ACCULTURATION AND TOBACCO SMOKING AMONG ARAB AMERICANS

By

Hasan Al-Omari

B.S.N., The University of Jordan
M.S.N., The University of Kansas Medical Center

Submitted to the School of Nursing and the Faculty of the Graduate School of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy

Dissertation Committee:

_____
Chairperson

_____

_____

_____

_____

Date:

The Dissertation Committee for Hasan Al-Omari certifies
that this is the approved version of the following dissertation:

ACCULTURATION AND TOBACCO SMOKING AMONG ARAB AMERICANS

Committee:

_____
Chairperson*

_____

_____

_____

_____

Date approved _____

Abstract

Despite the extensive research on smoking, it is still considered one of the highest causes of deaths in the U.S. Although Arab Americans came from countries where smoking ratios are among the highest in the world, very limited information is available about their smoking patterns and behavior after they move to live in the U.S. An important concept in understanding smoking patterns and behavior among Arab Americans is acculturation. It is a complex process that may modify or change immigrants' social life, communication style, and lifestyle. **The purpose** of this study was to describe the Arab Americans smoking patterns and behavior, and investigate the relationship between tobacco dependence, smoking behavior change, and acculturation. **Design**: this was a cross-sectional descriptive exploratory correlational study designed to elicit information from 96 smoker and ex-smoker participants from three different sites in the Midwest and Southwest. **Results** showed that 81.3% of the participants were men. Mean age of participants was 35.3 (range 19-60). Most of the Arab Americans who participated in this study smoked (70.8%) and more than 62% of them have lived in the U.S for 5 years or more. Majority of the participants (80%) reported having one or more of their family members who smoked, and 88% have at least one friend who smoked cigarette. Pearson correlational analysis revealed a significant positive correlation between specific acculturation behaviors and tobacco dependence, and between tobacco exposure and tobacco dependence. The strongest predictor of smoking behavior stage of change was tobacco exposure. We also found significant correlations between acculturation scales and cons of smoking. **Conclusions:** family and peers smoking are considered the most critical factor contribute to tobacco smoking in this population. Arab

Americans who behave mostly like their ethnic peers and spend more time with them are more dependent on tobacco and do not feel embarrassed to smoke among others.

Implications: there should be a tobacco prevention intervention programs designed specifically for this minority group. In order to be effective, these programs should include smokers and their family and friends as well.

Acknowledgments

I would like to thank my wife, Majida Al-Omary, for her support and encouragement in my study. She was very patient and understandable throughout my entire program. Also I would like to thank my parents for their great support throughout my entire education in the U.S. I want to thank them for their endless love and support for me, and I would like to thank my angel Lana, who just turned 9 months, just for being with me during my dissertation.

For my dissertation chair and advisor Dr. Pallikkathayil, thank you so much for your patient with me and for your efforts and support throughout my entire education. Without your guidance things would have been much harder. Another special person that I would like to recognize is my dissertation mentor, Dr. Schiebmeir, who guided and helped me in the entire dissertation process. For my dissertation committee: Dr. Boyle, Dr. Gajewski, and Dr. Won, thank you each for your guidance and encouragement in my dissertation process.

Table of Contents

Chapter 1

General Introduction

Cigarette smoking has been identified as the single most preventable cause of death, yet many people die each year from diseases associated with this unhealthy behavior all over the world. With 4.9 million tobacco-related deaths per year, cigarettes are considered the only legally available consumer product that kills through normal use (WHO, 2003). In the U.S., approximately 44.5 million American adults are current smokers (CDC, 2005), causing more than 430,000 adult deaths every year from diseases related to tobacco smoking (Health People 2010, 2000). Cigarette smoking causes deaths among Americans more than AIDS, alcohol, cocaine, heroin, suicide, motor vehicle accidents and fires combined (Healthy People 2010).

It has been more than 40 years since the Surgeon General's office issued its first report on smoking and health in the year 1964. Since that time, much research has been conducted to strengthen the association between cigarette smoking and various health risks to both the smoker and nonsmoker who is exposed to environmental tobacco smoking. Although the rates of smoking continue to decline in the U.S, there are approximately 20.9% (44.5 million) adult current smokers in 2004; of these, 47.4% are between the age of 18 and 44. Cigarette smoking is more common among men (23.4%) than women (18.5%) (CDC, 2005). The total direct medical costs attributable to tobacco smoking are $50 billion per year (Healthy People 2010, 2000). Although the current smoking prevalence is lower than years 2003 and 2002 (21.6 % and 22.5% respectively) the goal is to reduce the prevalence of cigarette smoking among adults to <12% by the year 2010 (Healthy people 2010).

While more attention was given to investigate and examine different interventions to reduce cigarette smoking among white Americans, little attention was given to

understanding tobacco use among members of different racial/ethnic groups living in the US. Not until 1998 did the Surgeon General's office issue its first report to focus exclusively on tobacco use among members of four major U.S racial/ethnic minority groups-African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics (CDC, 1998). According to this report, American Indians and Alaska Natives have been found to have the highest prevalence (40%) of tobacco use when compared to African Americans (24.3%), Hispanic (18.1%), and Asian/Pacific Islanders (15.1%). While African American and Southeast Asian men have a high prevalence of smoking, Asian American and Hispanic women have the lowest prevalence of tobacco smoking (CDC, 1998). In a more recent report, the prevalence rates of smoking among Hispanic (10.9%) and Asian (4.8%) women were below <12%, which is below the national objective (CDC, 2005). Since the Surgeon General's first report in 1998, many efforts have been made to understand the pattern of smoking among Americans from different racial/ethnic groups (Klonoff & Landrine 1999; Rice & Kulwicki, 1992; Rice, Templin, & Kulwicki, 2003; Shelley, Fahs, Scheinmann, Swain, Qu, & Burton, 2004).

While the current findings show a significant decline in tobacco smoking inside the U.S., more people are smoking in other parts of the world. According to the WHO, the use of tobacco has grown sharply in low and middle-income countries. Around 50 percent of men in the developing countries are currently smokers, compared to 35% in developed countries. Although cigarette smoking among women is higher (22%) in developed countries than in developing countries (9%), it is expected that the rate will

increase. If the current trends of tobacco use continue, there will be around 10 million deaths related to tobacco use, 70% of them from developing countries (WHO, 2005).

Despite the fact that cigarette use in the Middle East area is among the highest in the world, little information is known about the smoking prevalence and associated behavior of adults from Arabic countries after they move from their country of origin. Global immigration due to economic, political, or war issues has in the last 100 years been greater than ever before (Rissel, 1997). Arab-Americans are one of the fastest growing populations in the United States due to the above factors (U.S. Census Bureau, 2000). Tobacco use in Arab countries has been identified as the highest in the world; tobacco use in Iraq is (40%) for men and (5%) for women, Egypt is (40%) for men and (18%) for women, Palestine is (40%) for men and (2.7%) for women, Lebanon is (46%) for men and (35%) for women, Jordan is (48%) for men and (10%) for women, Syria is (50.6%) for men and (9.9%) for women, Tunisia is (61.9%) for men and (7.7%) for women, and Yemen is (77%) for men and (29%) for women (WHO, 2006). Many Arabs migrate from a culture where smoking is considered an acceptable behavior to a culture of socially unacceptable behavior such as the US. With an estimated 3 million to 4 million of Arab Americans living in the U.S. (Kulwicki &Rice, 2003) Arab Americans are one of the racial/ethnic minority groups that need to be investigated to understand their smoking prevalence. This study will investigate the Arab Americans smoking behavior change, if any, and relate this change to the process of cultural adjustment, which is acculturation process.

Background and significance

It has been noted that there are differences in tobacco use between adults from various racial/ethnic identity (Rice, Templin, & Kulwicki, 2003). Examining each minority groups smoking behaviors is essential before we can establish successful interventions to the different racial/ethnic minority groups. The Surgeon General's report in 1998 stated, "Effective strategies are needed to reduce tobacco use among members of the U.S. racial/ethnic groups and thus diminish their burden of tobacco-related diseases and deaths" (CDC, 1998, p. vii).

Arab-Americans

Arab-Americans are defined as "Americans of Arab ancestry and constitute an ethnicity made up of several waves of immigrants from 22 Arab courtiers, stretching from Morocco in the west to Oman in the east" (Wikipedia, 2005, para 1). It is estimated that there are three to four millions Americans who have an Arabic origin (Kulwicki, 2000). They descend from a heritage that represents common linguistic, cultural, and political tradition. The majority of them (62%) originate from Syria, Lebanon, Palestine, and Jordan. Around eleven per cent originates from Egypt, while the remainder originates from Iraq, Morocco, and other Arab nations (Wikipedia).

Arab-Americans live in all the 50 states, one-third of the total live in California, New York, and Michigan. The majority of Arab-Americans (90%) live in the urban areas (Arab American Institute Foundation, 2004). More than half (57%) of the Arab-Americans are men, more likely to be married (61%), have high school diplomas (84%), and 41% of them with bachelor's degree or higher. Around 46% of foreign-born Arab-

Americans have lived in the United States 10 years or less, and the median family income was $52,300 (U.S. Census Bureau, 2000)

The review of published empirical work examining the smoking patterns of Arab-American adults is limited. The prevalence of tobacco use among Arab-Americans in the Detroit area was reported at 40.6% for men and 38.2% for women (Rice & Kulwicki, 1992). In a more recent study conducted to examine Arab-American adolescents smoking behavior, most (93%) of the participants reported smoking at least one pack per week, and 26% smoked at least one pack a day (Rice, Templin, & Kulwicki, 2003). In light of the fact that majority of smokers start smoking before the age 18 (CDC, 2001), the results of the Arab-American adolescent study indicate that cigarette smoking is a growing problem among this group of Americans. There is a need for culturally relevant interventions to help Arab-Americans in their smoking behavior. Unless we have further information about the patterns of tobacco use among Arab-Americans, we will not be able to identify the best strategies to help this group stop their smoking behavior.

Smoking in Arab Countries

Cigarette smoking is an acceptable social and cultural behavior in Arab countries. Offering a cigarette to someone is a sign of hospitality in this region. Unlike developed countries such as the U.S., smoking inside the home is considered acceptable. In a study conducted in Syria to investigate smoking habit among high school students, Maziak and Mazyek (2000) reported that male and female were 4.4 times more likely to be smokers than those with no smokers in the family. This was explained by the fact that parental and/or sibling smoking provides an excuse and encouragement for others to smoke as well. In another study, Arab adolescents who identify themselves as Arab-Americans

described their use of narghile (a type of smoking that will be discussed later) in the home as an acceptable social activity by the family (Kulwicki & Rice, 2003).

Smoking prevalence in Arabic countries is associated with age, gender, socioeconomic status, and family and peer influence. Age has been identified by researchers as a contributing factor of cigarette smoking in the Arab countries. In three regions in Saudi Arabia, the majority of smokers (78%) were young to middle-aged (21-50 years old) (Jarallah, Al-Rubeaan, Al-Nuaim, Al-Ruhaily, and Kalantan, 1999), while 79% of Saudi smokers in Riyadh City reported starting smoking between the ages of 15 and 30 years (Saeed, Khoja, & Khan, 1996); in Iraq, 39.9% of college student smokers were between 18 to 22 years old (Jamil, Mukhlis, & Saadon, 1989), more than 30% of the United Arab Emirates smokers were between 15 to 19 years old (Bener & Al-Ketbi, 1999).

Gender has been reported by researchers as a significant predictor of smoking status in Arab countries. Smoking rate among male Jordanian university students was reported to be seven times higher than female students (Haddad & Malak, 2002). In Syria, cigarette smoking among universities students was reported to be higher among males (30.9%) than females (7.4%), and males were more likely to initiate smoking at an earlier age compared to females (Maziak et al, 2004; Maziak & Mzayek, 2000; Maziak, Ward, & Eissenberg, 2004). Additionally, researchers noted that Arab males were 10 to 20 times more likely to smoke than females (Rice, Templin, & Kulwicki, 2003). This high difference can be explained by the fact that men perceive tobacco use as a sign of maturity and manhood, while women perceive smoking as a shameful and unacceptable behavior by the society. This is confirmed by Maziak (2002) study to explore women's

motivations for not smoking in Syria. Non-smoking women in this study identified tradition as the most salient motive behind not smoking.

Few studies have been conducted to examine the relationship between smoking and socioeconomic status. In an attempt to explain the smoking epidemic in developing countries, the WHO proposed a model based on the experience of the developed countries. According to this model, young males with higher income first take up smoking, followed years later by female with higher income. Those with lesser income then follow the example of the higher class (Haddad & Malak, 2002). This might be explained by the fact that individuals from a low income class cannot afford the high prices of tobacco products in Arabic countries. In support of the WHO model, Maziak, Asfar, and Mzayek (2001) reported in their study that women smokers were economically better off than non-smokers.

Family and peer smoking have been reported to be strong predictors of tobacco use in Kuwait (Moody, Memon, Sugathan, el-Gerges, & Al-Bustan 2000); Lebanon (Chaaya, Awwad, Campbell, Sibai, & Kaddour, 2003); Syria (Maziak et al., 2004); and Jordan (Haddad & Malakeh, 2002). Peer and sibling smoking have been reported the most important factors to influence the smoking behavior of male adolescents in the Arabic society. In Syria, around 50% of male smokers were introduced to tobacco smoking by a friend and they smoke because their friends do so (Maziak & Maziak, 2000). On the other hand, family smoking has been reported the most important factor to influence smoking behavior of female adolescents. In Maziak and Maziak study, researchers reported that 37.7% of female smokers said they were introduced to smoking by a family member. The researchers explained these findings by the fact that while

smoking in Arabic society is not acceptable behavior among females and youngsters, parental and/or sibling smoking will provide some encouragement and excuse for others in the family to smoke as well.

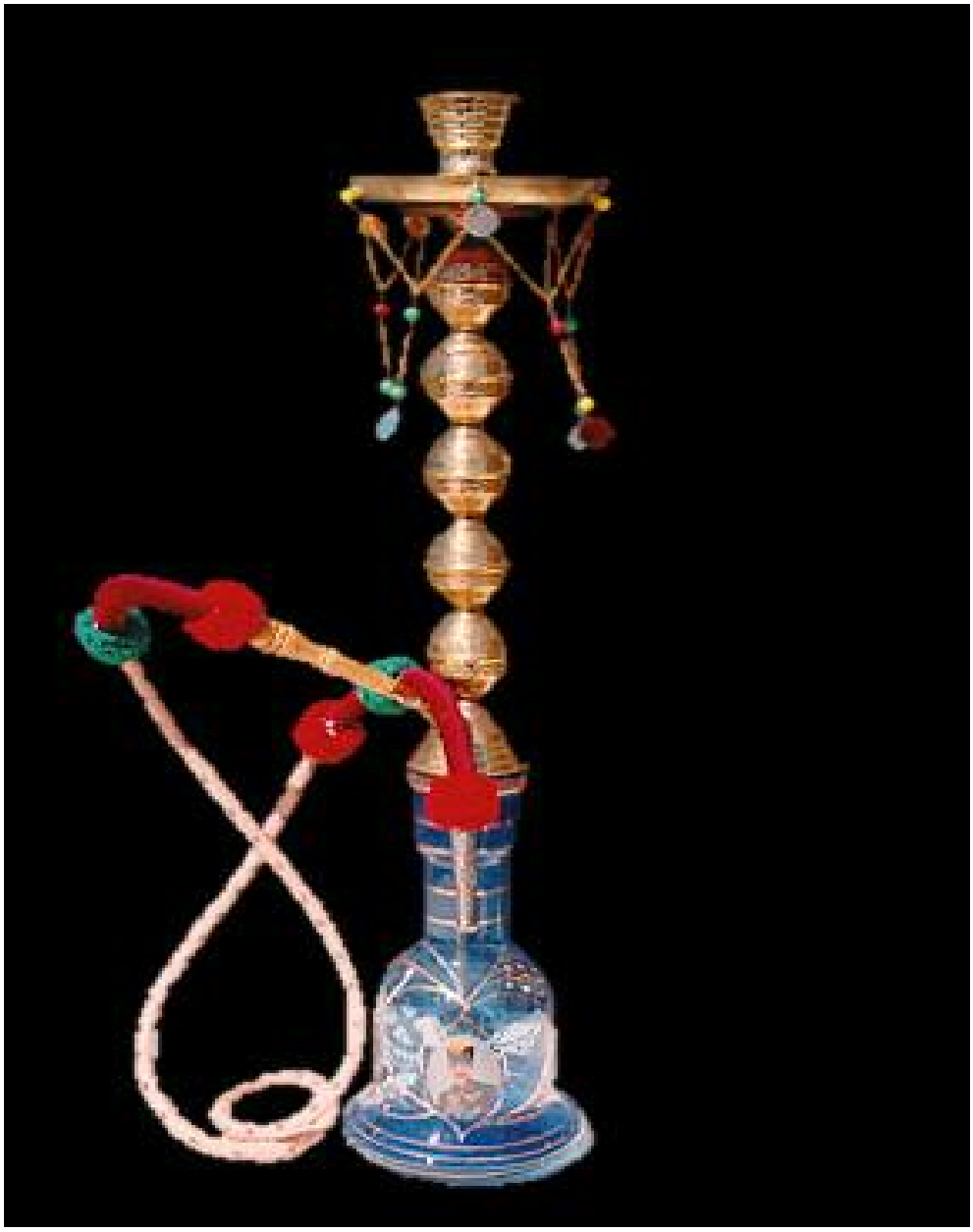
One type of smoking behavior found to be popular among Arab adults is the hookah (water pipe). It is known as shisha, borry, goza in Egypt, Saudi Arabia, and narghile, arghile in Jordan, Lebanon, and Syria. The hookah is believed to have originated in India in the 16th century and then brought to the Eastern Mediterranean area. Hookah is made up of clay bowl, a glass body, water reservoir, and hose to inhale tobacco smoke (see figure 1). The hookah tobacco is called mu'essel, which is a paste like mixture of crude (30%) cut tobacco, fermented with approximately 70% honey, molasses, and pulp of different fruits to create the fruity flavor (Asotra, 2005). Some researchers have reported that hookah smoke contains high concentrations of carbon monoxide, nicotine, tar, and heavy metals. The concentrations of these elements were as high as or higher than those among cigarettes (Knishkowy & Amitai, 2005).

Hookah smoking has been increasingly popular in Arab societies in the 25 years. It has moved to the U.S recently due to the cultural and social practices of new immigrants from countries where hookah smoking is an accepted tradition (Asotra, 2005). Rastam, Ward, Eissenberg, and Maziak (2004) reported that smoking narghile is considered a sign of Arabic identity. The researchers explained that narghile is viewed as an "oriental" method of smoking. Furthermore, Arab smokers view smoking narghile as a chance to socialize with friends and family members. Maziak et al (2004) reported that Syrian students believe smoking narghile is an appealing way to spend leisure time with friends. Moreover, families' attitudes towards younger smokers were more permissive

about narghile compared with cigarettes, and were more permissive about narghile smoking by females than males.

Although there are thousands of Arabs who have moved to live in the U.S over the last century, there is no adequate information about their tobacco use. No study has been done to compare tobacco use patterns and behaviors among Arabs in the U.S with those who live in their original countries and relate the findings to cultural differences. Adjusting to a new culture is a complex process. This process is called acculturation and it involves the changes that individuals and groups undergo when they come into contact with another culture (Williams & Berry, 1991). Acculturation may be stressful or liberating and challenging. It is stressful when individuals or groups are often resistant to change, and consider change a threat to one's beliefs, values, social order, lifestyle and history. On the other hand, it may be liberating and challenging because the new culture may offer new opportunities unavailable in one's original social structure (Ma, Tan, Toubbeh, Su, Shive, & Lan, 2004). In both cases, stressful or liberating and challenging, immigrant smokers may change their smoking behavior during their adjustment to the new culture. This change might be positive; they might for example decrease the number of cigarette smoked per day, not smoke inside the house and/or not smoke in the work place due to regulations and rules in the new culture. This change commonly occurs with immigrant men. A negative change, on the other hand, occurs most often among women when they find themselves more liberated, allowing themselves the opportunity to smoke without the social restrictions they had when they were living in the country of origin.

Figure 1: Narghile



Therefore, it is essential to examine the smoking behavior of immigrants from Arabic origins and link the findings to the cultural adjustment process, which is acculturation.

Acculturation

Culture is defined as "values, beliefs, and practices that are shared by people and passed down from generation to generation (Hamilton, 1996, p. 127). It plays an important role in shaping individuals sense of self. When people move from one culture to another, many aspects of their cultural identities are modified to accommodate information about and experiences within the new culture. Some of these changes may include their attitudes, behaviors, values, sense of cultural identities, and sense of self (Ryder, Alden, & Paulhus, 2000). Because culture has an important effect on every aspect of people's live and sense of self, it is relatively constant and exceedingly difficult to change (Hamilton). In addition to these difficulties, people may experience other stressors particular to the new environment. These stressors include discrimination, language inadequacy, unemployment, feelings of not belonging in the new culture, and sense of anxiety due to the unfamiliar environment (Hovey, 2000). Therefore, some people find it difficult to assimilate or integrate to the new culture. Those individuals tend to resist the adoption of the new society's ways and behaviors. This resistance by the individuals will produce stress, which may then lead to emotional and psychological difficulties (Ghaffarian, 1998).

The concept of acculturation can be traced back to the 19th and 20th century. It has been widely used by the social and behavioral sciences particularly among anthropologist (Chun, Organista, & Marin, 2003). One of the most widely used definitions of acculturation is quoted from Redfield, Linton, and Herskovits (1936) discussion. They

define this concept as “phenomena which results when groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original culture patterns of either or both groups” (as cited by Chun, Organista, & Marin, p.6). The definition indicates that acculturation is the process of change occurring when a person from one culture experiences contact with another culture. There are a number of features and dimensions that can be derived from the definition, such as nature, course, and level. The nature of the acculturation requires the contact of at least two autonomous cultural groups, which results in a change in one or the other of the two groups due to the contact. The course of acculturation occurs over three-phases: contact, conflict, and adaptation. It is essential to have the first phase (contact), while conflict is a probable phase, and adaptation is inevitable. Finally, acculturation occurs at two levels, group (social) and individual (psychological) (Berry, 1980).

Castro (2003) differentiates between the two types of acculturation, social and psychological acculturation. Social acculturation is concerned with group behavior, while psychological acculturation is specific to the individual. Acculturation at the group level (social acculturation) results in changes in the social structure, economic base, and political organization of the group involved in the acculturation process. On the other hand, acculturation at the individual level (psychological acculturation) refers to the changes in attitudes, beliefs, values and behaviors in the individual.

Researchers have investigated the concept acculturation among immigrants from different ethnic/racial groups including Japanese, Mexican, African American, Korean, Chinese, and Iranian in order to understand its relationship with many health behaviors (i.e. tobacco use, mental health, obesity, and perinatal health) (Ghaffarian, 1998;

Heilemann, Lee, Stinson, Koshar, & Goss, 2000; Klonoff & Landrine, 1999; Lee, Sobal, & Frongillo, 2000; Oh, Koeske, & Sales, 2002; Shelley, Fahs, Scheinmann, Swain, Qu, & Burton, 2004; Yeh, 2003). These studies have shown that when immigrants come in contact with the new host society, they face many challenges, such as adjusting to a new language, social interaction, customs, and lifestyle. For example, some changes in lifestyle might include eating fast food more often, which then may cause obesity, while others change their smoker behavior at work and in public places due to smoking restrictions in these places in the U.S

Hovey (2000) explained that acculturating individuals might feel pulled between traditional values, norms, and customs. Individuals living in a new environment may feel a sense of loss, which leads to a reduction in effective coping resources. To overcome the feelings of loss and reduction in effective coping resources, individuals may use verities of acculturative patterns. These patterns comprise both competence and ease or comfort in communicating with peers and outgroup members, assimilation, separation, integration, and marginalization (Barry, 2005; Oh, Koeske, & Sales, 2002).

Berry (2002) described four acculturation strategies based on the immigrants' socialization and communication with individuals from both host society and same ethnic group. According to Berry, individuals who do not wish to maintain their cultural identity and socialize primarily with individuals from host culture are using the assimilation strategy. On the other hand, if individuals hold onto their original culture and refuse to interact with individuals from other culture, they are using separation strategy. Immigrants who use the integration strategy have an interest in maintaining their original culture while interacting with individuals from other culture. The last strategy is

marginalization; in this case immigrants have little interest in maintaining their culture of origin, and less interest in having a relationship with ethnic peer and individuals from other culture. In the assimilation pattern, the immigrants incorporate more elements of the host culture (interpersonal associations, language, value, and practices), which can help the person achieve a satisfactory adaptation at the expense of own culture, including reduced life stress and better mental health. While in the integration pattern, the same satisfactory adaptation outcomes (reduced stress and better mental health) can be achieved from blending the host native culture, with little loss of the central elements of the culture of origin.

Acculturation and smoking

Investigators have examined the relationship between acculturation and smoking during the last several years. Immigrants from different ethnic/racial groups were examined to understand the effect of their acculturation status on smoking rate and behavior. The smoking prevalence among less acculturated African American adults is twice as large as the prevalence of smoking among acculturated African American (33.6% for less acculturated and 15.3% for acculturated adults). More than 68% of the African American smokers were described as highly traditional (Klonoff & Landrine, 1999). Likewise, a recent study found that the prevalence of smoking among Chinese men living in the U.S is less than half that of Chinese men living in China (Shelley et al., 2004). The researchers reported that male Chinese smokers, either current or ex-smokers, were less acculturated relative to never smokers. These findings of men smokers are consistent with other immigrants and US-born groups such as Koreans, Chinese, Vietnamese, and Cambodians; however, the smoking prevalence among more

acculturated women from these groups has been reported higher than those less acculturated adult females. Furthermore, the rate of smoking among high acculturated women has been reported three times higher than those residing in their country of origin (Ma et al., 2004; Song et al. 2004).

To summarize there is an inverse relationship between men and women as it relates to smoking patterns when moving from their country of origin to the United States. The pattern that develops is that men are more likely to reduce their smoking and women are more likely to increase their smoking when residing in the U.S. What would be helpful in understanding this pattern of change related to smoking is a health behavior theory that focuses on individual change.

Theoretical framework

The Transtheoretical Model of Change (TTM) (Prochaska & DiClemente, 1982) is one of many theories that focus on health behavior. It states that individuals who are changing health behaviors go through a series of stages until they reach the desired behavior. The TTM is a model of intentional change that focuses on the decision making of the individual, unlike other approaches to health promotion that focused primarily on social and biological influences on behavior. The central constructs of the model are the stages of change, the processes of change, and the decisional balance. The model has been tested to a variety of healthy behaviors such as low fat diet, radon testing, alcohol abuse, weight control, organizational change, drug abuse, medical compliance, delinquency, safer sex, using sunscreens, mammography screening, smoking cessation, stress management, and exercising (Prochaska & Velicer, 1997; Velicer, Prochaska, Fava, Norman, & Redding, 1998).

Stages of change

The Transtheoretical Model constructs change as a process involving progress through a series of five stages. These stages are considered the key-organizing construct of the model. They are an ordered series of discrete categories that are based upon past behavior and intention to change. Each stage is represented with period of time and specific tasks associated with it. The five stages are precontemplation, contemplation, preparation, action, and maintenance (Velicer, Prochaska, Fava, Norman, & Redding, 1998).

Precontemplation. : Is the stage in which people are not intending to take action in the foreseeable future, usually measured as the next six months. People may be in this stage because they are uninformed or under-informed about the consequences of their behavior. Or they may have tried to change a number of times and become demoralized about their ability to change. Both groups tend to avoid reading, talking or thinking about their high-risk behaviors. People in this stage are described as being not able to see the problem (Prochaska, DiClemente, & Norcross, 1992).

Contemplation. Is the stage in which people are intending to change in the next six months. They are more aware of the pros of changing but are also acutely aware of the cons. These people are also not ready for traditional action oriented programs.

Preparation. Is the stage in which people are intending to take action in the immediate future, usually measured as the next month. They have typically taken some significant action in the past year.

Action: is the stage in which people have made specific overt modifications in their life-styles within the past six months. Since action is observable, behavior change

often has been equated with action. The Action stage is also the stage where vigilance against relapse is critical.

Maintenance: is the stage in which people are working to prevent relapse but they do not apply change processes as frequently as do people in action. They are less tempted to relapse and increasingly more confident that they can continue their change.

Processes of Change

Processes of change provide important guides for intervention programs, since the processes are the independent variables that people need to apply, or be engaged in, to move from stage to stage. They are described as the cognitive and behavioral strategies used by individuals to change unhealthy behavior. There are ten processes (Prochaska, Velicer, DiClemente, & Fava, 1988). The first five are classified as Experiential Processes and are used primarily for the early stage transitions. The last five are labeled Behavioral Processes and are used primarily for later stage transitions. The processes of change are major dimension of the TTM, which enables us to understand how shifts in behavior occur. The ten processes of change are: Consciousness awareness (increase knowledge), dramatic relief (emotional release), environmental re-evaluation (impact on others), self- revaluation (self-knowledge), self-liberation (making a commitment), helping relationships (developing support team), counter-conditioning (using substitute), contingency management (rewarding one self), stimulus control (avoid and control), and finally social liberation (changing social norms).

The relationship between the processes of change and the stages of change is described as curvilinear. Processes of change are used at a minimum in the precontemplation stage, more often in the middle stages, and declines over the last stage

(Velicer, Prochaska, Fava, Norman, & Redding, 1998). Table 1 shows a more detailed explanation of the relationship between the stages of change and the processes of change.

Decisional Balance

The Decisional Balance is another construct of the Transtheoretical Model and reflects an individual's weighing of the pros and cons of changing. It has been derived from Janis and Mann's model of decision making, which include four categories of pros and four categories of cons (Velicer, Prochaska, Fava, Norman, & Redding, 1998). After testing the original model, the authors designed a simpler structure that includes two factors only, the pros and cons. According to the Transtheoretical Model, the pros have to outweigh the cons before action will be taken. It has been noted that there is a predictable pattern of how the pros and cons relate to the stage of change. For example, a person in the precontemplation stage far outweighs the pros of smoking than the cons. While in the contemplation stage the pros and cons are equal. In a more advanced stages, the cons outweigh the pros (Velicer et al.).

Problem and Purpose

Problem

Tobacco smoking causes diseases and premature death in every population in the United States. Over the last several years in tobacco control, less attention has been given for planning and developing effective health programs for individuals from different ethnic/racial background. This is due to the lack of information on which to base smoking prevention interventions (CDC, 1998). The effect of acculturation on American smokers from Arabic origin has not been investigated yet. There are no previous studies examined

the effect of acculturation on Arab Americans beliefs, behaviors, attitudes, and values regarding tobacco smoking.

Purpose

The overall purpose of this study was to describe the patterns of tobacco use and the association between smoking behavior change and psychological acculturation among Arab-Americans living in the Midwest.

Aims and Research Questions

There were two specific aims for this study:

Aim 1: Describe the relationship between tobacco use and psychological acculturation. The research question for this aim:

1. What is the relationship between psychological acculturation and tobacco dependence?

Aim 2: Describe the relationship between acculturation and readiness to quit smoking. The research questions for this aim are:

1. What is the relationship between acculturation and stages of change?
2. What is the relationship between frequency of using processes of change and stages of change?
3. What is the relationship between acculturation and pros and cons of smoking?

Ethical Considerations

Approval of the Human Subject Committee at the University of Kansas Medical Center and the study sites were obtained prior to the data collection procedure. During the data collection procedure, the investigator assured the participants that their participation is voluntary and will not influence their activities at the Islamic center.

Table 1.

Stages of Change in Which Particular Processes of Change Are Emphasizes

Processes	Stages of Change				
	Precontemplation	Contemplation	Preparation	Action	Maintenance
Consciousness-raising					
Dramatic relief					
Environmental reevaluation					
Social liberation					
Self-reevaluation					
Self-liberation					
Reinforcement management					
Counter conditioning					
Stimulus control					
Helping Relationships					

Note. From "In search of how people change, Application to addictive behaviors," by J. O. Prochaska, C. C. DiClemente, & J. C. Norcross, 1992, *American Psychologist, 47*, p. 1109

Chapter 2

This work contains material from the manuscript in progress:

Al-Omari, H. & Pallikkathayil, L. (2006). *Psychological acculturation: A concept analysis and its implications for nursing practice.* Manuscript submitted for publication.

Abstract

Psychological acculturation is a complex process that has been widely discussed in the literature of anthropology, psychology, and sociology. The purpose of this paper is to analyze the concept of psychological acculturation using Walker and Avant's strategy of concept analysis. The authors bring greater clarity to this process of acculturation to help nurses understand individuals' health behaviors. Definitions of acculturation are examined using different resources including dictionaries and scholarly literature. Antecedents, defining attributes, and consequences are identified, discussed and summarized. Model case and contrary case are presented. Measurement of psychological acculturation is discussed in the context of defining attributes. Direction for future research and implications for nursing practice are presented.

Introduction

Immigration is a phenomenon that has occurred over time in all nations. International immigration has in the last 100 years been greater than before due to economic, political, or war issues (Rissel, 1997). One of the most culturally diverse countries is the United States (U.S.). The American population includes people from different backgrounds, languages, religions, and beliefs. It is recognized as the home of boundless array of cultures, races, and ethnicities (CDC, 1998). According to the U. S. Census Bureau, almost one in ten persons living in the U.S was a foreign-born immigrant in 2000 and the total number of immigrants in the population exceeded 31 million (U.S. Census Bureau, 2006).

Culture plays an important role in shaping the sense of self. People's self identity is a reflection of the cultural group to which they belong. Adjusting to a new culture is a complex process because it involves alterations in the individual's sense of self (Ryder, Alden, & Paulhus, 2000). During this process, immigrants experience many stressors and difficulties, which may lead to emotional or psychological problems (Ghaffarian, 1998). The process of adjusting to a new culture is called acculturation. It involves the changes that individuals and groups undergo when they come into contact with another culture (Williams & Berry, 1991).

As the number of immigrants escalates in the coming future, health care providers will be more challenged with the complexity of caring for individuals from different ethnic/racial backgrounds. If nurses, who are considered a key element of the health care system, better understand the process of acculturation, they are in a good position to assist individuals experiencing acculturation stress. The purpose of this paper is to define

and analyze the concept of psychological acculturation and discuss its implication for nursing practice. Walker and Avant's (1995) strategy of concept analysis will be utilized as a framework.

Goal of the Analysis

A concept analysis serves as an avenue for establishing conceptual clarity. It is a formal linguistic exercise used to determine the defining attributes of a concept (Walker & Avant, 1995). The 1998 Surgeon General's report related the problems of limited studies on acculturation, its effects on health status and behavior of ethnic groups, and difficulties in designing appropriate measuring instruments of acculturation (CDC, 1998). Literature search of the nursing field revealed little information about the concept of acculturation. It is unclear what behavioral changes, either healthy or unhealthy, occur to individuals after they come into firsthand contact with a different culture.

This concept analysis is intended to identify attributes, antecedents, and consequences of the concept psychological acculturation. A model case and a contrary case will be presented to enable readers to understand defining attributes of this concept. This concept analysis is intended to help nurse researchers and practitioners capture the critical elements of the concept. By gaining more knowledge about this concept, nurse practitioners may then improve the quality of care provided for immigrants from different cultures, races, and ethnicities.

Concept Definitions and Literature Review

Dictionaries are an excellent resource to start to define and clarify a particular term or concept. They provide common accepted ways in which a word is used. Although they are not designed to explain the full range of perceptions associated with the word

(Chinn & Kramer, 1995), they are useful in identifying basic elements related to the concept. According to Merriam-Webster's Third New International Dictionary (2002), acculturation is defined as "a process of intercultural borrowing marked by the continuous transmission of traits and elements between diverse peoples and resulting in new and blended patterns" (p. 13), also it is defined as a " modification of a primitive culture resulting from prolonged contact with a more advanced culture" (p. 13). Although these definitions do not describe and explain the actual meaning of the word, they are helpful in determining the basic elements of the concept. For additional definitions and information about the concept, sources from different fields, such as anthropology, psychology, and sociology were used.

The first use of the concept acculturation can be tracked to the year 1880 (Berry, 1980). This concept was introduced by anthropologists to refer to cultural changes that emerge from intercultural contact (Castro, 2003). According to Berry (2002), the work on acculturation has changed over time. Initially, the work was focused on understanding the effects of European domination of colonial and indigenous people. Later, much of the work focused on how immigrants change after their settlement into host societies. More recently, the work on acculturation has focused on understanding how ethnocultural groups relate to each other and change in their attempts to live in multicultural societies. There are no pure large societies. International immigration, economic globalization, and political conflicts have created multicultural societies all over the world (Trimble, 2002). The concept of acculturation is now considered the cornerstone of immigration research (Rissel, 1997).

Two classical definitions were often cited and used by researchers. Redfield, Linton, and Herskovits (1936) defined acculturation as:

> *Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups* (as cited in Berry, 1980, p. 9).

This definition indicates that acculturation is the process of change occurring when a group of people from one culture experience continuous contact with another culture. As the definition implies, people move in groups from their original culture to a new culture where they will face new patterns. The new cultural patterns are different from the original ones. Subsequent changes will occur to cultural patterns of either or both groups. Changes in host culture will not be discussed in this paper.

The Social Science Research Council (SSRC) in 1954 described acculturation as:

> *...culture change that is initiated by the conjunction of two or more autonomous cultural systems. Acculturative change may be the consequence of direct cultural transmission; it may be derived from noncultural causes, such as ecological or demographic modifications induced by an impinging culture; it may be delayed, as with internal adjustments following upon the acceptance of alien traits or patterns; or it may be reactive adaptation of traditional modes of life* (as cited in Berry, 1980, p. 10).

In this description, the SSRC includes other aspects of the acculturation process. The description refers to ecological or demographic changes, which are indirect modifications of the individual's patterns of life. The description also discussed time as a factor to

influence the acculturation process. For example, some patterns, like alterations in the individual's sense of self, may take longer or shorter time than other patterns in the acculturation process. Finally, acculturation is described by the SSRC as a reactive process. An individual may refuse to adapt the new cultural patterns of life and become more traditional to his/her culture of origin.

William and Berry (1991) used acculturation to refer to the change that occurs to individuals and groups when they come into contact with another culture. Some authors were more specific in describing acculturation as the process of adjusting to a new language, different customs and norms for social interactions, unfamiliar rules and laws, and lifestyle changes (Organista, Organista, & Kurasaki, 2002). In the health field, acculturation is described as the process by which individuals and groups selectively accept aspects of another culture without completely relinquishing their own. The adopted aspects may include beliefs, values, social norms, lifestyles, and health behaviors, such as smoking (Ma, Tan, Toubbeh, Su, Shive, & Lan, 2004). Reaction to intercultural contact is not limited to individuals; it may also include families, communities, and societies (Rudmin, 2003).

Some authors (Berry, 2002; Trimble, 2002) have differentiated between two types of acculturation; social and psychological acculturation. While social acculturation is concerned with group behavior, psychological acculturation is specific to the individual. Acculturation at the group level (social acculturation) results in physical, biological, political, economical and cultural changes in the larger group or society. Whereas, acculturation at the individual level (psychological acculturation) refers to the changes in

attitudes, beliefs, values and behaviors in the individual. The focus of this paper is to analyze psychological acculturation.

Since the first use of acculturation in 1880, many scholars from sociology, psychology, anthropology, political science, and linguistics have proposed more than 100 taxonomies of different types of acculturation (Rudmin, 2003). Rudmin conducted a meta-analysis to describe constructs that underlie theories about different kinds of acculturation. He presented more than 120 theories about different types of acculturation published between 1918 and 2003. Due to the large number of theories found in the literature, the authors decided to focus their analysis of acculturation on two often cited and used models; the linear model and the multidimensional model.

The linear model, introduced by Gordon 1964, assumes that changes in an individual's cultural identity, including attitudes, values, and behaviors takes place along a single continuum over time (Ryder, Alden, & Paulhus, 2000). It is one of the earliest models to describe changes that occur in the immigrant's social structure, cultural patterns, and psychological features from one generation to another. Gordon used the term assimilation to describe these changes. He used the term assimilation and acculturation interchangeably to refer to the process of gradual absorption into the host culture at both the group and individual levels (Castro, 2003). The model implies that an immigrant's progress is in a directional nonreversible pattern from a native or tradition oriented state through a transitional stage to an elite acculturated state, where the elements of the dominant culture have been fully and thoroughly internalized (Trimble, 2002). Acculturation does not occur till the immigrant has fully assimilated to the hosts' cultural lifestyle.

In Gordon's model, immigrants have two options only, either to be fully acculturated (assimilated), or not acculturated at all. However, this model has been widely criticized for being misleading and its inability to offer a complete understanding of the acculturation process (Ryder, Alden, & Paulhus). Some authors argued that Gordon's linear model is not helpful in explaining the acculturation process because acculturation is neither a linear process nor an achievable end (Trimble). Trimble confirmed that immigrants select the portion of host culture that fit their original worldview, at the same time, they strive to retain vestiges of their traditional culture. These notions led John Berry, a Canadian scientist, to conclude that assimilation is only one type of acculturation. He established a comprehensive model to explain the acculturation process at the individual level, which he termed psychological acculturation.

Berry (2002) identified four acculturative strategies at the individual level: assimilation, integration, separation, and marginalization. Immigrants are classified into one of these acculturation strategies based on their socialization and communication with individuals from both the host culture and the same ethnic group. Individuals who do not wish to maintain their cultural identity and socialize primarily with individuals from the host culture use the assimilation strategy. Immigrants who use the integration strategy have an interest in maintaining their original culture while interacting with individuals from the other culture. If individuals hold onto their original culture and refuse to interact with individuals from other cultures, they use separation strategy. The last strategy is marginalization; in which immigrants have little interest in maintaining their culture of origin, and less interest in having a relationship with ethnic peers and individuals from

the other culture. Berry's (1980) acculturation model is multidimensional and assumes that individuals can develop positive ties with both the culture of origin and the new culture.

Related Concept

Acculturation is a complex concept that is different from assimilation. The authors discuss the related concept assimilation to clarify the differences between the two concepts.

Assimilation. Defined in Merriam-Webster's Dictionary (2002) as "sociocultural fusion wherein individuals and groups of differing ethnic heritage acquire the basic habits, attitudes, and mode of life of an embracing national culture" (p. 132). When people assimilate to a certain culture they lose their original cultural patterns and behaviors and adopt the host's cultural behaviors. Gordon used the term assimilation to describe changes that occur to immigrants when they adjust to a new culture. According to Gordon, assimilation is a gradual process of absorption and fusion into the new culture (Castro, 2003).

Several decades ago, the concept of multicultural societies was not of concern, they were called the uncontaminated culture. The goal was to assimilate new immigrants to the host culture and help them adopt the host's cultural lifestyle. The focus was to examine how individuals change their behavior in their attempts to settle in the new culture. Because of the international immigration and the creation of multicultural societies, researchers became more interested in understanding the varied experiences of cultural minority groups in their attempts to live in multicultural societies (Trimble, 2002). This has urged researchers to reconsider their view of acculturation and include

other ways of conceptualizing acculturation rather than limiting the process to assimilation only.

Assimilation and psychological acculturation are two distinct concepts that have evolved from studies of immigrants and intercultural contacts. While assimilation has been described as adoption of the host's culture lifestyle, psychological acculturation is a broader concept that describes assimilation as an element of its process. Psychological acculturation describes the immigrant's response to intercultural contact.

Psychological Acculturation: Definition and assumptions

Acculturation is a complex phenomenon that is different from assimilation. It includes changes that occur in the immigrant's cultural lifestyle after he/she comes into direct contact with a new culture. For the purpose of this analysis, the authors define psychological acculturation as voluntary and comfortable modifications that occur in the individual's lifestyle, behaviors, beliefs, values and identity as a result of continuous firsthand contact with different cultural groups. The authors emphasize modifications instead of fusion and absorption.

Though Berry calls the acculturation process multidimensional strategies, it seems to be multiple unidimensional strategies in the way he describes them. The authors' propose is to view Berry's four acculturation strategies as four potential stages that an individual may go through during the acculturation process. An individual may vacillate between the stages, or resist some cultural elements of the host culture but adopt other elements and arrive at a degree of integration. A complete voluntary adoption of the host culture may not occur. The authors agree with Trimble (2002) that there is no one end

point in the acculturation process. A perfect assimilation where one looses his/her identity may never occur and may not be or should not be a goal.

The authors make the following eight assumptions about the psychological acculturation process: (1) psychological acculturation is generally considered a desired goal when one person permanently moves to a new culture, (2) psychological acculturation process can produce stress, (3) psychological acculturation process takes time and may vary with individuals, (4) an individual's needs, desires, and goals act as motivators in the psychological acculturation process, (5) the degree of welcome/unwelcome by the host culture can promote or hinder the psychological acculturation process, (6) psychological acculturation is a dynamic and continuous process without a distinct end point, (7) psychological acculturation may result in healthy or unhealthy behavioral changes, and (8) an individual's characteristics, such as adaptability may help or hinder the psychological acculturation process.

Antecedent Conditions

Antecedent conditions are necessary circumstances that must occur before psychological acculturation starts. Contact of two autonomous cultural groups is considered at the core of acculturation. There is no acculturation without contact. The contact can occur through different ways, such as: trade, invasion, enslavement, education, and missionary activity (Berry, 1980). A new type of contact that has not been discussed by researchers is telecommunication contact. People might be active participants of the acculturation process through the use of telecommunications, such as the Internet, videoconference, and long distance education. This topic is very complex and beyond the purpose of this paper.

Knowledge and education about the host culture are important antecedent conditions for acculturation. Ghaffarian (1998) explained that individuals who are educated in the host culture become either more culturally incorporated or culturally shifted toward the host culture. Immigrants who move to the host culture with no previous knowledge or education about the host's cultural lifestyle; such as clothing, language, and food may develop cultural resistance when they fail to learn the new cultural behavior. Immigrants who move from their culture of origin to a new culture have expectations for the future, which is the reason for their moving (Hovey, 2000a). People migrate from their own culture for different reasons such as: education, work, or politics and war in their countries. They move expecting that they will achieve what they came for, whether it is education, money, or safety. In another report, Hovey (2000b) confirmed that immigrants with positive expectations for the future perceive acculturation changes as opportunities and may experience less distress.

Cultural group factors described by Berry (2002) are other antecedent conditions that influence people's acculturation strategies. Group factors include the nature of contact (voluntary or involuntary), appearance, and national policies in the larger society. Berry argued that individuals in voluntary contact are more willing to participate in the new society than those who are not in voluntary contact. Immigrants with a distinct physical appearance from the dominant population may be kept away from the dominant society by discrimination. The national policies of the dominant culture may encourage new immigrants' acculturation by different methods, such as: educating about the dominant culture's lifestyle, encouraging participation in national activities, and teaching the language of the new society. Members of the host culture may also play a role in

welcoming and accepting the new immigrants. Members of multicultural societies may reinforce the national policies and encourage new immigrants to participate in day-to-day interaction.

Another important antecedent condition for psychological acculturation is adaptability. People have different degrees of adaptability. This is a personal characteristic and may influence the individual's acculturation experience. Some individuals are able to deal with the acculturation process with minimal stressors, while others have a lower degree of adaptability and may view acculturation as a challenging experience. The acculturation experience may be highly stressful for those who have low levels of adaptation to stressful events.

In summary, there are eight identified antecedent conditions that must occur before psychological acculturation, these include: (1) continuous contact of at least two autonomous cultures, (2) knowledge and education about the host culture, (3) expectations for the future, (4) the nature of voluntary/involuntary contact, (5) appearance, (6) host culture's national policies, (7) degree of welcome by the host culture, and (8) personal adaptability characteristic.

Defining Attributes

Defining attributes help differentiate the concept of psychological acculturation from other similar or related concepts. The goal is to cluster the distinctive features commonly affiliated with the concept (Walker & Avant, 1995). The most common defining attribute that occurs following the contact of two immigrants is language (Barry, 2005; Berry, 1980; Rissel, 1997). The psychological acculturation process depends on language used by immigrants when they are in a direct and continuous contact with the

host culture. It is considered the most common experience that occurs following the contact between two cultures. Language used at home may be different from that used at work or school. Immigrants who use the host's culture language everyday of their life, including at home and with their families, have more acceptance toward the host culture than toward their native culture.

Another important defining attribute of acculturation is the people with whom the immigrants decide to socialize and communicate (Barry, 2005; Berry, 1980; Rissel, 1997; Zan & Mak, 2002). Individuals who prefer to have contact with members from their heritage culture only and socialize with the same ethnic group are more likely to separate themselves from the host culture. These individuals tend to maintain their heritage cultural lifestyle, including clothes, food, music, and holidays. On the other hand, individuals who participate in the host's cultural social life and interact with their members are more likely to adapt to the host culture. They learn to appreciate and adopt the host's cultural daily living habits, including food, clothes, and music.

Cultural/ethnic identity plays an important role in identifying the immigrant's psychological acculturation process. Every person belongs to a cultural group. Berry (2002) explained that a person's orientation to ethnic and national identities is an antecedent factor for the acculturation process. Ethnic identity is defined by Phinny (2002) as "a dynamic, multidimensional construct that refers to one's identity or sense of self as a member of an ethnic group" (P. 63). People use the term to refer to the group to which they belong. They may also use it to refer to their values and beliefs. According to Phinny, ethnic identity is not static and can be changed over time, across generations in a new culture, in different contexts, and with age or development. Individuals who prefer to

maintain their ethnic identity engage in cultural related activities and will maintain a network of close friends of the same ethnicity (Padilla, 1980). On the other hand, Berry predicted that individuals who prefer the national identity (e.g., American) will be more likely to assimilate to the host culture. However, those who prefer to use the hyphenated identity (e.g., Arab-American) are more likely to use integration strategy.

To summarize, the defining attributes of psychological acculturation includes: 1) language used at home, work, with friends…etc, 2) immigrants' socialization and communication with others, (3) immigrants' daily living habits, (4) cultural traditions and customs such as food, clothing, music…etc, (5) cultural identity, and (6) cultural values.

Measuring Psychological Acculturation

Given the importance of studying acculturation in immigrant research, several efforts have been made by researchers to develop the tools that can capture individuals' acculturation level (Zane & Mak, 2002). A review of the existing literature revealed two main theories when measuring acculturation: unidimensional approach versus multidimensional approach. The unidimensional approach places individuals on a continuum of identities that range from exclusively heritage culture to exclusively mainstream culture (Ryder, Alden, & Paulhus, 2000). Acculturation in this approach is viewed as a continuous process over time and should be measured on a continuous scale (Rissel, 1997). The unidimensional approach assumes that acculturation is measured by individuals' level of adaptation to the host culture. Individuals' ties to their heritage culture weaken as they acculturate to the host culture (Zane & Mak). High acculturated individuals are those who have fully adopted the host culture.

The multidimensional model, on the other hand, assumes that the heritage and the host cultural identities are free to vary independently. Individuals in this model may adopt some behaviors or values of the host culture without giving up facets of identity developed in their culture of origin (Ryder, Alden, & Paulhus). Unlike the unidimensional approach, individuals are assessed based on their preference to maintain their own heritage culture and preference to communicate and socialize with other individuals from the host culture (Berry, 2002).

The most common dimension used by researchers to measure acculturation is language use and preference (Barry, 2005; Rissel, 1997; & Zane & Mak, 2002). It includes the type of language, heritage or host culture, individuals use or prefer to use when communicating with friends, colleagues, and family members. Another important dimension to measure acculturation is the individuals with whom the immigrant decides to communicate (Barry; Ryder, Alden, & Paulhus, 2000; & Zane & Mak,). Immigrants are assessed based on their preference to communicate with members of the heritage culture and/or host culture. Researchers have identified certain types of social activities and cultural traditions (e.g. holiday celebration, dating) as an important dimension in measuring acculturation (Barry; Ryder, Alden, & Paulhus). Other identified dimensions include: entertainment preferences (e.g. music and movies) (Ryder, Alden, & Paulhus), and cultural identity (Rissel). To determine the cultural identity, individuals were asked to choose the ethnic group with whom they identify. This group may include ethnic group (only or mostly), host and ethnic groups equally, or host group (only or mostly).

Consequences of Psychological Acculturation

Consequences are the events or incidents that occur as a result of psychological acculturation. Individuals will have positive or negative outcomes. Individuals with positive outcomes will have new identities with the cultural group to which they now belong. They become more socially active, comfortable, and functional in the host culture. Individuals who successfully acculturate will be able to adjust to the host culture with minimal conflicts.

On the other hand, the absence of psychological acculturation will result in stress, identity confusion, social dysfunction, and psychological problems. Berry (2002) used the term acculturation stress to refer to the stress that results as a reaction to challenging life events rooted in the process of acculturation. Some individuals might feel unable to deal with different conflicts that arise due to intercultural contact. They feel pulled between two cultures and are unable to identify themselves as members of either group. They will lose the identity of their heritage culture. They do not have a sense of belonging to the host culture either. Individuals with identity confusion will find themselves isolated with minimum contact with members of any group. Unsuccessful acculturation will produce stress and psychological problems that might be manifested by many unhealthy behaviors such as depression, smoking, and substance abuse (Hwang, Chun, Takeuchi, Myers, & Siddarth, 2005; Hofstetter, Hovell, Lee, Zakarian, Park, Paik, & Irvin, 2004; Wagner-Echeagaray, Schutz, Chilcoat, & Anthony, 1994; Wilkinson et al., 2005).

In summary, acculturation is a stressful event. Individuals who are able to deal with this experience with minimal conflicts and stressors will successfully modify their lifestyle. On the other hand, some individuals are unable to deal with the acculturation

process stressors. These individuals will find themselves isolated from others. Some of them may become depressed due to their failure to modify their lifestyle, others may seek unhealthy behaviors like smoking, drinking alcohol, or abusing drugs.

Implications for Nursing Practice and Research

Acculturation is a long process that individuals go through encountering stressors along the way. Not all individuals encounter acculturation in the same way. For some individuals, acculturation is a successful experience through which they modify their lifestyle to adjust to the host culture. For others, it is a stressful process that may result in unhealthy behaviors. Therefore, it is critical for health care professionals to understand the acculturation process and the possible unhealthy outcomes that might result due to acculturation stress. Berry (2002) argued that acculturation stress is commonly associated with those who face major heritage cultural loss and show many dysfunctional and deviant behaviors. According to Berry, individuals who use integration strategy have the least acculturation stress and those who use marginalization have the most stress. However immigrants who use assimilation or separation are in between.

The growing diversity is a challenge to health care providers. Nurse professionals encounter patients from different ethnic groups daily in all clinical settings. Understanding the process of acculturation that individuals go through will help nurses understand stressors associated with acculturation. Furthermore, nurses may learn about barriers that might prevent immigrants from seeking medical care such as language, cultural traditions, values, and specific beliefs, and therefore, take the necessary steps to encourage them to seek treatment. Most important, nurses are encouraged to learn more about cultural traditions in relation to disease prevention and treatment.

Acculturation is a fertile area for future research to examine the relationship between acculturation and health behavior change among immigrants from different cultural groups. Due to the lack of agreement among researchers from other fields on how to measure acculturation, nursing researchers are encouraged to develop valid and reliable instruments to measure acculturation for individuals from different ethnic groups. The authors hope that the content of this analysis will help clarify the dimensions of acculturation to nurse researchers and practitioners.

Model Case

Walker and Avant (1995) suggested presenting a model case to provide "a real life example of the use of the concept that includes all critical attributes of the concept" (p. 42). A model case is used to illustrate the occurrence of the concept. The following model case is an example of psychological acculturation and includes all of its defining attributes.

This is the first day for Omar in his new job. He has been waiting for this job since he moved to the U.S. from his home (Jordan) more than two years ago. Before this job he used to work in a grocery store owned by his cousins. Most of his previous coworkers were from his country and spoke Arabic. He had no problems in communicating with them since they all spoke their mother language. He felt comfortable in his relationship with them. They went out together, cooked Arabic food, and listened to Arabic music.

Omar can speak, read, and write English. He learned it when he was at home. He always loved the American lifestyle and learned about it from movies, internet, books, and magazines. Although Omar has been living in the U.S. for more than two years, he

has no American friends because he spent most of his time with his cousins at work and at home.

Most of Omar coworkers at his new job are Americans. They go to lunch together, they often meet after work to spend some time, party, and celebrate national holidays. It has been two months and Omar is more interested in developing friendships with his coworkers. He realizes that in order to do this he has to change his lifestyle.

Understanding that he has the option of keeping part of his Arabic culture, Omar decides to become an American. He is now using English at work, with friends and his cousins, and at home more often. He listens to American music, watches American movies, and eats American food frequently. Most of his friends are Americans. They visit together frequently. Contrary to what he has to do, Omar does not communicate with his cousins now. He realizes this is against his Arabic values which emphasize family connections. He believes that he needs to be independent and live the life that he always wanted without his family's interference.

It is early in July and some of his coworkers have invited him to celebrate the 4th of July with them. He appreciates the invitation because he believes that he is an American now and should celebrate the American national holidays.

Contrary Case

In answer to a 911 call a fourteen-year-old Indian girl, Dugra, is brought by ambulance to the crises stabilization center. She is extremely frightened, covers her ears, and screams someone is yelling at her. Her mother and father are standing at her side, speaking Hindi, trying to console her. The father works as a guard in a federal prison. He

reports that he has seen some prisoners who have had the same strange behavior as his daughter. Despite this acknowledgment, his wife protests his 911 call.

With the help of an interpreter the father tells the staff that Dugra and her mother have had difficulty adjusting to their new life in the United States this past year. His wife misses her family, feels very alone and unprotected in her new home. She spends time watching Indian channels on her television and cooking Indian food.

Even though Dugra has learned to speak English, she has found school to be very difficult, has trouble completing her homework, and has not made any friends. The husband's sister who sponsored their move to the United States has adjusted extremely well. She visits her brother's family daily and gives them advice as to what should be done with the daughter. His wife ignores her, cries and states that it was a mistake to come to America. She believes she does not belong here.

In the past week, Dugra refused to go to school because her classmates laugh and make fun of her. Yesterday her parents were asked to come to school for a teacher's conference. They were told that the school nurse was very concerned about their daughter's behavior. Dugra was often found staring into space and seemed to be talking to someone who did not exist.

The mother states that she has not seen any problems with Dugra and questions whether they understand the needs of a young girl from India. Dugra tells the staff she is very scared because she hears a monster, talking in Hindi, telling her to kill herself.

Dugra has a psychiatric evaluation and the staff informs her parents that she has had a psychotic episode. She needs to be hospitalized and stabilized on medication. The

father prevails on his wife to agree and signs the papers so Dugra can receive proper treatment.

Relieved to have the voices disappear; Dugra engages in treatment and is able to attend school at the hospital. Through the help of an Indian interpreter the staff negotiates a discharge plan that includes outpatient psychiatric treatment and tutoring services to help Dugra complete class assignments.

A week later Dugra did not show for her outpatient appointment. Follow up discussions with the father revealed that his wife left Dugra's medication on the kitchen table and had taken her to live with her family in India.

Chapter 3

This work contains material from unpublished manuscript not submitted for publication

Al-Omari, H. & Scheibmeir, M. (2007). *Arab Americans acculturation and tobacco smoking.* Unpublished manuscript.

Abstract

Despite the extensive research on the ill-effects, smoking is still one of the highest causes of deaths in the United States (U.S.). Although Arab Americans come from countries where smoking ratios are among the highest in the world, very limited information is available about their smoking patterns and behaviors after they move to the U.S. Acculturation is an important concept in understanding smoking patterns and behavior among Arab Americans. Acculturation is a complex process that may modify or change immigrants' social life, communication style, and lifestyle. **The purpose** of this study was to describe Arab Americans smoking patterns and investigate the relationship between tobacco dependence and acculturation. **Design:** this was a cross-sectional exploratory correlational study designed to elicit information from 96 smoker and ex-smoker participants in the Midwest and Southwest. **The results** showed that 81.3% of the participants were men. The mean age of the participants was 35.3 (range 19-60). Most of the Arab Americans who participated in this study smoked (70.8%) and more than 62% of the participants had lived in the U.S. for five years or more (*Mean= 3.7, SD= 1.4*). The majority of the participants (80%) reported having one or more of their family members smoke, and 88% had at least one friend who smoked cigarette. Pearson correlational analysis revealed a significant positive correlation between specific acculturation behaviors and tobacco dependence, and between tobacco exposure and tobacco dependence. **Conclusion**: Family and peers smoking are considered critical factors that are associated to tobacco smoking among Arab Americans. In this sample, Arab Americans who behaved most like their ethnic peers and spent more time with Arab Americans were more dependent on nicotine.

Key words: nicotine dependence, acculturation, Arab Americans

Introduction

Cigarette smoking has been identified as the single most preventable cause of death, yet many Americans die each year from diseases associated with this unhealthy behavior. According to Healthy People 2010 (2000), more than 430,000 adult Americans die each year from tobacco related diseases. Cigarette smoking causes deaths among Americans more than AIDS, alcohol, cocaine, heroin, suicide, motor vehicle accidents and fire combined. The total direct medical costs attributable to tobacco smoking are $50 billion per year (Healthy People 2010). Although the current smoking prevalence is lower than years 2003 and 2002 (CDC, 2006) the goal is to reduce the prevalence of cigarette smoking among adults to <12% by the year 2010 (Healthy people 2010).

For the last several decades, most of the tobacco studies have focused exclusively on White Americans. Little attention was given to understanding tobacco use among members of different racial/ethnic groups living in the U.S. It was not until 1998 that the Surgeon General's office issued its first report to focus exclusively on tobacco use among members of four major U.S racial/ethnic minority groups-African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics (CDC, 1998). Not included in the 1998 Surgeon General's report was information on Arab Americans.

Arab Americans are categorizes by U.S. Census Bureau (2003) as people with ancestries originating from Arabic-speaking countries or areas of the world, and are one of the fastest growing populations in the U.S (U.S. Census Bureau, 2000). It is estimated that there are three to four millions Americans who have an Arabic origin (Kulwicki, 2000). Arab Americans descend from a heritage that represents common linguistic,

cultural, and political tradition. More than one-third of the Arab Americans living in the U.S. originate from Lebanon, and another 24% originate from Egypt and Syria (U.S. Census Bureau, 2003).

Arab Americans live in all the 50 states, with one-third of the population living in California, New York, and Michigan. The majority of Arab-Americans (90%) live in urban areas (Arab American Institute Foundation, 2004), are male (57%), more likely to be married (61%), have high school diplomas (84%), with a significant minority who have a bachelor's degree or higher (41%). Around 46% of foreign-born Arab-Americans have lived in the United States 10 years or less, and the median family income was $52,300 (U.S. Census Bureau, 2000)

The prevalence of tobacco use in Arab countries is considered the highest in the world. In a recent report issued by the World Health Organization (WHO) (2006), the prevalence of tobacco use in some Arabic countries reached 77% for men and 35% for women (table 1).

The review of published empirical work examining the smoking patterns of Arab-American adults is limited. The prevalence of tobacco use among Arab-Americans in the Detroit area was reported at 40.6% for men and 38.2% for women (Rice & Kulwicki, 1992). In a more recent study that examined Arab-American adolescents smoking behavior, most (93%) of the participants reported smoking at least one pack per week, and 26% smoked at least one pack a day (Rice, Templin, & Kulwicki, 2003). In light of the fact that the majority of smokers start smoking before the age 18 (CDC, 2001), the results of the Arab-American adolescents study indicate that cigarette smoking is a growing problem among this group of Americans. Further information about the patterns

of tobacco use among Arab-Americans will be helpful in identifying best-practices to assist Arab Americans with tobacco cessation.

Cigarette smoking is an acceptable social and cultural behavior in Arab countries. Offering a cigarette to someone is a sign of hospitality in this region. Unlike developed countries such as the U.S., smoking inside the home is considered to be within the range of normal behaviors. In a study conducted in Syria to investigate smoking habits among high school students, Maziak and Mazyek (2000) reported that male and female were 4.4 times more likely to be smokers than those with no smokers in the family. This was explained by the fact that parental and/or sibling smoking provides an excuse and encouragement for others to smoke as well. In another study, Arab adolescents who identified themselves as Arab-Americans described their use of narghile in the home as an acceptable social activity by the family (Kulwicki & Rice, 2003).

Smoking prevalence in Arabic countries is associated with age, gender, socioeconomic status, family, and peer influence. Age has been identified by researchers as a contributing factor of cigarette smoking in Arab countries (Bener & Al-Ketbi, 1999; Jamil, Mukhlis, & Saadon, 1989; Jarallah, Al-Ribeaan, Al-Nuaim, Al-Ruhaily, & Kalantan, 1999; Saeed, Khoja, & Khan, 1996). In a study conducted in Saudi Arabia, Jarralah et al. found that the majority of smokers (78%) were young to middle-aged. In the United Arab Emirates (U.A.E.), more than 30% of smokers were between the ages of 15 to19 (Bener & Al-Ketbi). Initiation of tobacco use is also more common among Arab youths. The majority of Saudi smokers in Riyadh City (79%) reported smoking initiation between the ages of 15 and 30 years (Saeed, Khoja, & Khan). Additionally, some reports from other Arab countries have shown that children start smoking at an early age. For

example, in Jordan 17.8% of the university student's smokers started using tobacco at 15 years of age or earlier (Haddad & Malak, 2002).

Gender has been reported by researchers as a significant predictor of smoking status in Arab countries. Smoking rates among male Jordanian university students were reported to be seven times higher than female students (Haddad & Malak, 2002). In Syria, cigarette smoking among universities students was reported to be higher among males (30.9%) than females (7.4%), and males were more likely to initiate smoking at an earlier age compared to females (Maziak et al, 2004; Maziak & Mzayek, 2000; Maziak, Ward, & Eissenberg, 2004). Additionally, researchers noted that Arab males were 10 to 20 times more likely to smoke than females (Rice, Templin, & Kulwicki, 2003). This high difference can be explained by the fact that men perceive tobacco use as a sign of maturity and manhood, while women perceive smoking as a shameful and unacceptable behavior by the society (Haddad & Malakeh, 2002). This is supported by Maziak's (2002) study that explored women's motivations for not smoking in Syria. Non-smoking women in this study identified tradition as the most salient motive behind not smoking.

Family and peer smoking have been reported to be strong predictors of tobacco use in Kuwait (Moody, Memon, Sugathan, el-Gerges, & Al-Bustan 2000), Lebanon (Chaaya, Awwad, Campbell, Sibai, & Kaddour, 2003), Syria (Maziak et al., 2004), and Jordan (Haddad & Malakeh, 2002). Peer and sibling smoking have been reported to be the most important factors to influence the smoking behaviors of male adolescents in the Arabic society. In Syria, around 50% of male smokers were introduced to tobacco smoking by a friend and men smoke because their friends do so (Maziak & Maziak, 2000). On the other hand, family smoking has been reported as the most important factor

to influence smoking behavior of female adolescents. In Maziak and Maziak's study, researchers reported that 37.7% of female smokers said they were introduced to smoking by a family member. The researchers explained these findings by the fact that while smoking in Arabic society is not an acceptable behavior among females and children or adolescents, parental and/or sibling smoking will provide some encouragement and excuse for others in the family to smoke as well.

Although there are thousands of Arabs who have moved to live in the U.S over the last century, there is no adequate information about their tobacco use. There is no published information comparing tobacco use patterns and behaviors among Arabs in the U.S with those who live in their original countries and to relate the findings to possible cultural differences.

Adjusting to a new culture is a complex process. This process is called acculturation and it involves the changes that individuals and groups undergo when they come into contact with another culture (Williams & Berry, 1991). Ma, Tan, Toubbeh, Su, Shive, and Lan (2004) explained that the process of acculturation may be stressful and/or challenging. It is stressful because individuals often resist change, and consider change as a threat to one's beliefs, values, social order, lifestyle and history. On the other hand, other individuals may find change liberating and challenging because the new culture may offer new opportunities unavailable in one's original social structure. In either case, immigrant smokers may change their smoking behavior during their adjustment to the new culture. The change in behavior might be positive. For example, a new immigrant might decrease the number of cigarettes smoked per day, not smoke inside the house and/or not smoke in the work place due to regulations and rules in the

new culture. A negative change, on the other hand, occurs most often among women when they find themselves more liberated, allowing themselves the opportunity to smoke without the social restrictions they had when they were living in the country of origin. Therefore, it is essential to examine the smoking behavior of immigrants from Arabic origins and to link potential findings that help explain the relationship between acculturation and tobacco use.

Culture is defined as "values, beliefs, and practices that are shared by people and passed down from generation to generation" (Hamilton, 1996, p. 127). When people move from one culture to another, many aspects of their cultural identities are modified to accommodate information about and experiences within the new culture. Some of these changes may include their attitudes, behaviors, values, sense of cultural identities, and sense of self (Ryder, Alden, & Paulhus, 2000). Because culture has an important effect on every aspect of people's live and sense of self, it is relatively constant and exceedingly difficult to change (Hamilton). In addition to these difficulties, people may experience other stressors particular to the new environment. These stressors include discrimination, language inadequacy, unemployment, feelings of not belonging in the new culture, and sense of anxiety due to the unfamiliar environment (Hovey, 2000). Therefore, some people find it difficult to assimilate or integrate to the new culture. Those individuals tend to resist the adoption of the new society's ways and behaviors.

Two types of acculturation commonly defined by researchers are social and psychological acculturation (Berry, 2002; Trimple, 2002). While the former one results in political, economical and cultural changes at the group level, the later one focuses on changes in the individuals' attitudes, beliefs, values, and behaviors. According to Berry,

the psychological acculturation has four categories: assimilation, integration, separation, and marginalization. Immigrants are classified into one of these four categories based upon the combination of socialization and communication patterns with members from the same ethnic group, the host culture group, or both groups.

Many researchers have examined the relationship between acculturation and smoking. However, most of these studies have described acculturation as a directional non reversible process (less acculturated to fully acculturated). Although this approach has been widely criticized by some researchers for its inability to offer a comprehensive understanding of the acculturation process (Ryder, Alden, & Paulhus, 2000), the findings of these studies are considered helpful in providing background about the issue of tobacco use and acculturation among minority groups in the U.S.

Researchers have found that the prevalence of smoking among less acculturated African American adults is twice as large as the prevalence of smoking among acculturated African Americans (33.6% for less acculturated and 15.3% for acculturated adults). More than 68% of the African American smokers were described as highly traditional (Klonoff & Landrine, 1999). Likewise, a recent study found that the prevalence of smoking among Chinese men living in the U.S is less than half that of Chinese men living in China (Shelley et al., 2004). In the U.S., less acculturated Chinese men had a higher prevalence rate of smoking than those with high acculturation levels. These findings of men smokers are consistent with other immigrants and US-born groups such as Koreans, Chinese, Vietnamese, and Cambodians. However, the smoking prevalence among more acculturated women from these groups has an opposite effect-higher smoking rates are seen in women who have become more acculturated.

Furthermore, the rate of smoking among highly acculturated women has been reported three times higher than those residing in their country of origin (Ma et al., 2004; Song et al. 2004).

There is an inverse relationship between men and women as it relates to smoking patterns when moving from their country of origin to the U.S. Men are more likely to reduce their smoking and women are more likely to increase their smoking when residing in the United States. Therefore, the purpose of this study was to describe the relationship between Arab Americans tobacco use and psychological acculturation.

Methodology

A cross-sectional exploratory correlational design was used in the study. Data was collected at one point in time. Smokers and ex-smokers completed a self-reported questionnaire about their smoking history, nicotine dependence, and psychological acculturation. A convenience-sampling method was used for the study. Additionally, the researchers used a snow ball technique to recruit participants for the study.

Two grocery stores and one Islamic center located in the Midwest were initially used to recruit participants. Two other sites were added to improve recruitments of participants. Criteria for inclusion in the study were: (1) to be from an Arabic country of origin, (2) read and speak English language, (3) be 18 years of age or older, and (4) report that they currently smoke or are ex-smokers.

A power analysis was conducted to determine the appropriate sample size for the study. Setting the significance level at 0.05, with a power of 0.80, and effect size of 0.25, the samples size required for this study was 95. A one-tailed significant level was used in the analysis since previous studies conducted among other cultures have shown a

directional relationship between smoking and acculturation (Klonoff & Landrine, 1999; Ma et al., 2004; Shelley et al.,2004; Song et al., 2004). Statistical Package of Social Science (SPSS) version 14.0 was used to conduct descriptive, correlation statistics, and Cronpach's alpha reliability tests. Prior to the data collection process, approval of the Human Subject Committee was obtained.

Measures

Instruments completed by the participants included: The Fagerstrom Test for Nicotine Dependence (FTND), Male Arab-American Acculturation Scale (MAAS), and smoking history and personal information items.

The Fagerstrom Test for Nicotine Dependence (FTND). It is a 6-item measure of nicotine dependency or addiction (Heatherton, Kozlowski, Frecker, & Fagerstrom, 1991). Test-retest coefficients indicated a relatively high reliability value that ranged from 0.55 to 0.71. In this study, the Cronbach's alpha was 0.80.

Male Arab-American Acculturation (MAAS). The MAAS contains two themes; the Separation or Assimilation theme and the Integration or Marginalization theme (Barry, 2005). The two major themes were constructed based on four acculturation strategies developed by Berry (2002): assimilation, separation, integration, and marginalization. In the first theme, the separation versus assimilation, Arab Americans are examined based on their preference to socialize and communicate with only Arabs or to socialize and communicate with only Americans. Individuals are placed in the separation category if they prefer to behave and socialize and communicate with like Arabs only. Individuals in the separation category hold onto their Arabic culture and refuse to interact with individuals from American culture. If the individuals do not wish to maintain their Arabic

cultural behavior and instead prefer to socialize and communicate with only Americans then they are assimilated. These individuals behave like Americans in many ways and most of their friends are American. The separation or assimilation theme is measured by a 4-item Lickert-type format scale that ranges from strongly disagree (1) to strongly agree (7). Higher scores indicate that the participant is primarily socializing with Arabs and whose behavior closely resembles those from his/her country of origin. The internal reliability for this scale was reported at 0.71 (Barry).

The second theme, integration versus marginalization, examines Arab Americans based on their ease and comfort in interacting with Arabs and Americans equally (Barry, 2005). Integrating individuals are interacting with Americans and Arabic equally and have friends from both groups. They have interests in maintaining both their Arabic cultural behavior and to interact with Americans. Individuals who have little interest in maintaining their Arabic cultural behavior and less interest in having a relationship with Americans are in the Marginalization category. These individuals have difficulties getting along with anyone-Arabs and Americans. They experience difficulties in making friends. The integration versus marginalization theme is measured by a 4-item Lickert-type format scale that ranges from strongly disagree (1) to strongly agree (7). Higher score indicate that participants mix equally with Arabs and Americans and are equally at ease socializing with both of them. The internal reliability for this scale was reported at 0.73 (Barry). The MAAS scale has not been used to score female responses due to the difficulties of recruiting Arab American women.

Smoking History and Personal Information. Smoking history and personal information items were developed to measure specific smoking variables and obtain demographic information about the participants.

Results

Of the 240 Arab American adults who were approached to participate in the study, only 96 completed the questionnaires. Information was not obtained on those who refuse to participate in the study. Most of the participants were men (81.3%). The mean age was 35.3 (*SD= 9.42*). More than 62% of the participants lived in the U.S. for five years or more (x= *3.7, SD= 1.4*). The participants were well educated with more than 58% reporting completion of college or some level of graduate education. The majority of the Arab Americans who participated in this study were from Jordan (41.7%) and more than two-third of the sample (68.7%) reported smoking for five years or more. Narghile was not a common type of tobacco product smoked by the participants with less than 30% reporting they smoked it, while more than 70% of the participants smoked cigarette. The sample was comprised of predominately current smokers (70.8%) who were men, had a family member who smoked (79.2%), were exposed to tobacco in social settings (66.7%), and had at least one friend who smokes (88.5%). More information about the sample characteristics can be found in Table 2.

The majority of participants were exposed to tobacco use in multiple settings. To address this high exposure to tobacco, a new variable was computed. This variable was the sum product of the various components of tobacco exposure. The variable was the summed scores of the following items: (a) living with someone who smokes, being exposed to tobacco use in (b) social settings and (c) at work, (d) having a family member

who smokes, and (e) having at least one friend who uses tobacco. Each item was treated dichotomously with (0) equals no and (1) equals yes. The range of the tobacco exposure score was between (0) not exposed to tobacco to (5) highly exposed to tobacco. A Pearson correlation analysis revealed a statistical significant relationship between nicotine dependence and the tobacco exposure variable, $r(95) = 0.51$, $p < .01$.

The MAAS was used to measure acculturation among male and female Arab Americans. Because we were able to recruit female participants in this study, the psychometric properties of the MAAS among female and male Arab Americans were examined.

Berry (2005) was unsuccessful in recruiting women to complete the scale, therefore, all reported reliability coefficients were based upon male respondents only. In this study, around 20% of the participants were female. Possible gender differences in the psychometric properties of the MAAS were therefore performed in this study. The overall internal consistency reliability coefficient for the integration versus marginalization scale was 0.73, which was consistent with previous reports for male participants. When examining the scale for male and female participants separately, the analysis revealed the Cronbach's alpha for male was 0.73 and 0.75 for female. The separation or assimilation scale, on the other hand, showed low internal consistency reliability coefficients in general. The Chronbach's alpha for the total sample was 0.54, for male and female, the Chronbach's alpha was 0.54 and 0.55 respectively. Although the alpha value was considered low and not consistent with previous findings, the results in this analysis show a trend between the total sample and the male and female subsamples.

Pearson correlation analysis was performed to examine the relationship between nicotine dependence and the two acculturation scales, separation or assimilation and Integration/Marginalization. The first analysis revealed a positive significant correlation between separation versus assimilation and nicotine dependence $r(96) = 0.18$, $p < .05$. There were no gender differences in the correlation between nicotine dependence and Separation/Assimilation scale. There was no statistically significant relationship between Integration/Marginalization and nicotine dependence. In contrast to the Separation/Assimilation, the Integration/Marginalization score revealed a negative non statistical significant correlation with nicotine dependence (table 3).

Discussion

The present study describes the smoking patterns of Arab Americans and examined the relationship between acculturation to an American culture and nicotine dependence. Previous studies on this population are very limited underscoring the significance of the current findings.

The majority of Arab Americans who participated in the current study smoked, preferring to smoke cigarettes over narghile and other tobacco products. Most of the participants had lived in the U.S for five years or more. Five years might be a sufficient amount of time to become acculturated, but it did not account for the majority of Arab Americans who self-reported as a current smoker.

Most of the participants in the study reported that one of their family members or peers smoked. Family members and peer smoking have been reported by many researchers as the most important factor to influence smoking behavior among men and women in the Arabic culture (Chaaya, Awwad, Campbell, Sibai, & Kaddour, 2003;

Haddad & Malakeh, 2002; Maziak et al., 2004; Moody, Memon, Sugathan, el-Gerges, & Al-Bustan 2000). Kulwicki and Rice (2003) reported that most of the Arab American smoking adolescents in their study had parents who smoked and all of them reported at least one of their siblings who smoked. Because family is an important concept in the Arabic culture it should be considered a critical factor in understanding and changing the smoking behavior of Arab Americans. Additionally, most of the participants reported being exposed to smoking in social settings.

The results show a strong positive relationship between tobacco exposure and nicotine dependence. Participants who were exposed to tobacco at home, social setting, or work reported more dependence on nicotine. Being exposed to tobacco use more often and at different settings might be a sign for smokers to keep smoking. This relationship is consistent with other American populations. For example, the 2001-2002 youth tobacco surveillance shows that 91.4% of high school students who currently smoke report being in the same room with someone who was smoking cigarettes during the week before the study, and approximately 58% of them lived in a home in which someone else smoked cigarettes (CDC, 2006).

Acculturation is an important concept in understanding the social life and communication style among immigrants. Patterns of immigrants' socialization and communication shape their lifestyle and behavior in the host culture. In order to assess immigrants' lifestyle and their socialization/communication patterns we need to examine the acculturation process.

According to Barry (2005), immigrants who socialize/communicate primarily with individuals from the host culture are using the assimilation strategy, while those who

socialize/communicate primarily with individuals from ethnic peers are using separation strategy. In this study, a statistical significant positive correlation between separation or assimilation and tobacco dependence was noted. The analysis revealed that participants who reported that most of their friends were Arabs, chose not to behave like Americans in many ways, and felt more comfortable around Arabs than they do around Americans were highly dependent on nicotine. Less assimilated Arab Americans smoked more than other Arab Americans who behaved like Americans or primarily socialized with Americans. This supports previous findings from other ethnic groups (i.e. Chinese, African Americans). The findings are also consistent with Kulwicki and Rice's (2003) previous study that examined Arab Americans adolescent perceptions and experiences with smoking. In their study, Kulwicki and Rice reported that smoking is an activity shared by most of the participants' friend. They also found that Arab American adolescents view smoking as a social activity when they spend time together. Smoking for them is not only part of their pleasure time; it is also a way to make friends.

Many of the participants in this study reported having one or more of their family members smoke. Parental smoking in the Arabic countries has more of an effect on family members than in other parts of the world (Maziak & Mzaek, 2000). In their report, Maziak and Mzaek concluded that parental and sibling smoking not only encourages other family members to smoke, but also give them an excuse to do so. The findings of this study confirms our conclusion that family smoking should be considered a key factor in understanding the smoking behavior of Arab Americans

The study results are important for two reasons; first Arab Americans who separate themselves from the American culture tend to view tobacco smoking as an

acceptable behavior and may encourage each other to smoke. Second, preventive measures that have been established and implemented in the American culture are not working for other Americans from Arabic background. There is a need to redefine smoking prevention and cessation services that are culturally appropriate to Arab Americans.

Implications and Recommendations

Arab Americans view smoking as a social activity and an acceptable behavior. The most important factors that have contributed to their smoking are family and peers smoking. Tobacco prevention programs that are currently adopted by health care providers and health systems in the U.S. might not work for Americans from Arab background. Arab Americans need culturally sensitive tobacco prevention and smoking cessation programs, which are specifically designed for them.

Table 1

Smoking prevalence in Arabic countries

Country	Men	Women
Iraq	40%	5%
Egypt	40%	18%
Palestine	40%	2.7%
Lebanon	46%	35%
Jordan	48%	10%
Syria	50%	9.9%
Tunisia	62%	7.7%
Yemen	77%	29%

Table 2

Demographic and Characteristics of the sample

Age		
Male	*M= 36.2, SD= 9.5*	(81.3%)
Female	*M= 32.0, SD= 8.7*	(18.8%)
Years Lived in the U.S (*n*=95) [a]		
< 1	15	(15.6%)
1-2	5	(5.2%)
3-5	16	(16.7%)
5-10	16	(16.7%)
> 10	43	(44.8%)
No. of years smoked (*n*=95) [a]		
<1	6	(6.3%)
1-2	8	(8.3%)
3-5	13	(13.5%)
5-10	20	(20.8%)
>10	46	(47.9%)
Tobacco products used		
Cigarette	68	(70.8%)
Narghile	28	(29.2%)
Cigars	10	(10.4%)
Pipe	7	(7.3%)
Educational Level (*n*=95) [a]		
<8th grade	3	(3.1%)
9-11 grade	3	(3.1%)
High school graduate	15	(15.6%)
Some college	16	(16.7%)
College graduate	31	(32.3%)
Graduate education	25	(26.0%)
Income (*n*=93) [a]		
<$5,000 annual	4	(4.2%)
>$5,000 <$10,000 annual	10	(10.4%)
>$10,000 <$30,000 annual	26	(27.1%)
>$30,000 <$50,000 annual	29	(30.2%)
>$50,000 annual	18	(18.8%)
Country of Origin (*n*=91) [a]		
Jordan	40	(41.7%)
Palestine	19	(19.8%)
Saudi Arabia	13	(13.5%)
Kuwait	5	(5.2%)
Iraq	3	(3.1%)
U.A.E	3	(3.1%)
Qatar	2	(2.1%)
Egypt	2	(2.1%)
Lebanon	1	(1.0%)
Oman	1	(1.0%)
Sudan	1	(1.0%)
Syria	1	(1.0%)

Family member (s) smoke (*n*=94) [a]		
Yes	74	(79.2%)
No	20	(20.8%)
Friend (s) smoke (*n*=95) [a]		
Yes	84	(88.4%)
No	11	(11.5%)
Live with someone who smoke (*n*=95) [a]		
Yes	32	(33.3%)
No	63	(65.6%)
Exposed to cigarette at work (*n*=93) [a]		
Yes	31	(32.3%)
No	62	(64.6%)
Exposed to cigarette in social settings (*n*=95) [a]		
Yes	64	(66.7%)
No	31	(32.3%)

[a] Note: Sample size is reflective of subjects with valid data on the variable.

Table 3

Pearson Correlations between Nicotine dependence, Tobacco Exposure, and Acculturation

	Nicotine dependence
Tobacco Exposure (n=94)[a]	0.512**
Separation/Assimilation (n=95)[a]	0.181*
Male	0.166
Female	0.224
Integration/Marginalization (n=95)[a]	-0.064
Male	-0.148
Female	0.271

[a] Note: Sample size is reflective of subjects with valid data on the variable.
**$p < .01$
* $p < .05$

Chapter 4

This work contains material from unpublished manuscript not submitted for publication

Al-Omari, H. & Scheibmeir, M. (2007). *Arab Americans acculturation and smoking Behavior.* Unpublished manuscript.

Abstract

Increased attention on smoking among Americans from different racial and ethnic minority groups has occurred over the past few years. One such group that has been omitted from earlier investigation are Arab Americans. The limited information available about Arab Americans smoking behavior has thwarted the planning and development of tobacco control programs specific for this population. An important concept that is essential to understanding the complexity of adjusting to a new culture is acculturation. During the acculturation process individuals may modify or change their social life, communication style, and lifestyle to accommodate the new cultural setting. **The purpose** of this study was to investigate the possible relationship between Arab Americans smoking behaviors and acculturation. **Design:** this was a cross-sectional exploratory correlational study designed to elicit information from 96 smoker and ex-smoker participants. **Results**: multivariate regression analysis evaluated: a) acculturation themes, b) years of living in the U.S., and c) exposure to tobacco on the stages of change. The proportion of variance was twenty one percent, $R^2 = .212$, $F(4, 87) = 5.842$, $p < .001$. Pros of smoking and nicotine dependence were significantly associated with stages of change. There was a difference in using experiential processes of change among smokers in the precontemplation and contemplation stage. Significant correlations were found between specific acculturation behaviors and cons of smoking. **Conclusion**: Individuals in the early stages of change are more dependent on nicotine; therefore, they need more support to change their behavior. Additionally, family and friends were the most important factors contributing to tobacco use among Arab Americans. There is a need to

investigate and understand the nature of family and peer support for Arab Americans continued smoking behavior.

Key words: Acculturation, Arab Americans, Transtheoretical Model.

Introduction

Despite the extensive research on the ill-health effects from smoking, it is still one of the leading causes of death in the United States. More Americans die each year from tobacco related disease than other health problems such as drug and alcohol abuse, suicide, and AIDS (Healthy People 2010, 2000). In the last few years, there has been increasing awareness of the disparate health effect of tobacco use among Americans from different racial and ethnic groups. In its report, the Surgeon General's office acknowledged that the lack of sufficient information about tobacco use among four major U.S racial and ethnic minority groups - African Americans, American Indians and Alaska Natives, Asian Americans, and Pacific Islanders, and Hispanics- has prevented the planning and development of tobacco control programs specific for these groups (CDC, 1998). Unless we have adequate knowledge about tobacco use and behaviors among members of different ethnic and racial minority groups, chances for success in controlling tobacco behavior will be limited.

Like other racial and ethnic minority groups, Arab Americans smoking behavior has received little attention. To this date, there is no national or regional data about Arab Americans tobacco use (Rice, Weglicki, & Templin, 2006). Additionally, the number of studies that have investigated use of tobacco products by Arab Americans is very limited. In 1992 Rice and Kulwicki examined tobacco use among 237 Arab Americans residing in the Detroit area. They found that 40.6% of the men and 38.2 of the women who participated in the study were smokers. In a more recent study that examined the Arab American adolescents smoking behavior, 93% of the participants reported smoking at least one pack per week and 26% smoked at least one pack a day (Rice, Templin, &

Kulwicki, 2003). Although these studies have found that the prevalence of smoking among adult and adolescent Arab Americans is higher than other Americans, little attention was given to further investigate this unhealthy behavior among this population. In light of the fact that the majority of smokers start smoking before the age of 18 (CDC, 2001), the results of the Arab Americans adolescents study indicate that cigarette smoking is a growing problem among this group of Americans.

According to the Arab Americans Institute (2006), Arab Americans are made up of several waves of immigrants from the Arabic-speaking countries of southwestern Asia and North Africa and have been settling in the United States since 1880s. The number of Arabs who have migrated to the United States has grown in the last several years (U.S. Bureau, 2000). It is estimated that there are three to four million Americans who have an Arabic origin (Kulwicki, 2000). More than one-third of Arab Americans originate from Lebanon and 24% originates from Syria and Egypt (U.S. Census Bureau, 2003). They live in all 50 states and one-third of the total Arab American population lives in California, New York, and Michigan (Arab American Institute).

Arab Americans are moving from countries where smoking prevalence is among the highest in the world (WHO, 2006), to a country where smoking prevalence is on the decline (CDC, 2006). According to the World Health Organization (WHO) (2006), the prevalence of tobacco use in some Arabic countries reached 77% for men and 35% for women. Smoking in Arab countries is considered an acceptable social behavior. Moreover, smoking one type of tobacco products, which is narghile or water pipe, is considered a sign of cultural identity in the Arab countries (Rastam, Ward, Eissenberg, & Maziak, 2004). Some researchers have found that smokers in the Arab countries view

narghile as a chance to socialize with friends and family members (Maziak, Ward, & Eissenberg, 2004). Family member and peer smoking have been reported as the most important factors influencing tobacco smoking in Kuwait (Moody, Memon, Sugathan, el-Gerges, & Al-Bustan 2000), Lebanon (Chaaya, Awwad, Campbell, Sibai, & Kaddour, 2003), Syria (Maziak et al.), and Jordan (Haddad & Malakeh, 2002). Maziak and Mzayek (2000) have reported that while 37.7 of women smokers were introduced to tobacco use by a family member, around 50% of men smokers were introduced to smoking by a friend.

Although there are thousands of Arabs who have moved to live in the U.S. over the last century, there is no adequate information about their tobacco use. Due to the limited research on this population, it is unclear what changes or modifications occur in their smoking behavior once they move to the U.S. Researchers have acknowledged the difference in tobacco use between smokers from various racial and ethnic identity (Rice, Remplin, & Kulwicki, 2003). The gap in knowledge about the Arab Americans smoking behavior has limited the planning and development of tobacco control programs specific for this minority groups.

Acculturation is an important concept in understanding immigrant's behavior. It occurs at two levels: group and individual. Acculturation at the group level is called social acculturation, while acculturation at the individual level is called psychological acculturation (Berry, 2002; Trimble, 2000). The later one is the focus of this study. Psychological acculturation is defined as " voluntary and comfortable modifications that occur in the individual's lifestyle, behaviors, beliefs, values and identity as a result of continues firsthand contact with different cultural groups" (Al-omari & Pallikkathayel,

2006, p 11). When people move from one culture to another, many aspects of their cultural identities are modified to accommodate information about and experiences within the new culture. Some of these changes may include their attitudes, behaviors, values, and sense of cultural identities (Ryder, Alden, & Paulhus, 2000).

The relationship between acculturation and smoking has been investigated by many researchers. For example, the prevalence of smoking among less acculturated African American adults is reported twice as large as the prevalence of smoking among acculturated African Americans (Klonoff & Landrine, 1999). Among Chinese Americans, less acculturated men had a higher prevalence rate of smoking than those with high acculturation levels (Shelley, Fahs, Scheinmann, Swain, Qu, & Burton, 2004). Although the findings of Chinese men smokers are consistent with men smokers of other ethnic groups such as Korean, Vietnamese, and Cambodians, acculturation has an opposite effect on women smokers. Some studies have shown that the rate of smoking among highly acculturated women is three times higher than women smokers residing in their country of origin (Ma, Tan, Toubbeh, Su, Shive, & Lan, 2004; Song, Hofstetter, Hovell, Paik, Park, Lee, et al., 2004).

There are no previous reports that have investigated the relationship between the Arab Americans smoking behavior and acculturation. Examining the Arab Americans smoking behavioral changes during the cultural adjustment process might help health care providers understand factors that affect tobacco use among this population.

Theoretical Framework

The Transtheoretical Model of Change (TTM) (Prochaska & DiClemente, 1982) is one of many theories that focus on health behavior. It states that individuals who are

changing health behaviors go through a series of stages until they reach the desired behavior. The TTM is a model of intentional change that focuses on the decision making of the individual, unlike other approaches to health promotion that focus primarily on social and biological influences on behavior. The central constructs of the model are the stages of change, the processes of change, and the decisional balance.

To summarize, tobacco smoking causes diseases and premature death in every population in the United States. Over the last several years in tobacco control, less attention has been given for planning and developing effective health programs for individuals from different ethnic and racial background due to the lack of information on which to base smoking prevention interventions (CDC, 1998). The purpose of this explanatory correlative study was to investigate the relationship between Arab Americans smoking behavior change and acculturation.

Methodology

This paper is part two of a study that investigated the Arab Americans acculturation and tobacco use. A cross-sectional exploratory design was used in the study. Data was collected at one point in time. Smokers and ex-smokers completed a self-reported questionnaire about their smoking history, smoking behavior change, and psychological acculturation. A convenience-sampling method was used for the study.

Two grocery stores and one Islamic center located in the Midwest were initially used to recruit participants and two other sites were added to improve recruitments. Study participants were men and women from an Arabic origin who could speak and read English. Participants were required to be smoker or ex-smokers. Statistical Package of Social Science (SPSS) version 14.0 was used to conduct descriptive, correlation statistics,

one-way analysis of variance (ANOVA), and regression tests. Prior to the data collection process, approval of the Human Subject Committee was obtained.

Measures

Instruments to be completed by the participants include: the Stage of Change (SOC), the Processes of Change (POC), the Decisional Balance (DB), the Male Arab-American Acculturation Scale (MAAS), and smoking history and personal information items.

Stage of Change scale. The SOC is a series of five forced-choice questions that classify individuals into one of the five stages of change: precontemplation, contemplation, preparation, action, and maintenance (Prochaska, Velicer, DiClemente, & Fava, 1988).

Processes of Change scale. The POC measures the covert and overt activities people use when progressing through the five stages (Velicer, Prochaska, Fava, Norman, & Redding, 1998). There are ten process of change, the first five are labeled as experiential and the second five as behavioral process. The short form of the POC is a 20-item Likert-type format the ranges from 1 (never) to 5 (repeatedly). Each process has a 2-item subscale; a higher score means a greater use of the specific process. The instrument has demonstrated high reliability and validity (DiClemente, Prochaska, Fairhurst, Velicer, Velasquez, & Rossi, 1991). Previous construct validity was examined with principal component factor analysis and revealed a ten-factor structure. The internal consistency for the subscales ranged from 0.69 to 0.92 (Prochaska, Velicer, DiClemente, & Fava, 1988). In this study, the Cronbach's alpha ranged from .28 to .81.

*Decisional Balance S*cale. The DB measures the pros and cons of smoking, which reflect the individual's relative weighing of smoking behavior change. In the early stages

of change, the pros of smoking outweigh the cons and in the more advanced stages, the cons of smoking outweigh the pros (Velicer, Prochaska, Fava, Norman, & Redding, 1998). The short form of DB is a 6-item Likert-type format that range from 1 (not important) to 5 (extremely important). The alpha coefficient for the pros was reported at .79 and for the cons and .64 (Herzog, Abrams, Emmons, Linnan, & Shadel, 1999). In this study, the alpha reliability for the pros was .84 and for the cons was .66.

Male Arab-American Acculturation (MAAS). The MAAS contains two independent scales: the separation versus assimilation and the integration versus marginalization (Barry, 2005). The separation or assimilation scale examines the Arab Americans preference to socialize and communicate with Arabs or with Americans only. If the Arab American individuals prefer to behave like Arabs and socialize with only Arabs they are placed in the separation category. Those individuals hold onto their Arabic culture and refuse to interact with individuals from the American culture. If the individuals do not wish to maintain their Arabic cultural behavior and prefer to socialize with Americans only then they are assimilated. These individuals behave like Americans in many ways and most of their friends are American. In the integration or marginalization scale, Arab Americans are examined based on their ease and comfort in socializing with Arabs and Americans equally (Barry). Integrated individuals are interacting with Americans and Arabs equally and have friends from both groups. They maintain their interest in their Arabic cultural behavior but interact with Americans. Individuals who have little interest in maintaining their Arabic cultural behavior and less interest in having a relationship with Americans are in the marginalization category. These individuals have difficulties communicating with everyone- Arabs and Americans alike.

Each one of the two scales, the separation versus assimilation and integration versus marginalization, used a 4-item Lickert-type format that ranges from strongly disagree (1) to strongly agree (7). The internal reliability for the separation versus assimilation scale was reported at .71 (Barry, 2005). In this study, the internal reliability was .54. For the integration versus marginalization scale, the internal reliability was reported at .73 (Barry). In this study, the internal reliability was .73.

Smoking History and Personal Information. Smoking history and personal information items were developed to measure specific smoking variables and obtain demographic information about the participants.

Results

Around 240 Arab Americans were approached to participant in the study, of which 96 completed the questionnaire. Information was obtained from participants who completed the study questionnaire. More than 80% of the Arab Americans who participated in this study were men. Mean age of participants was 35.5 (*SD = 9.42*). The majority of participants (71%) reported being current smokers, had a family member who smoked (79.2%), had at least one friend who smoked (88.5%), were exposed to tobacco in social settings (66.7%), and lived in the U.S. for five years or more (62%). For detailed sample characteristics, see part one of this study (Al-Omari & Scheibmeir, 2007).

Of the 96 who participated in the study, thirty six (37.5%) had no plan to quit smoking in the next six months (precontemplation), twenty three (24%) were planning to quit smoking in the next six months (contemplation), seventeen (17.7%) had quit smoking in the last six months (action), and 19 participants (19.8%) had quit smoking more than six months ago (maintenance). Only one participant reported being in the

preparation stage. Participants were distributed almost equally among four of the five stages. Because the preparation stage had only one participant, we decided to move this subject to another stage to be able to run the analyses. Due to the fact that smokers in the preparation stage use experiential processes more frequently and are considered smokers, whereas in the action and maintenance stage they have quit smoking and use behavioral processes, this subject was added to the contemplation stage. Stages included in the analyses were precontemplation, contemplation, action, and maintenance. Table 1 describes the processes of change, and pros and cons of smoking.

The MAAS is relatively a new scale. It was developed by Barry (2005) and examined only men due to unsuccessful attempts to recruit women. In this study, the researchers were able to recruit female participants and measure acculturation among male and female Arab Americans. The overall reliability coefficient for the separation versus assimilation was 0.54. For male and female participants, the reliability coefficients were 0.54 and 0.55 respectively. On the other hand, the overall reliability coefficient for the integration versus marginalization was 0.73. The reliability coefficient for male participants was 0.73 and for female was 0.75.

To evaluate the impact of tobacco exposure, a variable was computed using the summed scores of the following items: (a) living with someone who smokes, (b) having a family member who smokes, (c) having at least one friend who smokes, (d) being exposed to tobacco use in social settings, and (e) being exposed to tobacco smoking at work. Each item was treated dichotomously with (0) equals no and (1) equals yes with a total score range of 0-5.

Predictors of Smoking Behavior Change

According to the Transtheoretical model of change, smokers change their behavior by progressing through the stages of change. In order to investigate the impact of acculturation (separation versus assimilation and integration versus marginalization), tobacco exposure, and years of living in the U.S. on Arab Americans smoking behavior stage of change, a multiple regression analysis was performed. Because multilcolinearity is an issue of concern when conducting regression analysis (Aaronson, 1989; Blalock, 1963; & Gordon, 1968), Pearson test was used to examine the correlation between the four independent variables. The Zero-order correlation coefficients were ranged from -.15 to .22.

The dependent variable, which is the stages of change, was regressed on separation versus assimilation, integration versus marginalization, tobacco exposure, and years of living in the U.S. The proportion of variance (R^2) in smoking behavior stage of change among Arab Americans accounted for by the four independent variables was 21%, $R^2 = .212$, $F(4, 87) = 5.842$, $p < .001$ with adjusted $R^2 = .175$. The strongest predictor of smoking behavior change among Arab Americans was tobacco exposure. It had a negative effect on the stage of change. The standardized coefficient for tobacco exposure was -0.412, $t = -4.235$, $p < .001$. Table 2 shows all of the multiple regression coefficients.

TTM Constructs and Nicotine Dependence Distribution Across the Stages of Change

The relationships between the four stages of change (independent variable) and the pros and cons of smoking, the experiential and behavioral processes of change, and nicotine dependence were investigated using a one-way ANOVA. The results indicated

that means of pros of smoking and nicotine dependence differed significantly according to the stage of change ($p < .05$ and $p < .001$ respectively). As the Arab Americans progress through the stages of change, the pros of smoking and nicotine dependence decrease. Table 3 show Tukey's HSD post hoc test.

Frequency of Using Processes of Change

A one-way ANOVA was used to examine whether there was a difference in using Experiential and Behavioral processes among precontemplator and contemplator subjects. As expected, there was a significant difference between the precontemplators and contemplators in the frequency of using Experiential processes, F (1,58) = 4.437, $p <$ 0.05.

Acculturation and Smoking Pros and Cons

Correlation analyses were performed to examine the relationship between Arab Americans acculturation and the participants' relative weighing of pros and cons of smoking. Somewhere in here you need to indicate what a higher score on the scales in the MAAS scale means so that it is not so difficult to interpret this part of the analyses. As it stands, this section is rather confusing. A negative statistical significant correlation was found between separation versus assimilation and cons of smoking, $r = -.266$, $p < 0.01$. These findings are consistent with other results in this sample (Al-Omari & Schiebmeir, 2007). A positive statistical significant correlation was also found between integration versus marginalization and cons of smoking, $r = .210$, $p < .05$. There were no statistical significant correlation found between the two acculturation scales and pros of smoking. Table 4 shows all of the Pearson correlations.

Discussion

The current study investigated Arab Americans smoking behavior and its relationship to acculturation. The limited information available about this population adds to the significance of this study.

The majority of Arab Americans who participated in this study have a family member and/or a friend who smokes. Family and peer smoking were the most important factors contributing to tobacco use among this population (Al-Omari & Schiebmeir, 2007; Kulwicki & Rice, 2003). This has also been reported by other investigators (Rice, Weglicki, Templin, Hammad, Jamil, & Kulwicki, 2006). Rice et al. reported that friends and sibling smoking were the strongest predictors of adolescents smoking. Additionally, around two-thirds of the participants were exposed to tobacco smoking in social settings. Smoking in the Arab Americans' community might be viewed as an acceptable behavior in select social settings. Furthermore, individuals who have a family member or/and a friend who smoke might be encouraged to do so. Other studies conducted in Arabic countries reported that peer and family smoking exerts social pressure that encourages smoking among university students (Maziak & Mzayek, 2000; Maziak et al., 2004).

The strongest predictor of smoking behavior change was tobacco exposure. It had a negative effect on smoking behavior stages of change. The more the Arab Americans were exposed to tobacco, the less likely they were to change their behavior. As mentioned previously about the perceived acceptance of tobacco use by family members, it is conceivable that the results indicate thatsmoking for Arab Americans is considered a social activity shared with their friends.

Surprisingly, the two acculturation scales were not significant predictors of smoking behavior change in this sample. In the area of smoking, previous studies have shown a significant effect of acculturation on smoking prevalence among other minority groups (Klonoff & Landrine, 1999; Shelly et al., 2004, & Ma et al., 2004). Most of these studies have reported that the prevalence of smoking among less acculturated individuals is larger than those who are more acculturated. The non significant effect of the two acculturation scale in this study might be explained by two reasons. First, acculturation in the other studies was measured as a directional non reversible process. Participants were placed in a continuous scale from less acculturated to fully acculturated. This approach has been widely criticized for its inability to offer a comprehensive understanding of the acculturation process (Ryder, Alden, & Paulhus, 2000). In this study, the researchers measured acculturation using different approaches. Secondly, none of the previous studies used the stage of change variable to examine participant readiness to change their smoking behavior. The other studies examined the prevalence of smoking among less acculturated and fully acculturated participants.

The pros of smoking are higher in the early stages of change. As the Arab Americans progress through the stages, the pros of smoking decline. This linear pattern of decline across the stages of change was also reported by Prochaska, Velicer, Guadagnoli, Roossi, and DiClemente (1991). Individuals in the precontemplation and contemplation stages are more dependent on nicotine. As individuals change their smoking behavior and move to the behavioral stages, their nicotine dependence decrease Hasan, I am not sure I would keep the previous sentence—it implies causality and we did not test that in this study. These results indicate that individuals in the early stages of

change report higher dependence upon nicotine. This finding is similar to other studies that examined tobacco dependence.

The Decisional Balance scale was used to examine the Arab Americans relative weighing of the pros and cons of smoking. According to the Transtheoretical model, the Decisional Balance scale involves the importance of the pros and cons of smoking (Velicer, Prochaska, Fava, Norman, & Redding, 1998). In this sample, there was a significant negative correlation between cons of smoking and the separation or assimilation scale. Arab Americans who prefer to socialize and communicate with Arabs and behave like Arabs only were not embarrassed to have to smoke and do not think that smoking bothers other people around them. On the other hand, participants who were more integrated to the American culture, thus mix equally with Arabs and Americans and are equally at ease socializing with both of them, are more embarrassed to smoke among others and think that their smoking bothers people around them. It is plausible that these individuals, who socialize with Arabs and Americans equally, have learned that smoking is not an acceptable behavior by Americans; therefore, they do not feel comfortable smoking among them. The significant correlational results add to our earlier findings that Arab Americans accept smoking as a social activity shared by most of them in their social settings.

Implications and Recommendations

The concept of acculturation was not associated with smoking behavior change among in this sample. This might be related to the different approach of measuring this concept in this study. Like other smokers in the U.S., Arab Americans are more dependent on smoking in their early stage of the TTM. As they progress through the

stages of change, pros of smoking decline. In designing tobacco prevention program for this population, it is recommended to further examination of the role of the family in the initiation and maintenance of smoking behavior as well as the novel of approaches to use the family to assist with tobacco cessation interventions.

Table 1

Means of the processes of change and pros and cons of smoking

	Mean	*SD*
Experiential Processes	***29.59***	***8.12***
Consciousness Raising	*6.29*	*2.05*
Environmental	*5.18*	*2.31*
Self-Reevaluation	*5.80*	*2.45*
Social Liberation	*7.00*	*1.86*
Dramatic Relief	*6.09*	*2.59*
Behavioral Processes	***27.75***	***8.59***
Helping Relationships	*5.58*	*2.29*
Self-Liberation	*6.93*	*2.39*
Counterconditioning	*6.00*	*2.25*
Reinforcement	*5.16*	*2.65*
Stimulus Control	*4.44*	*2.27*
Prose of smoking	*8.98*	*3.80*
Cons of smoking	*8.66*	*3.00*

Table 2

Predictors of Smoking Behavior Change (*N*=96)

Variables	B	*SE* B	β	*t*
Constant	4.706	.994		4.734**
Years in the U.S	.130	.107	.120	1.208
Separation vs. assimilation	-.021	.031	-.068	-.699
Integration vs. marginalization	-.024	.029	-.081	-.823
Tobacco exposure	-.585	.138	-.412	-4.235**

Note: Overall model: R^2 = .212; F = 5.842; p< .01; Adjusted R^2 = .175.
**p < .01

Table 3

Tukey's HSD test (dependent variable: Stages of Change)

Variable	(I) SOC	(J) SOC	Mean Difference (I-J)	Std. Error
Nicotine Dependence	P	C	1.020	.628
		A	2.782*	.693
		M	5.194*	.668
	C	P	-1.020	.628
		A	1.768	.753
		M	4.173*	.730
	A	P	-2.782*	.693
		C	-1.768	.753
		M	2.411*	.786
	M	P	-5.194*	.668
		C	-4.173*	.730
		A	-2.411*	.786
Pros of Smoking	P	C	2.847*	.951
		A	1.756	1.062
		M	3.165*	1.023
	C	P	-2.847*	.951
		A	-1.090	1.144
		M	.317	1.108
	A	P	-1.756	1.062
		C	1.090	1.144
		M	1.408	1.205
	M	P	-3.165*	1.023
		C	-.317	1.108
		A	-1.408	1.205

* The mean difference is significant at the .05 level.

Table 4

Pearson Correlations between pros and cons of smoking, separation vs. assimilation, and integration vs. marginalization

	Pros	Cons
Separation vs. assimilation (n=95)[a]	-0.023	-.266**
Integration vs. marginalization (n=95)[a]	-0.071	.210*

[a] Note: Sample size is reflective of subjects with valid data on the variable.
**$p < .01$
* $p < .05$

Chapter 5

General Conclusions

Tobacco use has been widely identified as the single most preventable cause of death, yet many people die each year from diseases associated with this unhealthy behavior all over the world. In the United States (U.S.), more than 430,000 adults die each year from tobacco related diseases (Health People 2010, 2000).

Although differences in tobacco use have been noted in America by racial and ethnic identity (Rice et al., 2006), little attention was given to understanding smoking among members of different racial and ethnic minority groups living in the U.S. In 1998 the Surgeon General's office issued its first report that focus exclusively on tobacco use among four racial/ethnic minority groups (CDC, 1998). One of the minority groups that were not included in the report is the Arab Americans.

Arab Americans are people with ancestries originating from Arabic-speaking countries or areas of the world, and are one of the fastest growing populations in the U.S (U.S. Census Bureau, 2000). It is estimated that there are three to four millions Americans who have an Arabic origin (Kulwicki, 2000). They live in all 50 states, with one-third of the population living in California, New York, and Michigan (Arab American Institute Foundation, 2004).

Many of the Arab Americans come from countries where the prevalence of tobacco use is considered the highest in the world (WHO, 2006) to a country where the smoking prevalence is on the decline (CDC, 2006). Although there are thousands of Arabs who have moved to live in the U.S. over the last century, there is no adequate information about tobacco use. To this date, there are no national or regional tobacco use data fro Arab Americans (Rice et al., 2006).

An important concept in understanding immigrant's behavior is acculturation. It occurs at two levels: group and individual. Acculturation at the group level is called social acculturation, while acculturation at the individual level is called psychological acculturation (Berry, 2002; Trimple, 2000). The concept of psychological acculturation is not well defined in the nursing literature; therefore, we analyzed this concept using Walter and Avant's (1995) process of concept analysis (Ch. 2). The purpose of the concept analysis paper was to bring greater clarity to the process of acculturation and to help nurses understand immigrant's health behavior changes.

Many studies conducted among other ethnic and racial minority groups have found a relationship between acculturation and smoking. The prevalence of smoking among less acculturated African American adults is twice as large as the prevalence of smoking among acculturated African Americans (33.6% for less acculturated and 15.3% for acculturated adults (Klonoff & Landrine, 1999). Likewise, a recent study found that the prevalence of smoking among Chinese men living in the U.S is less than half that of Chinese men living in China (Shelley et al., 2004). These findings of men smokers are consistent with other immigrants and US-born groups such as Koreans, Chinese, Vietnamese, and Cambodians. However, the smoking prevalence among more acculturated women from these groups has an opposite effect-higher smoking rates are seen in women who have become more acculturated. Furthermore, the rate of smoking among highly acculturated women has been reported three times higher than those residing in their country of origin (Ma et al., 2004; Song et al. 2004).

The overall purpose of this study was to describe the patterns of tobacco use and investigate the association between acculturation and smoking behavior. There were two specific aims for this study.

Aim One

The first aim of this dissertation study was to describe the relationship between tobacco dependence and acculturation (Ch. 3). The research question for this aim was: what is the relationship between psychological acculturation and tobacco dependence?

The majority of Arab Americans who participated in the study smoked, preferring to smoke cigarettes over the narghile and other tobacco products. Most of the participants had lived in the U.S for five years or more. Acculturation was measured using Barry's (2005) Male Arab American Acculturation Scale (MAAS). Because the MAAS is relatively a new scale that has not been tested on female Arab Americans, we examined the reliability coefficients for both male and female participants. The overall reliability coefficient for the separation versus assimilation was 0.54. For male and female participants, the reliability coefficients were 0.54 and 0.55 respectively. On the other hand, the overall reliability coefficient for the integration versus marginalization was 0.73. The reliability coefficient for male participants was 0.73 and for female was 0.75.

We have found that majority of the participants have a family member and/or a friend who smoker. Other studies conducted in the Arabic countries have reported that family and peer smoking as the most important factors to influence smoking among men and women (Chaaya, Awwad, Campbell, Sibai, & Kaddour, 2003; Haddad & Malakeh, 2002; Maziak et al., 2004; Moody, Memon, Sugathan, el-Gerges, & Al-Bustan 2000).

To address the issue of high exposure to tobacco, a new variable was computed. This variable was the sum product of the following items: : (a) living with someone who smokes, being exposed to tobacco use in (b) social settings and (c) at work, (d) having a family member who smokes, and (e) having at least one friend who uses tobacco.

There was a positive relationship between tobacco exposure and nicotine dependence in this sample. Participants who were exposed to tobacco at home, social setting, or work reported more dependence on nicotine. Being exposed to tobacco use more often and at different settings might be a sign for smokers to keep smoking. Also there was significant positive correlation between separation versus assimilation scale and tobacco dependence. Arab Americans who were less assimilated to the American culture smoked more. These individuals behave mostly like Arabs, prefer to socialize with Arabs only, and most of their friends are Arabs.

Aim Two

The second aim was to describe the relationship between acculturation and readiness to quit smoking (Ch. 4). There were three research questions:

1. What is the relationship between acculturation and stages of change?
2. What is the relationship between frequency of using processes of change and stages of change among?
3. What is the relationship between the acculturation scales and pros and cons of smoking?

The strongest predictor of smoking behavior change was tobacco exposure. It had a negative effect on smoking behavior stages of change. The more the Arab Americans were exposed to tobacco, the less likely they were to change their behavior. In this

sample, the acculturation scales were not significant predictors of smoking behavior change. The effect of acculturation on smoking had been reported by many researchers among other minority groups. The non significant findings of this study might be explained by two reasons. First, acculturation in the other studies was measured as a directional non reversible process. Participants were placed in a continuous scale from less acculturated to fully acculturated. This approach has been widely criticized for its inability to offer a comprehensive understanding of the acculturation process (Ryder, Alden, & Paulhus, 2000). In this study, the researchers measured acculturation using different approaches. Secondly, none of the previous studies used the stage of change variable to examine participant readiness to change their smoking behavior. The other studies examined the prevalence of smoking among less acculturated and fully acculturated participants.

A one-way ANOVA was used to examine whether there was a difference in using Experiential and Behavioral processes among precontemplator and contemplator subjects. Consistent with the Transtheoretical model, there was a significant difference between the precontemplators and contemplators in the frequency of using Experiential processes.

We have found a significant correlation between the two acculturation scales and cons of smoking. In this sample, there was a negative correlation between cons of smoking and the separation versus assimilation scale. Arab Americans who prefer to socialize and communicate with Arabs and behave like Arabs only were not embarrassed to have to smoke and do not think that smoking bothers other people around them. Also in this sample, we found a positive correlation between cons of smoking and the

integration versus marginalization scale. Participants who were more integrated to the American culture, thus mix equally with Arabs and Americans and are equally at ease socializing with both of them, are more embarrassed to smoke among others and think that their smoking bothers people around them.

The overall conclusion of this study is that family and peer smoking are the most important factors that contribute to the smoking behavior of Arab Americans. There is a need for further examination of the role of the family in the initiation and maintenance of smoking behavior as well as the novel of approaches to use the family to assist with tobacco cessation interventions.

References

Aaronson, L. S. (1989). A cautionary note on the use of stepwise regression. *Nursing Research, 38,* 309-311.

Al-Omari, H. & Pallikkathayil, L. (2006). *Psychological acculturation: A concept analysis and its implications for nursing practice.* Manuscript submitted for publication.

Al-Omari, H. & Scheibmeir, M. (2007). *Arab Americans acculturation and tobacco smoking.* Unpublished manuscript.

Arab American Institute (2004). *Quick facts about Arab Americans.* Retrieved September 15, 2004, from http://www.aaiusa.org.

Arab Americans Institute (2006). *Arab Americans demographics*. Retrieved February, 20, 2007 from http://www.aaiusa.org/arab-americans/22/demographics

Asotra, K. (2005). Hooked on ookah? What you don't know can kill you. *Tobacco-Related Disease Research Program Newsletter, 7,* 1-12.

Barry, D. (2005). Measuring acculturation among male Arab immigrants in the United States: An exploratory study. *Journal of Immigrant Health, 7,* 179-184.

Bener, A., & Al-Ketbi, L. (1999). Cigarette smoking habit among high school boys in a developing country. *Journal of the Royal Society for the Promotion of Health. 119,* 166-169.

Berry, J. (1980). Acculturation as vareties of adaptation. In A. M. Padilla (Ed). *Acculturation: theory, models, and some new findings (pp. 9-25)*. Colorado: AAAS Selected Symposia Series.

Berry, J. (2002). Conceptual approaches to acculturation. In K. M. Chun, P. B. Organista, & G. Marin (Eds*), Acculturation: Advances in theory, measurement, and applied research* (pp. 17-37). Washington, DC: American Psychological Association.

Blalock, Jr. H. M. (1963). Correlated independent variables: The problem of multicollinearity. *Social Forces, 62,* 233-238.

Castro, V. S. (2003). *Acculturation and psychological adaptation.* Westport, CT: Greenwood Press.

Centers for Disease Control and Prevention. (1998). Tobacco use among U.S. racial/ethnic minority groups, African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, Hispanics: a report of the Surgeon General (Executive Summary). *Morbidity and Mortality Weekly Reports, 47(RR-18),* vi-ix.

Centers for Disease Control and Prevention (2001). Youth tobacco surveillance---United States, 2000. *Morbidity and Mortality Weekly Report, 50,*1-84.

Center for Disease Control and Prevention (2005). Cigarette smoking among adults-United States, 2004. *Morbidity and Mortality Weekly Report, 54,* 1121-1124.

Centers for Disease Control and Prevention (2006). Youth Tobacco Surveillance---United States, 2001-2002. *Morbidity and Mortality Weekly Report, 55,* 1-56.

Chaaya, M., Awwad, J., Campbell, O., Sibai, A., & Kaddour, A. (2003). Demographic and psychosocial profile of smoking among pregnant women in Lebanon: public health implications. Maternal and Child Health Journal, 7, 179-186.

Chinn, P. L., & Kramer, M. K. (Eds.). (1995). *Theory and Nursing: a systematic approach* (3rd ed.). St. Louis, Missouri: Mosby Year Book.

Chun, K., Organista, P., & Marin, G. (2003). Acculturation: advances in theory, measurement, and applied research. Washington, DC: American Psychological Association.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155-159

DiClemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., & Rossi, J. S. (1991). The process of smoking cessation: An analysis of precontemplation, contemplation, and preparation stages of change. *Journal of Consulting and Clinical Psychology, 59,* 259-304.

Ghaffarian S. (1998). The acculturation of Iranian immigrants in the United States and the implications for mental health. *The journal of Social Psychology, 138*, 645-654.

Gordon, R. A. (1968). Issues in multiple regression. *American Journal of Sociology, 73*, 592-616.

Haddad, L. & Malak, M. (2002). Smoking habits and attitudes toward smoking among university students in Jordan. *International Journal of Nursing Studies, 39,* 793-802.

Hamilton, P. M. (1996). Realities of contemporary nursing (2nd Ed.). CA: Addison-Wesley Publishing Company, Inc.

Heatherton, T., Kozlowski, L., Frecker, R., & Fagerstrom, K. (1991). The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. *British Journal of Addiction, 86*, 1119-27.

Heilemann, M. V., Lee, K. A., Stinton, J., Koshar, J., & Goss, G. (2000). Acculturation and perinatal health outcomes among rural women of Mexican descent. *Research in Nursing & Health, 23,* 118-125.

Herzog, T., Abrams, D., Emmons, K., Linnan, L., & Shadel, W. (1999). Do processes of change predict smoking stage movement? A prospective analysis of the transtheoretical model. *Health Psychology, 18*, 369-75.

Hofstetter, C. R., Hovell, M. F., Lee, J., Zakarian, J., Park, H., Paik, H., & Irvin, V. (2004). Tobacco use and acculturation among Californians of Korean descent: A behavioral epidemiological analysis. *Nicotine & Tobacco Research, 6,* 481-489

Hovey, J.D. (2000). Psychosocial predictors of acculturative stress in Mexican immigrants. *The Journal of Psychology, 134,* 490-502.

Hovey, J. D. (2000b). Acculturative stress, depression, and suicidal ideation in Mexican immigrants. *Cultural Diversity and Ethnic Minority Psychology, 6,* 134-151.

Hwang, W., Chun, C., Takeuchi, D., Myers, H. F., & Siddarth, P. (2005). Age of first onset major depression in Chinese Americans. *Cultural Diversity and Ethnic Minority Psychology, 1,* 16-27.

Islamic Society of Greater Kansas City (ISGKC) (2004). What is the Islamic center. Retrieved October 15, 2004 from http://www.isgkc.org.

Jamil, H., Mukhlis, G., & Saadon, A. (1989). Epidemilogical study on the habit of smoking among youth in Baghdad city. *Journal of Community Medicine in Iraq, 4,* 15-24.

Jarallah, J., Al-Rubeaan, A., Al-Nuaim, A., Al-Ruhaily, A., & Kalantan, K. (1999). Prevalence and determinants of smoking in three regions of Saudi Arabia. *Tobacco Control, 8,* 53-56.

Klonoff, E. & Landrine, H. (1999). Acculturation and cigarette smoking among African Americans: replication and implications for prevention and cessation programs. *Journal of behavioral Medicine, 22,* 195-204.

Knapp, T. R. (1996). The overemphasis on power analysis. *Nursing Research, 45,* 379-380.

Knishkowy, B., & Amitai, Y. (2005). Water-pipe (Narghile) smoking: An emerging health risk behavior [Abstract]. *Pediatrics, 116,* 217.

Kulwicki, A. (2000). Arab woman. In M. Julia (Ed), *Multiculturism and gender.* Belmont, CA: Brooks/Cole Publishing.

Kulwicki, A, & Rice, V. H. (2003). Arab American adolescent perceptions and experiences with smoking. *Public Health Nursing, 20*, 177-183.

Labovitz, S. (1968). Criteria for selecting a significant level: A note on the sacredness of .05. *The American Sociologies, 3,* 220-222.

Lee, S., Sobal, J., & Frongillo E. A. (2000). Acculturation and health in Korean Americans. *Social Science & Medicine, 51,* 159-173.

Ma, G., Tan, Y., Toubbeh, J., Su, X., Shive, S., & Lan, Y. (2004). Acculturation and smoking behavior in Asian-American populations. *Health Education Research, 19,* 615-625.

Maziak, W. (2002). Smoking in Syria: Profile of developing Arab country. *International Journal of Tuberculosis Lung Disease, 6,* 183-191.

Maziak, W., Asfar, T., & Mzayek, F. (2001). Socio-demographic determinants of smoking among low-income women in Aleppo, Syria. *International Journal of Lung Disease, 5*, 307-312.

Maziak, W., Eissenberg, T., Rastam, S., Hammal, F., Asfar, T., Bachir, M. et al. (2004). Beliefs and attitudes related to narghile (waterpipe) smoking among university students in Syria. *Annual Epidemiology, 14,* 646-654.

Maziak, W. & Mzayek, F. (2000). Characterization of the smoking habit among high school students in Syria. *European Journal of Epidemiology, 16,* 1169-1176.

Maziak, W., Ward, K., & Eissenberg, T. (2004). Factors related to frequency of narghile (waterpipe) use: the first insights on tobacco dependence in narghile users. *Drug and Alcohol Dependence, 76,* 101-106.

Merriam-Webster's Dictionary (2002). *Merriam Webster's Third New International Dictionary (ed).* Springfield, MA: Merria-Webster.

Moody, P., Memon, A., Sugathan, T., el-Gerges, N., & Al-Bustan, M. (2000). Factors associated with the initiation of smoking by Kuwait males. *Journal of Substance Abuse, 10,* 375-384.

Oh, Y., Koeske G. F., & Sales E. (2002). Acculturation, stress, and depressive symptoms among Korean immigrants in the United States. *The Journal of Social Psychology, 142*, 511-526.

Organista, P. B., Organista., K. C., & Kurasaki, K. (2002). The relationship between acculturation and ethnic minority mental health. In K. Chun, P. Organista, & G. Marin (Ed). Acculturation: Advances in theory, measurement, and applied research. Washnigton, DC: American Psychological Association.

Padilla, A. M. (1980). The role of cultural awareness and ethnic loyalty in acculturation. In A. M. Padilla (Ed). *Acculturation: theory, models, and some new findings (pp. 9-25)*. Colorado: AAAS Selected Symposia Series.

Phinney, J. S. (2002). Ethnic identity and acculturation. In K. M. Chun, P. B. Organista, & G. Marin (Eds.). *Acculturation: Advances in theory, measurement, and applied research*. Washington, DC: American Psychological Association

Polit D., & Hungler, B. (1999). *Nursing Research Principles and Methods, 6th Edition,* Philadelphia: Lippincott, Williams & Wilkins.

Polit, D. F. & Sherman, R. E. (1990). Statistical power in nursing research. *Nursing Research, 39,* 365-369.

Prochaska, J.O. & Diclemente, C.C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research and Practice, 19*, 276-288.

Prochaska, J.O., DiClemente, C.C., & Norcross, J.C. (1992). In search of how people change. Applications to addictive behaviors. *American Psychologist, 47*, 1102-1114.

Prochaska, J.O., & Velicer, W.F. (1997). The transtheoretical model of health behavior change. *American Journal of Public Health, 12*, 38-48.

Prochaska, J. O., Velicer, W. F., DiClemente, C. C., & Fava, J. (1988). Measuring processes of change: Applications to the cessation of smoking. *Journal of Consulting and Clinical Psychology, 56,* 520-528.

Rastam, S., Ward, K., Eissenberg, T., & Maziak, W. (2004). Estimating the beginning of the waterpipe epidemic in Syria. BMC Public Health, 4. This article available from http://www.biomedcentral.com/1471-2458/4/32

Rice, V., & Kulwicki, A. (1992). Cigarette use among Arab Americans is the Detroit metropolitan area. *Public Health Reports, 107*, 589-594.

Rice, V., Templin, T., & Kulwicki, A. (2003). Arab-American adolescent tobacco use: four pilot studies. *Preventive Medicine, 37,* 492-498.

Rice, V., Weglicki, L., & Templin, T. (2006). Predictors of Arab American adolescent tobacco use. *Merrill Palmer Q (Wayne State University Press), 52,* 327-342.

Rissel, C. (1997). The development and application of a scale of acculturation. *Australian and New Zealand Journal of Public Health, 21,* 606-613.

Rudmin, F. W. (2003). Catalogue of acculturation constructs: Descriptions of 126 taxonomies, 1918-2003. In W. J. Lonner, D. L. Dinnel, S. A. Hayes, & D. N. Sattler (Eds.). Retrieved in February 25, 2006 from: http://www.ac.wwu.edu/~culture/rudmin.htm

Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head to head comparison in prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79,* 49-65.

Saeed, A., Khoja, T., & Khan, S. (1996). Smoking behavior and attitudes among adult Saudi nationals in Riyadh City, Saudi Arabia. *Tobacco Control, 5,* 215-219.

Shelley, D., Fahs, M., Scheinmann, R., Swain, S., Qu, J., & Burton, D. (2004). Acculturation and tobacco use among Chinese Americans. *American Journal of Public health, 94,* 300-307.

Song, Y., Hofstetter, R., Hovell, M., Paik, H., Park, H., Lee, J. et al. (2004). Acculturation and health risk behaviors among Californians of Korean descent. *Preventive Medicine, 39,* 147-156.

Trimble, J. E. (2000). Introduction: Social change and acculturation. In K. M. Chun, P. B. Organista, & G. Marin (Eds.). *Acculturation: Advances in theory, measurement, and applied research*. Washington, DC: American Psychological Association.

U.S. Census Bureau (2000). We the people of Arab Ancestry in the United States. Retrieved February 9, 2006 from http://www.census.gov/prod/2005pubs/censr-21.pdf

U.S. Census Bureau (2003). The Arab Population: 2000. Retrieved January 25, 2007 from http://www.census.gov/prod/2003pubs/c2kbr-23.pdf

U.S. Census Bureau (2006). American fact finder: Census 2000 demographic profile highlights. Retrieved February 25, 2006 from: http://factfinder.census.gov/home/saff/main.html

U.S. Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health.* 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000.

Velicer, W. F., Fava, J. L., Prochaska, J. O., Abrams, D. B., Emmons, K. M., & Pierce, J. P. (1995). Distribution of smokers by stages in three representative samples. *Preventive Medicine, 24,* 401-411.

Velicer, W. F., Prochaska, J. O., Fava, J. L., Norman, G. J., & Redding, C. A. (1998). Smoking cessation and stress management: Application of the Transtheoretical Model of behavior change. *Homeostasis, 38*, 216-233.

Wagner-Echeagaray, F. A., Schtz, C., Chilcoat, H. D., & Anthony, J. (1994). Degree of acculturation and the risk of crack cocaine smoking among Hispanic. *American Journal of Public Health, 84,* 1825-1827.

Walker, L. O., & Avant, K. C. (Eds.). (1995). *Strategies for Theory Construction in Nursing* (3rd ed.). Norwalk, Connecticut: Appelton-Century-Crofts.

Wilkinson, A., Spitz, M., Strom, S. S., Prokhorov, A. V., Barcenas, C. H., Cao, Y., Saunders, K. C., & Bondy, M. (2005). Effects of nativity, age at migration, and acculturation on smoking among adult Houston residents of Mexican descent. *American Journal of Public Health, 95,* 1043-1049

Williams, C. L., & Berry, J. W. (1991). Primary prevention of acculturative stress among refugees: Application of psychological theory and practice. *American Psychologist, 46,* 632-641.

World Health Organization (2003). An international treaty for tobacco control. Retrieved September 15, 2004 from http://www.who.int/features/2003/08/en/

World Health Organization (2005). Tobacco free initiative. Retrieved January 14, 2006 from http://www.who.int/tobacco/resources/publications/tobacco_atlas/en/

World Health Organization (2006). Tobacco free initiation. Retrieved July 19, 2006 from http://www.who.int/tobacco/global_data/country_profiles/emro/en/

Yeh, C. J. (2003). Age, acculturation, cultural adjustment, and mental health symptoms of Chinese, Korean, and Japanese immigrant youths. *Cultural Diversity and Ethnic Minority Psychology, 9,* 34-48.

Zane, N., & Mak, W. (2002). Major approaches to the measurement of acculturation among ethnic minority populations: A content analysis and an alternative empirical strategy. In K. M. Chun, P. B. Organista, & G. Marin (Eds.). *Acculturation: Advances in theory, measurement, and applied research*. Washington, DC: American Psychological Association.