

Smoking Behavior in Arab Americans: A Systematic Review

; \UXVUb`F1z` <UXXUX`@2'z` 5b`?'1z`H\UW_Yf`=@F1 UbX`GU`mYf`>¹

¹School of Nursing, Virginia Commonwealth University, USA

²College of Nursing, University of Florida, USA

`7cffYgdcX]b[` Uih\cf. Linda Haddad, RN, PhD, FAAN, College of Nursing, University of Florida, 1225 Center Drive, Gainesville, FL, 32610, USA, Tel: 01-352-273-6520; E-mail: \UXXUX4i`"Xi

FYWY]jYX`XUhY. August 03, 2016; 5WYdYhYX`XUhY. August 19, 2016; DiV]g\YX`XUhY. August 25, 2016

7cdf][\h. © 2016 Ghadban R, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

5VghfUWh

6UW_[fci bX. In the United States (US), Arab Americans who maintain traditional cultural norms after their immigration are more likely to continue smoking as a form of social interaction. Arab Americans and their families are at a high risk for poor health outcomes related to smoking.

CV^YWh]jY. This systematic review aimed to explore the smoking behavior, prevalence and use among Arab Americans and examine studies addressing the effect of acculturation on this behavior.

FYgi`hg. The majority of the studies included focused on smoking prevalence and cessation. Some discussed the impact of acculturation and health beliefs on the smoking behavior of Arab American adolescents. Only two smoking cessation programs have been developed for Arab Americans, despite the high prevalence of both cigarette and water-pipe smoking in this community.

7cbW`ig]cb. The scarcity of research on smoking among Arab Americans has impeded the development of interventions that improve health outcomes and reduce health disparities.

?YmkcfXg.` Minorities; Arab-Americans; Acculturation; Health beliefs; Smoking

Introduction

Smoking is one of the most addictive habits and most preventable causes for a broad range of diseases including cancer, cerebrovascular diseases, coronary heart disease, and chronic obstructive pulmonary disease [1-5]. YfYis g` V]bhevidence to infer causal relationships between smoking and increased risk for at least ten types of cancers [1,3,4]. Y World Health Organization's (= l`-nE` alSOrnN at su O c

Palestine (6%), and Iraq (3%) [22]. Arab Americans are found in every state, but more than two thirds of them live in just ten states (California, Michigan, New York, Florida, Texas, New Jersey, Illinois, Ohio, Pennsylvania and Virginia). One-third of the Arab-American population resides in metropolitan Los Angeles, Detroit, and New York [21].

Demographic information on Arab Americans is virtually nonexistent since the US government does not recognize them as a minority group [23] and Wiggly them as "White." Because of this Wiggly Arab Americans continue to be culturally invisible [24]. Arab Americans tend to be young and well educated: more than 30% of the population is under 18 years of age; 22.89% have at least a high school diploma and 45% have a bachelor degree [21]. About 60% of Arab American adults are in the labor force; 5% are unemployed and the median income for Arab American households in 2008 was \$56,331 with 13.7% of the population living below the poverty line [21]. Recently, however, a few studies have been conducted among Arab-Americans and, more gWV Wn developed in relation to Arab-American history [22], identity [24,25], the impact of September 11, 2001, [26] feminism and sexuality [27,28], acculturation [25] and health [19].

Individuals from Xj YfYbhcultures experience unique trajectories of acculturation. Furthermore, studies have provided evidence that risky health behaviors such as smoking and alcohol consumption are lb i YbWX by acculturation in these populations [29-34]. Most of the studies on these minorities found that acculturation may play a role in smoking among these populations and may account for this racial Xj YfYbW in their smoking rates [34-38]. It is well known that health disparities exist in the US, particularly among ethnic minorities [29].

i g in recent years, there has been a proliferation of research on human behaviors and practice based on minorities along with an emphasis from the National Institutes of Health (NIH) to have more minorities included in research [39]. In current health research, however, most acculturation studies are generally conducted with Hispanic or African American minorities [36]. Y purpose of this systematic review, therefore, was to examine current literature about smoking behavior, prevalence and use among Arab Americans, in order to help outline directions for future research in this understudied area of inquiry.

Methods

Protocol development

We developed the review protocol by stating all aspects of the review methods before starting the review. Ygy included the following inclusion criteria for studies, search strategy, screening method, abstraction, quality assessment, and data analysis. I aspect of the design was planned to minimize the Y W of our possible bias on the review.

Eligibility criteria

Our inclusion criteria included: all kind of study designs (randomized controlled trials, non-randomized trials, observational studies, and qualitative studies) published in English. Studies did not need a minimum sample size to be included. Population: Arab individuals, Arab American groups, or Arab American communities. We Excluded studies reported as abstracts and for which we could not identify a full text. U Yf, contacting the corresponding author,

Additionally articles were excluded if they were conducted outside of the US or if they were literature reviews.

Search strategy

Y Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Guidelines [40] was used to conduct this literature search and review on Arab Americans and smoking. I systematic review evaluates research examining smoking behavior in Arab Americans. Y review includes all studies that were published in English between January 1, 1990 and June 30, 2016. A systematic literature search was jXbhj YX through the following databases: PubMed, CINAHL, Embase, ScienceDirect, and Cochrane Library. Ancestry searches were used to identify any relevant studies that were not detected by the primary search. Because water-pipe smoking is a highly-prevalent behavior among Arabs and Arab Americans (practiced by an estimated 17% to 44.2% of this population) [10,41,42], studies that included water-pipe smoking or exclusively looked at water-pipe smoking behaviors among Arab Americans were also included. In addition, studies that included both adolescents and adults were included in this review. Studies were excluded if they were conducted outside of the US or if they were literature reviews.

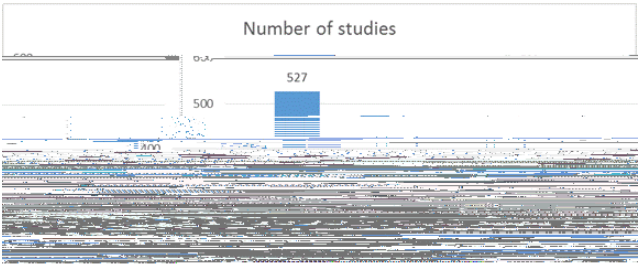
Y search terms included combinations of the following: "minorities," [All YXgQ"Arab Americans," [All YXgQ"acculturation," [All YXgQ"health beliefs," [Title/abstract] "smoking," [All YXgQ"water-pipe," [Title/abstract] "hookah," [Title/abstract] "shisha," [Title/abstract]" and "smoking cessation" [Title/abstract].

Data abstraction

Y data abstraction form was piloted over 5 studies and used to abstract general information about the paper, where the study was conducted, study characteristics, populations studied, design features that U WWX the quality of the study and the validity of the results, outcome measures, and quality assessment data. Abstraction was performed in duplicate independently. Any disagreement was resolved by discussion.

Data analysis

Two reviewers extracted data from the papers; the reviewers worked independently on each paper and then amalgamated the results. Discrepancies were resolved by referral back to the original papers and discussion. We did not combine the results of the studies because of the heterogeneity of design, outcomes, and populations. In our narrative analysis we consider the results in relation to the design and quality of the studies.



was significant for the entire sample. However, upon stratifying the results by group (exclusive vs. dual), exclusive waterpipe use was significantly correlated with proportion of life lived in the US ($r(16)=0.56, p=0.02$) as but the correlation remained not significant among dual smokers ($r(23)=0.08, p=0.6$).

The limitations of this study include the use of a non-random sample.

The acculturation association was assessed using a rough proxy measure instead of a psychometric tool.

Finally, the measure of tobacco use was based on self-report only.

4. Athamneh et al. Observational cross-sectional study Arab American adults N=340 Convenience sample 1. To address waterpipe smoking

	design	Males and females N=297 Convenience sample	environmental forces of parental and peer tobacco use and health risk action of tobacco experimentation and the psychological factor of self-esteem on waterpipe smoking. 2.To examine a cultural form of tobacco use (narghile/waterpipe smoking) and its relationship to self-esteem and to peer and family use.	with experimentation with tobacco. 2. The self-esteem variable did not contribute to predicting adolescents' narghile use. 3. Age and peer smoking had an indirect effect on narghile use. 4. The use of narghile was unrelated to parental tobacco use in any form despite the strong family ties in this population.	apparent that serious culturally specific intervention sessions, health education, and preventive measures should be implemented and applied effectively. To foster and benefit from such culturally specific interventions, the tobacco control community must work to correct the current misperceptions about the health risks of water-pipe smoking.
8. El Hajj et al.	Cross-sectional, descriptive, and correlational study	Adult Arab Immigrants N=100 Non-probable sample	1. To examine tobacco use among Arab immigrants living in Colorado, whose socioeconomic status and health habits may be different from Arab immigrants living in other states. 2. To understand the effect of acculturation on tobacco use, both cigarettes and hookah, among the mentioned target population.	1. Participants who were more integrated into Arab culture were more likely to use tobacco products and to have family members and friends who use tobacco products. 2. Acculturation plays a major role in affecting the health habits of Arab immigrants living in Colorado, especially in the area of hookah smoking.	The limitations of this study include the use of a non-probable sample. Understanding some culturally relevant predictors of tobacco use might assist health care providers in designing successful smoking cessation programs.
9. El-Shahawy and Haddad	Cross-sectional study	Arab immigrant smokers Self identified N=131 Convenience sample	To explore the potential differences between exclusive cigarette smokers and dual smokers, in terms of nicotine dependence and barriers to cessation, among Arab Americans.	1. There was significant difference between exclusive smokers and dual smokers in their FTND scores and Barriers to Cessation scores. 2. The correlation between the FTND scores and Barriers to Cessation scores remained significant only in the dual smokers group. 3. There was no significant correlation between barriers to cessation and desire to quitting or confidence in ability to quit smoking in either group, 4. Dual smokers had significantly more barriers to cessation than exclusive cigarette smokers. 5. There was a highly significant correlation among FTND scores, Barriers to Cessation scores, and past quit attempts among dual smokers.	Nonrandom sampling The study was conducted on Arab Americans; thus its results should be interpreted carefully when translated to other immigrant groups or the general population of exclusive cigarette and dual smokers.
10. Haddad et al.	Cross-sectional exploratory study	Arab Americans N=221 Convenience sample	To explore the cigarette use patterns including current use, beliefs and attitudes, and acculturation among Arab immigrants in Richmond.	1. Cigarette Smoking rates were higher among the study sample than the general population of the state of Virginia. 2. Many smokers in this study had the desire to quit and attempted to quit. 3. Many initiated smoking at an early age.	Non-random sample: further random sampling and study is needed to confirm the high prevalence of tobacco use among this minority group The acculturation effect was assessed using a rough proxy measure and not a proper psychometric tool.

4. The smokers in the study sample were not likely to be aware of the resources that could have helped them quit. The identification of tobacco use and other related patterns that would be identified here may help facilitate the development of community based interventions targeting tobacco use and would be sensitive for Arab immigrants in future research.
5. Acculturation indicators measured in this study were found to be positively correlated with the number of smoked cigarettes per day, as well as the number of attempts to quit by Arab immigrants.
6. The older an individual was when moved to the U.S. or the more time an individual had spent in the U.S. contributed significantly to the least number of quit attempts.

11. Haddad and Corcoran Pilot study Intervention study

Arab smokers
American Men
N=8
Convenience sample

1. To develop a culturally-tailored and linguistically-sensitive Arabic language smoking cessation program
2. To evaluate the feasibility of recruiting Arab Americans through a faith-based community organization which serves as a neighborhood social center.

Out of 11 participants, eight decided they were ready to stop smoking and moved from Stage One, subsequently completing all five stages.

				<p>Women initiated hookah use later than men. Ever dual smokers (hookah smokers who ever smoked a cigarette) initiated hookah use later than cigarettes; however, early hookah initiators < 18 years initiated hookah and cigarettes concurrently.</p> <p>Participants enjoyed the flavors of hookah tobacco, and complained about coughing, dizziness, and headaches.</p>	<p>Arab-Americans.</p> <p>Data were collected through selfreport, which is subject to social desirability response bias.</p>
16. Kulwicki and Rice	Qualitative Focus interviews group	Arab American adolescents N=28 Convenience sample	<p>1. To gather information on Arab American adolescent tobacco use behavior.</p> <p>2. To use the information to modify the Project Toward No Tobacco Use cessation program so that it would reflect the cultural values of Arab American youths.</p>	<p>1. Sociocultural factors are considered key factors in smoking behavior of adolescents.</p> <p>2. Participants identified one of the strongest barriers they experienced in trying to quit as their concern about hanging around friends who smoked.</p> <p>3. Most adolescents participating in the focus group discussions were exposed to smoking at a young age.</p> <p>4. Focus group participants had no difficulty obtaining cigarettes.</p> <p>5. When asked about the dangers of smoking, almost all participants had knowledge about the dangers of smoking, but most did not care about the long-term negative effects.</p>	<p>The findings from this study have several implications for nurses designing and implementing tobacco use programs for Arab American adolescents.</p> <p>Cultural attitudes and behaviors, family and peer relationships, and patterns of smoking are significant factors to take into consideration when developing a smoking cessation programs.</p>
17. Kulwicki et al.	Descriptive study	Pregnant women N=830 (823 Arab Americans)	<p>To determine the prevalence of smoking behavior in a select sample of Arab American women in order to eventually develop culturally appropriate prenatal health promotion and smoking cessation program for Arab American pregnant women.</p>	<p>Approximately 6% of pregnant Arab Americans smoked during pregnancy.</p> <p>The prevalence of smoking behavior among pregnant Arab American women was similar to that of smoking behaviors of Hispanics and Asian Americans in the United States.</p> <p>Cultural factors that support healthy behavior during pregnancy in the Arab culture seem to limit the use of tobacco in pregnant women.</p>	<p>Nurses who care for Arab American pregnant women can use this information to better inform their care of patients.</p>
18. Rice and Kulwicki	Interviews Self report survey	Arab Americans Males and females N=237 Random sample	<p>To examine the prevalence and characteristics of cigarette smoking in a randomly selected sample of Detroit area Arab Americans.</p>	<p>1. Statistical examination of smoking status by demographic characteristics revealed group differences based on age, sex, and ethnicity.</p> <p>2. Results indicate a current smoking rate of</p>	<p>This study shares the limitations of other studies of smoking behavior that rely solely on self-reports.</p> <p>Another concern is the disproportionately higher number of women to men in the sample.</p>

smoked a cigarette or
narghile'.

25. Weglicki et al.	Cross-sectional survey study	Adolescents N=2782 (71% Arab American) Convenient sample	To examine tobacco use, (i.e. cigarette smoking and WPS) in a sample of adolescents attending high school with a large immigrant Arab population.	<ol style="list-style-type: none"> 1. Cigarette smoking rates were significantly higher for non-Arab American youth for experimenting, current, and regular use 2. Cigarette smoking rates for non-Arab youth were lower than current national youth smoking rates but significantly higher than Arab American youth. 3. Rates for Arab American youth were much lower than current national reported data. 4. Rates of waterpipe smoking for U.S. youth, regardless of race or ethnicity, are not known. 5. Findings from this study indicate that both Arab American and non-Arab youth are experimenting and using waterpipe smoking regularly. 6. Grade, ethnicity, and sex were significantly related to waterpipe smoking. 	<p>There are no known studies of waterpipe smoking rates for non-Arab US youth.</p> <p>These results underscore the importance of assessing novel forms of tobacco use, particularly waterpipe smoking, a growing phenomenon among U.S. youth</p>
26. Weglicki et al.	Cross-sectional survey study	High school students Males and females N=1872 (70% Arab American) Convenience sample	<ol style="list-style-type: none"> 1. What are the tobacco use (cigarette and water pipe) patterns and percentages in Arab American and non-Arab American youth aged 14–18 years? 2. Which of the demographic and cultural factors of age, school grade, gender, and ethnic identity predict current cigarette and/or water-pipe smoking in Arab American and non-Arab American youth? 	<ol style="list-style-type: none"> 1. Arab American youth reported lower percentages of ever cigarette smoking, current cigarette smoking and regular cigarette smoking than non-Arab American youth. 2. Arab American youth reported significantly higher percentages of ever waterpipe smoking and current waterpipe smoking than non-Arab American youth. 3. 77% perceived waterpipe smoking to be as harmful as or more harmful than cigarette smoking. 3. Youth were 11 times more likely to be currently smoking cigarettes if they currently smoked water pipes. 4. Youth were also 11 times more likely to be current waterpipe smokers if they currently smoked cigarettes. 	<p>A major limitation is the use of convenience sampling.</p> <p>A more equal distribution may have provided different smoking percentages and patterns by ethnicity, gender, and patterns of tobacco use</p> <p>Further research is needed to determine the percentages, patterns, and health risks of waterpipe smoking and its relationship to cigarette smoking among all youth.</p>

Table 1: Summary of studies on smoking behavior in arab americans, N=26

Data synthesis

Smoking prevalence: Smoking prevalence among Arab Americans is high and ranges from 39% to 69%; rates are also higher in males than in females [10,11,43-45]. Rice et al. [11] conducted one of the earliest studies on Arab Americans and smoking. Ynsurveyed 237 Arab

American in Detroit, Michigan about their smoking behaviors. Y majority of the sample were female p K sS

majority of the current smokers were between the ages of 25 and 34 years, which was significantly different from the majority of former smokers who were older than 55 ($p < 0.002$). In addition, Arab Americans in this sample had a higher smoking rate (38.9%) and a lower quitting rate (11.1%) compared to national data (28.9% smoking rate; 23% quitting rate) and State of Michigan data (29.2% smoking rate; 25.5% quitting rate).

cessation=45.21 vs 38.47, $p=0.005$). In another study conducted in

References

1. Bullen C (2008) Impact of tobacco smoking and smoking cessation on cardiovascular risk and disease. *Expert Rev of Cardiovasc* 6: 883-895
2. Gandini S, Botteri E, Iodice S, Boniol M, Lowenfels AB, et al. (2008) Tobacco smoking and cancer: A meta-analysis. *Int J Cancer* 122: 155-164
3. Gritz ER, Fingeret MC, Vidrine DJ, Lazev AB, Mehta NV, et al. (2006) Successes and failures of the teachable moment: smoking cessation in cancer patients. *Cancer* 106: 17-27.
4. Salim EI, Jazieh AR, Moore MA (2011) Lung cancer incidence in the Arab league countries: Risk factors and control. *Asian Pac J Cancer Prev* 12: 17-34
5. Twombly R (2005) Cancer surpasses heart disease as leading cause of death for all but the very elderly. *J Natl Cancer Inst* 97: 330-331.
6. World Health Organization (2013) World health report 2013: Research for universal health coverage.
7. Center for Disease Control and Prevention (2013) Adult cigarette smoking in the United States: Current estimate.
8. Center for Disease Control and Prevention (2001) Tobacco use among global populations.
9. Forzley M (2005) Advancing the health of Arab Americans: Key points to obtaining resources and establishing programs focused on special populations. *Ethn Dis* 15: 190-92
10. Haddad L, El-Shahawy O, Shishani K, Madanat H, Alzyoud S (2012) Cigarette use attitudes and degree of acculturation among immigrants in USA: A preliminary study. *Health* 4: 785-793
11. Rice VH, Kulwicksi A (1992) Cigarette use among Arab Americans in the Detroit metropolitan area. *Public Health Rep* 107: 589-594
12. Rice VH, Templin T, Kulwicksi A (2003) Arab-American adolescent tobacco use: Four pilot studies. *Prev Med* 37: 492-498
13. Berry JW (2005) Acculturation: Living successfully in two cultures. *Int J Intercult Relat* 29: 697-712
14. Berry JW (2001) A psychology of immigration. *J Soc Iss* 57: 615-631.
15. Castro VS (2003) Acculturation and psychological adaptation. Praeger Publishers/Greenwood Publishing Group
16. Jadalla A, Lee J (2012) The relationship between acculturation and general health of Arab Americans. *J Transcult Nurs* 23: 159-165
17. Taylor SAJ (2015) Culture and behaviour in mass health interventions: Lessons from the global polio eradication initiative. *Crit Public Health* 25: 192-204
18. Arab American Institute (2015) Arab American demographics
19. Kayyali RA (2006) Arab Americans. Greenwood Publishing Group
20. Ibish

51. Athamneh L, Essien EJ, Sanggiry SS, Abughosh S (2015) Intention to quit water pipe smoking among Arab Americans: Application of the theory of planned behavior. *Jethnicity in substance abuse* pp: 1-11.
52. Rice VH, Weglicki LS, Templin T, Jamil H, Hammad A (2010) Intervention Y Wg on tobacco use in Arab and non-Arab American adolescents. *Addict Behav* 35: 46-48
53. Haddad L, Corcoran J (2013) Culturally tailored smoking cessation for Arab American male smokers in community settings: A pilot study. *Tob Use Insights* 6: 17-23
54. Kulwicki A, Hill Rice V (2003) Arab American adolescent perceptions and experiences with smoking. *Public Health Nurs* 20: 177-183
55. Rice VH (2006) Arab-American youth tobacco program. *Ethn Dis* 15: 54-56
56. Al-Faouri I, Weglicki L, Rice VH, Kulwicki A, Jamil H, et al. (2005) Culturally sensitive smoking cessation intervention program redesign for Arab-American youth. *Ethn Dis* 15: 62-64
57. Al-Omari H, Scheibmeir M (2009) Arab Americans' acculturation and tobacco smoking. *JTranscult Nurs* 20: 227-233
58. Kassem, Jackson SR, 8 U URM, Liles S, Howell MF (2015) Arab-American hookah smokers: initiation, and pros and cons of hookah use. *Am J health behav* 39: 680-697.
59. Champion VL, Skinner CS (2008) Y health belief model. (4th edn), John Wiley & Sons, San Francisco, pp: 45-65
60. Center for Disease Control and Prevention (2014) Cigarette smoking in the United States, 2011.
61. ReggySim