J Community Health (2010) 35:653–659
DOI 10.1007/s10900-010-9260-7

ORIGINAL PAPER

Health Assessment of the Arab American Community in Southwest Brooklyn

Linda Sarsour · Virginia S. Tong · Omar Jaber · Mohammed Talbi · Kell Julliard

Published online: 26 August 2010

Abstract Data on Arab American health is lacking nationwide. This survey of the Arab American community in southwest Brooklyn assessed perceptions of health status, needs, behaviors, and access to services. Bilingual interviewers administered a structured survey to community members in public gathering places. Of 353 surveyed, 43% were men and 57% women, most spoke Arabic and were Muslim, and most had moved to the U.S. after 1990. One quarter were unemployed. Over 50% reported household incomes below federal poverty level. Nearly 30% had no health insurance. 58% reported choosing their health care venue based on language considerations. 43% reported problems in getting health care, including ability to pay, language barriers, and immigration. 42% of men, and 8% of women reported current smoking. Almost half of respondents never exercised. Rates of poverty, lack of health insurance, and smoking in men are cause for concern and were high even for immigrant groups.

L. Sarsour
Arab American Center, 7111 5th Avenue, Brooklyn, NY 11209, USA

V. S. Tong
Cultural Competence, Lutheran Medical Center, 150 55 Street, Brooklyn, NY 11220, USA

M. Talbi
External Affairs, Lutheran Medical Center, 246 55 Street, Brooklyn, NY 11220, USA

O. Jaber · K. Julliard (✉)
Clinical Research, Lutheran Medical Center, 150 55 St., Brooklyn, NY 11220, USA
e-mail: kjulliard@lmcmc.com

Keywords Arab Americans · Self-rated health · Immigrant status · Health services accessibility · Survey · Social class

Introduction

As the Arab American population grows [1], knowledge of health practices and common illnesses within the Arab community becomes more urgent. The publication of important data on Muslim Americans notwithstanding [2], data on the health of the Arab American population are lacking in comparison to other minority groups. This is commonly attributed to the absence of an "Arab" or "Arab American" identifier in health records. Furthermore, existing data are sometimes contradictory. While the U.S. Census Bureau cites the Arab population as approaching 1.2 million [3], for instance, the Arab American Institute [1] estimates the number to be closer to 3.5 million, with 405,000 living in the New York City area alone.

Possibly because of lower socioeconomic status, "racial and ethnic minorities tend to receive a lower quality of health care than non-minorities, even when access-related factors, such as a patient's insurance status and income are controlled" [4, p. 1]. As a minority population in New York City, Arab Americans may be a part of this low-income group not receiving appropriate healthcare.

Surveys conducted by the Arab Community Center for Economic and Social Services (ACCESS) suggest a high prevalence of chronic diseases, underuse of health services, and limited preventive health practices among Arab Americans [5]. Abnormal glucose tolerance was common among these Arab Americans, with diabetes rates considerably higher than those reported for white, African American, and Hispanic populations in the United States.

This suggests that the prevalence of diagnosed diabetes will rise as the Arab American population ages, imposing a substantial public health burden if not well managed.

The World Health Organization ranked tobacco consumption of several Arab countries relatively high [6]. The health risks associated with smoking tobacco are thus potentially large in Arab Americans. In the Arab world, life expectancy is 62.6 years for men and 65.2 years for women [7], about 10 years less than the life expectancy of United States adults.

In light of the above, the leadership of Lutheran HealthCare and the Arab American Association of New York discussed assessing the health of the Arab American community in southwest Brooklyn. As partners in previous projects to provide services to the Arab American community, they agreed that data about the health status of the Arab American community was not available, which inhibited program planning and appropriate funding. A survey of perceptions of health status and access to health care was supported by City Councilmen Vincent Gentile and Dominic Recchia and funded in 2007.

The goal of the resulting survey was to gather basic demographic information about the Arab American community in Brooklyn and assess members' perceptions of health status, needs, behaviors, and access to services.

Methods

The study was designed and implemented through a collaborative partnership between Lutheran HealthCare (LHC) and the Arab American Association of New York (AAANY). A scannable instrument was created consisting of 27 questions covering demographics, socio-economic variables, respondents' health care status, choice of health care provider, and health care access issues. These questions were modified based on other community surveys and reviewed by the workgroup as well as experts from the board of AAANY for technical and cultural appropriateness. The survey was written in English and translated into Arabic by AAANY and was available to respondents in both languages. The survey was then piloted with 14 respondents and modified for clarity.

AAANY recruited bilingual English/Arabic surveyors representing a broad range of the Arab community. The 14 surveyors included 5 from AAANY, the event coordinator of a local church, 2 youth leaders from the Muslim Youth Center, 2 college students, a community organizer, a well-known member of the local student youth center, and a patient relations representative from Lutheran HealthCare. The surveyors ranged in age from 16 to 55 years old and included 2 Christians and 12 Muslims. Surveyors were trained by LHC Research Department and AAANY staff in how to conduct the survey and answer questions.

The survey was conducted in April and May of 2008. In order to capture a wide range of the community members, participants were enlisted from various Arab community gathering places in Bay Ridge, Sunset Park, Borough Park, Dyker Heights and Bensonhurst. These included businesses such as restaurants and barber shops, street corners and parks in the community, churches and mosques, and community events such as the annual Mother's Day event sponsored by AAANY for the past 3 years. Surveys were not conducted at LHC so as not to skew the sample. The purpose of the study was explained to respondents, who either completed the surveys themselves in English or Arabic or were assisted by the surveyors. Participants were given a small gift of a coffee cup and first aid kit upon completion.

The surveys were scanned and processed utilizing Survey Pro version 4.0. Summary descriptive statistics were generated using this software. Surveys missing more than 5 answers were not included in the analysis. A total of 353 surveys were completed. Chi square tests were used to determine statistical significance for categorical data, and *t*-tests for continuous data. All statistical analyses were done in SPSS version 15.0. Alpha was set at 0.05.

Results

Demographic information about the 353 total survey respondents is found in Table 1. Those with minimal formal education were significantly older: the mean age of the 77 persons with less than a ninth grade education was 50.3 year, while those in categories of ninth-grade education and above had mean ages ranging from 35.4 to 39.6 year ($P < 0.001$). A larger percentage of North African immigrants came to the U.S. more recently: 37 of 52 (71%) respondents from North Africa immigrated to the U.S. after 1999, whereas 103 of 252 (41%) respondents from Egypt, Yemen, and the Levant (Palestine, Lebanon, Syria, and Jordan) did so ($P < 0.001$).

Health care venue and health status information is found in Table 2. Men and women differed significantly in their rates of cigarette smoking (Fig. 1). Men and women, however, did not differ significantly in how they rated their health status. Women were more likely to have only a high school education or not to have graduated high school than men ($P = 0.02$). Many more men than women were employed full time, and many more women than men were homemakers ($P < 0.001$).

Age was related to perceived health status, with those rating their health from good to excellent having mean ages ranging from 34.8 to 39.8 years, and those rating their

Table 1 Study population sociodemographic variables

	Number	%
Age (years)		
0–19	14	4
20–35	119	34
35–50	140	40
50–64	51	15
65+	22	6
Total	346	
Gender		
Male	148	43
Female	200	57
Primary language spoken at home		
Arabic	311	92
English	23	7
Other	5	1
Marital status		
Never married	56	17
Married	231	70
Widowed	18	5
Divorced	17	5
Separated	9	3
Year moved to the US		
1960–1970	6	2
1970–1980	15	5
1980–1990	35	11
1990–2000	122	38
2000–2010	142	44
Highest level of education		
Less than 9th grade	80	24
9th–12th grade, no completion	41	12
High school completion	70	21
Some college, no degree	44	13
Associate degree	25	7
Bachelor's degree	66	19
Master degree	14	4
Occupation status		
Employed full time	101	30
Homemaker	89	26
Unemployed	84	25
Employed part time	44	13
Student employed	14	4
Student unemployed	9	3
Religious affiliation		
Muslim	306	88
Christian	39	11
Other	2	1
Weekly household income		
<$200	82	25
$201–$400	91	28
$401–$600	86	26
$601–$800	28	9
$801–$1,000	18	6
$1,001–$1,200	9	3
>$1,200	11	3
Total	347	
Living at or below		
Federal poverty level	133	42
Double federal poverty level	258	81
Below federal poverty level		
With 3 or more in household	99	31
Insurance status		
None	96	28
Government-sponsored	200	59
Private	42	12
Number in household age 20 and above without insurance		
None	270	80
1–2	61	18
3 and over	6	2
Number in household age 19 and below without insurance		
None	325	95
1–2	13	4
3 and over	5	1

health as fair or poor having mean ages of 48.0 and 51.5 years, respectively ($P < 0.001$). When a linear regression analysis was done to assess the relationship of age and length of time in the U.S. to perceived health status, only age was significantly related to perceived health status.

A significantly greater percentage of those who moved to the U.S. before 1999 were employed full time: 56 (37%) of respondents who moved to the US before 1999 were employed full time, while 35 (22%) of those who moved to the U.S. in 1999 or later were employed full time ($P < 0.048$). A significantly greater percentage of those who moved to the U.S. before 1999 never exercised: 82 (55%) of respondents who moved to the US before 1999 never exercised, while 70 (44%) of those who moved to the U.S. in 1999 or later never exercised ($P < 0.03$). Level of education was not significantly associated with whether respondents had health insurance or not, nor was it associated with how many in the household aged 20 or over or aged 19 or under had health insurance. Primary language spoken was not associated with how many in the household aged 20 or over or aged 19 or under had health insurance. 311 of 339 or 92% of respondents reported speaking Arabic at home.

Table 2 Health care venue and health status information

	Number	%
Where do you usually go for healthcare?		
Private doctor	174	51
Emergency room	47	14
Community clinic	87	26
No regular place for care	30	9
Total	338	
Last time you saw your doctor		
Less than 6 months ago	199	61
6 months to 1 year ago	70	21
1–2 years ago	39	12
Over 2 years ago	20	6
Total	349	
Reason for choosing healthcare venue		
Language	184	58
Insurance	110	34
Location	69	22
Recommendation	45	14
Cost	29	9
Friendliness of staff	27	8
Hours	23	7
Referral	14	4
Availability of sliding fee scale	5	2
Waiting time for an appointment	5	2
Self-perceived health status		
Excellent	56	16
Very good	93	27
Good	111	32
Fair	69	20
Poor	20	6
Current health concerns		
None	150	44
High blood pressure	61	18
Back pain	57	17
Arthritis	39	11
Diabetes	36	11
Overweight	30	9
Cigarette smoking	28	8
Hearth disease	20	6
Migraine	19	6
Cataracts	17	5
Emotional problems of any kind	17	5
Problems faced in getting health care		
No problem	182	57
Could not afford it	64	20
Language barrier	47	15
Some other reason	20	6
Immigration status	16	5
Could not take time off from work	15	5
Weekly exercise sessions		
How many times do you exercise per week?		
Never	160	47
1	54	16
2–4	88	26
5–7	32	9
Over 7	7	2
Total	341	
Do you smoke?		
Yes	76	22
No	263	78
Total	339	
Do you drink alcohol?		
Often	9	3
Occasionally	10	3
Rarely	22	6
Never	309	88
Total	350	
Do you think you have a need for health services that you're not getting?		
No	243	73
Yes	92	27

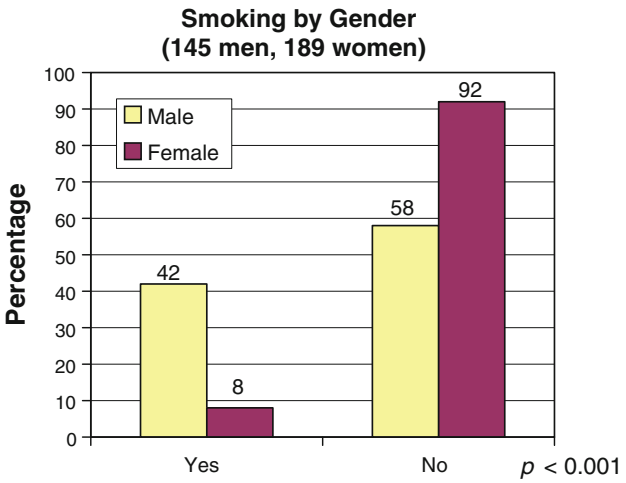

Fig. 1 Smoking by gender

A significantly greater percentage of those who moved to the U.S. more recently had no health insurance: 59 (37%) of respondents who moved to the US in 1999 or after had no insurance, while 31 (21%) of those who moved to the U.S. before 1999 had no insurance ($P < 0.001$). The greater the income respondents reported, the more likely they were to have health insurance ($P = 0.001$). Household income was not associated with how many in the

household aged 20 or over or aged 19 or under had health insurance.

Significantly more respondents with high blood pressure tended to be uninsured (17 of 57, 30%) compared to those without high blood pressure (62 of 271, 23%) ($P = 0.001$). Similarly, significantly more respondents with arthritis tended to be uninsured (14 of 35, 40%) compared to those without arthritis (65 of 293, 22%) ($P = 0.001$). Respondents with diabetes were significantly older (mean age 53 years) than those without diabetes (39 years) ($P < 0.001$). Respondents who were overweight were significantly older (mean age 47 years) than those who were not overweight (40 years) ($P = 0.004$). The same was true of those with arthritis (mean age 52 years) and without (39 years), and of those with back pain (mean age 44 years) and without (40 years).

Discussion

This survey investigated Arab Americans' perceptions of their health and access to health care. In summary of the results, this diverse sample of 353 Arab Americans was relatively equally divided between men and women, most spoke Arabic, and most had moved to the U.S. after 1990. Over one-third did not complete high school, with 24% completing ninth grade or less. Of those employed full time, only 8% were female. A quarter of the whole sample was unemployed. The great majority was Muslim. Over 50% reported a household income of $400 a week or less, and 31% were below the Federal poverty level and had 3 or more persons living in their household. Nearly 30% of respondents had no health insurance.

44% reported no current health concerns. The health problems most frequently reported were high blood pressure, back pain, arthritis, and diabetes. Almost three quarters perceived that they received the health services they needed. A majority reported receiving health care through a private doctor. 58% reported choosing their health care venue based on language considerations. A relatively high number of men (42%) reported current smoking, and a much lower number of women (8%). Almost half of respondents never exercised. Well over three quarters never drank alcohol.

Forty-three percent reported problems in obtaining health care, including ability to pay, language barriers, and immigration. A previous study of Arab Americans in New York also named language as one of the most profound and pervasive barriers to health care access by both male and female participants [8].

According to the New York City Department of Health [9], foreign-born adults are more likely to report fair or poor health compared with adults born in the U.S. (24% vs. 17%). Foreign born Hispanics were the most likely to report fair or poor health compared to their U.S. born counterparts (36% vs. 31%); foreign-born Asians (20% vs. 13%), and foreign born Whites (19% vs. 12%) were also more likely to report fair or poor health than their U.S. born counterparts. U.S. born blacks, however, reported fair or poor health more than foreign-born blacks (21% vs. 16%). Our sample of Arab Americans reported fair or poor health 26% of the time, exceeded only by Hispanics in the Department of Health survey. Department of Health statistics also found that immigrants who stayed longer than 4 years tended to report poorer health (24% vs. 17%), and our findings were similar. Jaber et al. [5] found underuse of health services and limited preventive health practices among Arab Americans, possibly explaining this pattern.

Length of stay in the US has previously been related to insurance status, with 31% of foreign born New Yorkers who have lived in the U.S. for less than 4 years reporting to be uninsured compared to 21% of those who have stayed for longer [9]. Our report has similar results with 37% of respondents living in the US since 1999 uninsured compared to 21% of those living here prior to 1999.

Our survey suggests a higher percentage of Arabs in Southwest Brooklyn (28%) are uninsured compared to immigrants in New York City overall (22%) [9]. Furthermore, the percentage of uninsured Arab Americans was well above Southwest Brooklyn as a whole (13%), Brooklyn (18%), and New York City (18%). Among other ethnic groups, Latinos were most likely to be uninsured, with rates by country of origin as follows: Mexico (44%), Ecuador (39%), Honduras (34%), and El Salvador (34%). Koreans reported high uninsured rates as well (37%) [9]. According to findings from a report on immigrant healthcare in New York City [8], the majority of women and men had health insurance through Medicaid, after establishing United States residency, although many reported difficulty staying insured because of recertification requirements.

A majority of our respondents reported making $400 or less a week (at most $20,800 annually). Overall, Southwest Brooklyn, with 16% of residents living in poverty, is relatively more affluent than the rest of Brooklyn (25%) and NYC (21%) [10]. The 42% rate of poverty reported by this sample of Arab Americans was thus much higher than that of southwest Brooklyn. Similarly, rates of poverty among Muslim Americans were higher than in other religious groups [2].

Surveys conducted by the Arab Community Center for Economic and Social Services suggested a high prevalence of chronic diseases, including diabetes [5]. In our sample, 24% of those with diabetes and 30% of those with high blood pressure did not have insurance. Uninsured patients with chronic illness may have difficulty obtaining affordable and appropriate care. No published studies were found

describing the prevalence of diabetes within the Arab American population of New York City, so the true extent of this problem is difficult to assess.

Several studies have shown discrepancies between individuals' perceived health and diagnosed health issues. Jaber et al. [5], for instance, found that of those with diabetes 47% of women and 57% of men were undiagnosed. On a survey such as ours, these persons would have responded that they did not have diabetes as a health issue.

In a survey from Bahrain, Al-Mahroos and McKeigue [11] found that 55% of obese women and 52% of obese men considered themselves to have about the right weight; 4% of the obese women rated themselves as underweight. Among Arab Americans in Dearborn, Mich., 34% were defined as obese in comparison to the United States average of 26% [5]. In a survey of Arab Americans in the Detroit area, the prevalence of asthma in Arab Americans was considerably lower than the average prevalence of asthma in the Detroit area [12]. These findings suggest that an epidemiological survey of disease prevalence in the Arab American population in southwest Brooklyn needs to be conducted.

The 22% rate of cigarette smoking overall in our survey was comparable to that of southwest Brooklyn in general [10]. As with Muslim Americans [2], our rates were high among men (48%) and low among women (8%). Rice et al. [13] in Detroit reported that 40% of Arab American men were current smokers, and 38% of women. This rate for men was thus comparable to ours, but their rate for women was much higher. According to the 2005 National Interview Health Survey (NIHS), overall 21% of adult Americans 18 years of age and older were current cigarette smokers; broken down by race, this translated into 13% of Asian adults, 21% of White adults, 21% of black adults, and 25% of American Indian or Alaska Native adults [14]. These statistics place Arab Americans near the top in cigarette smoking. Compared to other immigrant men in New York City, our findings suggest that Arab men in southwest Brooklyn have a much higher rate of smoking. According to Department of Health statistics of New York City, Russian men have the highest rates (25%) followed by Mexican (21%), Chinese (20%) and Jamaican (17%). Similar to our findings, other immigrant women reported lower rates than men: China (4%), Jamaica (3%), Mexico (11%), and Russia (16%) [9].

Limitations

The study focused on respondents' perceptions of their health and access to care, which gives valuable information about the community but would be enhanced by epidemiological data. While the sample size was relatively small, the sample itself was sufficiently diverse to yield valuable information. Because interviews were conducted primarily during working hours and at social functions, those who stayed indoors (unemployed or sick) could have been overlooked. The survey was broad, so specific information (such as type and definitions of exercise) was lacking for some variables. Regarding mental health, strong family values related to not exposing problems to outsiders can make seeking psychological help unlikely [15], and thus mental health issues were probably understated.

Furthermore, the survey only assessed "smoking", and thus was not a true representation of tobacco use within the Arab American community. Observations in Detroit indicated a high prevalence of tobacco use in immigrant Arabs, and studies of populations in the Middle East support these findings [13]. Weglicki et al. [16] found that, while Arab American students are less likely to have smoked a cigarette compared to non-Arab students (20% vs. 39%), they are far more likely to have smoked hookah (38% vs. 21%), sometimes as a means to maintain Middle Eastern ethnic identity. Reported smoking rates among adolescents in the Arab world are much higher than among white and Hispanic youth [17]. Hookah smoking may be a means for women to reassess gender roles. Hookah is traditionally smoked by males. Women who smoke hookah may believe they are making strides for gender equality [18]. Assessment of chewing qat, a narcotic popular in Yemen, was also not done in our survey. For these reasons, future research should focus on tobacco use patterns specific to Arab Americans.

In conclusion, the health impact of smoking and poverty on the Arab American community in southwest Brooklyn is cause for concern. Future research should quantify these issues more precisely so that effective programs can be designed and funded.

Acknowledgments The authors wish to thank: New York City Councilmen Vincent Gentile and Dominic Recchia for support; the City of New York for funding; the New York City Department of Health and Mental Hygiene for administering the project; the board of directors of the Arab American Association of New York for critiquing the survey; Ahmad Jaber, MD, for support through the entire process of training and data gathering; Vance Mauro and Dana Evans for data processing and analysis; Laura Gabbe, MS, for assistance with writing and editing; and all those who conducted interviews.

References

1. Arab American Yearbook 2007/2008. (2007). McLean, VA: TIYM Publishing Company.
2. The Muslim West Facts Project: Muslim Americans: A National Portrait. (2009). Washington, DC: Gallup and Coexist Foundation. Retrieved from URL:http://www.muslimwestfacts.com/mwf/116074/Muslim-Americans-National-Portrait.aspx.
3. de la Cruz, G. P., Brittingham, A. The Arab Population: 2000. (2003). Washington, DC: U.S. Census bureau. Census 2000 brief,

C2KBR-23. Retrieved from www.census.gov/prod/2003pubs/c2kbr-23.pdf.
4. Smedley, B. D., Stith, A. Y., & Nelson, A. R. (2002). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: The National Academy Press.
5. Jaber, L. A., Brown, M. B., Hammad, A., Nowak, S. N., Zhu, Q., Ghafoor, A., et al. (2003). Epidemiology of Diabetes Among Arab Americans. *Diabetes Care, 2003*(26), 308–313.
6. IARC Working Group. (1985). *Tobacco smoking, in monographs on evaluation of the carcinogenic risk of chemicals to humans* (Vol. 38, pp. 12–20). Lyon, France: International Agency for Research on Cancer, WHO Health Organization.
7. Jabbour, S. (2003). Health and development in the Arab world: which way forward? *British Medical Journal, 326*(7399), 1141–1143.
8. Shah, S. M., Ayash, C., Pharoan, N. A., & Gany, F. M. (2008). Arab American immigrants in New York: Health care and cancer knowledge, attitude, and beliefs. *Journal of Immigrant and Minority Health, 10*, 429–436.
9. Kim, M., Van Wye, G., Kerker, B., Thorpe, L., & Frieden, T. R. (2006). *The health of immigrants in New York City*. New York: New York City Department of Health and Mental Hygiene.
10. Olson, E. C., Van Wye, G., Kerker, B., Thorpe, L., & Frieden, T. R. (2006). Take Care Southwest Brooklyn. *NYC Community Health Profiles, Second Edition, 16*(42), 1–16.
11. Al-Mahroos, F., & McKegue, P. M. (1998). High prevalence of diabetes in Bahrainis. *Diabetes Care, 21*, 936–942.
12. Johnson, M., Nriagu, J., Hammad, A., Savoie, K., & Jamil, H. (2005). Asthma prevalence and severity in Arab American communities in the Detroit area. *Journal of Immigrant Health, 7*, 165–178.
13. Rice, V. H., & Kulwicki, A. (1992). Cigarette use among Arab Americans in the Detroit metropolitan area. *Public Health Reports, 107*(5), 589–594.
14. Pleis, J. R., & Lethbridge-Cejku, M. (2006). Summary health statistics for U. S. adults: National Health Interview Survey, 2005. *Vital Health Statistics, 10*(232), 1–153.
15. Kulwicki, A. D., Miller, J., & Schim, S. M. (2000). Collaborative partnership for culture care: Enhancing health services for the Arab community. *Journal of Transcultural Nursing, 11*(1), 31–39.
16. Weglicki, L. S., Templin, T. N., Rice, V. H., Jamil, H., & Hammad, A. (2008). Comparison of cigarette and water-pipe smoking by Arab and non-Arab-American youth. *American Journal of Prevtive Medicine, 35*(4), 334–339.
17. Kulwicki, A., & Hill Rice, V. (2003). Arab American adolescent perceptions and experiences with smoking. *Public Health Nursing, 20*(3), 177–183.
18. Maziak, W., Fouad, M. F., Hammal, F., Asfar, T., Bachir, E. M., Rastam, S., et al. (2004). Prevalence and characteristics of narghile smoking among university students in Aleppo, Syria. *The International Journal of Tuberculosis and Lung Disease, 8*(7), 882–889.