

ASSESSMENT OF THE EFFECT OF ACCULTURATION ON DIETARY AND PHYSICAL ACTIVITY BEHAVIORS OF ARAB MOTHERS IN LUBBOCK, TEXAS

Objectives: Our study was conducted to collect exploratory data on Arab mothers in the United States regarding their dietary and physical activity behaviors and to assess the relationship of acculturation to these behaviors.

Design: Focus groups and interviews were conducted to collect data on dietary and physical activity behaviors of Arab mothers in Lubbock, Texas. The Social Cognitive Theory guided the development of questions related to the role of acculturation on the dietary and physical activity behaviors. The Male Arab-American Acculturation Scale was used to measure acculturation.

Results: A bicultural dietary pattern of Arab mothers emerged. Negative behaviors included skipping meals, increased intake of high-fat fast foods and meat consumption, and lack of traditional physical activity. Some reported reasons for the negative behaviors included children's preferences, lack of access to traditional foods, preference for convenience, the low cost of some foods, and lack of time. Positive changes for some Arab mothers included healthier cooking techniques, reading nutritional labels, and making new healthy food choices due to increased awareness of healthy foods, availability and affordability of many healthy choices in the United States, and Arab mothers' attempts to enrich their families' meals with vegetables in order to keep the Arabic dietary pattern.

Conclusion: Positive dietary and physical activity changes should be supported. Nutrition interventions are needed that address the major barriers to diet and physical activity changes reported by these Arab mothers. (*Ethn Dis.* 2012;22(2):192-197)

Key Words: Acculturation, Arab, Mothers, Dietary, Physical Activity, Social Cognitive Theory, Focus Group

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INTRODUCTION

Acculturation of US immigrants may have a profound influence on their dietary habits, physical activity, and nutrition status.^{1,2} Arabs are one of the fastest growing immigrant groups in the United States.³ It is estimated that at least 3.5 million Americans trace their heritage to the Arab world.⁴ To our knowledge, little, if any, research has been reported on Arab mothers regarding dietary and physical activity changes, and factors leading to these changes that may accompany integration into the US society. In order to address the nutrition education needs of persons with Arab ancestry, the objectives of this study were to: 1) collect exploratory data on Arab mothers living in Lubbock, Texas regarding their dietary and physical activity behaviors; and 2) assess the relationship of acculturation to these dietary and physical activity behaviors.

METHODS

Participants were recruited at the local Islamic Center, and all study materials were available in English and Arabic. Study protocol and measures were approved by Texas Tech University's Institutional Review Board for the Protection of Human Participants. Focus group discussion and individual interview methods were used to collect information about practices and challenges of Arab mothers living in Lubbock, Texas regarding dietary and physical activity acculturation. A focus group discussion guide with 15 open-ended questions was developed using the Social Cognitive Theory (SCT) with its six constructs (reciprocal determinism, behavioral capability, expectations,

self-efficacy, observational learning, and reinforcement) to explain the role of acculturation on the dietary and physical activity behaviors.⁵

Measures: Participant Survey, Acculturation Scale, Physical Activity

The Participant Background Survey was designed to elicit demographic data, including: age, income, employment, and education level; information relative to the acculturation of participants such as used and preferred language and specific cultural background; and physical activity. In addition, questions on frequency of eating out in the United States and sources of foods purchased were included in the survey.

As a measure of acculturation, the Male Arab-American Acculturation Scale (MAAS) was used.^{6,7} The MAAS has been developed and validated to measure acculturation among both male and female Arab Americans. It contains two subscales: the separation or assimilation theme and the integration or marginalization theme. In the study by Al-Omari et al, the overall internal consistency reliability coefficients for the separation vs assimilation scale and the integration vs marginalization scale were .54 and .73, respectively.⁶ Questions for each theme are measured by a 4-item Likert-type format scale that ranged from a value of 7 (strongly agree) to 1 (strongly disagree). Scale scores were derived by summing reverse-scored and positive-scored scale items.⁷

In the first subscale, separation vs assimilation, Arab Americans are examined based on their preference to socialize and communicate with only Arabs or with only Americans. Higher scores indicate that the participant is primarily socializing with Arabs whose

behavior closely resembles that from his/her country of origin. The second subscale, integration vs marginalization, examines Arab Americans based on their ease and comfort in interacting with Arabs and Americans equally. Higher scores indicate that participants mix equally with Arabs and Americans and are equally at ease socializing with both of them.

Physical activity questions were based on the 2009 version of the Texas Behavioral Risk Factor Surveillance System (BRFSS) Questionnaire for vigorous and moderate activities.⁸ Several researchers have addressed the validity and reliability of the BRFSS.^{9,10}

Statistics and Data Analysis

Means and standard deviations were calculated for demographic variables. Means, standard deviations, and internal reliability for the MAAS were determined using the Statistical Package for Social Sciences (SPSS, v. 17, 2008) software. The audio recording of each focus group and individual interview was translated to English and transcribed. Analyses were completed using the transcripts and the assistant moderator's observation notes. A code list for the transcripts was developed. Themes were generated based on the codes most frequently identified. The themes were discussed in relation to the SCT model and previous studies.

RESULTS

Participant Background, Acculturation, Physical Activity

The 22 Arab mothers who participated in this study were, in general, <45 years old, married, and well-educated, with 15 having some college or a bachelor's degree. Participants were from seven different Middle Eastern countries. Most had been in the United States for <15 years and planned to return to their home countries in 3–4 years. Most participants had lived in other US cities,

in addition to Lubbock. Overall, participants were not students, not employed, and had ≤ 5 children in the household. Most children of these mothers were aged <15 years. Household income varied with 7 of the 22 mothers reporting <\$30,000 per year, 5 reporting >\$50,000, and 9 declining to respond. Nineteen participants preferred the Arabic language for speaking, reading, writing, at home, and with friends.

The majority of the Arab mothers indicated eating out at least once a month, and most preferred buffet-type restaurants. More than half of the Arab mothers indicated eating takeout food and delivery at least once a month. The most popular sources of food were supermarkets, Arab stores, and foods brought back from their home countries.

The analysis of the separation/assimilation subscale revealed that most of participants' friends were Arabs, chose not to behave like Americans in many ways, and felt more comfortable around Arabs than they did around Americans (Table 1). This subscale had internal reliability coefficients or Cronbach

alphas of .51, suggesting low internal consistency reliability of the subscale. For the integration/ marginalization subscale, the analysis revealed that participants mixed equally well with Americans and Arabs, were equally at ease socializing with Americans and Arabs, had many Arab and American friends, and did not have a lot of difficulty making friends. This subscale had internal reliability coefficients or Cronbach alphas of .68, suggesting relatively acceptable internal consistency reliability of the subscale.

The Arab mothers who had jobs chose mostly sitting or standing as a type of physical activity at work. The majority of the Arab mothers did moderate activity, such as brisk walking and vacuuming, at least 1–2 days a week for more than 30 minutes per day. Only ten of the Arab mothers did vigorous activity, such as running and aerobics, at least 1–2 days a week.

Focus Group Discussions and Individual Interviews

Differences existed in both opinions and dietary habits among the Arab

Table 1. The Male Arab-American Acculturation Scale (MAAS) results with Arab immigrant mothers (n=22)

Item	M	SD
Separation vs assimilation subscale		
I would much prefer to live in an Arab country	4.77	1.66
Most of my friends are Arabs	5.14	1.86
I behave like an American in many ways ^a	4.41	1.62
Generally I feel more comfortable around Americans than I do around Arabs ^a	4.59	1.47
Integration vs marginalization subscale		
I mix equally well with Americans and Arabs	4.05	1.84
I am equally at ease socializing with Arabs and Americans	5.27	1.75
I have many Arab and American friends	4.77	1.74
I have a lot of difficulty making friends ^a	5.68	1.70

^a Items are reverse scored.

M, mean; SD, standard deviation.

MAAS items are scored on a scale from 1 (strongly disagree) to 7 (strongly agree).

women who varied in terms of country of origin, educational background, and time spent in the United States. However, similar points were mentioned by the Arab mothers regarding preferences, challenges, and factors that affected their food choices and physical activity behaviors.

Experience with American Food

Participants were asked about their experience with American foods before and after coming to the United States. All participants said there were American fast food restaurants in their home countries, but due to expense, they only went once or twice a month to break the routine of their lifestyles. The frequency of eating American food after settling in the United States increased to once a week or once every two weeks. Some mothers indicated that generally, children's preference and the need to feel they are a part of the new American society were the only reasons to go to a fast food restaurant. Further, some mothers stated they preferred to go to the buffet style of restaurant to eat out, especially on weekends. A mother explained, "The weekend is like a vacation to the mother. I do not have to cook on weekends."

Dietary Preferences

All participants believed that traditional Arabic foods were an important part of their culture and something they did not want to lose. They exhibited a strong preference for traditional Arabic foods that are prepared in a traditional way and a weak preference for American foods. In addition, they stated that the Arabic food pattern, based on a variety of fruits and vegetables, is healthier than the American food pattern, based on a high amount of meat and fat and a small amount of vegetables. However, participants indicated that their children, especially those school-aged, preferred American fast foods. Some mothers stated that generally, the older their children were, the more they preferred and ate American foods.

Specific Changes by Food Groups

After moving to the United States, these Arab mothers tried to maintain their traditional food intake. However, when changes occurred, three most common reasons for change were food prices, absence of some Arabic foods, and the influence of children's preferences. Some of the food group changes included:

Carbohydrates. Several types of bread and rice, the staple carbohydrates of the Arabic food tradition remained dominant, but the mothers had begun consuming different types of pasta because their children preferred it. Mothers reported consuming tortillas and toast instead of pita bread, for example.

Meat, Fish, Poultry and Eggs. The amount of beef, fish, eggs and poultry consumption increased while the amount of consumption of lamb, which is the staple meat in many Arab dishes, decreased because it is not available on a large scale. Most Arab mothers stated that the prices of meat in the United States was cheaper than in their countries.

Milk and Dairy Products. The consumption of milk had increased to the detriment of yogurt and fresh cheeses common in home countries.

Vegetables and Legumes. Most respondents claimed that the availability and quality of fresh vegetables was limited and that they were too expensive in the United States. Mothers also reported a decreased consumption of legumes.

Cooking Fats. Many Arab mothers were using more oil and less other animal fat (primarily sheep-tail fat) for preparing different dishes. The practice of frying vegetables in oil had decreased because it was perceived that vegetables in the United States absorb more oil.

Fruits. It is very common to eat fruits as desserts and snacks in Arab countries. These mothers reported consuming less fruits than when they were in their home countries. They also claimed that their home countries' fruits were fresher and tasted more interesting than the fruits in the United States.

Desserts, Cakes and Sweets. Most of the mothers indicated they had increased their consumption of desserts and sweets, including ice cream, cakes, cookies, muffins, chocolate and candy as these foods were more affordable and accessible in the United States.

Savory Snacks. It is customary in Arab countries to eat nuts, seeds and dried fruits, such as dates and raisins, in dishes and also as between-meal snacks. The consumption of all these foods had slightly decreased. Consumption of processed snacks, such as potato chips and salty crisps, increased in the United States.

Beverages. The majority of respondents reported that consumption of sweetened fruit drinks and milk had increased somewhat, while consumption of buttermilk and yogurt beverages had decreased. Consumption of traditional herb teas, (eg, anise, mint, chamomile, fenugreek) had also decreased.

Perceptions of Negative and Positive Changes

While some Arab mothers stated negative changes regarding their food choices after moving to the United States, some mothers reported positive changes. One of the negative changes made in their diet included eating less food and skipping meals due to being too busy to prepare a real meal. A mother said, "Sometimes, I eat my lunch in the car." Another mother explained that having no appetite to eat due to loneliness is an important reason for eating less food. Several Arab mothers noted that they consumed

more meat and fewer vegetables. The lack of availability of some vegetables also was mentioned as reasons of decreasing vegetable consumption. "In Egypt, we use white eggplants in several dishes. I have never seen them here," a mother noted.

On the other hand, the availability of more healthy food options and the availability of nutrition information on foods (including, reduced fat dairy products, sugar-free, low calorie, and organic foods) were some of the positive alterations mentioned. A mother said, "I prefer to eat organic foods. In the United States, the prices of organic food are more reasonable and affordable than in my home country." Making healthy food choices was mentioned also to control a health issue, as a mother explained, "After I moved to the United States, I have been diagnosed with diabetes. Now, I eat more vegetables and whole grain food products in order to control this health problem."

Weight and Physical Activity Changes

All participants strongly agreed that physical activity was important, yet several mothers claimed that they had been more physically inactive than they were in their home countries where they walked to different stores, including the meat market, fruit and vegetable market, pharmacy, and clothing shops, to get what they need. In the United States, all these stores or shops can be found in one place, like Wal-Mart. A couple of mothers stated that they were not physically active unless they are on a diet and want to lose some weight.

A few mothers stated that they went to the university recreation center three to five times a week. A mother said, "In my country, sports centers are costly. Here, my husband and I go to the Rec Center and do physical activities together." Several mothers also noted that after exercising, they felt great and had more energy. Being physically active to control health issues was also mentioned. A few Arab mothers reported

enrolling in fitness classes at the Islamic Center. Those who did not exercise on a regular basis reported going to the shopping mall for walking.

DISCUSSION

This descriptive and exploratory study sought to collect data on dietary and physical activity behaviors of Arab mothers living in Lubbock, Texas and to assess the relationship of acculturation to these behaviors. 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.¹¹ The third way is biculturalism, which is adopted when home country food habits are followed, at the same time as practicing new dietary behaviors. The latter pattern, biculturalism, has been shown to be common among most first generation immigrants.¹² Similarly, the dietary and physical activity patterns of the Arab mothers in this study may be bicultural as they have maintained much of their traditional habits, yet they have adopted some US practices.

Most of the participants reported having lived in the United States for ≥ 5 years, allowing them an adequate amount of time to begin to understand some of the cultural customs of the country. Acculturation of the Arab mother participants in this study was measured using the MAAS.^{6,7} The means and standard deviations of the MAAS themes in this study were close to those reported by Al-Omari et al, even though their internal consistency reliability coefficients were slightly higher. No criteria for determining high or low acculturation were found in studies that had used the MAAS.^{6,7} However, biculturalism was shown in this study as participants reported that while most of their friends were Arabs,

they mixed equally well with Americans and Arabs.

APPLICATION OF RESULTS TO THE SOCIAL COGNITIVE THEORY

For these Arab mothers, constructs of the SCT were operating in the context of immigration from their home countries to the United States. Reciprocal determinism, a concept in SCT asserting that a person's behavior and their environment are potentially mutually interactive and influential,⁵ was evidenced by Arab mothers who started eating more meat in the United States since meat was more affordable. Similarly, without changing preference for bread products like pita bread, which is accessible in their home countries, the women in this study reported that they were substituting tortillas for pita bread. In addition, since US food habits included fewer vegetables, Arab mothers were compensating by adding more vegetables to sandwiches, pasta, and other dishes.

Some Arab mothers' answers were related to behavioral capability, another concept from SCT.⁵ They demonstrated the capability of changing behaviors by preparing new foods that they tasted, liked, and added them to their dietary patterns. For physical activity, some Arab mothers reported that they saw many people walking in the mall, which in turn, encouraged them to do so. Even though it was not mentioned by the Arab mother participants in this study, modesty and cultural barriers may have limited opportunities to experience new physical activity behaviors.¹³

Expectations also were shown by participants' responses. To help them and their children to feel a part of the US society, some Arab mothers reported going to fast food restaurants and eating out more often like American families do. For positive expectations, some mothers were motivated to read nutritional labels

and increase awareness of healthy foods. In addition, many Arab mothers valued the outcomes or consequences that they believed would occur as a result of performing a specific behavior or action. These outcomes are classified as having immediate benefits (eg, feeling energized following physical activity) or long-term benefits (eg, experiencing improvements in varicose veins as a result of physical activity). Even though traditional Arabic culture does not promote physical activity for females,⁴ some Arab mothers joined fitness classes and did new types of physical activities since coming to the United States. However, having just one fitness center for females only in the city of Lubbock contributed to Arab mothers' negative expectations.

Many Arab mothers showed their self-efficacy to perform different dietary behaviors, such as preparing new recipes and reading nutrition labels. Compared to their home countries, the United States had good-tasting and affordable lower fat foods, organic foods, and whole grain foods, which increased mothers' confidence in their abilities to buy and prepare healthier foods.

Observational learning allows one to develop an idea of how a new behavior is formed without actually performing the behavior oneself.⁵ Specifically, in the Arab community in Lubbock, where the Islamic Center has family nights every month, many mothers had observed new foods and dishes and asked about the recipes of those dishes to start preparing them for their families.

The construct of reinforcement was shown in some responses of Arab mothers. For rewarding positive behaviors, some Arab mothers reported that physical activities were pleasurable, satisfying, and energizing. Some Arab mothers, who learned new food preparation skills, prepared new recipes from other countries' cuisines, and enrolled in local fitness classes, found these new skills rewarding. In addition, sources of support and encouragement for new behaviors included family members,

children's friends, and other Arab mothers. Some also reported being encouraged to do physical activity with a group of mothers or their husbands.

We expected to see that healthy food choices may have been more difficult to make in the United States while increased physical activity may have been easier for these Arab mothers. The results of this study show notable unhealthy changes in dietary patterns of Arab mothers in this sample. These findings have important implications in terms of the health needs of the Arab immigrant mothers and programs tailored to this population. While findings from this study are not representative for all Arab mothers living in the United States, they do suggest that life in this country can lead to changes in dietary and physical activity behaviors. Most of the Arab mothers participating in this research study were on a path of biculturalism in making the transition from the Arabic culture to the US culture. Understandably, the modification of these new bicultural behaviors, positive and negative behaviors, is extremely complex. Arab mothers were forced to adapt to the incorporation of new foods as well as the changes in lifestyle caused by busier lifestyles. Fortunately, many Arab mother participants in this study were receptive to new ideas and education regarding healthy food choices and physical activity.

The new insights provided by this study can be used as a guide in assessing and considering issues of acculturation among Arab immigrant mothers. For preventive nutrition and health education, it would be ideal to use the SCT model to develop programs targeting Arab mothers to teach them, for example, how to eat nutritiously in fast food restaurants, how to moderate their children's requests to eat there, and how to read food labels. Suggestions also include the need to support the positive aspects of Arabs' traditional diet, such as eating small amounts of meat and a

greater variety of fruits and vegetables. Arab mothers should be encouraged to continue some of new desirable food habits they have acquired in the United States, including lower-fat food preparation methods. Since they are eating more pasta, bread, and tortillas, information and encouragement to make whole grain choices of these would be beneficial. In addition, groups where Arab mothers congregate, such as the Islamic Center can be helpful in promoting culturally acceptable opportunities for physical activity for Arab mothers and their families. The provision of culturally-specific and peer-led education programs stands to potentially impact the health of these mothers and their families.

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