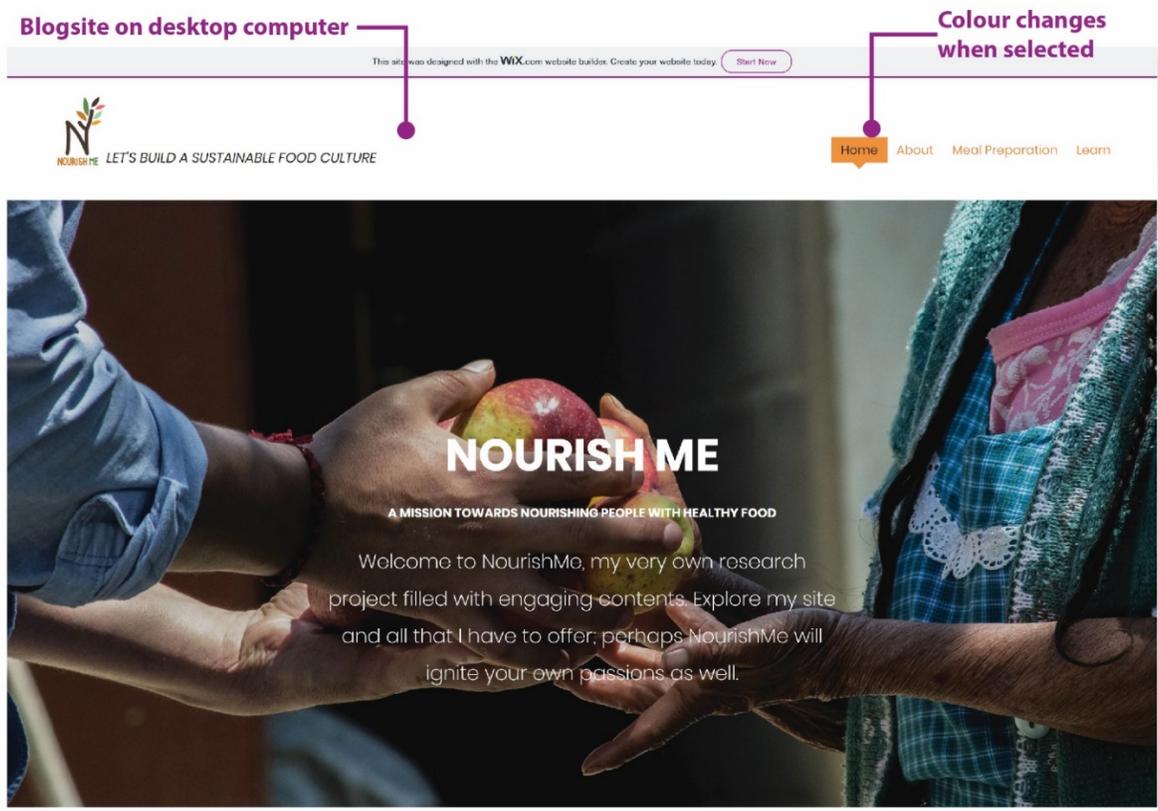


Figure 9: Home page and menu options of Nourish Me blogsite shown for desktop version

2. About

The 'About' page [Figure 10] states the purpose of the site, the reason for its development and other background information. The information includes the inspiration for creating this page as well as a tab that offers contact option of the designer.

User actions

Users can read through the description and should they wish, they can contact the designer by clicking on 'Contact Me' button. Once clicked on that depending on the settings of users' personal mobile device a communication method will pop up for example Gmail option as shown below [Figure 10]. User then can use email option to reach out to the designer.

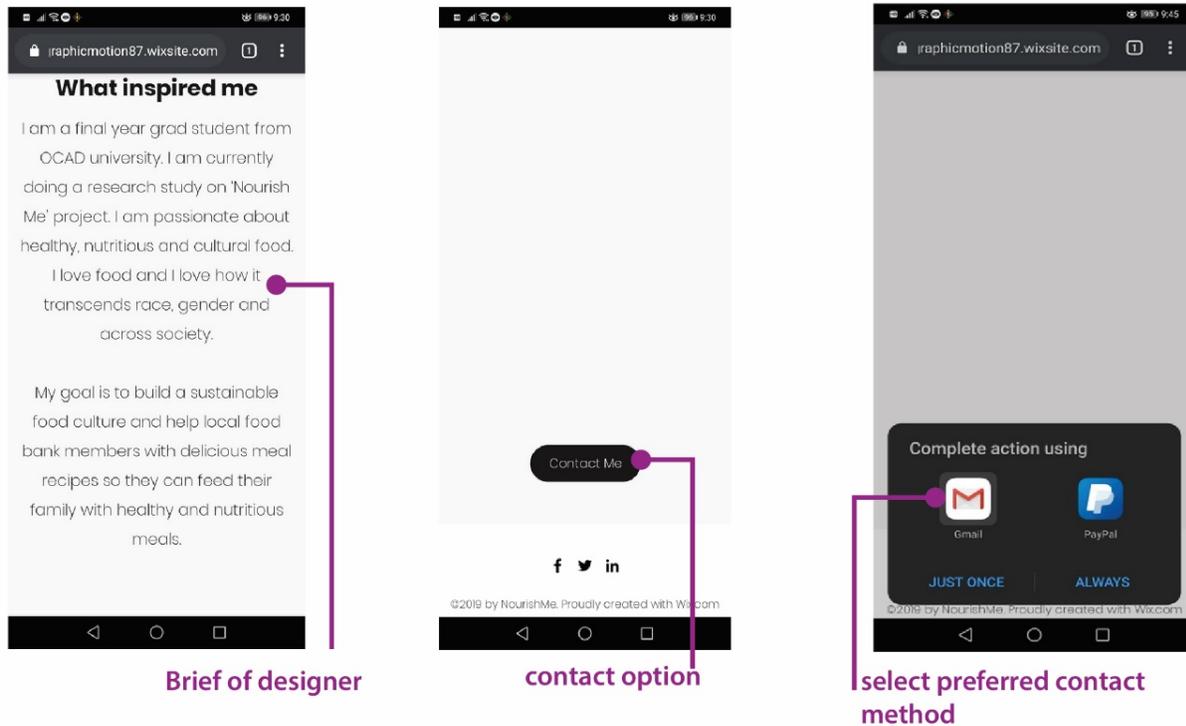


Figure 10: About page and contact option

3. Meal preparation

One of the most important pages of this blogsite is 'Meal Preparation' [Figure 10] that offers recipes using most common food items that members would receive regularly by their local food banks. This section has a list of food items with picture references that can be accessed by sliding the screen left to right and vice versa.

User actions

- Browse meal options by sliding the screen back and forth
- Select the choice of meal and the name of meal will appear
- Select again on the meal redirected to an external link like Youtube for a video of cooking method of that particular meal

Figure 11 below shows, user first clicked on menu option on home page and then a submenu popped up with 4 options. User clicked on 'Meal Preparation' as second step and selected 'Canned bean salad' as step 3. This action took the user to Youtube video link that shows cooking instruction. After watching the video user may wish to go back to see more meal choices by clicking on back button in step 4 on to the browser which then takes the user to 'Meal Preparation' content as last step 5. On this page the user can select other meal choices repeating the same steps 1 to 5 as shown in Figure 11 below.

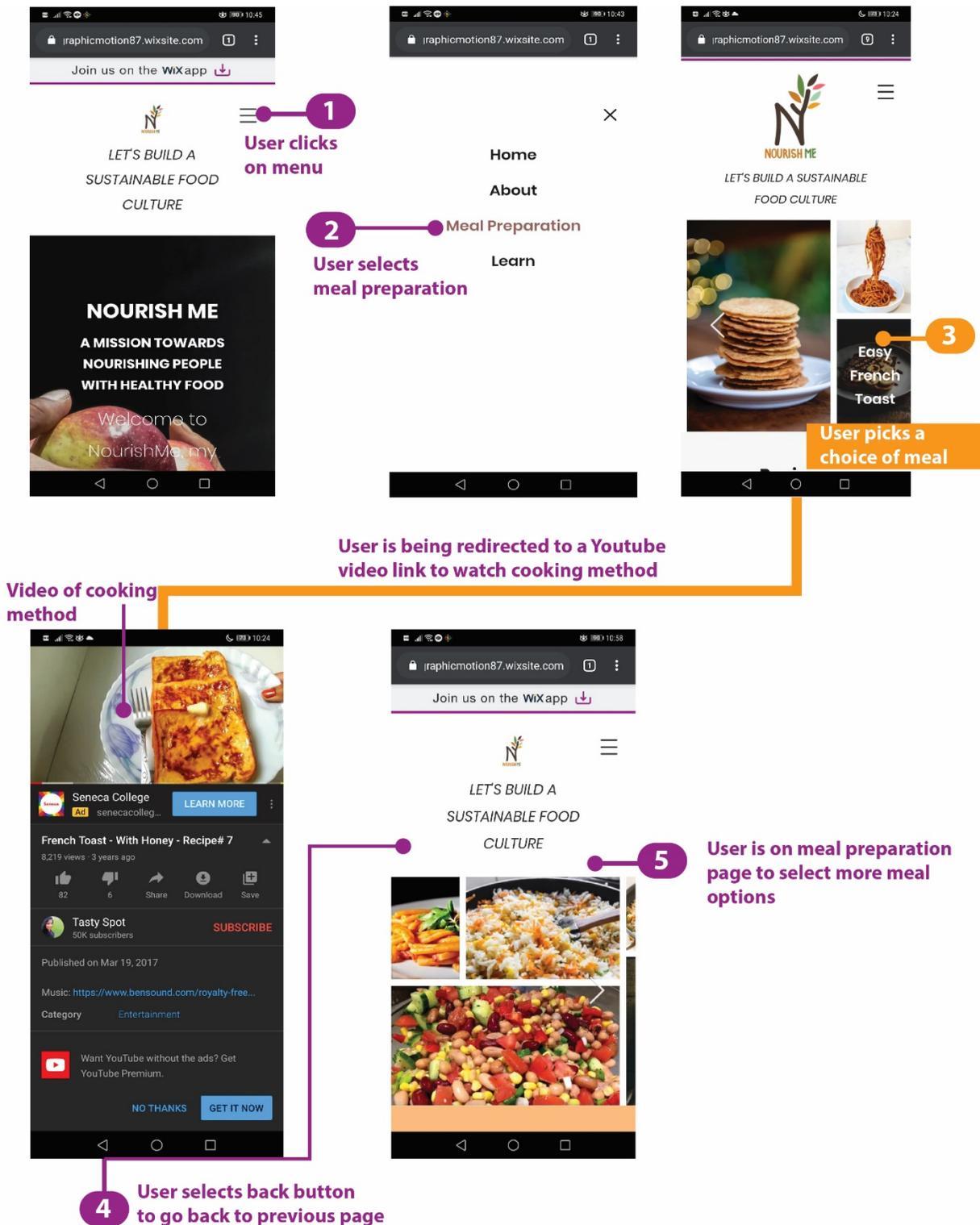


Figure 11: Meal preparation page This section displays a number of different cultural dishes and how a user can be redirected to external link for a video demonstration on that particular dish

4. Learn

Another important page of this blogsite is 'Learn' section where it displays a number of food items that are usually not recognised by the food bank members of different ethnic backgrounds as revealed during co-design activities. This section includes the food items with a brief description and some recipes that item can be added to or cooked with. It also comes with a 'Create a recipe here!' [Figure 12] option that would redirect the user to an external video link where there will be a cooking instruction video using that ingredient.

can be accessed by sliding the screen left to right and vice versa.

User actions

- Browse the items that users like to learn about
- Select the item to find out what kind of dishes can be prepared with the item
- Select on 'Create a recipe here!' button to be taken on to an external link like Youtube for a video of cooking method of using that particular item

The Figure 12 below shows, user first clicked on menu option on home page and then a submenu popped up with 4 options. After clicking on 'Learn' as second step and scrolling up and down to browse contents as step 2, user finds an item that shows a brief description of that item and spotted a 'Create a recipe here' button in step 3. Followed by step 4 clicking on 'Create a recipe here' user is connected to Youtube video link that shows cooking instruction using the ingredient that user is unfamiliar with. After watching the video in step 5. user may wish to go back to see more information on food items on previous page by clicking on the back button on to the browser as shown below in step 6. User can select and learn about more items and watch video instructions following the steps 1 to 6.

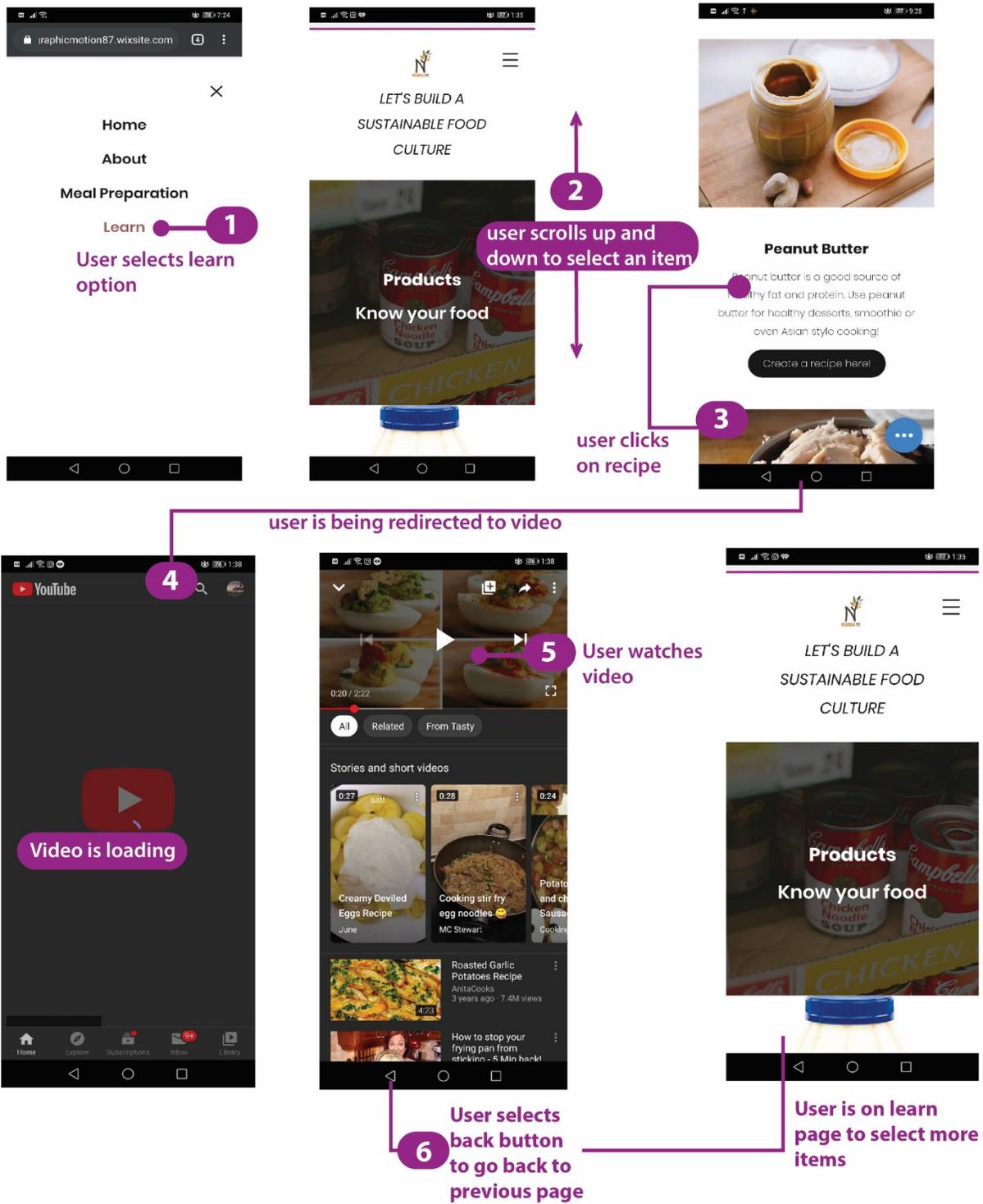


Figure 12: Learn page This section displays a number of food ingredients. Clicking on particular item will redirect the user to a video channel

Chapter 7

Conclusion

Living in a foreign land is an incredible experience, but for most low-income immigrant families this experience will also include some difficulties to varying degrees. Coping with various situations is one form of dealing with culture shock. Stated by one research participant earlier in chapter 4, how she tried to cook canned fish following her own cultural style of cooking and her son was not able to consume it, because it lacked in flavour and the texture was wrong. And the mother was blamed for her cooking style. Another participant mentioned how she would add plenty of liquids to one egg to make omelette that would feed two children for their lunch.

In most cultures, mothers are principally responsible for taking care of their children, preparing meals and feeding them. They care for their family's well-being and healthy eating. The children would also acknowledge the fact that their mother is the best cook than anyone else. But situation could be different when they settle in a foreign land and the expectation of food preparing duties are handled by the mother whose frustration over language barriers and a lack of support and tools that could help her cooking with foreign food ingredients.

As experienced by one mother during research interview, how she tried to prepare meals using food bank supplied items following her own traditional and cultural cooking method that became inedible for her family members. In situation like this, if she had supporting tools that helps her with cooking and utilising food items from food banks, to suit their own cultural tastes, her family would still have sufficient amount of food to function throughout the day. These are just some examples of how Western food ingredients can still be prepared according to each and individuals' taste buds.

There are a number of cooking strategies and techniques could be applied by mothers from different ethnic backgrounds to adjust and adapt in new environments.

The research findings suggest that lack of knowledge in Western food culture was perceived as a barrier, in line with food insecure household community who are from diverse ethnic backgrounds. Participants also revealed that even with limited resources and unusual items combined with lack of skills over right ingredient selection posed a challenge for food preparation. As discussed before, offering food bank members more helpful instructions may assist to aid this issue along with recipes and cooking ideas with different items that could make their way through the food bank.

Whereas food banks are trying to secure more donations that are faith-based like halal, vegetarian or non-eurocentric culturally appropriate food, but it is difficult for them to always procure certain types of donations. In the immediate need to eliminate hunger among the food insecure community, food banks could provide additional support to their members - using food ingredients that members are usually not familiar with to avoid the discarding of food when members do not know how to incorporate these unfamiliar ingredients into their meals. The recommendation of a blogsite has illustrated in this study is aimed at helping all individuals who regularly visit food banks and who are provided with food that is not as per their cultural cuisines. Individuals can find nutritious recipe ideas which use very common ingredients that they usually receive from food banks.

Strengths and limitations:

A major strength of this study included the close research relationship developed through the community based participatory research approach. This approach was engaged directly with the food bank members who voiced their experiences and opinions. The members also expressed appreciation that they could participate in this research study. This engagement shows that through participatory design session with emancipatory approach could potentially be useful to improve the food bank services.

Limitations of this study should be acknowledged in the interpretation of findings. Due to limited timeframe, the interview and questionnaire relied on a relatively small number of food bank members. Therefore, results may not be generalizable to the larger population of food bank members. A limitation to the qualitative component was the fact that this research study design only included a small group conducted at one site, and data analysis was done after the entire data collection method was completed rather than throughout the data collection process, which may have effects on ideal saturation.

Future research and Conclusion

Upon inspection of the questionnaire and interview data, it would appear that what could food banks to help the vulnerable community who are food insecure. Further research could be done by directly getting the food bank members involved into cooking at food bank community kitchens should they become accessible. This could be done by inviting a representative from one particular ethnic background every week who would actively cook some traditional meals using limited shelf life food items from the food bank. This prepared meal then can be offered to general visitors or public which

would help generate income. Thus, empowering the vulnerable individuals who would have some degree of contributions to the society.

A blogsite is not just an online journal anymore. Once the blogsite is fully developed and designed accordingly it could drive a lot of traffic and may be taken one step further to create a social business. Interesting and unique contents can attract Google and other search engines. Especially the blog part with regular new posts can directly connect with social media that would create visitors' engagement through comments and feedback. It would also be beneficial to optimise blog posts and page contents for the search engines like Google and this blogsite could grow as a small online business. There are many scopes that could be considered when the blogsite grows to support food bank members. List of contents that could be added to blogsite in future are as below:

1. Community forum: A separate section where not only foodbank users but also general audience can share recipes and tips about safe storage of ingredients
2. Exchange items section: This section could help those users who are willing to exchange items within their local neighbourhood.
3. Budget grocery shopping: This section can list some quality and cultural food items that are available from local superstores or grocery stores with regular updated information.
4. A Welcome page: This page can be designed to welcome newcomers to Canada from blog members who have fair experience with local food bank system.

Sharing culinary skills and knowledge can offer food bank members memorable ways to learn about new culture and cooking with different food items in more inclusive way. Lack of knowledge in

preparing meals was a common thread mentioned in this study by the participants, which in turn can improve their inner culinary skills. In order to further help low income community helping them become financially independent sharing meal preparation ideas, more research is needed to solidify current perspectives on old adages.

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Appendix 1 Questionnaire

1. Have you ever experienced food insecurity, which is not knowing where your next meal is coming from, or involuntarily eating less than you need, on a regular basis, for a period of time lasting more than 2 days?

- Yes
- No

Do you have anything to add about your answer? _____

2. At what age range(s) have you experienced food insecurity for 2 days or longer?

- 0-12
- 13-18
- 18-25
- 26-40
- 41-65
- 65 and older
- N/A

Do you have anything to add about your answer? _____

3. Did you feel concerned about visiting foodbanks?

- Yes
- No
- N/A

What is the concern? _____

4. How often do you visit foodbanks?

5. Please check any of the following services that you have used at the age of 18 OR OLDER:

- A food bank in your community
- Food assistance available from a church in your community
- Food assistance from another organization in your community
- School Breakfast Program
- Other services, or comments on your answer to this question: _____

6. On average, in the past month, how many servings of seasonal vegetables that are less costly at the grocery stores have you consumed daily?

- 0
- 1-2
- 3-4
- 5 or more

Comments on your answer to this question_____

7. Does the cost of food affect nutrition in your food choices?

- Yes
- No

Comments on your answer to this question_____

8. Do you like to see any particular type of food available at your local foodbank?

- Yes
- No

Please mention the type of food_____

9. Please select any of the following statements that you feel apply to you:

- I do not know how to prepare nutritious meals for myself.
- I am physically unable to prepare meals for myself.
- I can cook, but nutritious foods are too expensive.
- I am too busy to prepare nutritious meals for myself.
- I am not sure whether my meals are nutritious or not.
- None of these statements apply to me.

Comments on your answer to this question_____

10. Are you open to using mobile apps for food choices/news/local grocery market deals and so on?

- Yes
- No

Comments on your answer to this question_____

Appendix 2

Interview Questions

1. Tell me about yourself: your family, your concerns, how you are managing during difficult times?
2. Do you/spouse have a job? If so, what is it?
3. How many people in your household do you feel responsible for? (Children? Grandchildren? Elderly parents?)
4. How close does your income come to meeting your financial needs?
5. What are your greatest challenges at the most difficult times for you and your family?
6. If you needed help in just one or two areas, what would those be?
7. Have you or your family ever had to go without food? If so, for how long? How did that make you feel? Please expand on how difficult it is to get enough food.
8. Have you or your family ever gone to bed hungry?
9. How often do you visit the food bank?
10. How do you get here? Car? Walk? Get a ride with others?
11. Do you ever bring other people with you -- perhaps a neighbour, a senior, or someone else who might need the services of a food program, but has no means of transportation? If you do, tell me how it makes you feel to help others who are also in need.
12. Do the resources that you find here sufficiently meet your dietary and nutritional needs?
13. Where do you usually search for deals on special food items? Eg: Apps/Flyers
14. What specific foods do you and your family need most?
15. What is the longest period of time you had to go without food? [Optional]
16. What are your concerns about nutrition? How important is getting nutritious food to you and your family?
17. How would you describe your experience working/interacting with food bank personnel?
18. What would your life be like without the resources available at the food bank?
19. When you receive food you do not need, do you share it with others? If so, do the people you share with express their thanks to you?
20. Do you have any questions, comments, compliments or complaints?

Appendix 3

Participatory design activity – 1

Below here you are given a list of food items. Please pick any item of your choice and make a recipe using these ingredients. If you are not familiar with any particular item, please mention it on your exercise sheet.

1. Canned pineapple
2. Frozen bag of mixed vegetables cut
3. Canned tomatoes
4. Rice
5. Oil
6. Soy sauce
7. Yoghurt -flavoured
8. Yoghurt -natural
9. Pasta
10. Basil Pasta sauce
11. Jar of Asian cooking sauce
12. Butter -regular
13. Peanut butter
14. Eggs
15. Mayonnaise
16. Milk
17. Honey

You can use all the ingredients to create as many as recipes you like. Be creative. Please mention the name of your dish on top of each recipe you create.

Appendix 4

Participatory design activity- 2

Below here you are given a list of some food items. Try to make meal recipe that is close or somewhat close to your ethnic food. If it is difficult to create ethnic food of your culture using these items, please mention the key ingredients that are missing on your exercise sheet.

1. Canned pineapple
2. Frozen bag of mixed vegetables cut
3. Canned tomatoes
4. Rice
5. Oil
6. Soy sauce
7. Yoghurt -flavoured
8. Yoghurt -natural
9. Pasta
10. Basil Pasta sauce
11. Jar of Asian cooking sauce
12. Butter -regular
13. Peanut butter
14. Eggs
15. Mayonnaise
16. Milk
17. Honey

You can use all the ingredients to create as many as recipes you like. Be creative. Please mention the name of your dish on top of each recipe you create.

Appendix 5

Participatory design activity- 3

Open ended questions for discussion

1. Write down 3 important aspects of your experience that could make your life better.
2. How much do you roughly spend on weekly grocery shopping?
3. If someone asked you how to make something very quick and easy using the least amount of ingredients that is close to your culture, what would be your advice?