Food Habit Changes In a Group Of Immigrant Iranian Women In Uppsala

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Dietary change occurs in relation to transitional periods as in international migration. Some dietary changes may contribute to increased prevalence of chronic disease in immigrants to western countries. Several studies were carried out in Uppsala, Sweden for studying food habit changes among immigrant women from different countries. This paper presents findings from Iranian women. A first group consisting of 10 first-generation immigrant women participated in focus group interviews and a second group of 68 women, mothers to children attending Farsi home language courses filled out semi-structured questionnaires with information on how their consumption of 55 food items had changed following migration and their reasons. Food habits in the home country were mapped out and how different food clusters were altered after migration was analyzed semi-qualitatively. Change was discernible in all food groups. A bicultural dietary pattern had emerged. Major reasons for change were the price of foods, lack of home-country products, convenience and the preferences of children.

The consumption of an “affluent” diet with high amounts of fat and sugar and low in fruits and vegetables is of great concern for public health nutritionists because this type of diet, coupled with a sedentary lifestyle, affects the development of nutrition-related chronic conditions that constitute major public health problems in western countries and urbanizing areas of the world (Popkin, 2001; Holmoe-Ottesen, 2000; Satia et al., 2000; Vargas, 1990; Hsu-Hage et al., 1995). These chronic conditions include obesity, hypertension, cardiovascular disease and non-insulin dependent diabetes mellitus, to which immigrants in western societies seem to be particularly susceptible (Hyman et al., 2002; Wändell, 1999; Wandel, 1993; Koçtürk & Bruce, 1996). While there is some information on the determinants of nutrition status in the general population, less is known about food habits among immigrants. Evidence suggests that before migration, many immigrants from non-Western countries have a diet protective against the development of chronic diseases, but that this changes toward an “abundant” pattern after migration (Hyman at al., 2002) precipitating ill health.

Adequate nutrition, a fundamental cornerstone of health, is especially critical for women whose reproductive role creates unique nutrition needs (for example women need more calcium and iron than men). Besides, due to their role in the planning and preparation of food, decisions made by women also affect the health of their families. To intervene successfully on negative aspects of dietary acculturation in a new environment it is therefore important to study culture-specific food habits and processes by which immigrant women incorporate new and potentially less desirable dietary practices following migration (Satia et al., 2000).

Sweden is one of the countries where immigration is making a strong impact. During the course of a few decades, Sweden progressed from being a country of emigration to one where about 20% of the population has immigrant backgrounds. Immigrants in Sweden generally live under adverse socio-economic conditions, are discriminated against (Rydgren, 2004) and have poorer health than the rest of the population (Sundquist, 2002). The prevalence of chronic conditions that etiologically have a nutrition component is higher among immigrants than in Swedes. For example women from Poland, Eastern and Southern Europe have higher risk for developing breast cancer. Being overweight and obesity is increasing and the incidence is higher among women from Southern Europe, the Middle East, Chile, Finland, Hungary, the former Yugoslavia and Turkey than in Swedish women (Sundquist et al., 1999, Lahman et al., 2000, Lissner et al., 2000, Wändell et al., 2003). Immigrant women from Iran and Turkey run an elevated risk for developing cardiovascular disease (Gadd et al., 2003, Daryani et al., 2004).

There is thus a need to explore home country food patterns and the process of dietary change among immigrants from non-West European countries in Sweden. For this purpose a series of studies of dietary change among first generation immigrant women from four different countries (Iran, Turkey, Palestina, Eritrea), residing in Uppsala county, were carried out during the period 1996-1998. This paper presents findings from a group of women from Iran. Results from the other groups will be published separately.

METHODS

Objectives
The study had two objectives: a) to map out the basic food items, food combinations and food habits in Iran through focus group interviews with a subsample of Iranian women, and b) to collect information from a larger sample of Iranian mothers on food groups whose intake was modified following migration.

The Sample
A convenience sample of adult Iranian first generation immigrant
Koçtürk: FOOD HABIT CHANGES

collected during focus group interviews on food items most often used in Iran and Sweden was utilized for constructing a list of 55 key food items signifying staple carbohydrates, complements and accessory foods. Participants were asked whether their consumption of the 55 food items had remained as before, increased or decreased after settlement in Sweden. The aim was to have a qualitative account. No attempt for quantifying customarily used amounts in terms of volume or weight was made. Six additional questions sought information on fat usage for different purposes and one open-ended question asked what subjects perceived of as the most important factors affecting changes.

RESULTS

Focus Group Interviews

Ten women who voluntarily participated in the focus group interviews were recruited from a local Iranian women’s association. All had resided in Sweden for more than five years. Ages ranged between 28-53 years. Two women came from Isfahan, one from Tabriz and seven from Teheran. The mean years of school attendance was six, with two participants holding academic degrees. Six participants were married and others were single or divorced. Nine participants had children. Three focus group meetings were held, each lasting about 1.5 hours. Conversations were carried out in Swedish or through a translator from Farsi. These were tape-recorded, partially transcribed, their contents coded and qualitatively analyzed (Krippendorff, 1980; Caplan, 1990).

Core foods and accessory foods most often used in the home country and after settlement in Sweden were identified and parts of conversations that gave information about reasons for the changes were noted. A schematic summary of food habits in the home country, mapped out through this exercise is presented in Table I. This analysis compared favorably against information on Iranian food culture available from other authors (Barer-Stein, 1979; Batmanglij, 1992; Harbottle, 1997).

Information collected in the focus group interviews was utilized for constructing the semi-structured questionnaire including social background and 55 food items. The questionnaire was then translated to Farsi, pre-tested for comprehension in a sub-group of four persons, slightly adjusted and distributed with the aid of three home language teachers to a convenience sample of 157 mothers with children attending Farsi language training in the primary schools of Uppsala county. An accompanying letter included information about the identity of the investigators and objectives of the study. Participation in the study was voluntary and anonymity of the respondents was ensured. Participants

Mapping out Food Habits

The instrument used was a model for mapping out structure and change in culture specific food habits. In this model, foods are grouped into three clusters. The first cluster includes Staple carbohydrates consisting of widely available, inexpensive starchy foods with a mild or neutral taste (such as bread, rice etc.). Staple carbohydrates are given central importance because of their aptitude to distinguish specific culinary traditions (as, for example, spaghetti distinguishes Italy or couscous distinguishes North Africa). Complements, the second cluster, include food groups such as the meats (meat, fish, poultry, eggs and products), milks (milk and dairy products), vegetables and legumes that are customarily used together with staple carbohydrates. When combined with staple carbohydrates, complements can be said to provide the core elements of a culinary tradition. The third cluster, Accessory foods, encompass foods that add taste to Core foods and include items such as fats, spices, nuts, fruits, sweets, savory snacks and drinks. Accessory foods maximize the taste, appearance and acceptability of core foods but cannot, in themselves, characterise a culinary tradition.

This instrument enables mapping out food combinations and individual food preferences in different degrees of detail. In its simplest form, food combinations can be schematized to give a quick overview of the the most common food products (Koçtürk, 1995; 1999).

Focus Group Interviews

Through personal contacts with an Iranian women’s association in Uppsala a group of 10 first generation Iranian women were initially invited to participate in focus group discussions on the Iranian culinary tradition and alterations after settlement in Uppsala.

Semi-structured Interviews

On the basis of information gathered from focus group interviews, a semi-structured questionnaire was designed to collect information on social background, changes in food habits and their reasons. Questions on social background included origin, age, education, occupation, civil status and the migration experience. Information
Questionnaires had been distributed during the month of May 1996, only a few weeks before the summer vacation. Possibly due to families leaving Uppsala for summer, only 80 responses were received. Of these, 68 questionnaires met the study requisites. Mothers who were second generation immigrants (3 persons), were not born in Iran (2 persons), had not resided in Sweden for more than five years (4 persons) and whose husbands had filled in the questionnaire (3 persons) were discarded from analysis. Thus 43 % of all questionnaires were entered into analysis.

The mean age of respondents was 38 years and the mean period of residence in Sweden was nine years. Five respondents were single mothers and the rest were married. All women came from Teheran, Isfahan or other large cities in Iran. Two women had schooling of less than seven years duration, 48 % had schooling between 7-12 years and 48 % had academic education. Sixty percent had been employed in Iran. At the time of the study, 10% were housewives, 30% were studying and 60% were employed outside their homes. These results confirmed findings of other authors as to Iranian immigrants usually being well-educated with urban middle class backgrounds in the home country (Wiking et al 2004, Daryani et al 2004).

Table II shows percentage of women who indicated change in consumption (in either direction) for food items. Change was most pronounced among staple carbohydrates, milks, vegetables, legumes, sweets, cakes, desserts and savory snacks. When a cut-off point of 50% was determined for postulating the occurrence of substantial change in any direction, food items presented in Table III were identified as having been particularly affected.

| Table II. Percent of Interviews Who Implicated Change (increase or decrease) in Consumption of Food Groups |
|-------------------------------------------------|-------------------|
| **Food Group**                                | **Percent Change** |
| Staple Carbohydrate                          | 70                |
| Meats                                          | 54                |
| Milks                                          | 59                |
| Vegetable and legumes                         | 58                |
| Hard fats (butter, margarine, lard, whipping cream) | 60                |
| Oils                                           | 38                |
| Fruits                                         | 27                |
| Sweets & desserts                             | 66                |
| Crispy snacks                                  | 37                |
| Spices & condiments                           | 60                |
| Beverages                                      | 48                |
fats were used for different purposes, such as in rice dishes, in frying vegetables, as bread spreads and in sauces. After migration, the group had begun using more oil and margarine and less butter or other animal fat (primarily sheep-tail fat). The practice of frying vegetables in oil had decreased by about 70%. On the other hand, about 75% of the respondents said they had begun adding cream when preparing dishes such as ash, koresh, fish sauces and baked potatoes, etc., and about 35% said they had begun using butter as bread spread in Sweden (spreading butter on bread is not a common tradition in Iran). Only 10% of the participants reported selecting low-fat dairy products and spreads.

Fruits: Fruit consumption was affected to a lesser extent than consumption of vegetables. About 46% felt their consumption had not changed after migration.

Deserts, Cakes and Sweets: The group including desserts and sweets showed a pronounced change. More than half of the respondents indicated they had increased their consumption of chocolate and candy. Many had also increased their consumption of ice cream, cakes, cookies, muffins and the like.

Savory Snacks: It is customary in Iran to eat nuts, seeds and dried fruits in dishes and also as between-meal snacks. The consumption of all these foods had decreased. Nuts as snacks were substituted with industrially produced potato chips, salty crisps, popcorn, and the like.

Spices and condiments: Even though the traditional spices and condiments were maintained to a great extent, new taste-givers had been incorporated into cooking. Examples included powdered onion and garlic, soy sauce, ready-mixed salad dressings, bouillon cubes, spiced grilling mixtures etc. As mentioned earlier, the consumption of green fresh herbs such as fresh dill, mint leaves, etc. was greatly reduced.

Beverages: The majority of the respondents had begun to drink more coffee than tea. The consumption of Swedish-style sweetened fruit juice beverages (saft), milk, beer and carbonated beverages had increased somewhat, while the traditional yoghurt beverage (dugh) had decreased.

Reasons for change

One open-ended question asked which factors had mostly affected change. It was possible to state multiple reasons for change. Price was by far the most important reason (80%) for decreased consumption of fresh fruits, vegetables and nuts. Other answers included lack of access to Iranian products (61%), the convenience of Swedish cooking (41%), children’s preferences (45%), lack of information on Swedish products (14%), health reasons (10%), and the good taste of some products (14%).

Table III. Food Items whose consumption was mentioned as altered by more than 50% of the interview persons, following emigration to Sweden from Iran

<table>
<thead>
<tr>
<th>Increased</th>
<th>Decreased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasta</td>
<td>Bread</td>
</tr>
<tr>
<td>Boiled potatoes</td>
<td>Rice</td>
</tr>
<tr>
<td>Poultry &amp; fish</td>
<td>Lamb</td>
</tr>
<tr>
<td>Aged cheeses</td>
<td>Feta cheese, fresh cheeses</td>
</tr>
<tr>
<td>Cream</td>
<td>Fresh Vegetables</td>
</tr>
<tr>
<td>Root vegetables</td>
<td>Yoghurt drinks</td>
</tr>
<tr>
<td>Dehydrated &amp; frozen vegetables</td>
<td>Fresh vegetables, herbs</td>
</tr>
<tr>
<td>Bouillon tablets, ketchup etc.</td>
<td></td>
</tr>
<tr>
<td>Chocolate &amp; candy</td>
<td></td>
</tr>
<tr>
<td>Ice cream</td>
<td></td>
</tr>
<tr>
<td>Coffee</td>
<td></td>
</tr>
</tbody>
</table>
DISCUSSION

Iranians represent a large and important immigrant group in Sweden. According to Statistics Sweden, in 2003 there were over 53,000 individuals born in Iran, constituting about 12% of the foreign born non-European population in Sweden. The number of Iran-born immigrants in Uppsala was around 3200. Most Iranians are refugees who emigrated following the Islamic revolution and the Iran-Irak war during the 1980s and are people with urban, middle-class backgrounds with relatively high levels of education. The prevalence of poor self-reported health is quite high in this group with Iranian women reporting about five times increased ill health compared to Swedish women (Wiking et al., 2004).

A social anthropological study among Iranian women living in the United Kingdom gives an account of how the preparation of food in a new setting provides a means for the expression of ethnic identity and how British foods are used to restore the nutritional and symbolic value of home-country cooking (Harbottle, 1996). Iranian cuisine is renown for its rice dishes, prepared with the addition of meat, vegetables, fruit, nuts and unique spice and herb mixtures. Food combinations are balanced according to an ancient dichotomy of hot and cold foods, based on the belief that the body reflects the elements of earth, air, fire, and water. The traditional perspective sees illness as resulting from an imbalance between the humors of hot, cold, wet and dry foods. Generally animal fat, poultry, mutton, wheat, sugar, some fresh vegetables and fruits, and all dried vegetables and fruits are classified as hot; most beef, fish, dairy products, rice, and fresh vegetables and fruits are classified as cold. The ideal is balanced dishes, suitable to the occasion (Batmanglij, 1992; Harbottle, 1997).

In a study of dietary change, it is of course necessary to map out the main characteristics of home country food habits (Hyman et al., 2002). In this study the instrumental model of mapping out food habits was useful for gathering rapid and concrete information on home country food combinations. Change was discerned more or less in all clusters and food groups. The group had begun using more boiled potatoes, fish, pork sausage, sweet milk, aged cheeses, Swedish buttermilk, chocolate, candy, ice cream, deserts, cakes and cookies, savory snacks, fruit beverages, milk, beer and carbonated beverages, while the consumption of yogurt, fresh cheese, lamb, mutton, fresh vegetables, legumes, nuts and seeds, tea and yogurt-based beverages (dugh) had decreased.

Comparisons with findings from other studies are difficult due to the scarcity of studies on immigrants from Middle Eastern countries, as well as differences in study objectives and design. However several studies of dietary change in other immigrant groups confirm decreased consumption of fresh vegetables and legumes and increased intakes of accessory foods such as cakes, cookies and savory snacks among Greek students (Papadaki & Scott, 2002), Japanese women (Kudo, Falciglia & Couch, 2000) and Asian students (Fan et al., 1999) living in western societies. From a nutrition viewpoint, decreased consumption of vegetables and legumes involve lesser intakes of dietary fiber, some vitamins and micronutrients which are considered protective against chronic conditions. Increased consumption of sweets and sugared beverages is associated with increased intakes of refined carbohydrates (sugar, starch and white flour). Increased consumption of ice cream, chocolate, cakes, savory snacks and using cream in cooking means increased intakes of total fat and saturated fatty-acids. These types of changes contribute also to increased energy intakes and can result in excessive weight gain, particularly if they are coupled with decreased physical activity and a sedentary lifestyle. Changes in fatty acid consumption, particularly increased consumption of saturated and trans-fatty acids may lead to increased risk for cardiovascular disease.

It is suggested that migration can affect food habits in three principal ways. Immigrants may maintain traditional dietary patterns, completely adopt host country food habits or incorporate host country foods into their diet while maintaining some traditional dietary practices (Satia et al., 2001). The latter variant biculturalism, sometimes also called hybrid or cross-over eating, seems to be true in most first-generation immigrants (Lee, Sobal & Frongillo, 1999, Satia et al., 2000). Results of this study show a bicultural pattern. The group had incorporated many food items characteristic of the Swedish food tradition into their traditional eating styles.

The three foremost reasons for change were food prices, absence of Iranian foods and the influence of children’s preferences. Results of focus group discussions and answers given to the open ended question probing for reasons of change showed some reasons for biculturalism were brought about in the absence of alternatives, as in the example of incorporating boiled potatoes to the diet. As mentioned, boiled potatoes are staples in the Swedish diet but are considered vegetables in Iran. That this group had adopted the Scandinavian tradition of boiled potatoes as staple carbohydrate was explained already during group discussions with the fact that aromatic rice varieties (e.g. basmati and jasmine rice) used in Iran were not available on the market during the early 1980s when most Iranians migrated to Sweden. Rather than substitute basmati with the then-available Arizona rice varieties, tasteless to the Iranian palate, the group had preferred to alter their staple carbohydrate. Another example of...
of conditional biculturalism is the usage of dehydrated herbs to substitute the fresh herbs in the home country—lack of items with similar properties leads to adopting totally different items. Other bicultural practices, such as increased consumption of pork, fish, frozen vegetables and aged cheeses were encouraged by pragmatic reasons, either due to the high cost of imported home country alternatives or for satisfying the demands of children who had tasted these items at school and wanted their mothers to incorporate them in their home cooking. A third type of biculturalism was associated with what perhaps may be called epicurian reasons. Items such as new spices, condiments, chocolate, ice cream, whipping cream, different types of candies, cookies, cakes and savory snacks typical to western traditions were incorporated because they tasted good!

That food prices were by far the most important reason (80%) for decreased intakes of fresh fruits, vegetables, nuts etc. is not surprising, considering the fact that food prices in Sweden are inordinately high with European standards. On the other hand, foods such as carbonated beverages, high fat and sugar snacks, candies, cakes and chocolate bars are inexpensive (Lehmuskoski & Reinecke, 2004).

Lack of access to home country products was the second reason (61%) given for change. In Sweden, most groceries are owned by two retail companies offering a standard range of products geared to the needs of the majority population. Thus, change is due to the high cost of the healthy category of foods, so common and inexpensive in the home country, coupled with lack of access to familiar products seem to be important factors, followed by concerns of convenience and children’s preferences.

CONCLUSIONS & IMPLICATIONS FOR PUBLIC HEALTH NUTRITION

Immigration had made a strong impact on the food habits of this group of immigrant women. Introduction of items such as a large array of western-style deserts, cookies, cakes, savory snacks and decreased consumption of fresh fruits, vegetables, nuts and seeds were especially noteworthy, in that they can involve reduced intakes of dietary fiber and increased intakes of saturated and trans fatty acids and sugar, leading to high energy food consumption. However, not all changes were for the better. In order to enable immigrants to maintain the healthy aspects of their home country diets, it is desirable to encourage the presence of immigrant food counters or special stores in neighborhoods populated by immigrants. Food retailers should be more aware of the food habits and preferences of minority groups in order to cater to their needs. Public health interventions for the prevention of nutrition-related chronic disease need to be based on prior knowledge of the food culture in targeted groups. Mainstream health and nutrition information offered to majority groups needs to be adjusted to the food habits and cultural heritage of immigrants and directed toward their gaining new skills such as how to utilize less expensive locally grown foods, frozen vegetables and the like, in traditional meals. Immigrants could also be taught to read nutrition labels and to lower the intake of fat and sugar-modified products.

Limitations & Strengths of the Study

In this study results are limited by the small sample size and a high percentage of non-responders, possibly due to the bad timing for the interviews. Thus, caution is necessary in making generalizations about the results. The semi-qualitative nature of this study also rules out the establishment of causal relationship between dietary change and health outcomes. However, the strength of the study is that it constitutes a pilot example of how to make a quick, semi qualitative inventory of food choice before and after a period of transition. The instrument used for mapping out food habits proved useful for this purpose. This approach facilitated collection of concrete and detailed information on how individual key food items were modified in a group of immigrants from the Middle East. This type of information is necessary for designing preventive nutrition and health programmes or interventions targeted at subgroups or minorities.
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