Published in final edited form as:

J Immigr Minor Health. 2015 April ; 17(2): 535–542. doi:10.1007/s10903-013-9943-0.

Functional Limitations and Nativity Status among Older Arab, Asian, Black, Hispanic, and White Americans

Florence J. Dallo¹, Jason Booza², and Norma D. Nguyen³

¹Department of Wellness, Health Promotion and Injury Prevention, Oakland University, School of Health Sciences Rochester, Michigan 48309-4401 Tel: 248.364.8679 Fax: 248.364.8657 dallo@oakland.edu ² Director of Assessment, Department of Academic and Student Programs Assistant Professor, Department of Family Medicine & Public Health Sciences Wayne State University School of Medicine jbooza@med.wayne.edu ³ Research Associate Department of Family and Community Medicine Paul L. Foster School of Medicine Texas Tech University Health Sciences Center in El Paso norma.nguyen@gmail.com

Abstract

Background—To examine the association between nativity status (foreign and US-born) by race/ethnicity (Arab, Asian, black, Hispanic, white) on having a functional limitation.

Methods—We used American Community Survey data (2001-2007; n=1,964,777; 65+ years) and estimated odds ratios (95% confidence intervals).

Results—In the crude model, foreign-born Blacks, Hispanics and Arabs were more likely, while Asians were less likely to report having a functional limitation compared to white. In the fully adjusted model, Blacks, Hispanics, and Asians were less likely, while Arabs were more likely to report having a functional limitation. In both the crude and fully adjusted models, US-born Blacks and Hispanics were more likely, while Asians and Arabs were less likely to report having a functional limitation compared to whites.

Discussion—Policies and programs tailored to foreign-born Arab Americans may help prevent or delay the onset of disability, especially when initiated shortly after their arrival to the US.

Keywords

American Community Survey; Foreign-Born; Disability

BACKGROUND

According to several national level population-based data, 22% to 44% of individuals 65 years of age or older reported having a functional limitation [1-4]. This varied by race and ethnicity [2]: Non-Hispanic blacks (38.2%) reported higher rates of functional limitations compared to Hispanics (31.0%), Asians (40.8%), and non-Hispanic whites (26.4%) [2]. Traditional cross-tabulated results from national level population-based data, especially the US decennial census (2000; 2003), allow examination of general disparities between major racial groups; however, they prohibit more nuanced evaluations.

For example, these estimates do not account for the fact that a large proportion of Hispanics (40.2%) and Asians (68.9%) are foreign-born [5]. Nor do they consider the heterogeneity within the non-Hispanic white category, which, in health studies, is usually used as the reference group [2,3]. The non-Hispanic white category consists of persons having origins in Europe, North Africa, or the Middle East [6]. Using the global white category may mask elevated health risks for some subgroups of whites [7]. One such group is individuals who identify with an Arab ancestry, hereafter “Arab American”.

The Arab American population has increased from 660,000 in 1980 [8] to 1,189,731 in 2000 [9,10] to 2,075,091 in 2007 [11]. The Arab American population is larger than the Native Hawaiian and other Pacific Islander population (398,835) [12], and larger than many subgroups of other populations such as Japanese Americans (800,000) (2000), and Dominicans (764,945) [13], all of which are recognized as distinct racial and Hispanic groups by the US Census Bureau. Although Arab Americans are able to indicate their cultural heritage under ancestry on the US decennial census, they are racially classified as white by the US Census Bureau. Given that the size of the Arab American population is larger than some federally recognized groups (i.e. Native Hawaiian and other Pacific Islanders), and that 46% of Arab Americans are immigrants [14], it is crucial we begin disaggregating Arab Americans from the white population. Including Arab Americans with the white population presents two major public health challenges: 1) we might be failing to identify and address critical public health issues and 2) as mentioned above, we might be ignoring the large percent of foreign-born Arab Americans because of language, resource, and cultural barriers.

In general, the health of all foreign-born individuals, regardless of race or ethnicity, has been compared to US-born. Compared to US-born individuals, mortality and morbidity rates [15-17] including some forms of disability [15] are lower or similar to [18] foreign-born individuals. With acculturation, however, some health benefits diminish [19]. One study examined disability estimates among Asians, and found that disability risk differs based on timing of immigration and country of origin [20]. Among Arab Americans, Dallo and colleagues showed that the age- and sex-adjusted prevalence of having a functional limitation was 31.2% for foreign- and 23.4% for US-born older Arab Americans [21]. The authors reported that individuals from Iraq and Syria had higher estimates of functional limitations compared to individuals from other Arab countries [21].

The aforementioned studies provide crucial baseline information. Estimates using current data should be garnered to identify disability trends since the last Census in 2000. National data on Arab Americans are very limited. In fact, the only other national data set where Arab Americans can be identified is the National Health Interview Survey (NHIS). However, even the NHIS includes individuals from the general Middle East, and not necessarily only **Arab countries**. Beyond this, functional limitations are an “important health outcome to assess . . . because [they are] closely related to the need for both formal and informal long-term care” [22].

The objective of this study is to examine the association between nativity status (US- and foreign-born) by race/ethnicity (Arab, Asian, Black, Hispanic, and White Americans) on

having a functional limitation while controlling for potential covariates using 2001-2007 American Community Survey data. We hypothesize that foreign-born Arab Americans will have lower estimates of disability compared to US-born Arab Americans. These data are the only reliable, representative, and national source of information on Arab Americans.

METHODS

The American Community Survey (ACS) is conducted by the US Census Bureau, and uses monthly samples to produce annually updated data on demographic, economic and social indicators in the US. The ACS has replaced the US decennial census long form. For this study, we use the ACS Public Use Microdata Sample (PUMS) for two reasons [23]. First, the ACS provides us with a large national sample, especially when data is aggregated over several years. Second, PUMS data provides us with the ability to create custom cross tabulations which are necessary for examining the relationship between the above stated factors.

Outcome Variable

The outcome for this study is having a functional limitation. The ACS asked if the respondent had any of the following disabilities: sensory, functional, mental, self-care, difficulty going outside the home, and employment disability [24]. For this study, only functional limitation will be examined, because it is the most prevalent disability and its acceptable reliability and validity estimates [25,26]. To assess whether the individual had a functional limitation, the following question was asked: "Does this person have a condition that substantially limits one or more basic activities such as walking, climbing stairs, reaching, lifting, or carrying?" For the analysis, this question will be retained as collected in the ACS: yes versus no.

Main Independent Variables

The main independent variable was nativity status by race, ethnicity, and ancestry. To determine nativity status, individuals were asked where they were born, and if they were born in the 50 states or US territories, they were considered "US-born", otherwise, they were "foreign-born." To ascertain race, ethnicity, and ancestry, we used the following Census categories: Race -- White alone, Black or African American alone, American Indian alone, Alaska Native alone, American Indian and Alaska Native and no other races, Asian alone, Native Hawaiian and Other Pacific Islander alone, Two or more major race groups. The ethnicity question was, "Is this person Spanish/Hispanic/Latino?" (yes/no). Lastly, to ascertain ancestry identification, the following question was asked and coded into respective countries including Arab countries: "What is this person's ancestry or ethnic origin?" These three questions were combined and recoded to produce the following racial and ethnic categories: non-Hispanic Arab, Asian, black, white, and Hispanic. Nativity status and race and ethnicity were then combined to produce the following categories: US-born non-Hispanic Arabs, Asians, blacks, whites, and Hispanics and foreign-born non-Hispanic Arabs, Asians, blacks, whites and Hispanics. To obtain ancestry information, the ACS asks, "What is this person's ancestry or ethnic origin?" The question allows respondents to provide a maximum of two attributions. Based on responses to this question, 43 Arab

ancestries were identified by the US 2000 Census [9,10] [See Appendix A]. The current analysis includes all of the Arab ancestries identified by the Census 2000 briefs and special reports [9,10] in addition to other ancestries, whose individuals are from one of the countries that comprise the League of Arab States, but were not included in the Census reports [9,10]. Therefore, these analyses include all of the 43 categories, excluding individuals who listed an Iranian, Israeli, Armenian, or Turkish ancestry because these countries are not included in the League of Arab States.

Covariates

Consistent with other studies that examined disability using national data [1-4], age, sex, marital status, educational level, and poverty level were included as covariates. Age (continuous) and sex (male/female) were retained as collected in the ACS. To assess marital status, individuals were given the following choices: now married, spouse present; now married, spouse absent; widowed, divorced, separated, and never married. Based on previous research [2,3,21], we categorized marital status as married, with spouse present versus all others. Educational status was comprised of 16 categories in the ACS, and for this analysis, was coded as: no schooling completed; less than high school; high school graduate; some college; and college degree or more. In the ACS, poverty status was a continuous variable, and for this analysis and consistent with other research [21], poverty status was categorized as 125% below the poverty level, between 125%-199%, and > 200%. For foreign-born individuals, we controlled for citizenship status, English language ability, and length of time in the US. All respondents were asked their citizenship status with the following options: yes, born in the US; yes, born in Puerto Rico, Guam, US Virgin Islands, American Samoa, or Northern Marianas; yes, born abroad of American parent or parents; yes, US citizen by naturalization; and no, not a citizen of the US. For these analyses, we combined the first three categories and labeled them "born in the US", and we retained the fourth and fifth categories and labeled them, "naturalized citizen", and "not a US citizen," respectively. Individuals who indicated they spoke a language other than English were asked how well they spoke English, and the choices were retained as collected by the ACS: very well, well, not well, not at all. Length of time in the US was determined by subtracting 2000 (Census year) from the respondent's answer to the question, "When did this person come to live in the United States?" Based on quartiles, we categorized this variable as: 22; 23-38; 39-50; or 51 years.

Statistical Analysis

We used weighted proportions and means ($\pm$ SD) to describe the sample and to compare functional limitations between US and foreign-born individuals. We used logistic regression to estimate odds ratios and their 95% confidence intervals to examine the association between race and ethnicity by nativity status on having a functional limitation. Model 1 controlled for age, marital status, educational status and poverty level. Model 3 controlled for variables in model 1 plus citizenship status, number of years in the US, and English language ability. We used SAS version 9.2 to analyze the data [27].

RESULTS

Table 1 displays sociodemographic characteristics of the sample. Approximately 30% of Arab Americans are high school graduates, higher than any other group and second only to whites (36.3%). The average number of years in the US for foreign-born Arabs is 28.1 compared to 25.6 for Asians and 35.4 for Hispanics. The sex- and age- adjusted prevalence of reporting a functional limitation is 33.2% for Arabs, 34.3% for Hispanics, and 40.5% for blacks compared to 30.4% for whites (Table 1).

Individuals from Jordan (50.1%) reported the highest prevalence of having a functional limitation, followed by individuals from Yemen (46.1%), Iraq (43.3%), Syria (38.8%), Egypt (38.7%), and Lebanon (36.1%). Arab Americans born in the US reported the lowest functional limitation estimates (25.1%) (Table 2).

For all racial and ethnic groups, foreign-born individuals were less likely to have graduated from high school compared to the US-born. With the exception of blacks and whites, foreign-born individuals were more likely to live 125% or less below the poverty level compared to their US-born counterparts (e.g. 21.6% of foreign-born Arabs lived 125% below the poverty level compared to 11.2% of US-born). Foreign-born Arabs (37.6% vs. 24.6%) and Asians (27.4% vs. 20.4%) had a higher prevalence of functional limitation compared to US-born Arabs and Asians. This is not the case for blacks and Hispanics, where prevalence is higher for US-born (Table 3).

Table 4 contains the logistic regression analysis results for foreign- and US-born separately. For the foreign-born Arab Americans were 1.53 times (95% CI = 1.52, 1.54) as likely to report having a functional limitation compared to foreign-born whites. Blacks showed similar odds ratios (OR = 1.51; 95% CI = 1.51, 1.52) (model 1). When controlling for confounders in model 3, Arab Americans were 1.75 times (95% CI = 1.74, 1.77) as likely to report having a functional limitation compared to foreign-born whites. However, blacks, Hispanics and Asians were less likely to report having a functional limitation compared to whites. In contrast, US-born Arab Americans were 17% less likely to suffer from a functional limitation compared to whites, respectively (table 4, model 2). The same pattern was observed for Asian Americans (OR = 0.70; 95% CI = 0.70, 0.71). US-born blacks and Hispanics, however, were more likely to suffer from a functional limitation compared to whites.

DISCUSSION

The objective of this paper was to examine the association between nativity status by race and ethnicity on having a functional limitation. We hypothesized that foreign-born Arab Americans will have lower estimates of disability compared to US-born Arab Americans. Our hypothesis was not fulfilled – we found the opposite was true. In addition, we found that *foreign-born* Arab Americans were *more* likely, while Asians, Hispanics, and blacks were *less* likely to report having a functional limitation compared to non-Hispanic whites. In contrast, *US-born* Arab and Asian Americans were *less* likely, while Hispanics and blacks were *more* likely, to report having a functional limitation compared to non-Hispanic whites.

The findings of our study can only be compared to one other study on Arab Americans [21], but to several studies that used either census or ACS data or focused on functional limitations, race, ethnicity, and immigrants [3,20,22]. One study showed that foreign-born Arab Americans were more likely to report having a functional limitation compared to US-born Arab Americans [21]. The findings of the current study parallel those findings and add to that study by including other racial and ethnic groups.

Only a few investigators have used data from the ACS to investigate disability estimates among other minority groups [3,20,22]. These studies highlight that disability status differs by country of birth [20,22] and timing of entry [20]. Like these studies, our study showed that disability status differed by country of birth, with individuals from Jordan (50.1%) and Iraq (43.3%) having high estimates and Lebanon having low estimates (36.1%). According to Mutchler, these differences by country of birth and timing of entry may reflect “differences in the selectivity of the migration process associated with timing of arrival and country of origin, coupled with disparate patterns of incorporation in the United States” [20]. Future studies on functional limitations should inquire about migration selectivity, timing of arrival, acculturation status, and environment of the country of origin.

One reason for the high estimates of functional limitations in Iraq may be due to drastic economic, political, and social changes. These changes may have negatively affected the health of the individuals while they were still in their country of origin. In general, individuals who are “healthy” and able to immigrate do so. One implication of our findings is perhaps the individuals health gradually began to deteriorate in his country of origin, and it continued to decline upon arrival to the US. The US has welcomed many refugees from countries like Iraq, and several studies suggest that refugees suffer from poor health compared to immigrants [28-32]. However, the ACS does not collect data on whether or not the individual entered the US as a refugee, so we were not able to address this issue.

Although foreign-born individuals are generally healthier than their US-born counterparts [33], these positive health effects of foreign-born status diminish as individuals become more acculturated [19]. In this study US-born Arab and Asian Americans were less likely to report having a functional limitation compared to US-born whites. Therefore, with regard to functional limitations among Arab Americans, this well-established finding may not hold true. In our study, US-born Arab Americans had lower estimates of functional limitations compared to foreign-born Arab Americans. Again, this is probably due to the situation in their country of origin.

The burden of functional limitations in the country of origin may affect the estimates in the US. However, this is difficult to assess, because to our knowledge Jordan is the only country to provide this information. Youssef demonstrated that women were more likely than men to suffer from a functional limitation compared to men, but it was difficult to directly compare our findings to theirs, because it was not clear how they assessed functional limitations [34].

A second reason for the higher estimates of functional limitations among foreign-born Arab Americans is those who are experiencing failing health may be reluctant to return to their country of origin and choose to remain in the US with their children, grandchildren and

medical supports. According to Mutchler, “[i]f this occurs, segments of the older [Arab] immigrant population that remain in the United States may be negatively selected for health and disability; this process could offset potential advantages associated with lifestyle or health behaviors” [20].

A third reason for the higher estimates of functional limitations among foreign-born Arab Americans may be related to access to health care. Similar to other immigrant, minority groups, there may be language barriers, lack of insurance, and other factors that may affect their access to or utilization of health care. A few studies have shown that Arab Americans find the US health care system challenging to navigate [35, 36].

This study is not without its strengths and limitations. One of its strengths is the ACS assesses community-dwelling and institutionalized Americans, while other data sets exclude institutionalized individuals. We also had a large sample size, which allowed us to control for potential confounders. Some limitations were that the person who completes the ACS may report inaccurately for others in the household. In addition, the ACS does not inquire about the individual's cultural or environmental contexts, which may affect disability status. We could not assess potential correlates of functional limitations, such as chronic diseases, depression and social support, because these questions were not asked in the ACS.

The findings of this study suggest that several steps need to be taken prior to initiating intervention efforts to improve functional limitations among Arab Americans. First, policy must change to provide Arab Americans with their own ethnic identifier on health forms, such as is available for Asians, blacks, etc. This way, health care providers, researchers, and others are able to identify this population. Once this population has been identified, the second step is to assess the burden of functional limitations. Third, focus groups need to be conducted to better understand how Arab Americans understand and cope with functional limitations. Finally, culturally tailored interventions should be designed to prevent or delay the onset of functional limitations.

NEW CONTRIBUTION TO THE LITERATURE

To our knowledge, this is the first study to examine functional limitations by nativity status and race, ethnicity, and ancestry. Future studies should include quantitative and qualitative methods. Qualitative data will help provide a richer and more complete picture of the many elements contributing to the higher estimates of functional limitations. Investigators also should inquire about acculturation status including language of interview. Dunlop showed that Hispanics interviewed in Spanish had higher disability estimates than those interviewed in English [2]. These and other findings will provide useful information for policy changes and health care delivery to improve quality of life for individuals with functional limitations.

Acknowledgments

Funding: This work was supported by a grant from the National Institutes of Health (5P30AG015281) and the Michigan Center for Urban African American Aging Research.

Appendix

Appendix A

Arab Ancestries Identified by the US 2000 Census

-
1. Aden
 2. Algerian
 3. Alhucemas
 4. Arab
 5. Arabic
 6. Assyrian
 7. Bahraini
 8. Bedouin
 9. Berber
 10. Chaldean
 11. Comoros
 12. Djibouti
 13. Egyptian
 14. Gaza Strip
 15. Ifni
 16. Iraqi
 17. Jordanian
 18. Kurdish
 19. Kuria Muria Islander
 20. Kuwaiti
 21. Lebanese
 22. Libyan
 23. Mauritania
 24. Mideast
 25. Moroccan
 26. Muscat
 27. North African
 28. Omani
 29. Palestinian
 30. Qatar
 31. Rio do Oro
 32. Saudi Arabian
 33. Somalia
 34. South Yemen
 35. Sudan
 36. Syriac
 37. Syrian
 38. Transjordan
 39. Trucial States
 40. Tunisian

41. United Arab Emirates
42. West Bank
43. Yemeni

REFERENCES

1. Waldrop, J.; Stern, SM. Disability Status: 2000. Census 2000 Brief. U. C. Bureau. Department of Commerce, Economics and Statistics Administration; Washington, DC: 2003. p. 1-12.
2. Dunlop DD, Song J, et al. Racial/ethnic differences in the development of disability among older adults. *Am J Public Health*. 2007; 97:2209–2215. [PubMed: 17971548]
3. Goins RT, Moss M, et al. Disability among older American Indians and Alaska Natives: an analysis of the 2000 Census Public Use Microdata Sample. *Gerontologist*. 2007; 47:690–696. [PubMed: 17989411]
4. Seeman TE, Merkin SS, et al. Disability trends among older Americans: National Health And Nutrition Examination Surveys, 1988-1994 and 1999-2004. *Am J Public Health*. 2010; 100:100–107. [PubMed: 19910350]
5. Malone, N.; Baluja, KF., et al. The Foreign-Born Population: 2000. Census 2000 Brief. U. C. Bureau. Washington, D.C.: 2003. p. 1-12.
6. Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Statistical Policy Directive. F. Register, Office of Management and Budget; 1997. p. 58787-58790.
7. Sarnquist CC, Moix Grieb E, et al. How Racial and Ethnic Groupings May Mask Disparities: The Importance of Separating Pacific Islanders From Asians in Prenatal Care Data. *Matern Child Health J*. 2010; 14:635–41. [PubMed: 19582560]
8. Nigem ET. Arab Americans: migration, socioeconomic and demographic characteristics. *Int Migr Rev*. 1986; 20:629–649. [PubMed: 12268142]
9. Brittingham, A.; de la Cruz, GP. We the People of Arab Ancestry in the United States. Census 2000 Special Reports. U.S. Census Bureau; Washington, D.C.: 2005. p. 1-24.
10. de la Cruz, GP.; Brittingham, A. The Arab Population: 2000. Census 2000 Brief. Census. U.S. Census Bureau; Washington, D.C.: 2003. p. 1-12.
11. Dallo, FJ. Arab Americans in the American Community Survey. 2009. Unpublished data
12. Grieco, E.; Cassidy, R. Overview of Race and Hispanic Origin: March 2000. Census 2000 Brief. U. C. Bureau. Washington, DC.: 2001. p. 1-11.
13. Guzman, B. The Hispanic Population: Census 2000 Brief. Census 2000 Brief. US Department of Commerce; Washington, DC: 2001. p. 1-8.
14. Dallo FJ, Ajrouch KJ, et al. The Ancestry Question and Ethnic Heterogeneity: The Case of Arab Americans IMR. 2008; 42:505–517.
15. Singh GK, Miller BA. Health, life expectancy, and mortality patterns among immigrant populations in the United States. *Can J Public Health*. 2004; 95:114–21. [PubMed: 15191127]
16. Singh GK, Siahpush M. All-cause and cause-specific mortality of immigrants and native born in the United States. *Am J Public Health*. 2001; 91:392–399. [PubMed: 11236403]
17. Singh GK, Siahpush M. Ethnic-immigrant differentials in health behaviors, morbidity, and cause-specific mortality in the United States: an analysis of two national data bases. *Hum Biol*. 2002; 74:83–109. [PubMed: 11931581]
18. Dey AN, Lucas JW. Physical and mental health characteristics of U.S.- and foreign-born adults: United States, 1998-2003. *Adv Data*. 2006; 369:1–19. [PubMed: 16541709]
19. Lara M, Gamboa C. Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu Rev Public Health*. 2005; 26:367–397. [PubMed: 15760294]
20. Mutchler JE, Prakash A, et al. The demography of disability and the effects of immigrant history: older Asians in the United States. *Demography*. 2007; 44:251–263. [PubMed: 17583304]
21. Dallo FJ, Al Snih S, et al. Prevalence of disability among US- and foreign-born Arab Americans: results from the 2000 US Census. *Gerontology*. 2009; 55:153–161. [PubMed: 18714143]

22. Fuller-Thomson E, Brennenstuhl S, et al. Comparison of Disability Rates Among Older Adults in Aggregated and Separate Asian American/Pacific Islander Subpopulations. *Am J Public Health*. 2011; 101:94–100. [PubMed: 20299647]
23. Public Use Microdata Sample (PUMS), United States, Technical Documentation. U. S. C. Bureau. Washington, DC.: 2003.
24. Adler MC, Clark RF. Collecting information on disability in the 2000 Census: an example of interagency cooperation. *Soc Secur Bull*. 1999; 62:21–30. [PubMed: 10769869]
25. Andresen EM, Fitch CA. Reliability and validity of disability questions for US Census 2000. *Am J Public Health*. 2000; 90:1297–1299. [PubMed: 10937013]
26. Calsyn RJ, Winter JP, et al. Should disability items in the census be used for planning services for elders? *Gerontologist*. 2001; 41:583–588. [PubMed: 11574702]
27. SAS/STAT User's Guide. S. I. Inc.; Cary, NC: 2002-2003.
28. Jamil H, Hakim-Larson J, et al. A retrospective study of Arab American mental health clients: trauma and the Iraqi refugees. *Am J Orthopsychiatry*. 2002; 72:355–361. [PubMed: 15792047]
29. Jamil H, Hakim-Larson J, et al. Medical complaints among Iraqi American refugees with mental disorders. *J Immigr Health*. 2005; 7:145–152. [PubMed: 15900415]
30. Jamil H, Nassar-McMillan SC. The Aftermath of the Gulf War: Mental Health Issues Among Iraqi Gulf War Veteran Refugees in the United States. *Journal of Mental Health Counseling*. 2004; 26:295–308.
31. Jamil H, Nassar-McMillan SC, et al. Iraqi Gulf War veteran refugees in the U.S.: PTSD and physical symptoms. *Soc Work Health Care*. 2006; 43:85–98. [PubMed: 16966311]
32. Kira I, Hammad A, et al. Health issues in the Arab American community. The physical and mental status of Iraqi refugees and its etiology. *Ethn Dis*. 2007; 17:S3–79-S3-82.
33. Fennelly K. The “healthy migrant” effect. *Minn Med*. 2007; 90:51–53. [PubMed: 17432759]
34. Youssef RM. Comprehensive health assessment of senior citizens in Al-Karak governorate, Jordan. *East Mediterr Health J*. 2005; 11:334–348. [PubMed: 16602452]
35. Hammoud MM, White CB, Fetters MD. Opening cultural doors: providing culturally sensitive healthcare to Arab American and American Muslim patients. *Am J Obstet Gynecol*. 2005; 193:1307–11. [PubMed: 16202719]
36. Aboul-Enein BH, Aboul-Enein FH. The cultural gap delivering health care services to Arab American populations in the United States. *J of Cultural Diversity*. 2010; 17:20–23.

Table 1

Descriptive Characteristics for non-Hispanic Arab, Asian, black, white and Hispanic Individuals aged 65 or over: American Community Survey, 2001-2007* (Unweighted N = 1,964,777; Weighted N=242,000,000)

	non-Hispanic white (n=1,672,318)	non-Hispanic black (139,855)	Hispanic (n=93,460)	non-Hispanic Arab (n=8,417)	non-Hispanic Asian (n=50,727)
Functional Limitation [‡]	30.4	40.5	34.3	33.2	26.4
Demographics					
Mean age (±SE)	75.2 (0.01)	74.2 (0.02)	73.8 (0.02)	74.5 (0.07)	73.9 (0.03)
Female	57.3	61.8	57.8	53.6	57.6
Married	57.2	36.5	51.1	56.9	60.9
Educational Status					
None or less than high school	23.8	47.9	61.1	29.6	35.4
High school graduate	36.3	27.1	20.1	29.8	23.7
Some college	14.4	9.8	7.2	10.8	7.9
College degree or more	25.6	15.2	11.6	29.8	32.9
Poverty Level					
125%	14.2	32.3	29.9	18.2	19.5
125%-199%	16.8	19.6	20.5	18.4	13.5
200%	69.0	48.0	49.6	63.5	67.1
Immigration Characteristics					
Citizenship					
US-born/US Citizen	94.3	93.4	49.1	46.8	19.1
Naturalized citizen	4.6	4.7	32.2	40.2	58.5
Not a US citizen	1.1	1.9	18.6	13.0	22.4
Mean (±SE) years in US	46.1 (0.07)	29.3 (0.17)	35.4 (0.08)	28.1 (0.28)	25.6 (0.08)
Years in US (quartiles)					
22	13.8	32.9	24.4	42.9	46.6
23-38	13.9	42.9	28.8	30.9	33.6
39-50	30.8	16.9	28.2	15.6	13.6
51	41.6	7.3	18.6	10.7	6.2
English Language Ability					

	non-Hispanic white (n=1,672,318)	non-Hispanic black (139,855)	Hispanic (n=93,460)	non-Hispanic Arab (n=8,417)	non-Hispanic Asian (n=50,727)
Very well	61.3	46.1	32.9	34.8	27.2
Well	19.7	20.3	19.6	21.3	22.1
Not well	14.0	20.8	23.8	25.2	29.6
Not at all	4.9	12.8	23.6	18.7	21.1

* all p values <0.0001
£ Conditions that substantially limit one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying.

Table 2

Age- and Sex-Adjusted Prevalence ($\pm$ SE) of having a Functional Limitation for non-Hispanic Arab Americans by Country of Birth: American Community Survey, 2001-2007 (Unweighted N = 6,497)*

<u>Country of Birth</u>	<u>N</u>	<u>Functional Limitation (%)</u>
Jordan	143	50.1 ($\pm$ 5.1)
Yemen	22	46.1 ($\pm$ 12.6)
Iraq	426	43.3 ($\pm$ 3.0)
Syria	363	38.8 ($\pm$ 3.3)
Egypt	588	38.7 ($\pm$ 2.8)
Lebanon	602	36.1 ($\pm$ 2.6)
US	4353	25.1 ($\pm$ 0.81)

* Sample size is unweighted and the estimates for functional limitations are weighted.

Distribution of selected characteristics for US- and Foreign-Born non-Hispanic white, Arab, Asian, black and Hispanic Individuals 65 Years of Age or Older: American Community Survey, 2001-2007 (Unweighted N=1,964,777)

Table 3

	US-Born (n=1,487,690)					Foreign-Born (n=477,087)				
	White (1,322,068)	Arab (3,576)	Asian (9,548)	Black (111,388)	Hispanic (41,110)	White (350,250)	Arab (4,841)	Asian (41,179)	Black (28,467)	Hispanic (52,350)
Functional Limitation	30.7	24.6	20.4	41.4	36.5	29.8	37.6	27.4	38.5	32.9
Demographics										
Mean age (±SE)	75.3 (0.01)	76.0 (0.12)	76.5 (0.07)	74.4 (0.02)	74.1 (0.03)	74.9 (0.01)	73.7 (0.09)	73.5 (0.03)	73.9 (0.04)	73. (0.03)
Female	57.1	55.4	54.9	61.7	57.3	57.9	52.7	57.9	62.2	58.1
Married	56.9	55.7	59.4	36.1	50.5	57.6	57.6	61.2	37.3	51.4
Educational Status										
Less than high school	22.2	12.6	16.4	46.7	54.7	27.2	37.8	38.4	50.8	64.7
High school graduate	37.1	37.6	38.0	27.7	24.8	34.6	26.2	21.5	25.6	17.5
Some college	17.8	19.8	15.9	12.3	10.6	7.2	6.4	6.7	4.5	5.3
College degree	22.9	29.9	29.7	13.4	9.9	31.0	29.7	33.4	19.0	12.5
Poverty Level										
125%	14.3	11.2	11.3	33.2	27.8	13.9	21.6	20.7	30.5	30.9
125% - 199%	16.6	16.0	10.4	19.6	19.7	17.1	19.5	13.9	19.7	21.0
200%	69.1	72.8	78.4	47.3	52.5	68.9	58.9	65.3	49.7	47.9
Immigration Characteristics										
Citizenship										
US Born/Citizen *	100	100	100	100	100	82.3	21.2	6.6	79.1	20.8
Naturalized citizen	---	---	---	---	---	14.2	59.6	67.5	14.9	50.2
Not a US citizen	---	---	---	---	---	3.4	19.3	25.9	6.1	29.0
English Language Ability										
Very well	80.3	82.6	58.7	72.8	55.6	51.6	29.4	25.6	38.4	22.5
Well	13.2	11.9	24.9	15.9	23.0	23.0	22.4	21.9	21.6	17.9
Not well	6.2	5.0	14.2	9.8	14.9	18.0	27.4	30.4	23.9	27.9
Not at all	0.4	0.4	2.2	1.5	6.5	7.3	20.8	22.1	16.0	31.6

***All p-values are < .0001.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Born in US territories or born abroad of American parent or parents.
*

Table 4

Adjusted odds ratios (95% confidence intervals) for functional limitation for foreign- and US-born Whites, Blacks, Hispanics, Asians and Arabs: American Community Survey, 2001-2007

	<u>Model 1</u>	<u>Model 2</u>
<u>Foreign-Born</u>		
Whites	1.00	1.00
Blacks	1.28 (1.27, 1.28)	0.97 (0.96, 0.97)
Hispanics	0.98 (0.98, 0.99)	0.96 (0.96, 0.97)
Asians	0.90 (0.90, 0.91)	0.90 (0.89, 0.90)
Arabs	1.41 (1.40, 1.42)	1.75 (1.74, 1.77)
<u>US-Born</u>		
Whites	1.00	1.00
Blacks	1.28 (1.27,1.28)	---
Hispanics	1.08 (1.08,1.09)	---
Asians	0.70 (0.70,0.71)	---
Arabs	0.83 (0.82,0.84)	---

Model 1 controls for age, sex and marital status, educational status and poverty level.

Model 2 controls for model 1 plus citizenship status, number of years in the US, and English language ability.