CHANGES IN FOOD HABITS AMONG FARSI AND DARI-SPEAKING IMMIGRANT WOMEN IN BRITISH COLUMBIA, CANADA

by

Mana Bayanzadeh
BSc in Food Industry Engineering, Azad University, 2003
Certificate of Applied Human Nutrition, Simon Fraser University, 2005

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STUDENT'S NAME : Mana Bayanzadeh

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Chair Of Defense: Dr. Michael Hayes
Professor
Faculty of Health Sciences

Senior Supervisor: Dr. Rochelle Tucker
Assistant Professor
Faculty of Health Sciences

Supervisor: Dr. Nicole Berry
Assistant Professor
Faculty of Health Sciences

External: Dr. Marina Morrow
Assistant Professor
Faculty of Health Sciences

Date Defended / Approved: July 17, 2008

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ABSTRACT

Changes in dietary habits due to international migration have been associated with chronic diseases including obesity, hypertension, cardiovascular disease and non-insulin dependent diabetes mellitus in immigrant populations. Four focus groups (n= 20) were conducted with the objective to provide information on food habit changes and the influencing factors on such changes in Farsi and Dari-speaking immigrant women after migration from their home countries to British Columbia, Canada .The findings of this study show that women believe that a variety of factors have led to changes in their dietary patterns. Major factors for change were children's preference, work schedules, social relations, stress, weight concerns, digestion problems, food insecurity, taste, and positive culinary influence from different cultures in Canada.

Keywords: Women; Immigrants; Iran, Afghanistan; Food habits; Change

Subject Terms: Food habits - Social aspects; Food habits - Iran; Women - Iran - Social conditions

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LIST OF ABBREVIATIONS

CCHS	Canadian Community Health Survey
CHD	Coronary Heart Disease
CVD	Cardiovascular Diseases
FHA	Fraser Health Authority
IFANCA	Islamic Food and Nutrition Council of America
ISSBC	Immigrant Services Society of British Columbia
NPHS	National Population Health Survey
SUCCESS	United Chinese Community Enrichment Services Society
WHO	World Health Organization
WHR	Waist to Hip ratio

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INTRODUCTION

International migration has been shown to be associated with changes in dietary habits. Such dietary changes may have an important role in the development of chronic diseases including obesity, hypertension, cardiovascular disease, and non-insulin dependent diabetes mellitus in immigrant populations. (Wandel, 1993; Hyman et al, 2002; Huang et al, 1996; He et al, 1996). The aforementioned conditions have been associated with high fat and high sugar diets, low consumption of fruits and vegetables as well as inactivity (Koçtürk, 2004). This raises important questions not only about the overall health quality of diets and lifestyle, but also about the ways in which the health concerns of specified immigrant populations can be addressed through education and public policy.

In considering the importance of nutrition among any national or ethnic population, specific attention must be paid to the needs of women. A healthy diet is particularly essential for women as they have special dietary needs due to their reproductive role (The ESHRE Capri Workshop Group, 2006; Koçtürk , 2004). Consideration of this role, in turn, places emphasis on the fact that the health of the next generation is largely dependent on the health of the mother. The health behaviours, diet and lifestyle of a mother during and before pregnancy can directly influence infant health (Barker, 1998). Women are usually responsible for domestic food preparation and shopping (Kemmer, 1999). Therefore, women

may greatly influence nutrition-related health behaviours of family members in the household (Mellin-Olsen & Wandel , 2005). This may be particularly relevant in certain cultures, where women have the traditional role of the caregiver in the family (Edmonds, 2005). In this sense, the intersection of gender and culture is essential to understanding the full ramifications of dietary choices.

Evidence suggests that immigrants are generally healthier than native-born individuals upon arrival in the host country (Oxman- Martinez, 2000; Hyman, 2004; Ali et al, 2004). However, with an increase in the length of stay in Canada their health deteriorates (Hyman, 2004; Koçtürk, 2004; McDonald et al, 2005). Immigrant acculturation has been documented as an explanation for why immigrants' health deteriorates over time (Hyman, 2004).

The process of immigrant acculturation involves changes in health-related behaviours such as diet and exercise as a result of contact with native-born individuals (Beiser, Dion, Gotowiec, & Hyman, 1997;Hyman, 2001; Salant & Lauderdale, 2003; as cited in McDonald and Kennedy, 2005); and environmental influences (Stephen,Foote, Hendershot, & Schoenborn, 1994 as cited in McDonald and Kennedy, 2005).

While there is enough research in this area to confirm that a problem exists, certain questions remain about the specific nature of the problem, its cause(s) and potential solutions. As such, there is much to be gained from additional exploration and research.

In an attempt to answer such questions, the current study will provide valuable insight into the factors that influence dietary change as well as factors

and/or barriers to maintaining healthy eating habits among the target group. Such information may provide a basis for preventive nutrition and health programs and/or nutrition education that is specifically designed for such sub-populations.

BACKGROUND

Demographics

Focusing on the nation of Canada in particular, it is significant to note that Canada is a country with a culturally diverse population. One out of six persons living in Canada, approximately 18.4% of the population, is foreign born. In 2002, 20% of all immigrants in Canada were reported as Middle Eastern (Beiser, 2005). According to the 2001 Census, there are approximately 25,230 and 47,080 immigrants from Afghanistan and Iran, respectively. The Tri-Cities area, which includes Coquitlam, Port Coquitlam and Port Moody, is a multicultural region in British Columbia. The immigrant Services Society of Canada has reported that over 37% of the population of Coquitlam consists of immigrants. 50% of these immigrants have migrated to Canada during the past 10 years. The same reports have revealed that Iran is among the top ten source countries for immigrants in the Tri-Cities area.

Immigrant Health

The National Population Health Survey (NPHS) and the Canadian Community Health Survey (CCHS) are amongst the best sources of information on immigrant health in Canada. These sources provide varied insight into dietary habits of specified populations (Ali et al, 2004).

Data on fruit and vegetable intake, provided by the National Population Health Survey (NPHS), reflect increased consumption of fruits and vegetables

among recent immigrants (Ali , McDermott & Gravel, 2004). Canadian studies have reported that the intake of fat amongst recent immigrants is lower than the corresponding intakes for native-born residents of Canada (Pomerleauand& Ostbye, 1997; as cited in McDonald and Kennedy, 2005).

According to the results of the CCHS, the prevalence of chronic diseases is lower among recent immigrants to Canada in comparison to native- born Canadians. In this survey it was shown that although obesity is less prevalent among recent immigrants, this advantage seems to diminish over time. Similar results have been offered from the National Population Health Survey (NPHS), where it was shown that immigrants are less likely to be overweight or obese upon arrival to Canada in comparison to native-borns. However, this advantage diminishes over time as well (Cairney & Ostbye ,1999; as cited in McDonald and Kennedy, 2005).

Moreover, as obesity increases, most likely due to dietary and lifestyle changes, risks of serious health problems increase. These include high blood pressure, arthritis, diabetes, heart disease, asthma, and some cancers (McDonald and Kennedy, 2005).

Additional evidence suggests that the metabolic syndrome is an emerging health problem amongst immigrant populations. This can be attributed to the documented relationship between post-immigration changes in dietary habits and a higher risk for developing diet-related chronic diseases including diabetes type II, CVD, hypertension and obesity (Daryani, 2006).

Migrant studies have also proposed a strong relationship between lifestyle factors and the risk of developing cancer. Yavari et al (2006) reported that rates of breast cancer and colorectal cancer were four and two times higher for immigrant Iranian women in British Columbia (BC) in comparison to the corresponding rates in Iran, respectively.

The aforementioned studies provide information suggesting that certain health-related behaviours of immigrants, including diet, undergo negative changes with increased length of stay in Canada (Hyman, 2004). The reasons for the deterioration of immigrant health are important to examine because it reflects how Canada treats our most vulnerable populations and indicates the overall health of the population. Also, increased understanding of the nature of the problem can help us to develop effective and appropriate educational and public policy responses.

Migration and Dietary Change

As stated, there is considerable research supporting the association between migration and dietary change. All too often, the changes involved are not beneficial to the immigrant groups. Studies have reported that immigrant populations often incorporate unhealthy eating patterns of the host country that are high in fat and a low in fruits and vegetables placing them at risk for chronic diseases (Satia-Abouta et al, 2002).

Koçtürk (2004) explored changes in food habits in a group of Iranian immigrant women, who had migrated from Iran to Uppsala, Sweden. This study used a mixed method approach to understand the changes in dietary habits of

these Iranian women after migration as well as the reasons for such change. The data from the focus groups and questionnaire indicated changes in all food groups. The price of foods; inadequate products from their home country; convenience; and children's preferences were the most important reasons for changes in dietary habits.

Mellin-Olsen & Wandel (2005) conducted a qualitative study investigating dietary changes among Pakistani immigrant women in Oslo, Norway. The results of this study showed changes in the cultural importance of certain meals. Also, the participants reported that health aspects, children's preferences, work schedules, social relations, stress, traditional beliefs, climate, season and access to foods were the factors that most strongly influenced dietary change.

Edmonds (2005) focused on dietary patterns of Honduran immigrant women in New Orleans, Louisiana. The findings from this descriptive, explanatory study revealed both positive and negative changes in the dietary patterns of these women after immigration. Healthier methods of food preparation as well as an increase in fruit and vegetable consumption were reported as positive changes, while eating more foods high in fat and sugar at fast food restaurants and skipping meals were among the negative changes in nutritional habits of the Honduran women (Edmonds, 2005).

An additional study revealed that Muslim immigrant women in the United States maintain core dietary habits after immigration. However, elevated intakes of processed food, which are high in fat and sugar, were reported with an increase in the number of years in the host country (Hassoun 1999; as cited in Suad,

2006). Lenoard reported exposure to new foods and ingredients as influencing factors on dietary change amongst Muslim immigrant women in the United States (1997; as cited in Suad, 2006). It has been documented that Muslim immigrant women often experience difficulties in accessing halal foods. This appears to be particularly relevant to those living in low-income and rural areas (IFANCA, 2005; and Morland et al, 2002; as cited in Suad, 2006).

Food Security

According to Struble et al. (2003), food insecurity has been defined as "limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways" (as cited in Rush et al, 2007). Evidence suggests a strong relationship between food security and obesity. One study of Hispanic women revealed that food insecure women were four times more likely to be overweight (Townsen et al, 2001; as cited in Edmonds, 2005). The aforementioned study reported that binge eating was common amongst this group of women during times when food was less available and accessible. Other studies have documented a tendency to substitute less expensive and higher calorie foods for healthier foods that are less affordable (Food, Research, and Action Report, 2004; as cited in Edmonds, 2005).

In certain countries, including Canada, food banks have been established in an attempt to improve food security amongst vulnerable populations. Inadequate food intake has been reported, however, amongst immigrant clients of food banks such as Colombian immigrant food bank users in Canada.

Immigrant food bank users have been identified as an important target group for nutrition education provided through community programs and health services. It has been documented that such vulnerable groups experience changes in dietary practices after immigration to this country and require appropriate services that address their food and health needs (Rush et al, 2007).

Patterns of Obesity in Middle Eastern Populations

Obesity as a major public health problem has been associated with many health conditions including type 2 diabetes and insulin resistance, which in turn,

have serious health consequences such as cardiovascular (CVD) and cerebrovascular diseases; some forms of cancers; hypertension; gallbladder disease; and metabolic syndrome. Aside from overall obesity, central obesity has also been linked to certain risk factors and morbid conditions (Bahrmani et al, 2006).

Although uncertainties remain with regard to the development of obesity in adults, evidence suggests a combination of interacting social, cultural, behavioural, physiological, metabolic, and genetic factors (National Institutes of Health, 1998). Studies have suggested the usefulness of investigating dietary patterns, which may reveal dietary behaviours, as opposed to merely studying diet in the nutritional etiology of obesity .The former approach (i.e. dietary patterns approach) has the advantage of providing a more thorough understanding of the etiology of chronic disease from a nutritional perspective (Esmaillzadeh & Azadbakht, 2008).

Studies suggest that the prevalence of central adiposity is higher amongst Middle Eastern women in comparison to other Middle Eastern populations (Esmaillzadeh & Azadbakht , 2008), which places them at an increased risk for obesity-related ill-health conditions. A high Waist to Hip Ratio (WHR) characterizes this type of obesity, namely the Middle Eastern pattern. In fact, 50% of the female adult population of this region has been categorized as being abdominally obese (Azizi et al, 2005; as cited in Esmaillzadeh & Azadbakht , 2008). It has been documented that Iranian women are more likely to have higher WHR in comparison to many other Middle Eastern populations (Bahrmani et al, 2006). This pattern is contrary to that in Western countries, where a higher prevalence of central obesity has been observed in the male population as opposed to females (Azizi et al, 2005; as cited in Esmaillzadeh & Azadbakht , 2008).

Dietary Practices of Middle Eastern Populations

The Persian Diet

Staple foods in the Persian diet include rice (*polo*) and bread. *Polos* can be consumed in "simple" form, along with stews or with mixed vegetables/herbs and served with chicken/meat. One common form is Basmati rice, or long grain white rice. The type of bread (*Nân*) that is mostly consumed is white wheat bread, namely *Lavash, Taftoon, or Barbari.*

Legumes, beans and nuts are amongst the most important sources of protein in the Persian diet. A large variety and amount of these protein sources

are eaten on a daily basis. Examples include chickpeas, fava beans, white and red beans, lentils as well as walnuts, pistachios and almonds.

Meats such as lamb, beef and chicken are added to stews (*khoresh*), soups (*ash*), and meatballs (*koofteh*). *Kebabs*, which are usually grilled lamb or chicken, are common protein foods. Omelets made with eggs and vegetables are also well liked. Seafood is less common and many Iranians do not consume pork products due to religious beliefs.

Tea and *dugh* are typical beverages in the Persian diet. *Dugh* is a popular Persian drink, which is a mixture of whole milk yogurt; soda water; dried rose petals, dried mint leaves and salt. Coffee is also a favorite drink of Iranians, especially in certain parts of the country.

Cow or sheep milk and feta cheese are also typical. A very common practice among Persian housewives is to make yogurt at home by adding a small amount of yogurt to fresh boiled milk. The mixture is then poured into a cloth, tied up and left in the sun or near a radiator to allow for fermentation. *Kashk* and *Dugh* are other milk products that are included in the Persian diet. *Kashk* (meaning dry yogurt) is similar to thick whey or sour cream.

Tea (*châ*y) eaten with dates, figs or raisins, and a variety of fresh and/or dried fruits are served as typical snacks that are eaten after and between meals. *Ajeel*, another common snack, consists of a mix of salted and roasted nuts and seeds.

Roghan Nabati (vegetable oil), which is margarine from Iran, is a common type of fat that is used to prepare Persian foods. Another type of cooking fat,

namely "*lamb-tail fat*" is obtained from sheep. Olive oil is used in cooking and salads.

Desserts are usually prepared and eaten on special occasions rather than on a regular basis. Examples include "*Halva*"(a sesame dessert) and "*Baghlava*" (a Persian pastry layered with nuts and glazed with honey) (Koçtürk, 2004).

CONCEPTUAL FRAMEWORK

Kocturk has developed and used a model for understanding food combination patterns and meal patterns in varied cultures as well as changes in such patterns (Kocturk-Runefors, 1990, 1991, 2004). Other researchers have tested and confirmed the usefulness of the model (Mellin-Olsen & Wandel, 2005).

According to this model, foods are groups into three categories: staple foods, complementary foods, and accessory foods. Staples include carbohydrate rich foods. Food items including meat, fish, eggs, vegetables, legumes, or dairy products have been categorized as complementary foods, while accessory foods include foods such as fats/oils, herbs/spices/condiments, sweets/snacks, nuts, fruits, and drinks. Kocturk has proposed that the process of adapting to new dietary patterns starts with changes in accessory foods.

It has been argued that changes in complementary foods do not happen at an early stage, as the cultural desire for such foods is stronger. Staples have been known to remain the same for many years and do not change easily due to their high cultural identification to the homeland (Mellin-Olsen & Wandel, 2005).

The Kocturk model explains a similar pattern in relation to meal patterns. Accordingly, the first changes begin in snacking patterns. The cultural importance of breakfast is known to be less than other meals. Hence, the next changes appear to occur for this meal. Subsequently, changes occur in the lunch

meal. Kocturk's hypothesis states that the last adaptations are related to the dinner meal. The given explanation for this latter change is that in many cultures, dinner is the occasion when the family gathers to eat. According to Kocturk, the first changes occur in weekday meals, whereas the cultural importance of meals on weekends is maintained.

METHODS

Research Design

Qualitative research, using a focus group methodology was conducted in an attempt to obtain Farsi and/or Dari-speaking immigrant women's own thoughts and experiences regarding dietary change after arrival to Canada. The women were asked to explain how these changes have occurred as well as the factors that may be associated with such changes.

Focus groups have been proven to be a powerful tool for obtaining rich and detailed subjective data on psychological beliefs and attitudes in comparison to individual interviews (Basch, 1987; Frey & Fontana, 1993; Marshall & Rossman, 1995; as cited in Edmonds, 2005). It has been documented that focus groups may have the advantage of revealing the influence of culture on dietary patterns as well as health/illness beliefs and behaviours (Betts, Baranowski,& Hoerr, 1997; Marshall & Rossman, 1995; as cited in Edmonds, 2005).One unique characteristic of focus groups is the promotion of interaction between group members (Stewart et al, 2007).

Setting

Focus groups were held in public settings, namely SHARE and SUCCESS community centres, in Tri-Cities. Each focus group session was carried out for approximately an hour and a half including a break time, when lunch was served.

Daycare was arranged for the children who accompanied the women and several nurses were recruited to take care of the little ones.

Sampling and Characteristics of Participants

The participants were recruited through community organizations, namely SHARE Family & Community Services Society and SUCCESS, which provide settlement services to immigrant populations in the Tri-Cities area as well as local Persian/Afghani stores. SHARE Family & Community Services Society provides such services through two accessible locations for the immigrant clients (i.e. Port Moody and Coquitlam); these services can be delivered in Farsi and Dari. Gerry Kasten and Jane Wark , as Public Health Community Nutritionists at Fraser Health Authority, assisted in facilitating the establishment of connections with these community organizations. Posters were developed and displayed at these community organizations and local Persian/Afghani stores for the purpose of recruitment.

During this time, the investigator made visits to community kitchens, food banks as well as the Immigrant Services Society of British Columbia (ISSBC), all of which are affiliated with SHARE Family & Community Services Society and/or SUCCESS. These visits allowed for the author to build connections with community leaders/workers and for meeting and taking part in informal talks with eligible participants. This resulted in establishing a friendly relationship with the immigrant women and community leaders/workers.

Purposeful sampling was carried out in this study to select participants for the focus groups. The criteria for the study sample dictated that participants

should have been born in Iran or Afghanistan; be Farsi and/or Dari-speaking; be at least 19 years of age; have lived in Canada for more than 6 months; and be residents of the Tri-Cities area. An invitation letter, which was developed in English/Farsi, was given to each of the eligible participants. Subsequently, the investigator contacted the women by phone to invite and to remind them to participate in the focus groups. After obtaining access to a source population through SHARE Family & Community Services Society and/or SUCCESS, the investigator continued the process of recruitment though snowball sampling and invited eligible participants to take part in the focus groups. Personal contacts including purposeful questions were carried out to ensure that the participants would fit the inclusion criteria.

The investigator aimed to get at least 5 participants in each of the focus groups. However, not all women showed up at the sessions. Hence, the author managed to get three to eight participants in each focus group. Overall, four focus groups were conducted and 20 immigrant women participated in this research study. This research study was carried-out over the time period of July 2007 to March 2008. The time interval for the four focus groups was organized on the basis of the participants' preference and availability.

The study protocol received approval from the Research Ethics Board for practicum related courses of Simon Fraser University, and permission was obtained from SHARE Family & Community Services Society and SUCCESS. Informed consent forms, which were provided in both English and Farsi, were

collected from the women prior to taking part in the study. Participants were paid $20 for their participation in the focus group sessions.

Data Collection

Focus groups were conducted for collecting information on changes in dietary patterns of Farsi and Dari-speaking immigrant women. A focus group interview guide including open-ended questions was developed in English and then translated into Farsi. The interview guide for the focus group sessions was pilot tested with a small group of Farsi-speaking Immigrant women and changes were made where required.

The investigator acted as the moderator and facilitated the discussions. The women were asked about their preference and language qualifications. All women agreed that they were more comfortable if the discussions were in Farsi/Dari. Hence, the author, a native-born Iranian fluent in Farsi, facilitated all four focus groups in Farsi. Conducting the focus groups in Farsi may have had the advantage of providing more valid information as the Farsi/Dari -speaking immigrant women may have been able to better express themselves in their mother tongue.

All focus group sessions were tape-recorded. The moderator recruited a technical assistant to help run the tape-recorder/s and to take notes. The discussions in the focus group sessions were formed around the objectives of the study.

Analysis

Following each focus group, the researcher transcribed the tape-recorded discussions; translated the transcriptions; categorized/coded; and analyzed them. Analysis of the information provided in the focus groups started as soon as possible after each session. The investigator chose the "long table approach" to analyse the transcribed transcripts (Krueger & Casey, 2000). A priori code list was produced from the designed questions in the interview guide. These codes were analyzed. Subsequently, interpretation of the major themes that emerged during the analysis process was carried out.

Each line of the transcripts was numbered and every set of transcripts was given a specific coloured line down the left margin, allowing the investigator to quickly locate quotes in a given transcript. The transcripts were then arranged

by categories of participants (Afghan and Persian women) so that similarities and differences could be identified.

The investigator read the translated transcripts several times, and subsequently categorized or coded them by question and then by theme. The author constantly compared the answers to each question to identify similarities and differences and compiled the quotes accordingly. Categories were rearranged and new ones or subcategories were created during the process. Then a descriptive summary was written for each question that was analyzed and was compared to summaries of other questions. During the process of analysis, special attention was given to certain factors including specificity, emotions and extensiveness of comments and themes (Krueger & Casey, 2000).

RESULTS

According to the women, life in Canada has led to changes in meal patterns and food items. The factors that most strongly influenced dietary change included children's preference, work schedules, social relations, stress, weight concerns, digestion problems, food insecurity, taste, and positive culinary influence from different cultures in Canada. The women gave recommendations on their dietary and health needs.

Meal Patterns

Table 1 and Table 2 depict changes in breakfast, lunch, and dinner meals as well as snacking patterns and number of meals amongst Persian and Afghan woman, respectively. The discussions reveal that changes that women report are consistent with the Kocturk model. According to the women, the cultural significance of the lunch meal has diminished after immigration to Canada. Most agreed that they do manage to gather the family for dinner. Different opinions were stated in relation to the breakfast meal in Canada. Some reported skipping breakfast or just drinking a cup of sweetened tea. Others said that they do eat breakfast, although this meal is typically eaten alone on weekdays due to different working schedules of family members. The women reported skipping lunch, eating light meals or eating out for lunch in Canada, whereas traditional foods were always served for lunch in their home countries. Often lunch was skipped in order to eat a full course dinner meal with other family members. As lunch meals

mostly included rice dishes in Afghanistan and Iran, skipping this meal in Canada has led to the increased consumption of rice at dinner time. The participants talked about maintaining their traditional snacking habits, while incorporating Western snacks, especially cup cakes and chocolate into their diet.

Overall, the foremost reported changes in meal patterns after immigration to the host country stated by the women are: less family meals, ad hoc eating, and skipping meals.

Table 1: Changes in meal patterns (reported by Persian women)

Meal/Snack	Traditional habits	New habits adopted in Canada
Breakfast	○ Tea, milk, cheese, butter, jam, bread or cereal, fresh or dried fruit, nuts (walnuts)	○ Eggs, and sausages (in addition to traditional foods)
Lunch	○ Rice with different traditional stews ○ The wife always prepares lunch for the rest of the family ○ Children usually come home at 3:00 and eat homemade traditional dishes/hot meals for lunch ○ Family is gathered	○ Children take sandwiches to school and/or eat at McDonalds or Starbucks on their way back home ○ Children are full when they come home from school and do not usually eat homemade lunch ○ Women do not have a routine for lunch ○ Women do not eat at the table/ stand-up meals are common for lunch
Dinner	○ Family is gathered	○ Dinner -times vary depending on the time that family members get home from work (especially the husband) ○ Dinner is often eaten very late at night
Snacks	○ Family is gathered at tea times (tea and snacks in the evening)	○ Individualistic snacking ○ More ad hoc eating ○ More snacking throughout the day and less actual meals
Number of meals	○ Always three meals a day	○ Skipping meals has become more common; especially the breakfast/lunch meal

Table 2: Changes in meal patterns (reported by Afghan women)

Meal/Snack	Traditional habits	New habits adopted in Canada
Breakfast	○ Tea, nuts (almonds, hazelnuts), bread (sesame bread is common), milk, cheese ○ Fixed time for eating breakfast (breakfast was eaten exactly at 6:00 – 6:30 am) ○ The mother always wakes to prepare breakfast for the rest of the family ○ Family is gathered for breakfast	○ Similar foods eaten for breakfast ○ Milk, almonds, tea ○ Family is not gathered – except on weekends ○ Women do not usually get up early and do not prepare breakfast
Lunch	○ Soup ○ Rice and meat (sheep meat) ○ Lunch is eaten exactly at 12:00 pm ○ Family is gathered	○ No fixed time for eating lunch ○ Light meals eaten for lunch or lunch is skipped ○ Children take sandwiches to school for lunch ○ Family is scattered
Dinner	○ Family is gathered ○ Dinner is always eaten at 5:00 – 6:00 in the afternoon ○ Meat and or vegetable rolls are common	○ More rice (rice dishes are eaten more frequently for dinner; rolls less common)
Snacks	○ Nuts ○ Large amounts of fruit ○ Occasional consumption of sweets/confectionaries- always bought fresh from bakeries ○ Glass of milk or a bowl of yogurt	○ The same amount of fruit, but a greater variety ○ Increased consumption of cup cakes and chocolate
Number of meals	○ Always three meals a day	○ Skipping meals has become more common; especially the breakfast/lunch meal

Family Meals

In Afghanistan and Iran meals were regarded as "sit-down meals" in which the whole family would gather to eat. This was reflected in the statements of most of the immigrant women. However, the participants explained that traditional-style "sit down-family meals" are less frequent in Canada. The immigrant women talked about the emotional implications of changes in traditional-style "sit down

family meals". Several women talked about how they miss having traditional family meals, which involves spreading the tablecloth; setting the table; and eating together around the table. One woman explained:

> " The only thing that really upsets me is the fact that I miss eating around that familiar family table cloth. I wish that this wouldn't change, you know, because Iranian families always gather to eat together, you will never enjoy eating the way you used to, this can never be replaced by anything else. I think that the emotional and mental aspect of eating is equally important, it is not just the nutritional value of foods and for us as immigrants this aspect will always be lost"

The discussions reveal that family members are more likely to eat together on weekends in the host country. This points to the fact that the immigrant women have maintained the cultural importance of weekend meals, which is consistent with the Kocturk model. As one participant said:

> "We eat meals together more on weekends because, you know, my husband is home, the kids don't go to school. Meal times are more similar to Afghanistan. We eat breakfast together and we are all gathered for lunch and dinner"

In accordance with the Kocturk model, the women have maintained the cultural importance of dinner meals, as dinner appears to be the occasion when the family is more likely to eat together. However, the challenges associated with time scheduling for dinner and getting the whole family gathered to eat were brought-up during the focus group discussions. Dinner meals on weekdays were reported as the only meals that are eaten in the traditional style (i.e. "sit down-family meals"); although, it was mentioned that this meal is usually eaten very late at night. One participant said:

> "I always cook dinner, everyday. You know dinner always has to be ready here, always. Dinner is always eaten and everyone is gathered. Well, we eat dinner so late, you know

> by the time my husband gets home from work and I manage to gather everyone, we just end up eating dinner very late, it just happens, that is why we sleep late as well"

Overall, the reasons that were given for less family meals were different work schedules of family members; individualistic eating according to hunger cues; and challenges associated with getting the children to eat around the table rather than eating in front of the TV. The below quote demonstrates the challenges in getting children to eat meals around the table with the family.

> " Some days when the children get up in the morning I tell them to sit around the table for breakfast, but very soon they get up and sit in front of the TV to watch cartoons, then I am left there sitting all alone [...], and I then tell them, gosh can't we just all eat together, just once"

Ad hoc Eating

According to the women, meals were eaten at specific times each day in their home countries. However, irregular eating patterns and individualistic eating appear to become common since coming to Canada. As one Afghan women explained:

> " Our meals were eaten at a specific time everyday, and we would always have breakfast, lunch, and dinner. Now, it is all over the place and we don't really have a schedule. It always changes depending on different things that come up everyday"

Another woman elaborated:

> "If I am home I may prepare lunch, but even if I do it is something small, it is a light lunch meal,..., whenever I feel hungry I will make something. It is not like Afghanistan where you had to have lunch ready at exactly 12:00, but here I am alone for lunch, so I just eat whenever I am hungry"

This statement also reflects the fact that the cultural importance of lunch seems to have diminished after immigration. This is consistent with the Kocturk model.

Skipping Meals

Most women reported eating three meals as well as snacks between meals on a daily basis in their home countries. The discussions reveal that life in Canada has led to skipping meals as a profound change in the dietary patterns of the immigrant women. One woman explained that having no appetite to eat due to loneliness is an important reason for skipping the breakfast meal:

> "We would eat breakfast together. We would start off with fruit. Now that I am here in Canada, I never eat fruit anymore, I don't know why, maybe it is because I am so lonely now, I don't enjoy eating anymore, I don't even eat breakfast anymore"

It was consistently mentioned that the lunch meal is often missed on weekdays. One participant said:

> "Well here we usually only eat two meals. In Canada, we do prepare lunch sometimes, but it is not like a full meal though. Sometimes I will eat a light meal that I have prepared and on some days I won't eat anything at all. [...]. In Afghanistan you would always, always have breakfast, lunch and food in the evening."

One of the women talked about how weekend meals in Canada resemble meals in Afghanistan in such a way that three meals are eaten instead of two meals a day.

Changes in Food Items

Table 3 and Table 4 provide summaries of changes in food items amongst Persian and Afghan women after immigration, respectively. Overall, the results show that not all changes in food items have occurred according to the Kocturk model, as some changes seem to be inconsistent with this model. The changes in staples (grains); complementary foods (vegetables/legumes, dairy products, meat and fish); and accessory food items (fruits, fat/oils, herbs/spices/condiments, sweets/ processed snacks, drinks) have been explained below.

Grains

Most women agreed that the taste of bread is significantly different to that in their home country. Two of the participants talked about how they have come to accept the taste of bread. Several women mentioned that they have had difficulty in finding rice with an acceptable taste in Canada. It was stated that it took quite some time for them to accept the taste.

Concerns about food additives in baked goods in Canada were revealed from the discussions. One woman raised her worry on the topic of bread improvers. In contrast, Another woman thought that the different taste of bread in Canada is due to lack of baking powder in breads, which is a result of stringent food regulations in Canada. One participant shared her experience of how she misses fresh, warm bread that her husband would buy from local bakeries in her home country.

Most women made comments on having problems with digestion after eating certain types of Western breads such as hamburger buns. The participants

expressed their desire to know the reasons for developing problems with digestion in Canada. One woman said:

> "Have you seen the breads that they eat, the hamburger buns. I believe they add additives to these breads that is why the bread here is so fluffy. It really causes stomach upset for us, but you see that all Europeans are actually eating these fluffy breads and none of them have the same experience of stomach upset as we do. I have no idea why, I am really curious to know the reason for this"

According to the participants, the consumption of rice is less frequent in Canada. In particular, rice dishes seem to be less popular among children of the immigrant families. One woman talked about how her daughter disapproves of eating so much rice due to weight-related reasons, while Another woman talked of the low nutritional value of white rice. The below quote illustrates some of the aforementioned statements in relation to rice consumption:

> "Lunch consisted of rice with one of the Iranian stews, traditional stews, and for dinner, well dinner was similar to lunch, but maybe a bit more simple. I guess it was more simple because we would try not to eat as much rice at night. Of course, I have to say that we eat much less rice here in Canada. My children don't eat much rice, they say that they don't like it, my older daughter tells us that it is not good for your health"

A few expressed their fear of high-fat rice dishes, which were traditionally prepared in their home countries. Rice dishes are prepared with less oil/grease in Canada. At the same time, most women mentioned that they use a-lot of oil/grease in rice preparation when cooking food for guests. As stated earlier, Kocturk's argument provides indication of resistance to change for staple foods including rice. The results of this study, however, appear to be inconsistent with this model.

Vegetables and Legumes

Many of the traditional Persian and Afghan dishes include vegetables and legumes as a main ingredient. Two of the women believed that their vegetable intake has increased after immigration to Canada. One of the reasons for increased consumption was the greater variety and seasonal availability vegetables in Canada. However, despite the greater availability of different kinds of vegetables in Canada, a number of women gave reasons for not buying these food items. These women explained that it took them several years to accept the taste of such food items in Canada. Disliking the taste of legumes that are available in Canadian supermarkets/grocery stores was also mentioned .The undesirable shift from using fresh vegetables to the use of frozen vegetables was discussed in all focus group sessions.

Many of the participants talked about the fact that their children do not like many of the vegetables. This was demonstrated in the response below:

> "Broccoli isn't very pleasant. I have bought it many times, I boiled it, so I was ready to try it and eat it, but honestly I think the kids are right, they don't like it"

Concerns were raised with regard to lack of knowledge on preparing and cooking these new vegetables and legumes; and in relation to the health benefits of such foods. The women talked about how they have come to learn that legumes cook muck quicker in Canada.

Many women have started to adopt healthier cooking techniques in preparing vegetable/legume dishes including the use of less oil/grease and cooking foods for shorter time periods. The reason for this change appeared to be

the positive culinary influence from different cultures in Canada, especially from those of the Chinese. As one women said:

> "I have tried to make our foods healthier. I have learned from the Chinese people in Canada not to fry the vegetables as much, like them, you know. Now I just try to stir-fry some foods like vegetables and chicken"

Dairy Products

Most women stated that they have become more aware of the fat content of dairy products since their stay in the host country. As one explained:

> " In Iran I would never pay attention to the fat content, I have become more conscious about this here, especially for the children, I think it is important for me to know"

However, one woman said that despite the fact that she has learned about the health benefits of eating low-fat diary products, she is not always able to afford these products. This woman explained that she buys high fat dairy products for her small children and that she is forced to consume high fat milk products herself in order to save on costs. Some participants talked about how they believe that milk was tastier in their home country. They said that the higher fat content may be a possible explanation for better taste.

Several women expressed their determination in buying organic milk products. However, the discussions show that the high price of organic dairy products in Canada does not always allow the immigrant women to buy such items. Two of the women raised their concerns on the topic of hormone and antibiotic content of dairy products in Canada. Many myths/misconceptions, as demonstrated in the quote given below, were revealed on this matter during the focus group interviews:

> "It seems like they add antibiotics as well, you know, to the cows, they continuously add antibiotics, and I have heard that the meat and milk from these cows are bad for you"

Other concerns were raised in relation to additives and preservatives in yogurt in Canada. The women talked about how they would typically use plain yogurt in Iran, while the consumption and availability of flavoured yogurts has increased in Canada.

Meat

The discussions reveal that the consumption of meat varied among the Afghan people living in their home country. In Afghanistan, meat was associated with wealth and status. Hence, the poor did not eat as much meat. One participant explained this as:

> " Meat was very expensive, so not everyone could afford to buy meat, although Afghan people are real meat lovers, you know, a-lot of the Afghan people are very poor and are living in distress, so they can't, they have many problems, meat is a food of the rich and wealthy people, so you know, not everyone can buy meat over there"

In Canada, however, most women (Afghan and Persian) reported eating lower quantities of meat. It was explained that the increased availability of vegetables has had an influence on the change to including more vegetables rather than meat in dishes. However, the main reason that was given for decreased consumption was that meat is not healthy:

> "I would personally buy a lot of meat [...] and use a-lot of meat in the dishes that I would prepare, but it has decreased now. I know that too much meat is bad for you, so now we only eat meat twice, or even just once a week. We eat other foods more now"

Concerns were raised mainly with regard to chicken. Certain myths such as high amounts of hormones added to chicken in Canada were amongst the most important reasons given for reduced intake of chicken. The latter reason as well as disliking the taste of chicken appeared in many of the comments.

Meat that has been slaughtered according to Islamic rules, namely halal meat, is very popular among family members. However, the women mentioned encountering problems in accessing halal meat during their life in Canada. One woman stated:

> " Our preference is to buy halal meat, I try to buy halal meat, but a-lot of the time I am not able to, well because of not always having access to Iranian grocery stores, or an Iranian butcher."

Two women stated that they have started to adopt healthier practices with regard to meat preparation .The reason for this change was related to incorrect traditional habits/beliefs. Although, one woman stated that she would always remove fat when preparing meat in Iran as well; hence, this habit was not new to this individual.

Fish

The women's dietary habits in Afghanistan did not include eating much fish. This was due to lack of availability in many small cities of Afghanistan. However, the Afghan women reported an increased availability and consumption of fish after immigration to Canada. One woman said that:

> " There were many difficulties in Afghanistan, there was very little fish, if we ever went to certain places like another city, well we would buy fish, but there was little fish, we eat much more fish here."

A few of the women talked about the fact that they disliked the taste of fish in Canada. However, it appears that they have come to like certain kinds of fish over time.

Fruits

The participants talked about the lower consumption of fruits at the earlier stages following immigration. They explained that at first they had a hard time accepting the taste of fruits. However, with an increase in the length of stay in Canada the women have come to like these fruits, leading to an increased use of these food items in their diets. One woman related her experience as:

> "I couldn't bare the taste of fruit here ...I really don't know, I always had to throw out the fruits in our fridge because I would realize that they had become mouldy. Now I think some of them are actually quite tasty, I am getting used to the taste of food here, I am beginning to like some of the foods."

Several women expressed their interest in learning more about certain unfamiliar types of fruits available in Canada.

Fat/Oils

The discussions about fat/oils reveal that most women have been using less fat when preparing food after immigration to Canada.

The reasons that were reported for this change include fear of CHD as well as other ill-health conditions; new nutritional knowledge; and the culinary influence from other cultures, especially the impact of the Chinese cuisine on that of the Persian and Afghan. The immigrant women have learned to add less oil while cooking rice. Also, stir-frying vegetables and other foods has replaced deep-frying. One woman explained the reasons for this change as:

> "I have noticed that we use a-lot of oil in our foods, and heart problems are more common in Iran compared to Canada ...of course a-lot of people say that it is because their lives are very stressful there, but I think nutrition plays a role too and is important... I think it has got to do with the fact that wrong beliefs and unhealthy methods of food preparation have been passed on to us from previous generations."

One participant stated that she still uses a lot of oil when preparing foods, especially when cooking for guests. Most participants maintained that they continue to use high amounts of oil when cooking food for guests. This is reflected in the below statement:

> "I usually don't add as much oil to the traditional foods like I did in Iran, but same here, if I have guest I add more oil to make foods have the taste that we are used to."

Herbs/ Spices/Condiments

Several women reported substituting dried herbs for fresh herbs, which were traditionally used in their home country. The reasons for this change include lack of availability of fresh items.

Drinks

The women explained that water was taken with meals in their home countries. In Canada, however, water has been substituted with Coke and to a lesser extent with fruit juices due to children's preferences for such beverages. One woman talked about her children's preference for Coke:

> " The kids like to have their food with Coke and not with water, now I have substituted Coke with fruit juice, but they don't drink fruit juice as much."

Two of the women made comments about the increased consumption of coffee in Canada. The participants regarded this as a negative change as they believed that caffeine is most often coupled with sugar and/or sweet snacks such

as chocolate and cakes. This was illustrated in the statement of one of the participants, who said:

> "I really believe that this is a very bad food habit that many of us develop here, too much caffeine gets into the body, and it is not just coffee you know, since coffee is usually taken with so much sugar, or a cake or chocolate or something."

Sweets/Processed Snacks

The immigrant women stated that they have maintained much of their traditional snacking habits. They believe that such snacks including fruits and nuts are healthier than Western snacks. However, life in Canada has led to an increase in choosing snacks with a high fat and sugar content.

One of the focus groups included food bank users and community kitchen clients. The participants of this group also indicated that they have more access to processed snacks in the host country. They shared their negative experiences of using food banks in Canada when they explained that processed snacks are the only high quality foods that are being offered to them through the food bank. For this reason, the women told that they always have these high calorie snacks stored at home.

One of the immigrant women explained:

> "The food bank gives out a-lot of cakes so we usually have plenty in the house, so when we have cakes and biscuits, well we will eat them with our afternoon tea"

Another participant further explained:

> "Most of the foods that they [food bank] give include cakes and biscuits and roulettes, these are the only foods that have a high quality and can be eaten for a few days without becoming spoiled, the rest are usually either spoil right from the very beginning or become moldy and spoiled after a few days."

The women explained that their children's' preference was an important factor, which has influenced their snaking habits. Also, the availability of such snacks at restaurants and coffee shops in Canada has affected their choices in eating less of the traditional snacks. The below statement clearly demonstrates the increased consumption of high fat and calorie snacks:

> "I try to eat the same Iranian snacks here, and I try to provide traditional snacks for the family, especially for my children. I think Persian snacks are healthier, for example fruits and sometimes nuts, but sometimes just for a change I buy Western snacks, like chocolates, biscuits. I buy these for my children more often here, they like to eat these types of snacks, and sometimes I go for a cup of tea and have a cake or something sweet with it. I usually go to McDonald's because I like the apple pie there or I go to Starbucks or Blenz to have a raisin fruit cake, oh and I really love the cinnamon sticks at Starbucks too."

One woman talked about the relationship between weight gain and the increased intake of processed snacks in Canada. She explained this as:

> "I think it is actually because of these cup cakes that I have gained so much weight, I think these snacks have been added to our diet, we eat more of these foods here."

Table 3: Changes in food items (reported by Persian women)

Food items	Traditional habits	New habits adopted in Canada
Grains	○ Long grain rice (jasmine) ○ White wheat bread including Sangak , Lavash, Barbari ○ Pasta	○ Same breads bought from Iranian stores (Pita bread; hamburger buns) ○ Less overall consumption of rice
Vegetables	○ Fresh vegetables ○ Large variety in dishes ○ Deep fried vegetables	○ Frozen vegetables ○ Stir frying vegetables rather than deep frying ○ Inclusion of new vegetables in diet

Food items	Traditional habits	New habits adopted in Canada
Fruit	○ Large variety of fresh and dry fruits are eaten as snacks and between meals ○ Dry fruits such as dates, figs and raisins are eaten at teatimes as afternoon and evening snacks	○ Availability of fruits all year round ○ Greater variety
Dairy products	○ High fat milk, cheese and yogurt ○ Plain yogurt ○ Dough (a yogurt drink) ○ Limited choices of low fat diary products ○ Home-made yogurt	○ More flavoured yogurts ○ Some buy low fat products, while other continue using high fat ones ○ More choices of low fat milk products, especially for cheese ○ Some continue to make yogurt at home, while others have discontinued to do so
Meat	○ Lamb, beef, chicken ○ Halal meat (meat which is slaughtered according to Islamic rules) ○ Stews include meat; other dishes such as meatballs and kebabs are also common ○ Meat is often bought fresh	○ Less consumption of meat due to various reasons including disliking the taste; less accessibility to places which sell halal meat; health reasons; worries regarding hormone content ○ Purchase of frozen meat has become more common although not desirable by many
Fish	○ White fish, rainbow ○ White fish eaten with a certain rice dish (Sabzi Polo) is a special meal that is prepared on the first day of the Persia New Year	○ Salmon
Legumes	○ A great variety of legumes included in traditional dishes including stews and soups ○ Legumes are cooked for long hours	○ Legumes require less time to cook
Nuts	○ A variety of nuts including walnuts, almonds and pistachios are eaten as snacks after and between meals ○ Nuts, particularly walnuts are eaten with bread and cheese for breakfast ○ Nuts are also included in traditional dishes. For example, pistachios are added to certain rice dishes and walnuts are included as a main ingredient of a traditional Persian stew, namely Fesenjoon. ○ Nuts are also used in baking (Baghlava)	○ Less popular among children

Food items	Traditional habits	New habits adopted in Canada
Drinks	○ Tea for breakfast, and between/after meals ○ Dough (yogurt drink) ○ Water	○ Coke for children (children's preference) ○ Fruit juices –mostly for children ○ Less consumption of tea due to lack of time for family members to gather and different schedules of members of the household ○ Increased consumption of coffee, especially at coffee shops
Snacks	○ A variety of fresh and dried fruits ○ Nuts	○ Maintained traditional snacks including fruits and nuts ○ Increased consumption of processed snacks including cakes, chocolate, biscuits ○ Lower interest of children in traditional snacks like nuts ○ Snacks have replaced main meals for some women
Fat/oils	○ Roghan Nabati (Margarine); lamb-tail fat; olive oil ○ Large amounts of oil used for cooking/ deep-frying vegetables for stew	○ Canola oil, olive oil ○ Stir-frying or grilling; less oil/grease use
Herbs/ spices/ Condiments	○ Dill, basil, parsley, fenugreek (shanbalileh) ○ Turmeric, coriander, saffron ○ Use of both fresh and dried herbs	○ Less use of fresh herbs; mostly dried herbs are used

Table 4: Changes in food items (reported by Afghan women)

Food items	Traditional habits	New habits adopted in Canada
Grains	○ White rice ○ White bread/rich breads ○ Homemade breads ○ Sesame Bread	○ Less overall daily consumption of rice; however, more rice is eaten later in the day compared to before. Less rice eaten due to concerns with regard to gaining weight ○ Bran bread eaten to help with digestion ○ Less overall bread consumption due to problems with digestion ○ Spaghetti for the children (school lunch meals)
Vegetables	○ Fresh vegetables	○ A greater variety and consumption of vegetables ○ Lower intake of fresh vegetables and increased consumption of frozen vegetables
Fruit	○ Large variety of fresh and dry fruits are eaten as snacks and between meals	○ Availability of fruits all year round ○ Greater variety
Dairy products	○ Fresh milk/cow's milk ○ High fat dairy products ○ Homemade yogurt	○ Increased consumption of cheese
Meat	○ Sheep meat ○ High quantities eaten by the wealthy and little consumption among those who are less well-off ○ Halal meat	○ Lower intake due to health reasons ○ Less access to halal meat
Fish	○ Little consumption ○ Not available in all cities	○ Increased availability and consumption
Drinks	○ Tea for breakfast, and between/after meals ○ Green tea is popular ○ Water	○ Coke for children (children's preference) ○ Fruit juices (children's preference) ○ Less tea as a result of less family/social gatherings that include tea times
Snacks	○ A variety of fresh and dried fruits ○ Nuts	○ Maintained traditional snacks including fruits and nuts ○ Increased consumption of processed snacks including cakes, chocolate, biscuits ○ Lower interest of children in traditional snacks like nuts ○ Snacks have replaced main meals for some women
Fat/oils	○ Sesame seed oil ○ Canola oil	○ Less use of sesame seed oil due to lack of availability

Reasons for Change

The immigrant women reported a wide range of influencing factors on changes in their dietary habits after immigration. Many of these reasons have been depicted in Table 5, while some factors that have caused change were mentioned in the above sections. Overall, however, the most significant themes mentioned include children's preference; work schedules, stress; digestion problems; weight concerns; taste; food insecurity; and positive culinary influence from different cultures in Canada.

Children's Preference

An important theme that was mentioned by the women was children's preference. The mothers reported that their children's request for fast food, especially McDonalds was an important factor influencing increased consumption of these foods. As one participant said:

> "I don't know what it is about McDonald's. Is it the smell that attracts the kids? The children love McDonald's. I make home made fries, the kids sometimes eat it, but they don't find it very appealing...when I take the kids there, well we all sit together and eat. I know it is bad for me, but I sit with them and eat with a great appetite, although I know it is very unhealthy. I tell my kids that we should not eat these foods because they are not good for you. I tell them that it is better if we eat other foods, but you know what, I mean come on, they see me eating the fries with such great appetite. Obviously, we are giving them the wrong type of education."

Many of the statements reveal that these female immigrants face the challenge that their children want fast food. One woman expressed her frustration about her children's desires for these unhealthy foods as:

> " For us it is quite hard to manage because even if we don't go out to eat the kids still like foods offered at restaurants

> and ask for home delivery. For instance, the children always ask their father to buy McDonald's or a hamburger on his way home, even though I have made food at home, they like to eat those foods."

Children's desire for snacks high in fat and sugar was also mentioned during the discussions. One woman stated:

> "They [the children] also ask their dad for other things like cakes and chocolate ...the kids eat more chocolate [...] here...they really like them and then they tell me that they want to take these snacks to school."

Many of the mothers talked about the fact that their children constantly ask for Coke and/or fruit juices. According to the participants, in their home country people would consume water more frequently, while pop and fruit beverages were less common. One mother explained:

> "I think the children drink more Coke and fruit juice here. It is impossible not to buy these drinks for them. Well, the kids just like to drink these beverages."

When the women talked about changes in traditional foods, one of the most important reasons was children's influence on their diet. Many mentioned that their children dislike some of the traditional dishes and/or prefer Western foods, while others discussed the fact that the children disapprove of eating certain traditional foods due to health-related reasons. Two women said:

> "The kids don't eat certain types of food. They don't like all of our traditional Afghan dishes, like Baghali Polo and [...] we like the rice dishes a lot, the adults like it, but the kids don't like it and so they never eat it. "

> "My children don't eat much rice. They say that they don't like it, my older daughter tells us that it is not good for our health."

Work Schedules

Work schedules of family members have had a major influence on food patterns of the immigrant women. The fact that family members come home at different times and often very late at night has lead to independent eating; fewer family meals; and the shift of energy consumption towards later in the day. As two women described:

> " The family is scattered here, my husband goes to work at a certain time, the wife goes to work at a different time, but you know the sad thing is that our work places aren't that far away from each other. This is something that has always been unacceptable to me, and I have always missed."
>
> "My husband comes home late, so he tends to eat very late, he sill eats but it is late at night....the timing has changed because everyone eats at different times."

Work schedules, busy lifestyles and children's preference were a combination of reasons mentioned for dietary changes. These factors were reported as important influencing factors on food item change and meal pattern change including timing of meals and family meals. The below quote demonstrates these reasons:

> " In my opinion people are extremely busy here, the lifestyles are very different. Each person likes to schedule their time in a way that works best for themselves, in a way that they personally prefer. People can still find the time to gather and eat together if they really want to, but this usually doesn't happen, especially because of the children. They spend a-lot of their time out at restaurants or with a friend rather than at home with their families, this is what has changed "

Stress

The process of immigration has had many emotional implications for the immigrant women. Many participants talked about their experiences of loneliness, which has lead to appetite changes. For the majority of women being

lonely during meal times was associated with loss of appetite, skipping meals, and irregular meal patterns. These have been illustrated in the below statements:

> "There is this sense of loneliness here. In Afghanistan, the family would always eat together, we had a very big family, eating was so enjoyable ...I just don't feel like eating alone."
>
> "I can't even remember eating breakfast anymore, never in the whole time that I have been living in Canada...only on Saturdays and Sundays, that is when my husband is home, we all eat breakfast together on those days."
>
> " When I am alone I don't feel like cooking just for myself, I just buy something."

Contrary to the common experience of losing the appetite to eat, for a few of the women, loneliness has led to having an excess desire for food. One participant explained:

> "I think that we are at home alone and more than our husbands. Of course this is my opinion. I personally eat a lot. If I don't control my eating I will gain weight very fast and then I try to lose weight. I have a great appetite for food now"

Digestion Problems

Digestion complaints were common amongst the immigrant women in this study. One food item causing digestion problems, which was frequently mentioned, was bread, especially hamburger buns and fluffy breads. Switching from traditional breads to whole wheat/bran bread in order to avoid digestion complications was discussed in the focus groups.

> " The breads that have bran in them, it is easier for me to eat these types of bread now. I occasionally bake traditional bread due to an Afghan habit, but I can't digest it well anymore."

The women said that they never experienced this problem when eating these foods in their home country. They expressed their frustration at not

knowing the cause of having digestion problems. As demonstrated below, they are curious to understand the reason/s behind this:

> "It is just hard to digest...maybe it is because of the change in the weather, yes, maybe it is that, but I really don't know the exact reason."

Two women talked about seeking help from family physicians for their digestion problems. One of the women explained that:

> "Me and my daughter, our stomachs can't digest many foods here, we want to go and talk to a doctor about this, it really makes you feel uncomfortable, you know, we can't digest food like we did in Iran and we experience bloating after eating many foods here."

Taste

One topic that was extensively discussed during the focus group discussions was the change in taste of foods. The women talked about how they missed their home country foods and that they have been searching to find food items with a familiar taste. The participants believed that perhaps one should allow several years for accepting these new tastes. The below quote illustrates this change:

> "I would choose certain foods to try and then I would realize that they weren't what I had hoped for, the taste just wasn't what I was searching for, it wasn't the same."

On the other hand, the appealing taste of certain foods such as fast food and Western snacks was mentioned. Two women talked about the combination of taste and variety as influencing factors on dietary change. As one woman said:

> "Some foods here like sweet snacks are good, they are tasty, some foods are really delicious, there is a great variety of these foods, all very appealing, it has changed [...], changed compared to Afghanistan."

Food Insecurity

Availability

The discussions show that in most cases, home country food items are available in Canada. The increased availability of fish as well as fruits and vegetables was a common view amongst the female immigrants. This was demonstrated in the below quotes:

> "I think that there is a huge variety of fruits and vegetables in Canada, and you can find many fruits all year round here."

> "We eat fish, we eat more fish here because you know there was little fish there."

The storage of foods was a topic mentioned by a few of the participants. One woman explained:

> "Well, we always have chocolate in the fridge here, and we store cakes that the food bank gives....these foods are just so available."

Access

Accessing foods in Canada was an important theme that was discussed among the immigrant women. The participants raised their concerns with regard to distance and involved costs for accessing food. The below statements refer to affordability of food items and distance to travel:

> "Organic foods are extremely expensive here, that is why I can't buy organic foods all the time, actually I can rarely afford to buy organic foods."

> "Our preference is to buy halal meat. I try to buy halal meat, but a lot of the time, well we don't always have Iranian grocery stores near by"

In one of the groups, food banks and/or community kitchens were reported as means to accessing food in Canada.

Acceptability

The quality and cultural acceptability of certain foods was an important theme that was discussed amongst the women. The immigrant females reported having difficulty in accessing fresh foods, especially fresh fruits and vegetables in Canada. Limited access to ethnic speciality foods such as halal meat was a common concern. This was illustrated in the above quote. A few voiced their concerns about the lack of mention of "halal" on food labels. One woman shared her experience of accessing fresh foods as:

> "I try to buy fresh foods rather than frozen items, but you know I don't think that it is always possible here."

Adequacy: Nutritional/Health Concerns

Weight was an important health concern that was raised in the sessions. Most women reported gaining weight and/or problems with maintaining a healthy body weight after immigration to the host country. Fear of CHD was also a health problem that was mentioned. Some statements about weight and CHD were:

> "I don't know why we gain weight so easily here, although we do eat less. We were never worried about our weight there and we would eat well."
>
> " I don't really know why we gain weight here, well maybe it has got to do with the weather here, and one thing is that we work less here too."
>
> "Statistics have shown that the rate of heart attacks are very high among those of the age of 30 in Iran"

Positive Culinary Influence from Different Cultures in Canada

The significant culinary influence from different cultures on the immigrant women's food preparation and cooking was consistently mentioned by most of

the immigrant women. The Chinese culinary influence appeared to have a great positive effect on the eating and cooking habits of many of these women. Some positive changes in cooking habits included using less oil/grease in cooking; stir frying; and grilling foods. One woman explained:

> "I have seen some foods here that are quite healthy, like Chinese foods include a variety of different vegetables, and they cook very fast, so I think they are easy to prepare. They don't include a-much oil either, but you know our foods cook for long hours and they loose all their vitamins"

Table 5: Factors that have caused dietary changes (reported by participants)

Reasons for change	Description/quotes
New health/ Nutritional knowledge	• **Unhealthy foods: meat** ➢ *"I would personally buy a lot of meat... but it has decreased now, I know that too much meat is bad for you."* • **Importance of low fat cooking** ➢ *"I have adjusted our foods according to what I have learned here to make them healthier. I have corrected what was wrong about our cooking habits, like I have reduced the amount of oil that I use in cooking, made it healthier."* • **Importance of eating less of high glycemic index foods** ➢ *"I use less white rice in preparing meals here as well because I know it has a bad effect on blood sugar levels, so I cook less rice here."* • **Benefits of cooking foods for shorter time periods** ➢ *"Foods lose their nutritional value if they are cooked for a very long time."*
Myths	• **Growth hormone use with dairy cows (in Canada)** ➢ *"It is unacceptable to me to eat such foods with so much added hormones. I have heard that they inject so much hormones into the bodies of milk producing cows that instead of being pregnant for 9 months, they are actually pregnant for 12 months, all year round, their bodies are full of hormones now."* • **Hormones in chicken (in Canada)** ➢ *"I am disgusted by chicken, I just hate it because I am aware of the high hormone levels, I just dislike it so much."* • **Antibiotic use with cows (in Canada)** ➢ *"It seems like they add antibiotics as well, you know, to the cows, ...and I have heard that the meat and milk from these cows are bad for you."*

Reasons for change	Description/quotes
	• **Misconceptions in relation to the sugar content of fruit juices** ➢ *"Fruit juices don't contain much sugar and are a good substitute for coke to be given to children."*
Physical activity	• **Less activity:** **1. Less domestic and caring tasks:** ➢ *"In Afghanistan [...], well we had a big family, so to manage the big family many people had to get together to take care of all the work. It is because there was lots of work that had to be done there, so I think we were more active there."* **2. Shopping is no longer a daily ritual involving activity** **3. Walking to places is less common now** **4. Less time to exercise** ➢ *"I would eat a lot, but I was very active, I wouldn't gain weight. I feel like I am not as active here and because of the job that I have I don't have time to go to the gym- I only exercise at home, very short though."*
Sources of nutrition/ health information	• **Limited access to nutrition information: Persian web-sites were the only sources for such information mentioned** ➢ *"I just sit behind the computer and search on-line for information on healthy foods. I visit Iranian web sites that have information on healthy eating, that is all I have access to."*
Time/ convenience	• **Busy lifestyles in Canada have lead to a demand for convenience resulting in increased fast food consumption and less family meals and social gatherings** ➢ *"My children eat out a-lot, I think people are so busy here that they don't find the time to cook food, so they just eat something at work or at school."* ➢ *" I don't think that any of the Iranian Canadians spread the table cloth and set the table like they used to anymore. I don't think they can find the time to do so... we often just grab something quick to eat."*
Unfamiliarity with preparing and foods cooking Western foods	• **Food bank users** ➢ *"They [food bank] mostly give out canned foods, like canned corn, tuna fish, canned fish, but you know we never use the canned foods. We end up throwing them out. W we don't know how to prepare them, they don't taste good either"* • **Problems in cooking and preparing unfamiliar food items** ➢ *"At first it was very difficult for me because I wasn't familiar with any of the food items in Canada. The method of preparation of these foods was also different than what I had thought... it was so strange, I had lost hope, I couldn't even cook food anymore. It is only about two months now that I have started cooking again. I was uncomfortable with cooking items, which I was unfamiliar with. I lost interest in cooking, then I stopped cooking."*

Reasons for change	Description/quotes
Social relations	➢ *"You attend gatherings here and all they put on the table is some kind of processed food like sausages, maybe a light meal light like salad. Of course, this is a good thing in certain way. Some people maybe more comfortable this way and it saves you the trouble of preparing food, but you know, on the other hand, you miss sitting all together- "around" the table, while chatting and eating, and you know just enjoying the food and the company of the people around you at the same time and all the love."* • **Misunderstandings and cultural differences with regard to social relations** ➢ *"She usually doesn't ask if we would like to eat something or not, even if she does, we always say that we have eaten although we may not have done so and we are actually quite hungry, I think she works and it is hard,"* ➢ *"This relationship is more of a Western style one. That is that they usually just leave it up to you to eat or not to eat. So we don't always eat if they don't serve us food. In Iran the host would always offer food to the guests"* ➢ *"The relationships are different here. In Canada, everyone has accepted the fact that others are very busy, everyone works, everyone has accepted to respect other people's boundaries. There are just certain things...I guess the level of people's expectations is different. In Iran, you would go to a friend's house or maybe to a close friend's place, and you were really comfortable doing so."*

Recommendations from Participants

The focus group interview guide included one question on recommendations from the participants in relation to their nutritional and health needs. Some of the women identified the lack of education and information on healthy eating for immigrant populations. One woman stated:

> "I think the reason that many Canadians have healthy eating habits is that more nutrition education is available to them than us "

A few women requested to be provided with food and nutrition classes. They suggested that such programs could help them learn about foods that are available in Canada and assist them in adapting their traditional cooking habits to these foods. This was reflected in the below statement:

> "My preference is to learn more about those foods that are very foreign to us as Iranians, for example I also see the variety of vegetables here in Canada, but I am not all familiar with them, that is why I never look for them or buy them. A program that would teach us about the health benefits of these foods, you know to teach us as Iranians who do not have enough information on them, also it would be good if we could learn how to prepare them, so like a cooking class as well as a class providing information, like if they teach us things so we can actually learn how to use them, and then we will eat them."

Some participants talked about how they have tried to use healthier methods for food preparation and cooking in Canada. However, the women feel that they do not have adequate knowledge on healthy cooking and food preparation techniques. This was explained as:

> *"I would like to learn about these things. For example, I have seen that the people here use brown rice in their foods. I actually tried to make it once, but I couldn't, I couldn't cook it, it is so different, it is very hard to cook brown rice...the cooking requires a-lot of time, I have heard it is healthy"*

DISCUSSION

It has been proposed that immigration to a new country may influence dietary patterns of immigrants in three different ways. Some immigrants continue to practice their traditional food habits, while others adopt the dietary practices of those of the host country (Satia et al., 2001). Biculturalism is adopted when home country food habits are followed, at the same time as practicing new nutritional habits. The latter pattern has been shown to be common amongst most first generation immigrants (Lee, Sobal & Frongillo, 1999; Satia et al., 2000). It appears that the dietary patterns of the Persian and Afghan women in this study may be more bicultural as they have maintained much of their traditional eating habits, while new foods of the host country have been incorporated into their diets and Canadian dietary practices have been adopted.

The results of this study show significant changes in meal patterns and food items. These findings have important implications in terms of nutritional/health needs of the immigrant women and programs/policies tailored to this population.

The cultural importance of lunch has diminished and this meal is often skipped, while the family is usually gathered for a late dinner. Such changes may lead to an increased calorie intake later in the day. The shift in energy intake as well as ad hoc snacking and skipping meals may encourage weight gain.

Inconsistent with the Koçtürk model, the women have taken significant steps in attempting to make changes in staple foods, particularly rice. Many expressed their concern with the high fat content of traditional rice dishes and reported eating less rice and cooking this food with less fat. However, some talked about eating larger portions of this food for dinner as a result of missing the lunch meal. In addition, nearly all women said that they continue to cook rice and other foods with large amounts of oil when preparing food for guests.

It is important to understand the socio-cultural determinants of healthy eating habits amongst different cultural groups. Studies have documented that social factors may act as a barrier to healthy eating (Hargreaves et al . 2002; von Hofe et al. 2002; as cited in Norway Mellin-Olsen. & Wandel, 2005).The issue of social pressure to serve large portions of foods, high in fat and sugar amongst this group of immigrants may require further investigation. The participants talked about cultural differences in the way one takes care of guests in Canada compared to the home country and how this change has affected dietary patterns. One woman explained that she often refuses to eat when attending social gatherings in Canada as it is considered impolite to eat if not directly served food by the host. Another participant explained that she does not eat as a way of showing consideration to the host. Such social and cultural barriers to healthy eating should be addressed when providing nutrition counseling for this group of immigrant women.

Important changes in complementary foods were also found. The women have made efforts to reduce their red meat intake due to health reasons and fish

consumption has increased after immigration. However, although participants reported using less meat when cooking homemade foods, an increased tendency to consume fast foods, especially hamburgers that have a very high fat content was revealed. Major myths in relation to chicken available in Canada have led to the lower consumption of this food. Hence, dietary counseling for immigrant women should address myths such as hormones in chicken (Kendall, 2006). Also, an emphasis should be placed on increasing women's awareness of the low nutritional value of fast foods as well as the relationship between the consumption of such foods and the associated health risks. Another important factor that was frequently mentioned was lack of access to acceptable foods, especially ethnic specific foods such as halal meat. An important nutrition intervention for immigrants could involve food labeling of all halal products. Such a strategy could help them identify foods that are culturally acceptable. The women have different views about dairy products. Some raised their concerns with regard to hormones and antibiotics in milk and said that they refuse to eat such food items if not organic, although it is illegal to have hormones and antibiotics in dairy cows in Canada (Kendall, 2006). Many participants reported gaining new knowledge and information on the health benefits of consuming

low-fat dairy products. However, the women pointed out that the high cost of dairy products, especially the organic form, is a barrier to making healthy food choices.

Positive changes in relation to vegetable use were observed, although many challenges to making and maintaining such changes were revealed. Several

women reported a shift to including more vegetables rather than meat in homemade dishes, although disliking the taste of certain vegetables was also mentioned. Some said that they have tried to use healthier cooking methods such as steaming, boiling and stir-frying rather than frying vegetables. The women regarded the culinary influence from other cultures (especially Chinese) as the most important reason for the latter change. However, most statements show the lack of knowledge on adapting traditional cooking habits to such healthier cooking methods and preparation of vegetables. There is a need to teach immigrant women how to appropriately incorporate such new and unfamiliar items including frozen vegetables into their diets.

The women have incorporated high fat and sugar snacks, drinks, and more fast foods into their traditional diet. An increased intake of snacks including cakes, chocolate, and biscuits was revealed. There was shift from traditional drinks including tea and water to sugared beverages such as coke, fruit juices, and coffee. From a nutrition standpoint, the higher intake of sweet snacks and drinks means an increased consumption of less favourable refined carbohydrates. The aforementioned energy dense snacks are high in total fats, saturated and trans fatty acids. These changes may have serious health and nutritional implications (e.g. snacks may promote excessive weight gain). Also, high intakes of saturated and trans fatty acids have been associated with a greater risk of developing certain health problems, especially cardiovascular diseases (Koçtürk, 2004). Children's preference was the major reason for choosing energy dense snacks, sugared beverages, and fast foods. Similarly, other studies have documented children's preference as one of the most significant influencing

factors on dietary change amongst immigrant women (Koçtürk, 2004; Norway Mellin-Olsen. & Wandel, 2005). Public health interventions including preventive nutrition and health education is necessary to address chronic diseases that are nutrition-related amongst this group of immigrant women. Such interventions are important, as diets high in fat and sugar have been associated with an increased risk for developing chronic diseases (Koçtürk, 2004).

Eating less food after immigration was a common perception amongst participants. In spite of this, many of the participants talked about gaining weight and problems with maintaining a healthy body weight. Most women argued that they gain weight much faster in Canada compared to the time that they lived in their home country.

It is important to note that such unhealthy eating patterns coupled with lack of physical activity may further put individuals at risk of obesity and

obesity-related health problems. It has been argued that the rates of diabetes may be higher amongst those living less active lifestyles in urban areas (Ramachandran et al, 1999; Gupta et al, 2002; as cited in Norway Mellin-Olsen. & Wandel, 2005). This is particularly relevant to this group of immigrant women as a more sedentary lifestyle after immigration was reflected from the discussions. According to the women, life in Canada is associated with less domestic and caring tasks, whereas life in the home country involved more hard work, especially with regard to housework, where the women would manage bigger houses. Also, caring for extended families in Afghanistan and Iran was linked to engagement in more daily activities, leading to a more active lifestyle.

Other reasons for decreased activity included lack of time to exercise and less walking in neighbourhoods. Counseling steps should be taken to promote physical activity amongst immigrant women.

Food insecurity appears to be an important issue amongst immigrant food bank users and clients of community kitchens of this study. The food bank users reported receiving mainly high fat and sugar snacks and talked about storing these foods at home for long time periods. According to the women, most other types of foods that are provided to them lack dietary quality. Major concerns were raised in relation to lack of knowledge of using canned products and unfamiliarity with new foods, leading to the disposal of such offered foods. Some of the women regarded community kitchens as means of accessing foods. Such resources have been regarded as an ideal place for women to connect and share the costs of cooking (Kendall, 2006). However, not all foods prepared and cooked at community kitchens are healthy, nutritious meals. Also, the kitchens are mainly facilitated by volunteers or community workers, but do not receive supervision by nutritionists.

For the aforementioned reasons, this group of immigrant women should be considered as a high-risk target population for community-based public health strategies. Canada has set national policies for ensuring the admission of healthy immigrants to this country. However, there are a limited number of policies that address the maintenance of health among this population. (Beiser , 2002).

Evidence suggests that effective educational programs must be culturally appropriate. For example, the knowledge, attitudes and practices of certain cultural groups should be taken into consideration when designing such

programs (Friis et al. 1998; Badruddin et al . 2002; and Von Hofe et al . 2002; as cited in Mellin-Olsen & Wandel ,2005). According to Oxman-Martinez et al., women's health strategies have not been designed in a culturally appropriate manner (2000). Appropriate interventions should be carried out to reduce the negative experiences of immigrant women using food banks. For instance, cultural barriers to using foods banks should be addressed through offering appropriate foods. The women should be provided with culturally adapted nutrition information and need to be taught new skills on preparing and cooking canned foods, frozen products as well as other unfamiliar foods. Community kitchen programs may be improved through including a culturally specific educational and skills building component on nutrition as well as cooking and food preparation, which could be delivered through trained community-based health workers/ nutritionists.

It is important to note that immigrants are not a homogeneous group. Immigrants have distinct nutrition and health needs according to certain factors including culture, country of origin, socio-economic status and gender (Hyman et al., 2002). This study provides evidence that immigrant women are a heterogeneous group, as different nutrition and health needs were identified between and amongst the Afghan and Persian immigrant women. For example, it was revealed that the Afghan immigrant women in this study, who are food bank users and/or community kitchen clients, face intersecting cultural, social and economic barriers/challenges while meeting their nutrition/health needs.

According to the World Health Organization, health has been defined as:

" a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (2006). Stress and loneliness associated with life in Canada as well as work schedules and social relations were amongst the most significant influencing factors on dietary changes that were reported by the immigrant women in this study. From a public health perspective, it is important to acknowledge the population determinants of health. These determinants include income, social support networks, education, working conditions, social and physical environments, personal health practices, coping skills as well as gender and culture (Health Canada; as cited in Hyman et al., 2002). Effective health promotion activities should recognize the social, economic and cultural context of immigrant women's lives as certain factors such as family and social support and multiple roles of women (e.g. care giving and working roles) are key determinants of their health (Hyman et al., 2002). Overall, health promotion interventions targeting immigrant women should not only address the population determinants of health, but also consider the specific determinants of women's health.

CONCLUSION

The results of this study give an excellent indication of the diverse array of factors that impact diet and dietary change among immigrants. In the vast majority of cases, the female immigrants surveyed in this research study were on a path of biculturalism in making the transition from the Iranian and Afghan cultures to the Canadian. Even when strong efforts were made to adhere to traditional eating habits, elements such as child preference and lack of availability and access to traditional foods made biculturalism to more realistic course. Understandably, the fine-tuning of this new bicultural diet is extremely complex. Women are forced to adapt to the incorporation of new foods as well as the changes in lifestyle caused by new work schedules among family members, generally busier lifestyles, higher levels of stress, and lower levels of physical activity. In order to negotiate this terrain effectively, women such as those featured in this report are in dire need of information about the new foods they are coming into contact with. There is evidence that, with the proper skills and knowledge, women will make positive changes in their lifestyles including diet. An example of this is seen in the efforts of the women in this study to use less fat in the preparation of rice dishes. Women have also made the active effort to reach out to other cultural influences, such as the Chinese population, in order to find new methods for preparing food in healthier ways.

At the same time, much of the new food that immigrant women and their families are coming into contact with are pre-packaged. It is here where education may be most essential. Unlike long-term members of Canadian culture, newly arrived immigrants will generally be operating at a great knowledge deficit regarding the foods unique to the new culture. As such, an extra effort must be made to educate them about the content of these foods. Armed with this information, immigrant women can be empowered to make active choices about which foods to emphasize and which foods to avoid. Many of the quotes and comments offered by these women show them groping for information. They have heard about hormones in chicken and antibiotics in beef but they are not aware of all the facts and do not know how they should react. In cases such as these, the benefits of organic foods and the introduction of new shopping outlets may open up new doors for the consumption of healthier foods. At the same time, it must be remembered that many immigrant women and their families may not have the economic status to access such healthier foods. Here, once again, the gap must be filled with education and information (e.g. eating local foods), allowing these women to make effective choices based on the means and options at their disposal.

Ultimately, food is one of the most important expressions of cultural identity that any society offers. Frequency and time of eating is strongly influenced by cultural preferences. Moreover, as the people most likely to make choices about food purchase and preparation, immigrant women can be seen as "gatekeepers" to this process of cultural expression. It is not surprising, then, that food was such a central issue for the women of this study. In a certain sense their

ability to negotiate the new bicultural diet can serve as a microcosm of their adaptation to Canadian culture itself. The more immigrant women struggle with these issues the more likely they are to feel alienated from the culture around them. Conversely, the ability to incorporate new foods effectively based on education and information can signify a feeling of empowerment and efficacy on the part of these women. In the sense, the provision of culturally-specific education and training programs stands to serve not only the health of these women and their families, but the harmony and cohesiveness of the Canadian culture overall.

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