Comparison of international students’ perceptions of healthy eating before and after arrival in Canada: A qualitative study

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A thesis submitted in partial fulfillment of the requirements of the Honours Program in the Department of Applied Human Sciences

This Thesis is Accepted

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ABSTRACT

Purpose: The number of international students in Canada is increasing steadily with many planning to reside in Canada permanently. However, the health of this population tends to decline with time spent in Canada, leading to higher rates of chronic disease. Previous research suggests that international students perceive their traditional diet as healthier compared to that available in North America. However, there is a gap in the literature exploring what healthy eating means to international students, both in their country of origin and in Canada. Therefore, the objectives of this study were to explore international students’ (1) perceptions of a healthy diet in their country of origin, (2) perceptions of a healthy diet in Canada, and (3) how their perception of a healthy diet has changed since their arrival in Canada.

Methods: A qualitative descriptive design was used where in-depth, one-on-one interviews were conducted with 13 international students at UPEI. The interviews were transcribed from audio recordings and analyzed using thematic analysis.

Results: Nine key themes were identified: Preference for traditional foods and meals, associating traditional foods with healthy eating, the transition from familial to individual cooking practices, reading labels on processed foods, distrust of the food supply, discovering non-traditional foods, traditional food availability in Canada, reliance on convenience foods, and changing views of healthy eating.

Conclusions: International students coming to Canada have unique experiences with food due to a change in way of life, a lack of social ties, and a new food culture. There is increased interest in research of international students’ nutrition and health transitions because of the vulnerability of this subpopulation and the impact that the “healthy immigrant effect” has on the health system. Researchers, policymakers, beneficiaries, and dietitians will benefit from increased research in this area to support evidence-based, culturally-appropriate nutrition interventions.
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1.0 INTRODUCTION

1.1 Background

The transition from high school to university brings newfound independence over lifestyle and dietary patterns. For students who choose to study outside of their country of origin, this experience also produces a change in way of life, a lack of social ties, and a new food culture. Certain factors influence students’ acculturation to the new country, such as the campus environment, individual preferences, and the food environment (Alakaam, Castellanos, Bodzio, & Harrison, 2015). Dietary change at this time is often associated with stress, homesickness, and a preoccupation with food (Amos & Lordly, 2014).

It has been reported that Canadian residents who were born outside of Canada have reduced risk for chronic illnesses compared to those born in Canada. This is known as the “healthy immigrant effect”; however, the rates of disease can converge to Canadian levels over time as people adopt unhealthy behaviours and eating practices (McDonald & Kennedy, 2004). It has been found that international students in Canada report higher consumption of fat and sugar, large portion sizes, fast food, snacks, and sugar-sweetened beverages than in their home country (Amos & Lordly, 2014). The consequences of dietary changes such as these are associated with a decrease in overall health, including weight gain, increased blood glucose levels, and mental or emotional distress (Alakaam et al., 2015). Further, time since arrival in Canada has been correlated to a higher BMI, increased frequency of health care usage, increased onset of chronic conditions, and a decline in self-assessed health (Sanou et al., 2014).
The health of international students is important to policy makers because internationally-born Canadians made up 20.6% of the population in 2011, the greatest proportion of G7 countries (Statistics Canada, 2013). There was a 119% increase in the number of international students coming to Canada between the years 2010 and 2017, with a 20% increase in the last of those years (Esses et al., 2018). International students arrive from across the globe, with China, India, and South Korea sending the most students (Esses et al., 2018). A survey conducted by the Canadian Bureau for International Education (CBIE) found that 50.6% of international students plan to apply for permanent residency after completing education in Canada, motivated by job opportunities and a high standard of living (Esses et al., 2018).

1.2 Rationale

There is limited research available on international students’ perceptions of healthy eating. This qualitative study will explore how international students define a healthy diet in their country of origin and in Canada, and how their perception of a healthy diet has changed after coming to Canada. It is important to discover what international students perceive as healthy eating in order to better support this population to improve health on the individual and community level. There is increased interest in research of international students’ nutrition and health transitions because of the vulnerability of this subpopulation and the impact that the “healthy immigrant effect” has on the health system. Researchers, policymakers, beneficiaries, and dietitians will benefit from increased research in this area to support evidence-based, culturally-appropriate nutrition interventions.
1.3 Objectives

The objectives of this study are to explore international students’ (1) perceptions of a healthy diet in their country of origin, (2) perceptions of a healthy diet in Canada, and (3) how their perception of a healthy diet has changed since their arrival in Canada.
2.0 LITERATURE REVIEW

2.1 Dietary Acculturation

“Acculturation” denotes the process of adopting behaviours, practices, and values in reaction to being immersed in a different culture. Dietary acculturation may have a positive or negative impact on health depending on the behaviours that are adopted or discarded; however, a decline in health is more common in the international student population (Alakaam et al., 2015). Unhealthy dietary behaviours can be adopted because of acculturation to the North American diet or adjustment to the university experience, including time and budget constraints and a desire to have convenient, appetizing meals (Yan & Fitzpatrick, 2016). When international students arrive in Canada, consumption of fast foods, snacks, and sugar-sweetened beverages increases, which correlates to higher intake of fat and sugar (Amos & Lordly, 2014). International students consume fewer fruits and vegetables after arriving in North America, which may be because they are or taste different from those available in their country of origin, or because of budget constraints (Ogah, 2001). As well, 38.2% of international students surveyed in the United States of America reported using alcohol as a coping mechanism for stress, with 73% reporting occasional binge drinking on the weekends (Misra, Crist, & Burant, 2003).

2.2 Factors that Influence Acculturation

Pillarella (2006) found that perceived healthfulness, food availability, a preference for traditional food, cooking skills, and a commitment to maintain culture influenced West African immigrants to maintain their dietary habits in Montreal.
However, factors that induce acculturation of this group were hours of work that conflict with a usual eating pattern, transitioning to a Canadian lifestyle, and not being surrounded by other people of the same culture (Pillarella, 2006). Young, educated, and employed Chinese women have more knowledge of government nutrition materials and increase fruit and vegetable consumption after coming to Canada (Satia-Abouta et al., 2017). Nonetheless, many reduce consumption of Chinese foods because of time constraints and incorporation of Western foods (e.g., fruit juice and salads) (Satia-Abouta et al., 2017).

2.3 Diet and Health of International Students

International students may have different ideas of healthy eating depending on their country of origin, cultural practices, home environment, and personal experiences. These varied perspectives of healthy eating may yield differential opinions on the healthfulness of a Canadian diet and the impact their stay in Canada will have on their health. Across ethnic groups, those arriving in Canada tend to believe that their traditional diets are healthier, which is a strong motivator to maintain eating habits of their country of origin (Sanou et al., 2014). In a photovoice study of international students in Canada, all associated their traditional foods with health and thought that a Canadian diet was less healthy (Amos & Lordly, 2014). Traditional diets were considered healthier because of home cooking, specific ingredients, and how they made the students feel (e.g., some students mentioned digestive problems since arriving in Canada) (Amos & Lordly, 2014). International students in the United States have also voiced concern
over the impact that new dietary patterns have on their health and weight status (Langesmith & Van Scyoc, 2017).

Although research suggests that international students perceive their traditional diets as healthier compared to that available in North America, little research has delved into what is meant by these statements. There is a gap in the literature exploring what healthy eating means to international students, both in their country of origin and in Canada. For example, little is known about what foods international students perceive as healthy and unhealthy, and their reasons. It is vital to gain a greater understanding of what international students perceive as a healthy diet and how they believe their stay in Canada impacts their health. The number of international students in Canada is increasing steadily with many planning to reside in Canada permanently. However, the health of this population tends to decline with time spent in Canada, leading to higher rates of chronic disease.

2.4 Methodological Approach

Qualitative and quantitative research lie on a continuum of methods of inquiry, though they are not mutually exclusive. Qualitative research is defined as that which describes data and knowledge in linguistic means, whereas quantitative research is defined as that which uses the scientific method to numerically describe the differences between variables (Landrum & Garza, 2015). Both designs play key roles in fully explaining the natural world, though the method chosen for each study depends on the
research question. Since the present study’s purpose was to elucidate international students’ perceptions of a healthy diet, a qualitative study design was chosen.

A qualitative descriptive research design was employed to gain a deeper understanding of the natural world without manipulation, thus observing and analyzing situations and participant recounts in their natural state (Sandelowski, 2000). This type of study is favoured when researchers want to describe phenomena in a straightforward manner, such as the who, what, when, where, and why (Sandelowski, 2000). A qualitative descriptive approach allows for analyzing data that lies outside of more rigid frameworks, such as phenomenology, grounded theory, or ethnography (Neergaard, Olesen, Andersen, & Sondergaard, 2009). Another attribute of this design is that the researcher is able to gain an understanding of firsthand experiences through direct contact and conversations with participants (Neergaard et al., 2009). This approach is used when the researcher wishes to apprehend “a phenomenon through accessing the meanings participants ascribe to them” (Bradshaw, Atkinson, & Doody, 2017, page 2).

Most often seen in qualitative descriptive research are semi-structured interviews with open-ended questions, either used for individuals or in focus groups (Neergaard et al., 2009). Interviews allow the researcher to gain an understanding of a phenomenon using the participant’s own language, non-speech sounds, and body language. Individual interviews allow for understanding individual experiences in a private setting, whereas focus groups allow for understanding common experiences in a group setting.

In-depth individual interviews were chosen for the data collection method in the present study as they have been found to generate more topics per participant and per interviewing session, thus increasing efficiency and the level of depth of responses
(Guest, Namey, Taylor, Eley, & McKenna, 2017). Focus groups require more time, resources, and data collecting events to generate similar amounts of data (Guest et al., 2017).

One-on-one interviews allow for full focus on one individual using a single researcher. This allows for rich data collection in the comfort of a conversational setting. It also allows for clear transcription as there are only two voices to distinguish. This is an important aspect since qualitative description is based on interpretations of an experience and verbatim quotations are used to strengthen the researcher’s analysis (Bradshaw et al., 2017).
3.0 METHODS

3.1 Research Design

A descriptive qualitative approach using purposive sampling was the methodological approach of the current study. International undergraduate students from UPEI were recruited for in-depth, one-on-one interviews. Data was collected until no new pertinent information was gained during interviews, thus reaching theoretical saturation.

3.2 Sample Selection

The population for this study consisted of male and female international undergraduate students enrolled at the University of Prince Edward Island. The research team expected that 15 students would be recruited to attend a one-on-one interview. The inclusion criteria for this study were: 18-25 years old, international student at the University of Prince Edward Island, ability to engage in a 30-45 min English interview, living in Canada for no more than four years. The age range and duration in Canada were chosen to represent someone in their first undergraduate degree with an ample recollection of their food experience in their home country.

Full-colour posters were pinned on various bulletin boards across campus at the library, student union building, and various building entry-ways. The recruitment poster used is attached in Appendix G. As well as physical posters, the same template was posted as a picture to social media pages for the University of Prince Edward Island and school clubs with a high percentage of international students. If a student contacted me through social media postings or through email, I would ask them about their suitability.
in regards to the inclusion criteria and set up an information session. Following the information session and if the student represented a gender and country of origin that was not included in the sample, the student was offered an interview position. If data had already been collected from a student of the same gender and country of origin, the student was thanked for their interest and told they would be contacted if needed. This ensured a diverse group for data collection through purposive sampling techniques. Recruitment began in late November after receiving ethical approval by the UPEI Research Ethics Board.

### 3.3 Research Procedures

The primary researcher completed two pilot interviews with international students at UPEI to verify that the questions were easily understood, relevant to study objectives, and were able to generate rich responses. The pilot test interviews were audio recorded and transcribed verbatim into a Microsoft Word Document. Original transcripts from the pilot tests were analyzed by the primary researcher before recruitment and formal data collection were initiated. Data from one of the pilot interviews was chosen to be included into the study because no changes to the interview guide were made after the interview. The other participant who attended a pilot interview did not fit the inclusion criteria because he had been living in Canada for over four years; thus, the data from this pilot interview was not used.

Data collection was carried out in November at convenient times for both the participant and researcher. Word of mouth, social media postings, and advertisement on
bulletin boards on campus were used to recruit participants. If students contacted the researcher out of interest in joining the study, they were asked to attend an information meeting. Purposive sampling was used so that a representative sample of students from various countries of origin were included in the study. Further interviews were not conducted within a certain subpopulation of country of origin, gender, and age after reaching saturation.

After recruitment and acceptance into the study, interview times were scheduled for each participant. Interviews were conducted one-on-one using an original interview guide and a semi-structured format. The interview guide (Appendix C) was developed by the researchers to include open-ended introductory questions followed by more detailed probing questions. The specific questions were chosen by the research team to achieve the study objectives, elucidating international students’ perceptions of a healthy diet in their country of origin and within Canada (Appendix C).

The interviews took place in unused, private office space (room number 321) in the Health Science Building during daytime hours. This was chosen as it allowed for minimal distraction, optimal face-to-face seating arrangement, and negligible background noise in the recordings. Only the primary researcher was present for the interviews.

It was estimated that the interviews should take 30-45 mins to complete. At the time of the interviews, the participants were welcomed into the office space. When seated comfortably, the participants were provided with the informed consent form and given the opportunity to review the form and ask any questions. If they wished to participate, they were asked to sign the consent form (Appendix E) and complete the participant information sheet (Appendix D). They were reminded that participation in the study was
completely voluntary and that they were free to withdraw until February 1, 2019 without penalty or reproach. After signing the consent form, the briefing script was read aloud by the primary researcher (Appendix A). After all student questions were addressed, the primary researcher began audio recording and commenced the interview. After the interview questions were asked, the participant was asked if they wanted to add any additional information on their perceptions of healthy eating. Recording was terminated when participants verbally acknowledged that they had no further information they wanted to add. At this point, participants were thanked for their time and the debriefing script was read by the primary researcher (Appendix B). The primary researcher answered questions before the participant was thanked again and left the research space. The audio recordings were immediately transferred to a private laptop computer to prevent accidental deletion of the audio file.

3.4 Data Analysis

All interviews were audio recorded and transcribed verbatim into a Microsoft Word document. This took place after each interview session was completed. Once transcription was complete, the transcript was corrected for spelling or other errors; anonymized by removing identifying information; and formatted to include notations for pauses, laughter, and full stops. The transcripts were analyzed manually via a qualitative descriptive approach because it is considered the preferred method for studies aimed at describing a phenomenon (Neergaard et al., 2009). A qualitative descriptive approach yields an in-depth description of a lived experience or event, with analysis remaining
closer to the data than in other qualitative methodologies (e.g., grounded theory) (Neergaard et al., 2009).

The data was analyzed using thematic analysis, which consists of six steps: Familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Braun & Clarke, 2006). This outline was chosen as it provides a direct and systematic approach for qualitative data analysis, which was considered an asset given the inexperience of the primary researcher.

Familiarization with the data began during the transcription process as the audio recordings were manually transcribed verbatim into a Microsoft Word document. The transcripts were transcribed throughout the data collection process. Transcripts were formatted based on the research team’s experience and on Mount Saint Vincent University’s guide to original transcripts (Humble, 2016). This included using a new line for speaker changes, an ellipses for trailing off, an em dash for stutters/topic changes, parentheses for laughter, and quotations for quotes of others or self used by participants (Humble, 2016). Original transcripts were formatted with numbered lines and wide margins to allow for note-taking during analysis. After transcription was complete, each transcript was read alongside the audio recording to correct for any missing statements or misquotes. The primary researcher was well familiarized with the data following this process.

The second phase of thematic analysis started shortly after the transcripts were complete and verified as matching the audio recording. This involved the primary researcher analyzing the entire data set for initial codes, or the smallest segments of data
that were of interest to the research objectives (Braun & Clarke, 2006). Because this was a qualitative descriptive study, the coding was data-driven, revolving around the questions and research objectives to develop themes (Braun & Clarke, 2006). Coding was conducted by highlighting and writing notes in the margins of the original transcripts and by collating codes for each question of the interview guide in a separate document. The latter method allowed the primary researcher to more easily see trends and outliers in data and allow for development of themes. All answers to study questions were coded so that nothing was missed for lack of perceived relevancy during initial stages of analysis.

Surrounding information was included in coding so that the context of statements was not lost; furthermore, the participant’s identification number was included next to the code so the researcher could find the statement in the original transcript for confirmation of understanding or quotation purposes.

3.5 Study Rigour

The trustworthiness of the study was measured as to credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). The credibility—or confidence in the findings—was ensured by peer debriefing and member checking of the original transcripts. In regards to member checking, original transcripts from each interview were emailed to participants to allow for correction, addition, and deletion of statements. Member checking in this fashion allowed the researcher to verify that the data collected was in line with what the participant truly wanted to express. Three students contacted the primary researcher about the original transcripts. Two made minor changes to clarify words used inappropriately given the language barrier, and the third wished to
ascertain that the data was satisfactory. If there was no response after the stated deadline, the transcripts were included in the study without alterations.

Peer debriefing was used throughout the data analysis process, where the primary researcher met with supervisors to discuss the findings and interview process for aid and direction. The supervisors read the original transcripts and the codes generated by the primary researcher to elucidate any missed themes or different interpretations of the data. The peer debriefing process added to the credibility of the current study because multiple researchers coded the data and were available for an external interpretation of the research.

Transferability of the study was achieved through clear description of study design and rich description of results (Lincoln & Guba, 1985). In this report, the researcher provided detailed accounts of the study design, methods, and context of the current study for readers to interpret the application of this work to other groups.

The characteristic of dependability is to demonstrate that the findings are consistent and repeatable (Lincoln & Guba, 1985). Dependability was established with an inquiry audit, where a researcher not involved in the study reviewed the process and results of the study for consistency and repeatability. To maximize the consistency of results, inclusion criteria narrowed the study population and all interviews were conducted within the span of a two-week period.

Study confirmability is defined as neutrality or the magnitude that study findings are derived from the participants and not of the researcher (Lincoln & Guba, 1985). Confirmability was verified with a reflective journal of the analysis process, including
decisions made by the researcher in creating codes from the original transcripts. This allowed for critical thinking and an awareness of potential bias or ulterior motivation while generating codes. The primary researcher is a dietetic intern, having studied foods and nutrition in a Canadian context. Therefore, there is potential bias for the researcher to view healthy eating under the lens of nutrition standards and food practices within Canada.

3.6 Ethical Approval

The UPEI Research Ethics Board received the ethics review submission form for the present study on October 31, 2018. Approval was confirmed on November 20, 2018. A copy of the certificate of ethical approval can be found in Appendix H.
4.0 RESULTS AND DISCUSSION

4.1 Summary of Demographic Data

Thirteen international students from the University of Prince Edward Island who met all inclusion criteria were included in this research study. One student completed an interview under the assumption that he met inclusion criteria. After learning that he had been living in Canada for over four years and now has permanent residency, he was dropped from the study. Table 1 summarizes the profile information of participants interviewed. The age range of participants was 18-23 years old at time of interviewing, with every year of an undergraduate degree represented. Only two of the thirteen students had completed a course in nutrition at the university level, both taken at UPEI. One student was completing a major in Foods and Nutrition, but the remaining students of the sample came from other disciplines. Two countries of origin were represented twice in the sample, China and Vietnam, yet one student identified as being male and one female for each of these countries. Therefore, the sample remains purposively diverse.
Table 1: Participants' profile information

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Country of origin</th>
<th>Major</th>
<th>Nutrition education</th>
<th>Year of study</th>
</tr>
</thead>
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<td>M</td>
<td>France</td>
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<td>21</td>
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<td>Japan</td>
<td>Business</td>
<td>No</td>
<td>3</td>
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<td>2</td>
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<tr>
<td>21</td>
<td>M</td>
<td>China</td>
<td>Business</td>
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<td>4</td>
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<td>No</td>
<td>2</td>
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<td>Nutrition</td>
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</tr>
</tbody>
</table>
4.2.0 Summary of Key Themes

Nine key themes were identified by the researcher: Preference for traditional foods and meals, associating traditional foods with healthy eating, the transition from familial to individual cooking practices, reading labels on processed foods, distrust of the food supply, discovering non-traditional foods, traditional food availability in Canada, reliance on convenience foods, and changing views of healthy eating.

4.2.1 Preference for Traditional Foods and Meals

The participants of this study tended to prefer traditional foods and dietary patterns. When asked about what foods they like to eat in their country of origin, all respondents except one mentioned traditional foods. One participant mentioned his love of traditional meals by saying “…I really like broth kind of food, from seafood too, especially soup. And there are many kind of different soup in Vietnam, so, I eat them just like every morning, just a big bowl, like. Especially, I also really like with rice—eating with rice in Vietnam too”. It was common for participants to mention dietary staples such as the above, including grain products, soups, and traditional meals. Furthermore, foods listed were often indicative of the culture and cooked in the home by family members. Another student commented, “Um, typical favourite meal would be like rice with some curries, that’s it, and that would include like vegetables and usually seafood”.

Several researchers have also found a strong preference for traditional foods in international student populations (Alloh, Tait, & Taylor, 2018; Amos & Lordly, 2014). The preference for certain flavours begins early in life. Flavour compounds are
transmitted from mothers’ diets into the amniotic fluid while the baby is *in utero* and in breastmilk during lactation (Mennella & Castor, 2012). Duration and early exposure of flavours have a positive effect on children’s preference for a food, with these preferences carrying over into adulthood (Mennella & Castor, 2012). The familiarization of foods early in life increases the likelihood that people will enjoy the sensory properties of these foods and select them more often (Mennella, 2014). Therefore, it is to be expected that young adults will have strong preferences for their traditional foods and familiar flavours. Likewise, exposure to their cultural food practices can influence the way that young adults shop, prepare foods, and eat (Bowen & Devine, 2011). Cultures may exhibit “flavour principles” which encompass combinations of seasonings that are highly palatable within a group and lead to recognizable and distinct cuisines across the world (Rozin, 1973). For example, Chinese cuisine is characterized by soy sauce, rice wine, and ginger, and Thai cuisine fish sauce, lime, and chilies (Rozin, 1973). These flavour combinations hold a special place within cultural groups and are selected several times daily (Rozin, 1973). Therefore, traditional foods and flavour principles are familiar and highly palatable to international students; they may continue to desire these foods regardless of acculturation into a new food culture.

Preparing traditional foods from home while staying in Canada was a prominent theme. Students preferred making meals that were made by family members, or simple and quick versions thereof. When asked what she likes to cook in Canada, one student said “…I would prefer making simple dishes so that I can save time to go—to go school or to study and stuff. I would, for sure I would make rice and vegetable-based soup plus like a pork like dish or like stir-fry pork or stir-fry beef”. It was common for students to
prefer cooking traditional meals at school, though some were considered too time-consuming to make often. One student said, “I do a lot of Vietnamese dishes and I eat—eat less soup because it takes time to make them”. Despite time constraints, it appears as though international students cooked traditional meals as a way to maintain cultural identity while in Canada.

Frequent home cooking by mothers is positively correlated with the rate at which students cook for themselves after moving out (Backer, 2013). Similar to the current study, Backer’s research found that students used mothers’ recipes more often than fathers’ recipes (Backer, 2013). Other studies have found that cooking and eating traditional foods can be reassuring, nurturing, and stabilising to international students as it can elicit memories of times when they felt safe and loved (Brown, Edwards, & Hartwell, 2010). Though not identified in the current study, Brown et al. (2010) found that some international students limited traditional foods because they elicited feelings of homesickness and a desire for family meals (Brown et al., 2010). Therefore, it can become a balancing act between wanting to cook foods from home for personal comfort and enjoying time spent in the new country without feelings of homesickness.

Similar to the current study, Deliens et al. found that time and convenience were prominent driving factors in determining what foods university students cook (Deliens, Clarys, De Bourdeaudhuij, & Deforche, 2014). Students were quoted as prioritizing studying and leisure over cooking, especially if the students were only cooking for themselves (Deliens et al., 2014). Accordingly, it is natural for international students to choose to make quick versions of their traditional foods because these are most familiar to them. It would require less time and effort than learning about ingredients and cooking
methods of the host country. Despite comfort in cooking traditional meals, international students are unlikely to cook certain dishes perceived as too time-consuming or tedious to make.

**4.2.2 Associating Traditional Foods with Healthy Eating**

Participants equated traditional foods and dietary patterns with healthy eating. This was in part due to regular meal times, balanced meals, and the consumption of vegetables. It was a common theme for students to skip breakfast or lunch in Canada, and to replace meals with snacking throughout the day. This was viewed as less healthy than having a set meal schedule back home. An employed full-time student said, “...last year, I skipped a lot of lunch because I was working and didn’t really have time for it, so I would have—breakfast is the only thing I never skip, and sometimes I won’t have supper. But, back home I had to because I had someone who would like always make me eat...”.

Similarly, another student commented on the increase in snacking, saying “Yeah, and now that I come here, I feel like I usually skip breakfast, and then just eat brunch, and dinner, and eat a lot of snacks... I’m like trying my best to like not buying them that much and just eat like 1 or 2 crackers or like a little bit of chips at a time, so I can try to reduce that amount of junk—of unhealthy food.”.

When one student was asked what a healthy diet would look like, he said “Oh, healthy diet, so, it would be a full meal with the combination of meat, soup, with different vegetables”. Balanced meals were mentioned across ethnic and cultural groups. Another student commented on this saying, “Yeah, back in Sri Lanka, my mom used to make me like a lot of grains and stuff, but after I came here I kind of avoided it because I don’t really enjoy eating it, so I feel like I should go back to doing that but I haven’t been doing
it. I feel bad, so it should include like everything, like vegetables, meat, and water, and grains, and everything on a balanced scale”. Balanced meals were associated more with home cooking than food available in Canada. One student who noted a lack of meal balance said, “Sometimes I go to a restaurant, I order steak and I know at here, people just like steak as a meal. But I just feels like I need a pasta or I need a rice. Like, this is just meat”.

Several other researchers found that students felt guilty about eating fast foods and unhealthy foods in their host country (Alakaam et al., 2015). Studies show that people feel more guilt when choosing a food perceived as unhealthy, with higher levels of guilt the more difficult the food choice was perceived to be, with difficulty as a proxy for conflicted (Becker et al., 2018). Additionally, women have been shown to be more susceptible to feelings of guilt surrounding self-control and consuming unhealthy foods (Becker et al., 2018). Food guilt is pervasive in North America because media portrays overly simplistic and exaggerated divides between “good” and “bad” food; eating supposed “bad” foods can elicit negative emotions like anxiety, fear, and guilt (Freeland-Graves & Nitzke, 2013). In contrast, the media also markets unhealthy convenience foods which are widely available and relatively cheap for purchase. This can make food choices difficult and psychologically stressing.

It was a common theme for students to mention traditional foods when asked what a healthy diet would look like in Canada. It seemed as though international students were using the same qualifications of a healthy diet in their home countries, but in a Canadian context. When a student was asked about what a healthy diet in Canada would consist of, she said, “I would say the same things that I would do in Sri Lanka. Like cut
down on my sugar, and salt, and calories, and eat more vegetables, and meat, and seafood”. Along with using examples of traditional foods as healthy, students mentioned fast food and convenience foods as unhealthy. These foods, such as hamburgers, soda, and sweets were more associated with a western diet. When asked what foods she would avoid to eat a healthy diet in Canada, one student said, “...at the Tim’s, a lot of like doughnuts, muffins, and looks really good for me, but I’ve never bought before, because I know like a lot of sugar in it, so I avoid that. And like, potato chips as well. The snacks”. Similarly, another student said, “And the things I want to avoid is also Coke, and fried chickens with—and also pizza, but I kind of eat more pizza when I came here, so... it’s really good, the pizza here is really good”. Despite being highly palatable, Canadian fast food was perceived as something to be avoided when eating a healthy diet.

In accordance with our interviews, Amos and Lordly found that all international students in their photovoice study felt as though their traditional diets were healthier than Canadian diets (Amos & Lordly, 2014). Students valued specific ingredients of their cultural diets as health-promoting and believed that home cooking was better than eating out (Amos & Lordly, 2014). Adding to the body of literature that supports this view, all postgraduate international students in a UK study believed that eating food from their home countries was key to maintaining physical health and avoiding unhealthy weight gain (Brown et al., 2010). Supporting this belief, international students’ transition to university has been associated with reduced consumption of vegetables, fruits, protein, and fish coupled with increased consumption of fatty, high-calorie foods, and soft drinks (Alloh et al., 2018). In a US study, international students mentioned eating more
convenience food, fried food, meats, soda, desserts, and salt, along with eating fewer
fruits and vegetables (Alakaam et al., 2015).

4.2.3 The Transition from Familial to Individual Cooking Practices

Only two of the thirteen participants mentioned habitually cooking in their
countries of origin. Several reported that they barely cooked at home but would make
traditional meals if they did. However, the vast majority said that they did no cooking in
their country of origin because they lived at home before coming to Canada for
university. Therefore, the participants ate food prepared by family members instead of
cooking. When asked what her favourite thing to prepare for herself in her country of
origin, one participant said “Um, actually I didn't cook in China because my mom cook”.
Mothers were stated as the main cook by seven participants, with the remaining not
specifying which family member provides meals most often. Other family members and
neighbours also cooked for the participants in their country of origin, as stated by one
participant, “like I’d eat what my grandma—like my grandma lives with me—one of them
lives with me, and I have my mom, and I have my other grandma, and we are also like—
my neighbours would give me a lot of food because they know I like the way they cook, so
they would just bring anything they make to me”.

In agreement with our students’ responses, 80% of the international students in a
US study said that when living in their countries of origin, meals were home cooked on a
daily basis, and that it was usually the woman of the household who made the meals
(Alakaam et al., 2015). The domestic division of labour incorporates who performs what
duties and who is responsible for the management and planning of said duties (Ambert, 2014). Globally, traditional gendered divisions of labour are often unequal, leaving married women to do a larger proportion of the housework, even if both parties are employed in full-time work outside of the home (Ambert, 2014). Although we are seeing more men take on domestic duties such as cooking, they often have a different level of responsibility and approach to preparing food (Szabo, 2014). According to Szabo, culinary masculinity encompasses leisure and artistic performance, while culinary femininity encompasses nurturing, care, and creating a home environment (Szabo, 2014). Scholars agree that women tend to care more about providing meals for their families that are well-liked and nutritious (Szabo, 2014). In our study, international students’ experiences at home appear to be those of traditional gender division in regard to cooking, with mothers seen as the primary provider of nourishing food.

Cooking in Canada represented a significant change in way of life for many of the participants. Students mentioned that budgeting time to grocery shop, plan and prepare meals, and eat was a new experience in Canada. One student mentioned “I mean it also was a change, not just the country like, I was in high school and now I’m in university. I was living at home and now I have to do my own groceries. And I don’t live with my parents anymore, I live alone, so I had to do my own groceries and try to manage my time to go home and eat”. Students describe this increase in responsibility as a noticeable difference when studying abroad. As well, some students reported eating out often in their country of origin because of the relatively low cost and convenience. In Canada, prices for dining out were believed to be much higher and therefore not possible to sustain as a frequent habit on a limited budget. One student stated, “But compared to
Vietnam, I can eat out when I'm alone because it's cheap. Maybe it's actually cheaper to eat out in Vietnam than cooking for self”. Students who relied on eating out in their home country often switched to cooking in Canada because of the cost savings, as noted by this statement “... I don’t need to cook by myself because it’s very convenient and cheaper to eat outside, but here we need to cook by ourselves...”.

Other research of international students has found that cooking is considered an important leisure activity and way to preserve culture, though a lack of time and desire for convenience are limitations in how often students cook (Brown et al., 2010; Corcoran, 2018). Research suggests that university students, resident and international, prioritize food’s cost, taste, and convenience over health, with price of food being one of the most important factors in driving food choices (Deliens et al., 2014). A recent questionnaire in the US found that cooking at home more often was associated with higher healthy eating index scores at no extra financial cost (Tiwari, Aggarwal, Tang, & Drewnowski, 2017). On the other hand, eating out frequently was associated with higher financial cost and lower healthy eating index scores (Tiwari et al., 2017). International students stated that the reason they chose to start cooking was the cost of eating out, though this decision has potential positive health implications due to the relatively higher nutrition typically found in home-cooked meals.

### 4.2.4 Reading Labels on Processed Foods

The research team identified a common theme of reading nutrition labels only in Canada, as students gained responsibility for grocery shopping, interest in eating well, and desire to limit/increase consumption of select nutrients. Eight of the thirteen participants said that they never looked at food package labels in their country of origin
before coming to Canada. Only one participant reported looking at the nutrition facts of foods purchased, and this was because of her experience as an athlete. “I usually, mm, look for the, uh, the fat level among the sugar and like the calories. And basically, and also the protein—how much protein the things has, because, um, since I was—like I belonged to the sports gym before, so I really care about the y’know, the health, and also, if I want to build my muscle, I need the protein, so I see how much protein it have and then sugar and the calories, yeah.” This was an outlier, as the other participants reported looking on packaged foods for ingredients, if they did look at food package labels in their countries of origin.

It was common for participants to not read food package labels in their countries of origin because they didn’t do the grocery shopping, or the shopping was done in local markets where food was unlabeled. One student mentioned buying from farmer’s markets, by saying “So, we don’t check the informations on the other side of the product, because there is no information when you buy, um, raw product, like vegetables, grains”. Similarly, another student said, “It’s like the market that like we usually go out and get food, it’s not—well, I mean I don’t go to supermarkets”. Eating foods from local markets and buying primarily raw ingredients is a main theme and driving factor in why participants did not read food labels in their countries of origin. It is important to note that nutrition labeling is not mandatory in all countries, so responses will differ depending on if a student comes from a country without mandatory labeling (e.g., Nigeria and Japan) (Perez & Edge, 2014).

Similar to our study, international students in the USA said that the foods they ate at home were mostly cooked from fresh, with few frozen and processed products
Participants mentioned there being no nutrition labels on their foods at home because they were not processed; foods without labels were perceived as fresh and healthy (Alakaam et al., 2015).

After coming to Canada, only one participant mentioned that she does not look at any food labeling, including nutrition facts or ingredients. This is due to her living arrangement in a homestay, saying “And it’s usually not me who gets food, like I—I’ve always had my parents cooking for me, I’ve always had like my landlords cooking for me”. It appears from this study that buying groceries and being responsible for food preparation is what prompted the desire for these students to check food labels. When asked if he looks at nutrition labeling, one student said, “Yeah, I started to look at them when I came here. When I started shopping the ingredients for myself”. When students look at nutritional labels in Canada, they looked for calories, sugar, fat, sodium, and protein. Seven students look for sugar, which was stated as being unhealthy for a myriad of reasons such as weight-gain, diabetes, and producing high blood glucose values. When asked why he limits sugar, one student said “Like sugar is addictive. And there’s like a strong correlation between sugar and obese—like sugar and obese are two words that stick together. So, I don’t want to be obese, so lower sugar in my diet”.

Similarly, a study on acculturation of international students found that they did not read labels in their home country, but started to read nutrition labels in the US and make healthier food choices because of it (Yan & Fitzpatrick, 2016). University students who read nutrition labels in dining halls select more fruits, vegetables, and beans, and fewer fried foods, foods with added sugars, potatoes, and refined grains (Christoph & Ellison, 2017). Christoph and Ellison posit that students who read labels make different
food choices than those who do not, though this was shown in what foods they choose and not so much in terms of limiting portions (Christoph & Ellison, 2017). This was also apparent in our interviews as students commented on using labels primarily in grocery stores to decide between purchasing items, and not at home to decide how much of something to eat.

A recent survey of young adults in the USA found that the most used aspects of the nutrition label were sugar (74.1%), total calories (72.9%), serving size (67.9%), and the ingredients (65.8%) (Christoph, Larson, Laska, & Neumark-sztainer, 2018). This is similar to our study, with the most common label component read being sugar. In recent years, there has been an emergence of publications and policy development regarding dietary sugars around the world (Borra & Bouchoux, 2009). Due to the media’s coverage of sugars in relation to obesity and diabetes, consumer perceptions of sugar have become increasingly negative and low-carbohydrate diets have gained popularity (Borra & Bouchoux, 2009).

4.2.5 Distrust of the Food Supply

Numerous students made comments indicating distrust of the food supply, such as not trusting the safety of raw foods, preservatives, chemicals, and hormones. Raw foods were cited as potentially unsafe in their countries of origin by three Asian students. One student said, “And like the food in Vietnam there’s like some controversies going on about like clean food or dirty food, they just like—they just, like they don’t really—the hygiene part in like street vendors is not that great, so I would say like I would prefer like cooked food”. However, eating raw foods was not mentioned as being unsafe in Canada by any participants.
A survey conducted in Vietnam found that 95% of respondents worried much or very much about food safety (Ha, Shakur, Hang, & Do, 2019). Their concerns were mainly surrounding pesticides, preservatives, and hormones, with fresh fruit, vegetables, and meats considered the most hazardous (Ha et al., 2019). International students growing up in that environment likely developed a negative perception of the raw food supply in their home country that didn’t carry over to Canada. This may be because of the different way of shopping for raw foods in Canada, being in an indoor supermarket instead of an open-air street market. It may also be because of dietary acculturation into an environment where raw foods like salads and sandwiches are promoted as healthy.

Many students voiced concern over preservatives in processed foods and read ingredients lists to avoid them. When asked why one student avoids products with preservatives and colourants, he stated “Yeah, I guess normally, I just heard they are bad like they are like things that would not be in the food like otherwise”. Processed foods with preservatives were considered to be less healthy than raw, fresh foods by most participants. One student said “Like, I think—I consider canned stuff to be unhealthy food because they last very long time. But instead of lasting long time, the people put a lot of like artificial things in it...”. The theme of distrust of preservatives and artificial ingredients in foods was mentioned across cultural groups.

Social anxieties surrounding the food supply are increasing due to the removal of individuals from the flow of food. Fewer people are living on farms, leading to decreased comprehension and trust of the processing industry and foods available for purchase (Lofstedt, 2013). Media outcry and grass-roots advocates have spread fear to people about the way foods are processed, such as bisphenol-A or artificial colourants (Lofstedt,
Similar to our own study, other international students in the USA voiced concern over chemicals and hormones in the food supply, wishing to buy organic in order to limit their exposure (Alakaam et al., 2015). Distrust of the food supply is growing globally, and it may be heightened by those studying in a different country due to unfamiliarity with the food and policy on processing (e.g., pesticide use) (Brown et al., 2010).

4.2.6 Discovering Non-Traditional Foods

It was a prevalent theme for students to enjoy discovering new foods in Canada through restaurants and meeting friends from other food cultures. Students mentioned a desire to try new foods as part of their experience in Canada. One student said, “Well, first like culturally, like I want to like eat more like white people food, like non-Asian food, like, one reason is like I am like in like Canada, why don’t I eat like the generic Canada food, just pasta [laughing]. Yeah, like since I am there, I am going to adopt the culture anyway, the food culture as well”. Adopting food culture—dietary acculturation—is part of residing in a new location. The majority of students mentioned trying Canadian foods as positive aspect of their stay as an international student. Many students took pleasure in the addition of typical Canadian foods to their diets, such as yogurt, salad, cold cereals, and sandwiches. These foods are readily available and convenient, which may be a reason why international students gravitated towards them. When asked what she eats in Canada, one student mentioned “But I do have some of like rice, soup, and fish—oh, no, no meat dish still, I still have that as a basic thing and then I do include like western foods, like yogurt. I don’t really eat yogurt back in Vietnam”.

Similarly, other students mentioned the addition of other foods to their traditional diets, even when they travel home for holidays. “I tried to search some more menu and tried to
cook different foods, such as spaghetti and also some sushi and, yeah, I tried to do lots of—when I go back to China I try to cook sushi and I shared it with my parents because I learned it from my Japanese friends here”. Learning about and enjoying new foods in Canada led international students to incorporate non-traditional foods and meals.

The Canadian food culture allows students to explore new foods that are associated with North America, as well as those from other cultures in ethnic restaurants and grocery stores. Adapting to a new culture includes exploration of new foods and meal traditions, which is often an exciting aspect of traveling or living abroad. As in our study, other research of international students in the USA and UK has demonstrated the exploration of new foods as a positive experience (Brown et al., 2010; Corcoran, 2018; O’Sullivan & Amirabdollahian, 2016). Although international students often prefer the taste of traditional meals, students appreciate trying new foods and cooking methods, as well as having more control over their diet (O’Sullivan & Amirabdollahian, 2016). Incorporation of new foods is positively correlated with time spent in the new food culture and liking of the new foods, while negatively correlated with a preference for traditional meals (Brittin & Obeidat, 2011). Trying new foods and incorporating them into one’s diet is an integral part of assimilation into a new culture, and seemingly a positive aspect of choosing to study abroad.

However, the concept of not adapting well to the Canadian food culture was common, especially initially. This was represented as physical complaints and as disliking Canadian foods in comparison to home cuisine. One student mentioned “There’s some problem with me or something, it’s just like whenever I eat, um, exotic—not exotic food, like food from another country or food that I’m not used to, I would get
diarrhea”. However, it was more common from students to report their problems with Canadian foods as being because of taste. When asked about her favourite Canadian dish, one student said “I don’t eat Canadian dishes. Yeah, no, I don’t eat, like even I go eat somewhere, I usually go to the Asian—like Asian restaurants... one time, I went to Gahan, and then I order the curry, and it’s so like oily, I couldn’t like eat it, because it was too oily”. Different flavour profiles and meal preparations can make it difficult for international students to adjust to Canadian foods and the preparation of ethnic foods for a Canadian palate.

Other studies have also found that international students may have trouble adapting to the new food culture in terms of liking the food and its effects on their physical well being (e.g., digestive upset) (Amos & Lordly, 2014). The unwillingness to try new foods and dislike for new cultural foods may stem from the flavour principle theory, in that different cultures have distinct combinations of flavours that are highly palatable within their cultural group (Rozin, 1973). Both the food flavour and the general food environment affect how likely someone is to try and enjoy a new food, whereby a new food that has a familiar seasoning and offered by friends will be more accepted (Stallberg-White & Pliner, 1999). In fact, people are more likely to try new foods and enjoy them when they are seasoned according to their culture’s flavour principles (Stallberg-White & Pliner, 1999). This may play a role in why international students choose to cook traditional meals at home and introduce a few new foods instead of entirely switching to a North American diet.
4.2.7 Traditional Food Availability in Canada

It was a prevalent theme for students to mention problems accessing traditional foods in Canada because of lack of availability, higher prices, and low quality. This caused many students to change ingredients in recipes or forgo certain dishes altogether. One student stated “…but here olive oil, I haven’t—like it’s more expensive that’s to start with and I haven’t really found one that I—I’m like, that I want to buy, so that’s something that I’ve—I’ve changed. I’ve used coconut oil here”. Similarly, another student lamented her change in diet, stating “But here, it’s like I don’t eat fish. I want to, but it’s too expensive”. Higher food prices hinder students’ abilities to eat well and prepare traditional foods.

It is common for there to be a lack of traditional foods and ingredients when international students move to a new country, and if they can find the foods they’re looking for they are often much more expensive than back home (Faheem & Bukhari, 2015). This is a powerful driving force for students to assimilate to the new country’s cuisine or cook traditional meals using the foods available to them in their host country (Faheem & Bukhari, 2015). Differences in food prices may also be specific to different food categories, where fruits and vegetables are relatively expensive in North America compared to meats and convenience foods in other countries; thus, causing students to also change the proportion of these foods in their diets (Ogah, 2001).

As well, numerous students commented on the fact that foods available in Canada are different even when known by the same name in their countries of origin. One student commented on her experience with this problem, saying “Some of the dishes you just can’t cook it and especially for the cabbage it’s so different, like the cabbage at Sobeys,
when I buy it, it's too hard, it's, like, too thick...”. The same problem is found when students go out to restaurants, as stated by one student, “Here it’s like—I even went to an Indian restaurant and asked for curry chicken and it is not curry chicken, it’s just like a very plain sauce put on chicken and I’m like “that’s not it””. Foods from other cultures prepared in Canada may be less traditional to appeal to Canadian consumers, which makes them distasteful for those expecting what they are used to eating in their countries of origin.

Wang has found a similar effect, where international students found it challenging to find authentic traditional dishes and comfort foods despite an abundance of western-style Asian restaurants in Victoria, BC (Wang, 2016). Restaurants preparing cultural foods in Canada often try to cater to the North American palate, thus being modified from the original recipe to be less spicy or to avoid culturally unacceptable ingredients (e.g., insects). Research of international students in England suggests that the availability of their cultural ingredients and restaurants actually make students feel uncomfortable (Brown et al., 2010). This is because the foods are often more expensive and inauthentic or “fake”, causing alienation from their cultural identity (Brown et al., 2010). The representation of their cultural foods in a way that is foreign to them can cause more harm than good in easing assimilation into a new culture.

4.2.8 Reliance on Convenience Foods

In Canada, students said that they rely on convenience foods because of a lack of time to prepare healthy foods or the desire to eat palatable foods. Time constraints are a
part of adult life, especially for those who attend university as full-time students. Busy lifestyles can lead to eating out more often, as stated by one student, “Usually whenever I study with my friends, it’s either at the library or at someone’s place and we’re like “okay, we are hungry” and we tend to go out and grab something because it’s quicker and easier that way—and less work”. There are also opportunities to buy quick meals on campus from fast food establishments that act as a temptation for students to not pack a lunch. “I think that I eat out more often here, ‘cause you know like my friend, she doesn’t really bring food for lunch or breakfast, so she’s like “oh, do you want to go to Subway with me?” and then “do you want to go to Tim Horton’s with me?”. I’m like oh, it’s only two minutes’, three minutes’ walk, so I just go there everyday and when I’m there I’m like, it’s very hard for me to self control and stop—not buying food there”. Another student had a similar comment, saying, “I go to fast food, I go to Subway, yeah. That would be most of my like going out, I think. And I eat a lot of snacks”. This reliance on convenience foods was not a positive aspect of student life in Canada. Students would report wanting to limit fast food because of health concerns but mention that they still eat it because of convenience. “I think that I sometimes eat unhealthy here because I don’t have much time sometimes or I just go out to eat, like I just eat something that I can find, and I don’t really bother about what I’m eating”.

International students may choose convenience foods and fast food because of a lack of available traditional foods, a lack of time to cook, or the high cost of healthy foods (Faheem & Bukhari, 2015). Another major contributing factor in international students eating more of these foods is their wide-spread availability in North American culture (Deliens et al., 2014). Fast food restaurants are located both on and close by the
campus where our own study was conducted, and this is the norm for Canada. Fast foods are especially tempting to university students because they are convenient, highly palatable, and relatively inexpensive (Deliens et al., 2014). In an American study, 88% of international students claimed to eat at fast food restaurants, with 42% doing so at least three times per week (Brittin & Obeidat, 2011).

Similarly, the only student who had a university meal plan during interviewing commented on the adverse effects of convenience, “But because in the dining hall, they have you know, quantity amount of food, dessert, cookies, cereals, are from 7:00 to 9:00 pm, so it’s really hard to resist”. Another student who ate at the meal hall previously had similar comments about food choices, saying, “What I’ve noticed the most is when I used to go to meal halls—I ate two years—and yeah, there’s not a lot of healthy options sometimes, so sometimes we would just go with the fries, the hamburgers, or the pizza, or wraps”.

Dining halls with unlimited access to food create a food environment with high temptation to eat beyond what one would at home (Deliens et al., 2014). The availability of highly palatable foods like French fries, pizza, and desserts can make choosing healthier options more difficult, especially when all foods are included for the same price (Deliens et al., 2014). This was noticed in our interviews where students who had unlimited meal hall service disliked how easy eating unhealthy was.

4.2.9 Changing Views of Healthy Eating

When asked if they thought their diet back home or in Canada was healthier, seven said their diet was healthier in their countries of origin, four students said their diet
was healthier in Canada, and two said that neither was healthier than the other. The majority of students thought that their diet back home was healthier because of consuming more vegetables and home-cooked meals, with less reliance on convenience foods. One student said her diet in her home country was healthier, "Yeah, I think partly because like chips and sugary based foods are not that accessible, so you can’t really just like—because the street market is only like meat and vegetables and some other small ingredients". Traditional diets in students’ countries of origin were more focused on balanced diets that include vegetables. One student commented on meal balance saying “… like one meal is like rice, soup, the fish and the veggies, and fruits, like apples or orange. ... Japanese dish has the good—more well-balanced compared to the Canadian dish, I think”.

In agreement with our study, other research of international students has shown that students perceive their home country diets as healthier than that of their host county (Amos & Lordly, 2014; Brown et al., 2010; Corcoran, 2018; Yan & Fitzpatrick, 2016). International students perceive their diets as less healthy in their host country because they believe they are eating fewer fruits and vegetables and more fat and sugar (Alloh et al., 2018; Brittin & Obeidat, 2011). A survey of international students in the USA supports the belief of students; compared to their home countries, students ate more desserts, soft drinks, and meats, and fewer vegetables (Lange-smith & Van Scyoc, 2017). Additionally, a food frequency questionnaire found that international students increased their consumption of typical western foods like hamburgers, pizza, ice cream, French fries, and carbonated drinks (Almohanna, Conforti, Eigel, & Barbeau, 2015). Therefore,
international students’ perceptions of decreasing healthfulness of their diet is supported by research of actual food behaviours.

In contrast, some students believed their diet improved with coming to Canada because they gained responsibility and interest in buying and preparing their own foods. One student said, “I would say my health in Canada—my health diet in Canada is more better than what I’m doing in Nigeria because I was not conscious of what I was eating, I’m just eating anything pretty much that comes my way”. Another reason why some students perceived their diet as better in Canada was increased consumption of home-cooked foods instead of dining out. A student who relied on dining out in his country of origin said, “But in Canada, we can cook by ourselves, we can buy the fresh food from—in some shops and so, and the cooking ways. We can choose the healthy one to cook. So, from my perspective, I think it’s healthy to eat in Canada”.

Though not as common, the students who expressed this view did so because they gained an interest in nutritious eating. Having more education (especially nutrition education) and reading food labels are both associated with improvements in diet, which may be part of the reason these students feel as though their diet has improved (Christoph et al., 2018). Additionally, the two students who believed that their diets improved also mentioned cooking for themselves, which is known to be a healthier alternative than eating out (Tiwari et al., 2017).

We identified the sub-theme of students recognizing disagreements in foods considered healthy in their countries of origin and in Canada. Carbohydrate-rich staple foods like rice and bread were considered a food to limit by three participants even though these are considered healthy at home. Making point of this difference, one student
said, “we do consider having rice as healthy, like, I noticed that the standards of being healthy here and back home are not the same”. Low-carbohydrate fad diets are on the rise in Canada, which classify traditional carbohydrate-rich staple foods as unhealthy.

There is wide-spread media coverage on the negative impacts of sugar and carbohydrates, with low-carbohydrate diets reaching mainstream popularity (Borra & Bouchoux, 2009). However, there may be cultural differences in views of carbohydrate-containing foods. A study of health perceptions of students found that American students were more likely to avoid high-carbohydrate foods when trying to eat well, while Chinese students were more likely to avoid foods high in fat and salt (Banna, Gilliland, Keefe, & Zheng, 2016). There are cultural differences between North American and other cultures in the importance of carbohydrate foods. Rice is a major crop that feeds over half of the world’s population, being especially popular as a staple food in Asian and African countries (Hu, Pan, Malik, & Sun, 2012). Though rice and other carbohydrate foods like bread and pasta are being negatively portrayed in the media as a contributor to type 2 diabetes and obesity in western society, international students may have grown up with them being an integral part of the diet (Hu et al., 2012). Other research on dietary habits of international students yielded a similar finding, where students still viewed their carbohydrate foods as healthy, even though they ate fewer of these in their host country (Brittin & Obeidat, 2011; Corcoran, 2018).

Body size and eating to achieve certain physical appearances were noted by several students. Four students mentioned emphasizing protein-rich foods or calories in order to gain muscle mass. When asked if he read nutritional labels in Canada, one participant said, “I did that because I’m trying to build muscle, so I want to know the
protein content in what I’m consuming, so then I started looking at these”. Societal pressure in Canada puts pressure on men to bulk up and gain muscle, all the while encouraging women to lose weight. It was a common theme for students to mention the problem of having gained weight in Canada and their efforts to lose fat. One student mentioned wanting to make dietary changes, saying “I will lose my weight—the weight I gained, and uh, I will also, um, feel healthier than I do right now, I guess, because too much grease, too much refined products, too much sugar and everything”. This student hopes to lose weight by limiting unhealthy foods, but it was prevalent for women to mention skipping meals in order to lose weight. When asked about her daily meals in Canada, a student mentioned, “Only breakfast and lunch, and I may have something between them, but I don’t have dinner ‘cause you won’t have time to burn the calories as I know, like, or else you would be fat”. Students viewed food as a way to become overweight, and thus as something that must be limited. Further, students noted a cultural difference between their countries of origin and Canada when it came to the perception of body weight. One student who lost weight in Canada said, “Because I used to be a lot chubbier, like chubbiness is healthy for us, and my mom would think that I am like anorexic right now...”.

Research of international students often supports the notion that students gain weight during their time studying in the host country (Alakaam et al., 2015; Brown et al., 2010). Reasons for weight gain include eating large portions, convenience foods high in fat and sugar, and not exercising due to a busy student schedule (Alakaam et al., 2015). In fact, researchers who have weighed international students support the idea that students do gain weight. In one twelve-week study in the USA, 68% of international students
gained weight, with an average of 2.8 lbs increase (Almohanna et al., 2015). However, it should be noted that weight gain during university is not only found in international students. A study of Canadian women saw an increase of 2.4 kg bodyweight in the first year of university (Duncan & Simpson, 2008).

Other research has found that international students can struggle with body image, as the media’s portrayal of beauty and the ideal body depend on the socio-cultural environment (Deliens et al., 2014). There is a preoccupation of thinness in the western world, but the messages are pervasive in other cultures as well (Wardle, Haase, & Steptoe, 2006). Across cultures, women overestimate weight and try to lose weight despite being at a healthy BMI; Asian women are the most likely to try to lose weight and Mediterranean women are the least likely (Wardle et al., 2006). Wishing to lose weight can result in extreme eating behaviours such as meal skipping instead of trying to eat healthier foods and exercise. This was seen in our study, where skipping meals—dinner, especially—was mentioned by female students as a way to control their weight. Also mirrored in our study was the gendered concept of body image, where women tend to be more dissatisfied and wish to lose weight, while men tend to be more satisfied and want to gain weight (e.g., muscle mass) (Ansari, Clausen, Mabhala, & Stock, 2010).

International students are susceptible to societal pressure to look a certain way, which may be different than the socio-cultural ideal in their home country.
5.0 CONCLUSION

5.1 Summary

The objectives of this study were to explore international students’ (1) perceptions of a healthy diet in their country of origin, (2) perceptions of a healthy diet in Canada, and (3) how their perceptions of a healthy diet have changed since their arrival in Canada. A qualitative descriptive research design was employed to gain a deeper understanding of students’ perceptions during a one-on-one interview. Researchers identified nine key themes: Preference for traditional foods and meals, associating traditional foods with healthy eating, the transition from familial to individual cooking practices, reading labels on processed foods, distrust of the food supply, discovering non-traditional foods, traditional food availability in Canada, reliance on convenience foods, and changing views of healthy eating. The results of this study suggest that international students studying in Canada prefer their traditional foods and view them as healthier than the foods offered in Canada. However, they assimilate into Canadian food culture out of desire for a new experience and out of necessity due to the unavailability of affordable and authentic traditional foods. Results indicate that international students don’t read nutrition labels in their countries of origin because most food is purchased by other people in their households and the food is bought fresh. Students started to read nutrition labels in Canada, with sugar being the most common label component read. Furthermore, international students voiced concerns over preservatives and artificial ingredients in packaged foods, viewing them as unhealthy. Even though international students perceive convenience and fast foods as unhealthy, they rely on them because they are convenient; time is a limiting factor for healthy eating in a busy student lifestyle. Lastly, students’
perceptions of a healthy diet have been impacted by Canadian culture, especially concerning the healthfulness of carbohydrates and body image.

5.2 Limitations

Concerning recruiting, the primary researcher employed purposive sampling techniques from those who contacted the researcher out of interest in participating. Therefore, the students who came forward were likely more interested in healthy eating than the general population and may have had disproportionately high rates of nutrition label reading or other positive health behaviours. Additionally, the University of Prince Edward Island is a small university that is within walking distance to grocery stores, restaurants, and a weekly farmer’s market. Our findings may not be generalizable to more isolated university environments.

The method of data collection chosen by the researchers may have impacted the statements of the international students during interviewing. Students may have felt pressure to report more positive health behaviours or healthy eating because the interview focused on perceptions of a healthy diet. Additionally, students may have over-emphasized the healthfulness of their countries’ diets because of nostalgia or homesickness.

Additionally, many of the students spoke English as a second language. Though they were all proficient and able to respond to the study questions, students did report not knowing words for foods or concepts in English. This language barrier may have changed the way students answered questions.
Another limitation is that the primary researcher is new to qualitative research, with this being her first experience in designing an interview guide, interviewing participants, and analyzing transcripts for themes. An experienced researcher may have gained better quality evidence to support themes or analyzed the data in greater depth.

5.3 Future Research

There should be further research into international students’ experiences with food and perceptions of healthy eating. The numbers of international students are increasing, making this an opportune time to gain understanding of their beliefs and attitudes toward healthy eating. Having a greater comprehension of the factors influencing eating behaviours will better allow dietitians and other health professionals to design nutrition education, policies, programs, and services to promote health and prevent nutrition problems. Foodservice professionals who work for universities may also benefit from these findings to better accommodate international students. Knowing the barriers and motivators for international students to eat a healthy diet can help to better assist this population in maintaining and enhancing their nutritional health while studying abroad in Canada.

5.4 Implications for Dietetic Practice

The results of this study provide insight into international students’ perceptions of a healthy diet in their home countries and in Canada. International students generally prefer their traditional foods and perceive them as healthier, which can make assimilating
into Canadian culture more difficult. Results of the study suggest that cost and availability are barriers for students to eat healthy traditional meals. Programs to help international students find affordable traditional foods and integrate Canadian foods into traditional recipes may help bridge the gap between diet cultures. Additionally, community dietitians could develop resources and programs to enhance international students’ nutrition knowledge and ability to make healthy choices. For example, many international students arrive in Canada without experience in reading nutrition labels or in shopping for groceries in supermarkets laden with convenience foods. Using an upstream approach to provide primary nutrition intervention strategies can protect and ameliorate the health of international students. With over half of international students planning to live and work in Canada after their studies, this would be a worthwhile investment for Canadian government agencies, community groups, and non-profit organizations.
6.0 REFERENCES


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Appendix A

Briefing Script

Thank you for agreeing to participate in an interview on your perceptions of a healthy diet. My name is Adèle Corkum. I’m an Honours student in the Foods and Nutrition program here at UPEI. There are no right or wrong answers to the interview questions. The more detail you can give, the better we can understand your point of view. I am audio recording the interview and making personal notes so that I don’t miss anything you say. I will not use your name or identifying information on the recording, my thesis, or any further reports. Everything you say is confidential and will not be tied to your name or other personal information. I am looking forward to hearing your unique perspective on healthy eating. We will go over the consent form now before starting the interview questions. Thank you for your participation!
Appendix B

Debriefing Script

Thank you for participating in this research project. Your contributions to the study are greatly appreciated by the research team. Your answers to these questions will add to the body of literature around international students’ experiences with food in Canada. Do you have any questions about the research project or how your information will be used? Thank you again for your participation in this research project!
Appendix C

Interview Guide with Prompts

1. What foods do you like to eat in _______ (country of origin)?
   Prompts:
   a. What is the favourite meal that you eat at home?
   b. What do you eat on special occasions?
   c. What is your favourite food to prepare yourself?
   d. What do you order when you go out to eat?

2. If you were eating a healthy diet in _______ (country of origin), what foods would you choose? What, if any, foods would you avoid?
   Prompts:
   a. What foods do you consider healthy?
   b. What sort of information would you look for on a food package label?
   c. What foods do you consider unhealthy?

3. What foods do you like to eat in Canada?
   Prompts:
   a. Do you have a favourite Canadian food?
   b. What do you eat on special occasions?
   c. What is your favourite thing to prepare yourself?
   d. What do you order when you go out to eat?

4. If you were eating a healthy diet in Canada, what foods would you eat? What, if any, foods would you avoid?
   Prompts:
   a. What foods do you considered healthy?
   b. What sort of information would you look for on a food package label?
   c. What foods do you considered unhealthy?

5. Do you think the type of foods you eat has changed since coming to Canada? Why? Do you think the foods you eat now are healthier or less healthy?
   Prompts:
   a. Is the number of meals you eat different? Is the timing of meals different?
   b. Do you eat out more or less?
   c. Do you think there is a connection between health and nutrition? Explain.
Appendix D

Information Sheet

1. How old are you? _____

2. Please list all the places where you lived before coming to Canada.

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3. What is your current year of study? ____________

4. What is your major? ______________

5. When did you first come to Canada (day/month/year)? ____________

6. Have you taken, or are currently taking, a nutrition course at the university level? _______
Appendix E

Consent Form

Comparison of international students’ perceptions of healthy eating before and after arrival in Canada: A qualitative study

You are invited to volunteer to participate in a research study at the University of Prince Edward Island that is being conducted by Adèle Corkum, an Honours student in Foods and Nutrition, under the supervision of Dr. Katherine Gottschall-Pass and Dr. Sarah Hewko.

The objectives of this study are to explore international students’ (1) perceptions of a healthy diet in their country of origin, (2) perceptions of a healthy diet in Canada, and (3) how their perceptions of a healthy diet have changed since their arrival in Canada.

You are eligible to participate in the study if you are 18-25 years old, an international student at the University of Prince Edward Island, able to engage in a 30-45 min English interview, living in Canada for no more than four years.

The study presents minimal risk to participants who choose to take part. Participation in this study is entirely on a volunteer basis and you are free to refuse participation, withdraw from the study until February 1, 2019 without penalty or reproach, or decline to answer any interview questions without consequence. If you choose to participate, you will be asked to set an interview time that is convenient in your schedule. At this time, you will be asked questions about your perceptions of healthy eating in a one-on-one interview. The interviews will be digitally recorded, and the researcher will also take notes during the interview.
The data collected during the interview will be kept confidential and anonymous. Consent forms and identifying information (e.g., name and student ID) will be kept separate from interview responses. Your name or other identifying information will never be associated with your answers to interview questions or included within study publications or presentations. Only my supervisors and I will have access to your identifying information and the raw data (your interview answers). This information will be kept in a locked cabinet in the Department of Applied Human Sciences for seven years, after which all data will be destroyed.

Please don’t hesitate to contact the primary researcher Adèle Corkum at acorkum@upei.ca or supervisor Dr. Katherine Gottschall-Pass at kgottschall@upei.ca. If you have any concerns about the ethical conduction of this study, you can contact the UPEI Research Ethics Board at (902) 620-5104 or at reb@upei.ca.

Signatures

☐ I have read and understand the above information and have had any questions about this study answered. I understand that I can keep a signed and dated copy of the consent form. I agree to participate in this study. I agree to have the interviews audio recorded and direct quotes of my answers (without identifying information) included in the resultant written works and presentations.

__________________________________
Signature of Participant

__________________________________
Date
Would you like to receive a summary of the results of this study?

☐ Yes. If yes, please leave your email address here and the summary will be sent to you at the end of the study: _____________________________

☐ No.

I have explained the purpose, study design, and procedures to participants, and have answered any questions to the best of my ability.

__________________________________________
__________________________________________
Signature of Person Obtaining Consent       Date
Appendix F

Recruitment Poster

ARE YOU AN INTERNATIONAL STUDENT AT UPEI?

If you are 18-25 years old, an international student at UPEI, able to engage in an English interview, and living in Canada for no more than four years, we are inviting you to participate in a research project.

The objectives of this study are to explore international students' perceptions of a healthy diet.

We are looking for students to participate in a 30-45 min one-on-one interview.

For more information, please contact Adèle Corkum
Appendix H

Ethical Approval

To: Adele Corkum
Applied Human Sciences

Protocol Number: REB Ref # 6007927

Title: Comparison of international students' perceptions of healthy eating before and after arrival in Canada: A qualitative study

Date Approved: November 20 2018  End Date: November 19 2019

This research proposal has been reviewed and approved by the UPEI Research Ethics Board. Please be advised that the Research Ethics Board currently operates according to the Tri-Council Policy Statement 2: Ethical Conduct for Research Involving Humans (2014) and applicable laws and regulations.

It is your responsibility to ensure that the Annual Renewal and Amendment Form for Approved Studies is forwarded to Research Services prior to the renewal date. The information provided in this form must be current to the time of submission and submitted to Research Services not less than 30 days prior to the anniversary of your approval date. The Renewal/Amendment form can be downloaded from the Research Services website (http://www.upei.ca/research/forms).

The Research Ethics Board advises that IF YOU DO NOT return the completed Ethics Renewal form prior to the date of renewal:
- Your ethics approval permit will lapse;
- You will be required to stop research activity immediately;
- You will not be permitted to restart the study until you reapply for and receive approval to undertake the study again.

Lapse in ethics approval may result in the interruption or termination of funding.

Any proposed changes to the study must also be submitted on the same form to the UPEI Research Ethics Board for approval.

Notwithstanding the approval of the REB, the primary responsibility for the ethical conduct of the investigation remains with you.

Sincerely,

M. Rossiter, Ph.D.
Chair, UPEI Research Ethics Board

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