Health Risk Behaviors Among Arab adults within the State of Michigan

2013 Arab Behavioral Risk Factor Survey

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The middle photo on the cover was courtesy of MPHI Photos Stock.

2013 Arab BRFS

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Arabs/Chaldeans in Michigan

2013 Arab BRFS

The term Arab is used to describe people who share a common language (Arabic) as well as geographic, historical, and cultural identity.[1] The Arab world consists of 22 nations including eight in Africa (e.g. Egypt, Libya, Sudan) and 14 in Asia (e.g. Iraq, Lebanon, Syria). Arab immigrants began settling in the US in the 1880s and there are now at least 3.5 million nationwide (after adjusting for under-reporting).[2,3] Since Arab Americans are usually classified as White in the US Census, accurate estimates are difficult to obtain and are often adjusted to better reflect undercounting. Although Arab Americans live in every state, they are highly concentrated in specific regions of the US. One-third of the Arab American population lives in Michigan, California, and New York and they primarily reside in large, metropolitan areas (ex. Detroit, Los Angeles, New York).[3]

Nationally, Arabs are largely Christian and Chaldeans are primarily Catholic.[2,4] Chaldeans are descendants of Semitic Babylonian and Assyrian populations and speak a dialect of Aramaic not Arabic. Chaldeans migrated to the US primarily from northern Iraq, beginning in the early 1900s.[4] Chaldeans are sometimes included in national Arab American estimates.

Michigan is home to the largest concentration of Arab Americans in North America, with an estimated population of over 500,000 after adjusting for under-reporting.[5] Over 80% of the population resides in the metropolitan Detroit area and nearly a third of the population in Dearborn are either Arab or Chaldean. While the majority of Arabs in Michigan originated from Lebanon, Iraq, Yemen, and Syria[5], Chaldeans uniquely originated from Iraq. Unlike the national pattern, the majority of Arabs in Michigan are Muslim. There is large diversity in the Arab community in the Detroit area and statewide, with many first, second, and third generation Americans. Automotive and other industries as well as a large concentration of Arab communities help attract Arabs to Southeast Michigan.

Previous studies and surveys among Arabs in Michigan found the population, on average, to be less healthy than the general population in Michigan.[1,6-8] A statewide study of all deaths in Michigan from 1990-2007 found that Arab Americans had a higher mortality rate for all causes as well as due to chronic diseases such as cancer, diabetes, and cardiac disease compared to non-Arab and non-Hispanic Whites.[8] In regional surveys, Arabs reported a higher proportion of cardiovascular disease and related risk factors as well as lower estimates of cancer screening and health care insurance than the general population in Michigan.[1,7] Although the Arab/Chaldean population makes up an estimated 5% of the Michigan population, accurate and timely data at the population level are not available. Data are necessary to help describe current health conditions and identify areas to focus prevention and intervention programs on to improve the health of Arabs/Chaldeans in Michigan.

Michigan Behavioral Risk Factor Survey (MiBRFS)

Currently, the Michigan Behavioral Risk Factor Survey (MiBRFS) provides the state with data annually on various health behaviors, medical conditions, and preventive health care practices at the population level and by race/ethnicity. The MiBRFS is a collaborative effort between the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University (MSU) Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health and Human Services (MDHHS). Due to the small number of Arab/ Chaldean participants included in the MiBRFS annually, Arab/Chaldeans are included in the 'Other, non-Hispanic' or "Hispanic' group, depending on their reported ethnicity. Estimates for Arabs/Chaldeans are not available on a yearly basis and are available only when multiple years of data are combined. Therefore, a stand-alone survey of Arab adults in Michigan was conducted to help identify the gaps in the data among this population. For the remainder of this report, the term 'Arab' will be used to describe adult respondents that are either Arab or Chaldean.

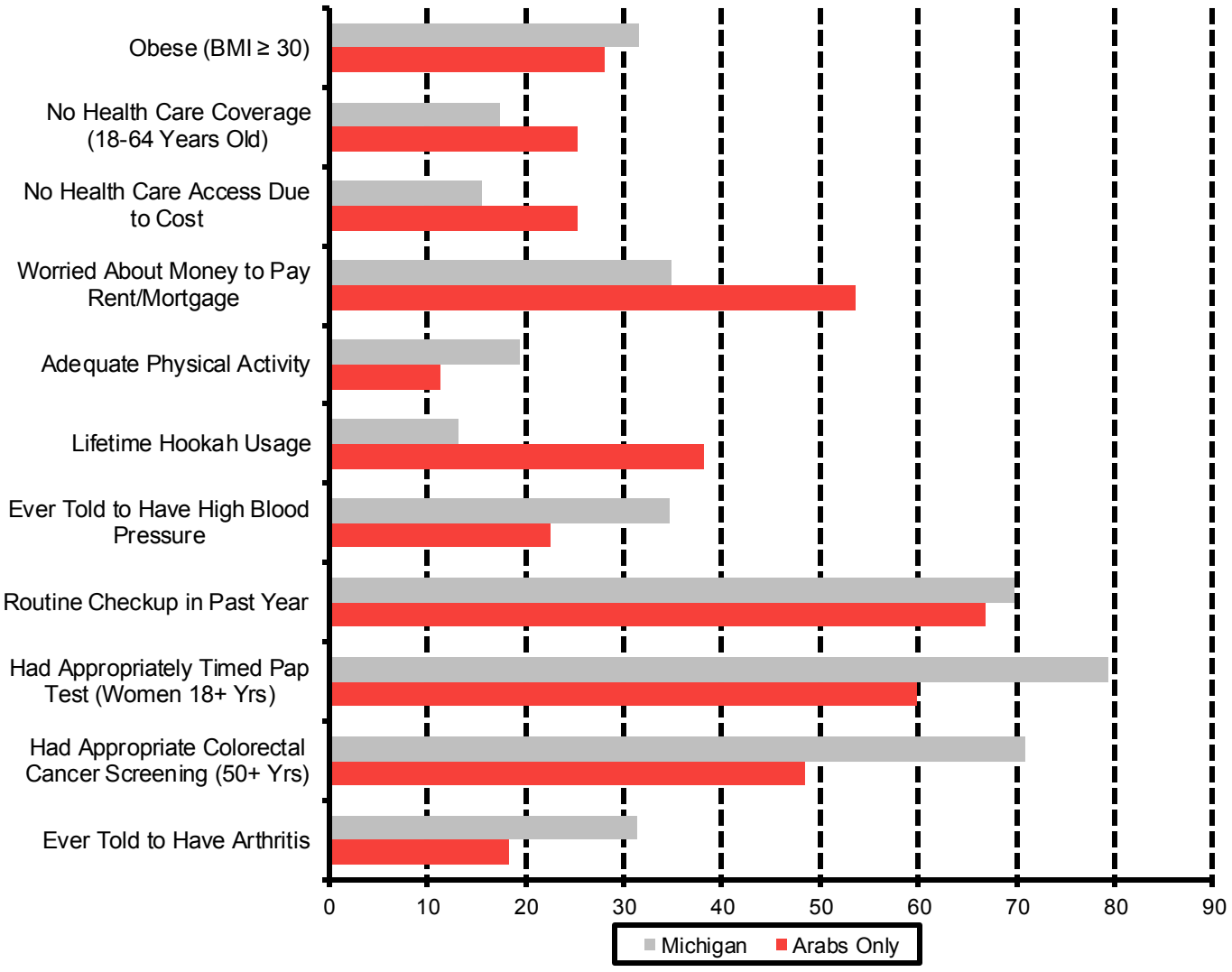
The 2013 Arab Behavioral Risk Factor Survey (BRFS) was coordinated by the MDHHS Health Disparities Reduction and Minority Health Section (HDRMHS) and Lifecourse Epidemiology and Genomics Division. The project was a multidisciplinary effort with assistance from MSU IPPSR, MSU Office of University Outreach and Engagement, Wayne State University, Saginaw Valley State University, and the Arab Community Center for Economic and Social Services (ACCESS).

Summary

This report presents estimates from the 2013 Arab BRFS, a statewide landline and cell phone bilingual survey of non-institutionalized Arab residents in Michigan aged 18 years and older. This is the first report of state-specific, population-based estimates of the prevalence of various health behaviors, medical conditions, and preventive health care practices that focuses specifically on all Arab adults in Michigan. A detailed description of the methodology of the survey is provided at the end of the report and the results are described in the subsequent pages. All of the results from the 2013 Arab BRFS presented within this report have been weighted as described in the methods section and can be interpreted as prevalence estimates for the Arab adult population in Michigan.

Differences in demographic characteristics can directly and indirectly influence the prevalence of certain health conditions and related risk factors and are important to consider.[9] In 2013, the Arab adult population in Michigan was younger and reported a lower household income compared to all adults in Michigan. None of the estimates presented in this report have been adjusted for age.

Selected Risk Factors - 2013 MiBRFS and 2013 Arab BRFS
Michigan vs. Arabs Only



Summary, continued

Public Health Implications of Findings

A number of themes emerge from the findings of the 2013 Arab BRFS that have implications for public health.

Nearly 1 in 4 Arab adults in Michigan report no health care coverage.

In 2013, an estimated 25.4% of Arab adults aged 18-64 years in Michigan reported having no health care coverage, significantly higher compared to 17.4% of all Michigan adults aged 18-64 years. Additionally, 25.3% of Arab adults reported not seeing the doctor within the past 12 months due to cost, significantly higher than all Michigan adults (15.5%). These results are consistent with previous surveys conducted among Arab adults in Michigan.[1,7] The high prevalence of no insurance among Arabs combined with cultural and language differences can act as barriers to receiving appropriate and timely health care services.[10] The Arab Community Center for Economic and Social Services (ACCESS) in Dearborn helps to address these needs by offering bilingual and culturally sensitive health care services at reduced costs (www.accesscommunity.org). In addition to ACCESS, the Arab American and Chaldean Council (ACC) also provides health services to three counties including Oakland, Wayne, and Macomb (http://www.myacc.org/).

Over half of Arab adults report worrying about having enough money to pay rent/mortgage.

In 2013, an estimated 53.7% of Arab adults in Michigan reported worrying about having enough money to pay their rent/mortgage within the past year, significantly higher than 34.8% of all Michigan adults in 2012. In addition, 31.5% of Arab adults in 2013 reported worrying about having enough money to purchase nutritious meals within the past year, significantly higher than all Michigan adults (21.9%) in 2012. These findings are not unexpected when half (48.0%) of Arab adults reported having a household income less than $25,000. Increased stress by way of financial difficulties can ultimately result in differences in health behaviors and health status.[11] Therefore, it is important to look at the impact of social factors on the prevalence of certain health conditions and risk factors.

Nearly 3 in 10 Arab adults in Michigan report using alcohol in the past month.

In 2013, an estimated 31.5% of Arab adults in Michigan reported some form of alcohol consumption within the past month, significantly lower than 56.6% of all Michigan adults. Furthermore, an estimated 8.4% of Arab adults reported binge drinking on at least one occasion in the past month, significantly lower than 18.9% of all adults in Michigan. Binge drinking is defined as consuming five or more alcoholic drinks per occasion (for men) or four or more alcoholic drinks per occasion (for women) at least once in the past month. Since Muslims are prohibited from drinking alcohol, religious and social discouragement may help explain the lower reported alcohol consumption estimates among Arabs. However, alcohol use and misuse do occur among Arab Americans[12] and it is still an important health concern. ACCESS facilitates a substance abuse program that helps address alcohol problems among the Michigan Arab population.

Over a third of Arab adults in Michigan report using hookah in their lifetime.

In 2013, an estimated 38.1% of Arab adults in Michigan reported that they had ever smoked tobacco using a hookah in their lifetime, significantly higher than 13.2% of all adults in Michigan. Hookah usage originated in the Middle East but has rapidly increased in the US. There is widespread misbelief that hookah smoking is a safe alternative to cigarette smoking.[13] This coupled with a dramatic increase in hookah establishments as well as marketing promotion may help explain the greater hookah usage among Arabs in Michigan. The ACCESS Substance Abuse program focuses on educating about the dangers of hookah usage with the goal to change community norms and decrease accessibility to minors.

Nearly 2 in 10 Arab adults in Michigan report ever being told they had arthritis.

In 2013, an estimated 18.4% of Arab adults in Michigan reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia, significantly less compared to all Michigan adults (31.3%). Although arthritis is more common among adults aged 65 years and older[14], the Arab population in Michigan is primarily comprised of young adults (60.7% of Arab adults are between the ages of 18-44 years), therefore, this may help explain the lower prevalence of reported arthritis among Arabs.

Summary, continued

Levels of appropriate colorectal cancer screening are lower among Arab adults in Michigan.

In 2013, an estimated 48.5% of Arab adults in Michigan aged 50 years and older reported having an appropriate colorectal cancer screening, significantly lower than 71.0% of all Michigan adults aged 50 years and older. Although the prevalence of appropriate colorectal cancer screening was higher among Arab males (59.0%) than Arab females (37.8%), the difference was not significant. In addition to health care access and cost, barriers to obtaining screening could include language, transportation, lack of information, discrimination, and complexity of the health care system.[15-16] To help address these barriers, ACCESS offers education on cancer to low-income Arab Americans and conducts colorectal cancer screenings among adults over the age of 50.

Low levels of breast and cervical cancer screenings among Arab females in Michigan.

In 2013, an estimated 59.8% of Arab women in 2013 reported having had a Pap test within the past three years, significantly lower than 79.4% of all women in Michigan aged 18 years and older in 2012. Additionally, an estimated 40.4% of Arab women 40 years and older in Michigan reported having both a clinical breast exam and a mammogram within the past year compared to 50.4% of all women aged 40 years and older in Michigan in 2012. In addition to barriers related to language and access, Arab women face additional barriers related to embarrassment, discomfort, modesty, and fear of detection.[17] ACCESS facilitates a breast and cervical cancer program to increase cancer education, prevention and screening services among Arab American women. Each year, the program aims to provide 2,000 women with comprehensive breast care health education and 1,500 women with free mammograms. Karmanos Research Institute collaborates with ACCESS by accepting referrals for mammograms, follow up services and treatment.

Less than a quarter of Arab adults report being told they have high blood pressure.

In 2013, an estimated 22.5% of Arab adults in Michigan reported ever being told by a doctor that they had high blood pressure (HBP), significantly lower than all adults in Michigan (34.6%). It is possible that these results do not accurately reflect the prevalence of hypertension in Arab adults, as screening for hypertension will be lower in populations with inadequate access to care and some adults may not wish to report their disease.

Future of the Arab Behavioral Risk Factor Survey

The MDHHS Health Disparities Reduction and Minority Health Section is planning to conduct the Arab BRFS again in the coming years, dependent on availability of funding. Ongoing implementation of the Arab BRFS will allow for a larger sample size, leading to more precise health estimates for Arab adults in Michigan. Additionally, the continued collection of Arab-specific data will allow for changes over time to be measured.

Additional projects among other populations currently underrepresented within the statewide Michigan BRFS recently conducted by the MDHHS Health Disparities Reduction and Minority Health Section include:

- In 2012 and 2014, a stand-alone BRFS-like survey was conducted among the Hispanic/Latino population in Michigan.
- In 2012, a stand-alone BRFS-like survey was conducted among the Asian/Pacific Islander population within Michigan.

When the 2013 Arab BRFS stand-alone was conducted, interviewers reported a significant number of requests from respondents about where to seek health care and other social services. Similar requests have not been made by respondents to the annual MiBRFS or other stand-alone BRFSs (Hispanic, Asian). These requests, along with the results from the survey, help highlight the high need for health care and other services among the Arab population in Michigan.

The Arab BRFS provides critical data related to health outcomes and behaviors among Arab adults not previously available through the MiBRFS alone. These data provide important information for public health officials, health care providers, researchers and local and state level policy makers by expanding our understanding of the risk factors and preventive behaviors for the major causes of disease among Arabs in Michigan. Moreover, they provide important information needed to develop effective, culturally appropriate programs and services.

2013 Arab BRFS

Demographics

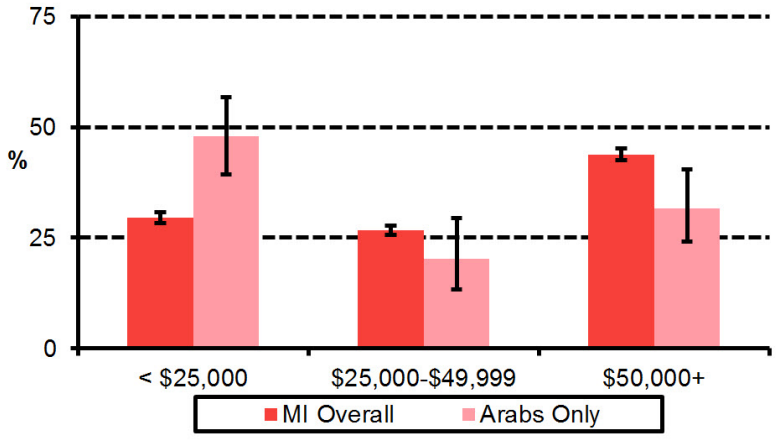
Although the Arab population is similar or slightly better in socioeconomic status to the general US population[3], the Arab population in Michigan tends to be poorer. Differences in these demographic characteristics can directly and indirectly influence the prevalence of certain health conditions and related risk factors.[9] Therefore, the demographic profile of Arab participants involved in the 2013 Arab BRFS was compared to all participants involved in the 2013 MiBRFS.

- In 2013, the largest proportion of Arab adults were between the ages of 18 and 44 years (60.7%), significantly higher than the prevalence among all Michigan adults (44.2%).
- Among both populations, there was a relatively even distribution by gender.
- Distribution by education was similar for both Arab adults and all Michigan adults.
- Arab adults (48.0%) were significantly more likely to report having a household income of less than $25,000 compared to all Michigan adults (29.5%). Similarly, Arab adults (31.7%) were significantly less likely to report having a household income of $50,000 or more than all Michigan adults (43.8%).
- Although a higher proportion of Arab adults (59.1%) were married than all Michigan adults (51.9%), the difference was not significant.

Demographic Characteristics	Michigan Overall[a] %	Michigan Overall[a] 95% Confidence Interval	Arabs Only[b] %	Arabs Only[b] 95% Confidence Interval
Age				
18 - 44	44.2	(43.0-45.4)	60.7	(53.5-67.5)
45 - 64	36.1	(35.0-37.2)	28.9	(23.1-35.6)
65+	19.7	(19.0-20.4)	10.3	(7.2-14.6)
Gender				
Male	48.5	(47.3-49.7)	52.2	(45.9-58.4)
Female	51.5	(50.3-52.7)	47.8	(41.6-54.1)
Education				
HS graduate or less	42.5	(41.3-43.7)	45.6	(38.3-53.2)
Some college or more	57.5	(56.3-58.7)	54.4	(46.8-61.7)
Household Income				
< $25,000	29.5	(28.3-30.7)	48.0	(39.4-56.8)
$25,000 - $49,999	26.7	(25.6-27.8)	20.3	(13.4-29.5)
$50,000+	43.8	(42.6-45.1)	31.7	(24.1-40.4)
Marital Status				
Married	51.9	(50.7-53.1)	59.1	(51.4-66.4)
Formerly married	20.2	(19.3-21.1)	12.8	(9.0-17.9)
Never married	23.9	(22.8-25.1)	25.8	(19.0-34.1)
Member of unmarried couple	4.0	(3.5-4.7)	--[c]	---

[a] Demographics of all participants in the 2013 MiBRFS. (N = 12,759)
[b] Demographics of Arab adults in the 2013 Arab BRFS. (N = 536)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

Household Income Level by Race/Ethnicity, Michigan Overall vs Arabs Only, 2013



2013 Arab BRFS

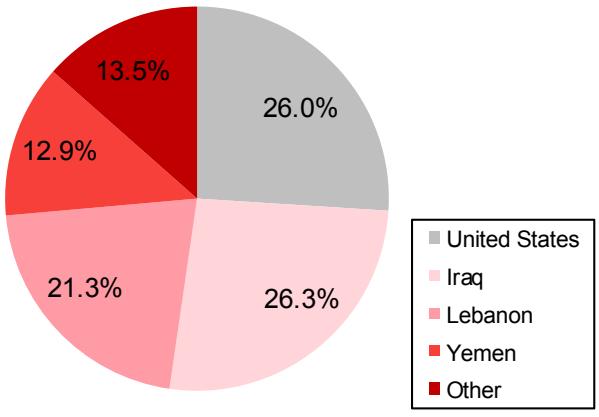
Cultural Characteristics

Characteristics related to religion, country of origin, time in the United States, and languages spoken are all important factors to consider when examining overall health status.

- Over half of Arab adults (51.7%) reported being Muslim, while 45.0% reported being Christian.
- The highest proportion of adults reported being of Arab origin (71.2%).
- The most common countries of origin were Iraq, United States, and Lebanon. The most common countries of origin for respondents' father and mother were Iraq followed by Lebanon (data not shown).
- The amount of time spent in the US was relatively even across groups.
- The majority of Arab adults reported speaking Arabic in the home (80.4%), while only 23.5% reported speaking Chaldean in the home.
- Almost a quarter (24.1%) of Arab adults reported not speaking English well or not at all.

Cultural Characteristics	%	95% Confidence Interval
Religious Affiliation[a]		
Muslim	51.7	(43.9-59.4)
Christian	45.0	(37.2-53.0)
Other	--[f]	---
None	--[f]	---
Arab/Chaldean Origin[b]		
Arab	71.2	(62.7-78.4)
Chaldean	24.0	(17.1-32.5)
Arab and Chaldean	4.9	(2.7-8.5)
Country of Origin[b]		
United States	26.0	(18.6-35.1)
Lebanon	21.3	(15.9-27.8)
Iraq	26.3	(21.4-32.0)
Yemen	12.9	(8.7-18.7)
Other	13.5	(7.6-22.8)
When Came to US to Live[c]		
Born in the US	26.1	(18.7-35.2)
Within the last 10 years	19.5	(15.1-24.9)
11-20 years ago	28.2	(22.0-35.3)
More than 20 years ago	26.2	(19.0-34.9)
Arabic Spoken in Home[d]		
Yes	80.4	(72.0-86.7)
No	19.6	(13.3-28.0)
Chaldean Spoken in Home[d]		
Yes	23.5	(17.1-31.4)
No	76.5	(68.6-82.9)
Fluency in English[e]		
Very well	43.6	(35.3-52.4)
Well	32.3	(24.9-40.6)
Not well or not at all	24.1	(18.7-30.5)

Country of Origin, Arab Adults, Michigan, 2013



[a] Among all Arab adults, proportion who reported their religious affiliation. (N = 390).
[b] Among all Arab adults, proportion who reported their Arab/Chaldean origin and country of origin. (N = 400)
[c] Among all Arab adults, proportion who reported the time since they came to the US to live. (N = 398)
[d] Among all Arab adults, proportion who reported speaking Arabic and/or Chaldean in the home. (N = 400)
[e] Among all Arab adults, proportion who reported their fluency in English. (N = 396)
[f] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

2013 Arab BRFS

General Health Status

Self-assessed health is a measure of how a person perceives their own health. Self-assessed health status has been validated as a useful indicator of health among different populations and allows for broad comparisons across a variety of health conditions.[18]

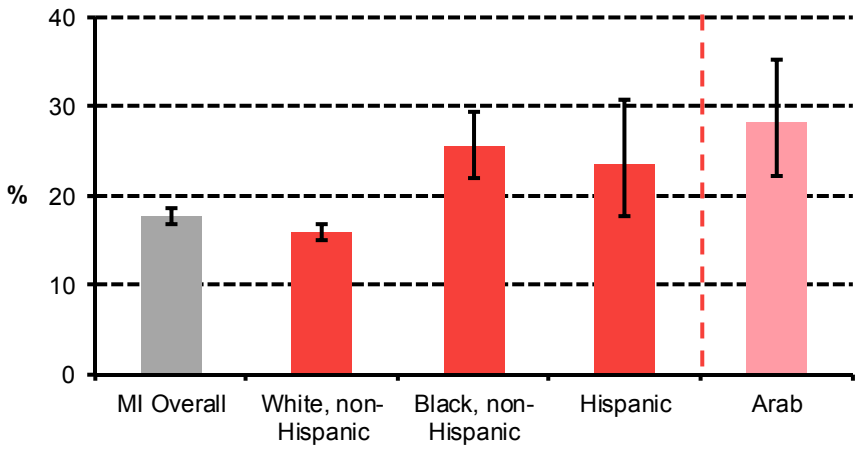
- In 2013, an estimated 28.3% of Arab adults reported that their general health was either fair or poor, significantly higher compared to 17.7% (95% CI: 16.8-18.7) of all Michigan adults.
- Arab adults aged 18-44 years (18.1%) were significantly less likely to report fair or poor health compared to Arab adults aged 45-64 years (43.6%) and aged 65 years and older (45.4%).
- Although the prevalence of fair or poor general health was higher among Arab females compared to Arab males, the difference was not significant.
- Arab adults with a high school education or less (42.4%) reported a significantly higher prevalence of fair or poor health than Arab adults with some college or more (16.4%).
- In 2013, Arab adults (28.3%) reported a significantly higher prevalence of fair or poor general health than White, non-Hispanic adults (16.0%). In other words, Arab adults reported their health was either fair or poor 1.8 times that of White, non-Hispanic adults in Michigan.

Arab Demographic Characteristics	General Health, Fair or Poor[a]	
	%	95% Confidence Interval
Total	**28.3**	**(22.2-35.2)**
Age		
18 - 44	18.1	(11.1-28.1)
45 - 64	43.6	(32.1-55.8)
65+	45.4	(28.6-63.2)
Gender		
Male	19.4	(11.9-30.2)
Female	38.0	(30.0-46.7)
Education		
HS graduate or less	42.4	(32.2-53.2)
Some college or more	16.4	(10.5-24.8)
Household Income		
< $25,000	45.7	(35.0-56.7)
$25,000 - $49,999	15.5†	(7.7-28.7)
$50,000+	4.3†	(2.0-9.1)

[a] Among all Arab adults, the proportion who reported that their health, in general, was either fair or poor. (N = 534)
† This estimate should be used with caution due to its low reliability and precision.

- The prevalence of fair or poor health among Arab adults did not significantly differ from that of Black, non-Hispanic and Hispanic adults in Michigan.

General Health, Fair or Poor, by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Quality of Life

2013 Arab BRFS

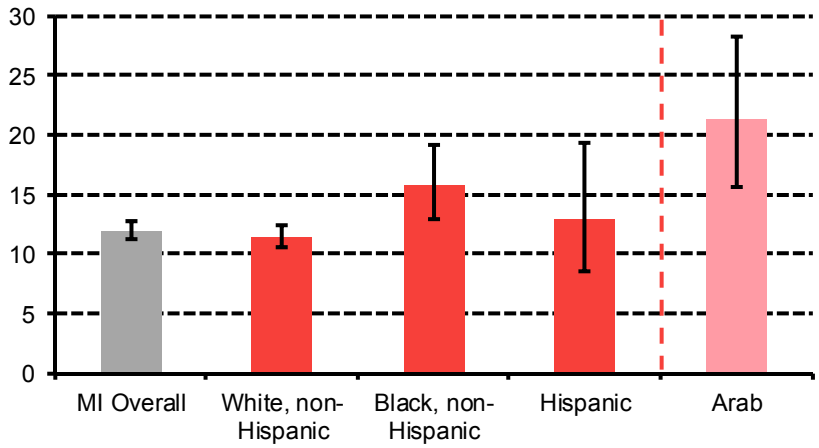
Physically and mentally unhealthy days measure the number of days within the past 30 days that individuals rate their physical and mental health as not good. Poor physical and mental health was defined as 14 or more days within the past 30 days in which the adult respondents rated their physical and mental health as not good. Discrimination against Arabs may play a role in negative health outcomes including mental health.[19-20]

- In 2013, an estimated 13.9% of Arab adults reported poor physical health, similar to 12.7% (95% CI: 12.0-13.6) of all Michigan adults. An estimated 21.3% of Arab adults reported poor mental health, significantly higher compared to all Michigan adults (12.0% [95% CI: 11.2-12.8]).
- The prevalence of poor physical and mental health tended to increase with age. Arab adults aged 18-44 years (7.2%) had a significantly lower prevalence of reported poor physical health compared to Arab adults aged 45-64 years (24.7%) and those aged 65 years and older (23.2%).
- Although the prevalence of both indicators were higher among Arab females than Arab males, the differences were not significant.
- Arab adults with a high school education or less (23.9%) reported significantly higher poor physical health than Arab adults with some college or more (5.7%).
- In 2013, the prevalence of poor physical health among Arab adults did not significantly differ from that of any of the other racial/ethnic groups in Michigan (data not shown).
- In 2013, Arab adults (21.3%) reported a higher prevalence of poor mental health than White, non-Hispanics (11.5%). Arab adults had a prevalence of poor mental health 1.9 times that of White, non-Hispanic adults in Michigan. The prevalence among Arab adults did not significantly differ from that of Black, non-Hispanic and Hispanic adults.

Arab Demographic Characteristics	Poor Physical Health[a] %	Poor Physical Health[a] 95% Confidence Interval	Poor Mental Health[b] %	Poor Mental Health[b] 95% Confidence Interval
Total	**13.9**	**(10.2-18.6)**	**21.3**	**(15.6-28.3)**
Age				
18 - 44	7.2	(4.4-11.5)	16.9	(10.0-27.0)
45 - 64	24.7	(15.5-37.0)	27.5	(17.8-39.8)
65+	23.2	(12.2-39.5)	30.0†	(13.5-54.1)
Gender				
Male	10.2	(5.6-17.9)	17.2	(9.4-29.2)
Female	18.0	(12.9-24.4)	25.7	(18.8-34.2)
Education				
HS graduate or less	23.9	(16.6-33.2)	28.8	(19.8-39.9)
Some college or more	5.7	(3.3-9.5)	15.1	(9.3-23.7)
Household Income				
< $25,000	21.1	(13.9-30.7)	35.3	(24.5-47.9)
$25,000 - $49,999	--[c]	---	17.7†	(7.7-35.7)
$50,000+	5.9†	(2.5-13.6)	3.7†	(1.6-8.5)

[a] Among all Arab adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days. (N = 521)
[b] Among all Arab adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days. (N = 522)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Poor Mental Health, by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Disability

2013 Arab BRFS

The Americans with Disabilities Act defines a disability as a physical or mental impairment that substantially limits one or more major life activities, having a history of such an impairment, or being perceived by others as having such an impairment.[21]

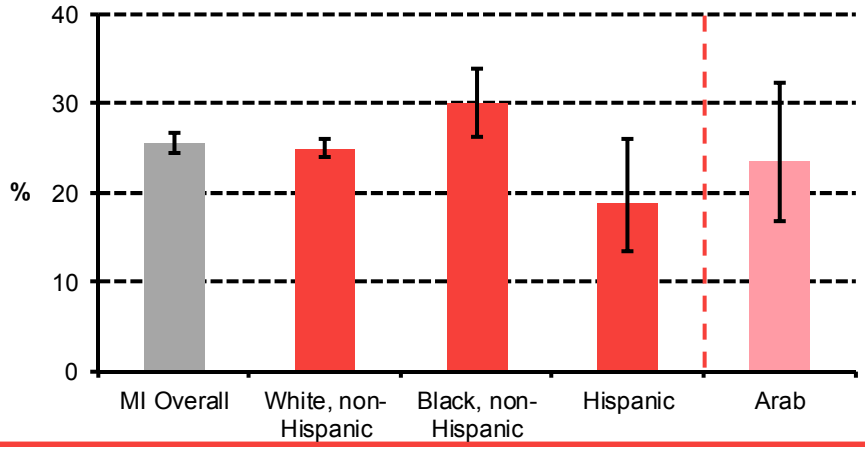
- In 2013, an estimated 23.6% of Arab adults reported being disabled, which was defined as being limited in any activities because of physical, mental, or emotional problems or requiring the use of special equipment, such as a cane, a wheelchair, a special bed, or a special telephone due to a health problem. This compared to 25.5% (95% CI: 24.5-26.6) of all Michigan adults.
- When looking at each component of the disability indicator, an estimated 20.7% (95% CI: 14.1-29.5) of Arab adults reported being limited in their activities, while 6.2% (95% CI: 3.8-10.2) reported that they required the use of special equipment due to a health problem.
- The prevalence of disability generally increased with age but was relatively even by gender.
- Arab adults with a high school education or less (36.6%) had a significantly higher prevalence of disability than Arab adults with some college or more (12.7%). In other words, Arab adults with a high school education or less were 2.9 times more likely to report being disabled than those with some college or more.
- In 2013, the prevalence of disability among Arab adults did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Total Disability[a] %	Total Disability[a] 95% Confidence Interval
Total	**23.6**	**(16.7-32.3)**
Age		
18 - 44	18.5†	(9.7-32.5)
45 - 64	27.0	(17.5-39.1)
65+	44.7	(27.3-63.6)
Gender		
Male	25.7	(14.7-41.0)
Female	21.4	(15.0-29.5)
Education		
HS graduate or less	36.6	(25.3-49.6)
Some college or more	12.7	(7.1-21.7)
Household Income		
< $25,000	35.3	(24.9-47.3)
$25,000 - $49,999	29.6†	(9.5-62.9)
$50,000+	7.2†	(3.7-13.7)

[a] Among all Arab adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (N = 525)

† This estimate should be used with caution due to its low reliability and precision.

Disability by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Weight Status

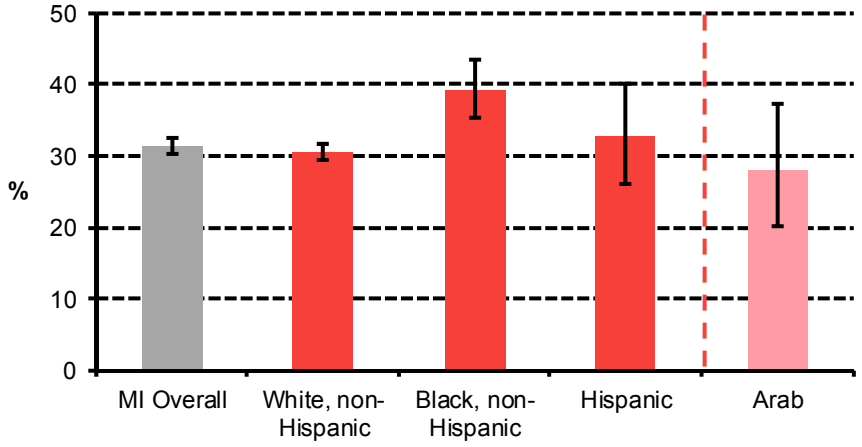
Overweight and obesity have been proven to increase the risk of many diseases and health conditions such as high blood pressure, diabetes, coronary heart disease, stroke, gallbladder disease, high cholesterol, and some forms of cancer.[22] The medical care costs associated with adult obesity in the United States is projected to be in the $150 billion range.[23] Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9, and obesity is defined as a BMI greater than or equal to 30.0.

- In 2013, an estimated 28.0% of Arab adults were classified as obese, with an additional 36.4% (95% CI: 29.4-44.0) of Michigan Arab adults being classified as overweight. The prevalence of obesity among all adults in Michigan was 31.5% (95% CI: 30.4-32.6), while the prevalence of overweight was 34.7% (95% CI: 33.6-35.9).
- The prevalence of obesity among Arab adults was highest among the 45-64 year age group followed by the 65+ year age group, although differences by age group were not significant.
- The prevalence of obesity was relatively similar by gender.
- Although the prevalence of obesity was higher among Arab adults with a high school education or less, the difference was not significant.
- In 2013, the prevalence of obesity among Arab adults did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Obese[a] %	Obese[a] 95% Confidence Interval
Total	**28.0**	**(20.3-37.2)**
Age		
18 - 44	21.4	(12.2-34.7)
45 - 64	40.9	(27.3-56.1)
65+	30.1	(16.7-48.2)
Gender		
Male	29.3	(17.6-44.6)
Female	26.3	(19.3-34.7)
Education		
HS graduate or less	35.8	(23.7-50.0)
Some college or more	21.8	(13.3-33.6)
Household Income		
< $25,000	26.5	(18.1-37.2)
$25,000 - $49,999	39.6†	(17.0-67.7)
$50,000+	27.3†	(13.1-48.5)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported. Pregnant women were excluded.
[a] Among all Arab adults, the proportion of respondents whose BMI was greater than or equal to 30.0. (N = 478)
† This estimate should be used with caution due to its low reliability and precision.

Obesity by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

No Health Care Coverage

Adults who do not have health care coverage are less likely to access health care services and are more likely to delay getting needed medical attention.[24]

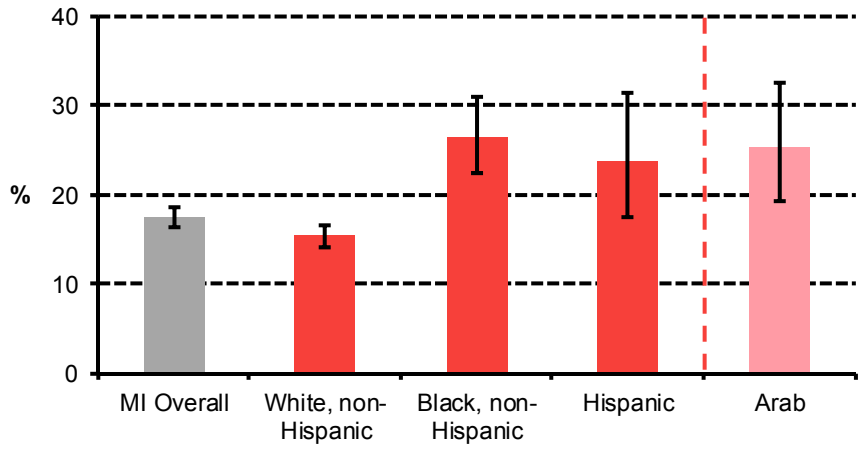
- In 2013, an estimated 25.4% of Arab adults aged 18-64 years reported having no health care coverage, significantly higher compared to 17.4% (95% CI: 16.3-18.6) of all Michigan adults.
- Although Arab females reported a slightly higher prevalence of no health care coverage than Arab males, the difference was not significant.
- The prevalence of no health care coverage generally decreased with increasing education and household income level.
- In 2013, the prevalence of no health care coverage among Arab adults aged 18-64 years (25.4%) was significantly higher than among White, non-Hispanic adults (15.4%) in Michigan. In other words, Arab adults reported no health care coverage 1.6 times that of White, non Hispanic adults in Michigan. Prevalence among Arab adults did not significantly differ from that of Black, non-Hispanic and Hispanic adults.

Arab Demographic Characteristics	No Health Care Coverage Among Adults 18-64 Years[a]	
	%	95% Confidence Interval
Total	**25.4**	**(19.3-32.6)**
Age		
18 - 44	26.0	(18.1-35.9)
45 - 64	24.0	(17.3-32.3)
Gender		
Male	23.3	(14.9-34.5)
Female	27.7	(20.0-37.0)
Education		
HS graduate or less	28.4	(18.6-40.7)
Some college or more	23.1	(16.4-31.7)
Household Income		
< $25,000	39.3	(27.8-52.1)
$25,000 - $49,999	22.9†	(11.8-39.6)
$50,000+	4.7†	(2.2-9.7)

[a] Among Arab adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services. (n=425)

† This estimate should be used with caution due to its low reliability and precision.

No Health Care Coverage Among Adults 18 to 64 Years by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Limited Health Care Coverage

2013 Arab BRFS

Two additional indicators related to health care access are: 1) not having a personal doctor or health care provider and 2) having had a time during the past 12 months when you needed to see a doctor but could not because of the cost. Increases in access to primary care have been shown to substantially improve health-related outcomes.[25]

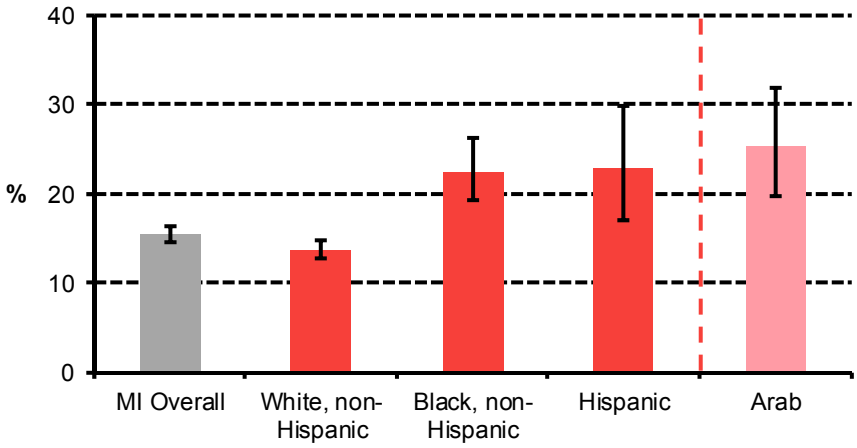
- In 2013, an estimated 17.5% of Arab adults reported not having a personal health care provider, similar to 17.0% (95% CI: 16.0-18.0) of all Michigan adults. An estimated 25.3% of Arab adults reported not seeing the doctor within the past 12 months due to cost, significantly higher than among all Michigan adults (15.5% [95% CI: 14.5-16.4]).
- The prevalence of both indicators generally decreased with age. Arab adults aged 18 to 44 years (22.4%) reported a significantly higher prevalence of no personal health care provider than Arab adults aged 45 to 64 years (7.1%).
- Even though Arab males reported a higher prevalence of no personal health care provider and Arab females reported a higher prevalence of not seeing the doctor due to cost, the differences by gender were not significant.
- In 2013, the prevalence of Arab adults that reported no personal health care provider did not significantly differ from that of any of the other racial/ethnic groups in Michigan (data not shown).

Arab Demographic Characteristics	No Personal Health Care Provider[a] %	No Personal Health Care Provider[a] 95% Confidence Interval	No Health Care Access Due to Cost[b] %	No Health Care Access Due to Cost[b] 95% Confidence Interval
Total	**17.5**	**(12.9-23.3)**	**25.3**	**(19.7-31.9)**
Age				
18 - 44	22.4	(15.9-30.6)	26.8	(18.7-36.8)
45 - 64	7.1	(4.0-12.2)	25.8	(18.8-34.2)
65+	--[c]	---	15.3[†]	(7.4-28.9)
Gender				
Male	20.9	(13.3-31.2)	19.3	(11.9-29.5)
Female	13.8	(9.7-19.2)	31.9	(24.4-40.5)
Education				
HS graduate or less	14.0	(9.4-20.4)	33.2	(23.9-43.9)
Some college or more	20.5	(13.3-30.1)	18.7	(12.8-26.6)
Household Income				
< $25,000	15.2	(8.9-24.9)	37.7	(27.3-49.5)
$25,000 - $49,999	18.5[†]	(9.2-33.6)	23.3[†]	(11.9-40.6)
$50,000+	10.6[†]	(3.9-25.5)	--[c]	---

[a] Among all Arab adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider. (N = 533)
[b] Among all Arab adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost. (N= 530)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
[†] This estimate should be used with caution due to its low reliability and precision.

- In 2013, Arab adults (25.3%) reported a significantly higher prevalence of not seeing the doctor within the past 12 months due to cost than White, non-Hispanics (13.7%). Thus, Arab adults reported not accessing health care due to cost 1.8 times that of White, non-Hispanic adults. Prevalence among Arab adults did not significantly differ from that of Black, non-Hispanic and Hispanic adults.

No Health Care Acces Due to Cost by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Delayed Health Care

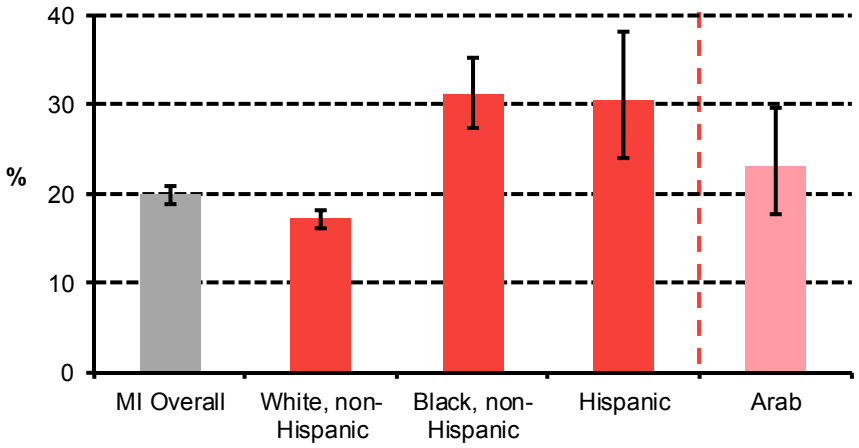
Factors other than cost can also contribute to delays in health care. For example, cultural differences and language difficulties can act as barriers to receiving appropriate and timely health care services.[10]

- In 2012, an estimated 23.2% of Arab adults reported delaying care for reason other than cost compared to 19.9% (95% CI: 18.9-20.9) of all Michigan adults in 2013.
- The prevalence of delaying care for reason other than cost generally decreased with increasing age.
- Although Arab females reported a higher prevalence of delaying care for reason other than cost compared to Arab males, the difference was not significant.
- The prevalence of delaying care for reason other than cost generally decreased with increasing education and household income level.
- In 2013, the prevalence of Arab adults that reported delaying health care for reason other than cost did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Delayed Health Care for Reason Other Than Cost[a]	
	%	95% Confidence Interval
Total	**23.2**	**(17.8-29.7)**
Age		
18 - 44	26.6	(18.8-36.3)
45 - 64	20.6	(14.3-28.9)
65+	10.7†	(4.8-22.1)
Gender		
Male	16.3	(9.6-26.5)
Female	30.7	(23.3-39.2)
Education		
HS graduate or less	27.6	(19.3-37.9)
Some college or more	19.5	(13.2-27.8)
Household Income		
< $25,000	32.5	(22.4-44.4)
$25,000 - $49,999	20.6†	(10.4-36.7)
$50,000+	7.8†	(3.7-15.6)

[a] Among all Arab adults, the proportion who reported delaying health care in the past 12 months due to reasons other than cost. (N = 529)
† This estimate should be used with caution due to its low reliability and precision.

Delayed Health Care for Reason Other than Cost by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

2013 Arab BRFS

Health Care Location & Language

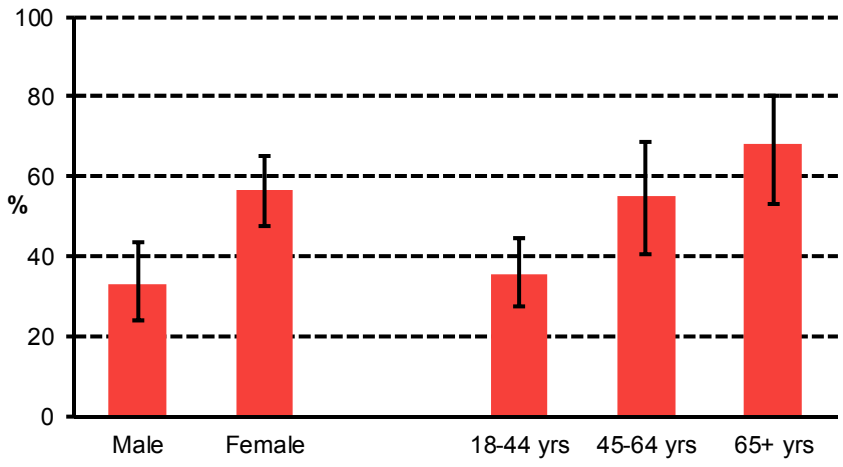
Factors related to health care location, language used to communicate with doctor, and satisfaction with health care received can serve as additional context to better understand potential barriers and enablers to receiving health care.

- In 2013, the majority of Arab adults (75.0%) reported getting their health care most of the time at a private medical practice/doctor's office, followed by another health care clinic (15.6%), an ACCESS clinic (6.1%), or hospital emergency room or urgent care clinic (3.3%).
- An estimated 44.8% of Arab adults reported speaking Arabic/Chaldean with the doctor.
- Arab females (56.4% [95% CI: 47.3-65.0]) were significantly more likely to report speaking Arabic/Chaldean with the doctor compared to Arab males (32.9% [95% CI: 23.9-43.5]).
- The prevalence of speaking Arabic/Chaldean with the doctor increased with increasing age. Arab adults aged 65 years and older (68.0% [95% CI: 52.9-80.1]) were significantly more likely to report speaking Arabic/Chaldean than those 18-44 years (35.6% [95% CI: 27.6-44.6]).
- In 2013, an estimated 58.9% of Arab adults reported being very satisfied with the health care received, similar to 62.5% (95% CI: 61.3-63.7) of all adults in Michigan. The prevalence among Arab adults did not significantly differ from that of any of the other racial/ethnic groups in Michigan (data not shown).

	%	95% Confidence Interval
Health Care Location[a]		
Private Practice/Doctor's Office	75.0	(66.6-81.8)
Hospital ER/Urgent Care	3.3	(2.0-5.4)
ACCESS Clinic	6.1	(3.8-9.6)
Other Health Center	15.6	(9.7-24.0)
Language Used to Communicate with Doctor[b]		
Arabic/Chaldean	44.8	(38.4-51.3)
English or some other language	55.2	(48.7-61.6)
Satisfied with Health Care Received[c]		
Very Satisfied	58.9	(51.8-65.6)
Somewhat Satisfied	36.3	(29.9-43.3)
Not At All Satisfied	4.8	(2.9-7.8)

[a] Among all Arab adults, the proportion who reported received their health care most of the time from: private medical practice/doctor's office, a hospital emergency room/urgent care clinic, an Arab Community Center for Economics and Social Services (ACCESS) clinic, or another community health center/ health department clinic/hospital clinic/someplace else. (N = 393)
[b] Among all Arab adults, the proportion who reported using Arab/Chaldean or English/some other language as the language used to communicate with doctor. (N = 398)
[c] Among all Arab adults, the proportion who reported their satisfaction, in general, with the health care received (N = 520)

Spoke Arabic/Chaldean with Doctor among Arab Adults, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS.

Social Context

2013 Arab BRFS

Differences in health-related exposures and stresses throughout life often result in differences in underlying health status.[12] As a result, it is important to look at the impact of social factors on the prevalence of health conditions and related risk factors.

- In 2013, an estimated 53.7% of Arab adults reported worrying about having enough money to pay their rent/ mortgage within the past year, significantly higher than 34.8% (95% CI: 33.4-36.2) of all Michigan adults in 2012. An estimated 31.5% of Arab adults reported worrying about having enough money to purchase nutritious meals within the past year, significantly higher than among all Michigan adults (21.9% [95% CI: 20.7-23.1]) in 2012.
- The prevalence of both of these indicators generally decreased with increasing age.
- Although the prevalence of both indicators were higher among Arab females than Arab males, the differences were not significant.
- Arab adults with a high school education or less had a significantly higher prevalence of both indicators than Arab adults with some college or more.

Arab Demographic Characteristics	Worried About Having Enough Money to Pay Rent/Mortgage[a]		Worried About Having Enough Money to Buy Nutritious Meals[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**53.7**	**(45.0-62.2)**	**31.5**	**(23.6-40.6)**
Age				
18 - 44	56.1	(45.4-66.2)	33.6	(22.9-46.1)
45 - 64	55.3	(37.6-71.8)	31.7	(19.9-46.4)
65+	28.9	(15.3-47.8)	13.5†	(4.8-32.5)
Gender				
Male	47.3	(33.3-61.9)	27.3	(15.4-43.6)
Female	59.2	(49.9-67.9)	35.4	(26.4-45.5)
Education				
HS graduate or less	65.4	(55.9-73.7)	43.7	(33.0-55.0)
Some college or more	42.0	(30.8-53.9)	18.5	(10.8-29.9)
Household Income				
< $25,000	70.1	(59.2-79.2)	48.4	(36.0-60.9)
$25,000 - $49,999	65.2	(48.1-79.2)	30.7	(16.1-50.5)
$50,000+	22.8†	(11.0-41.5)	--[c]	---

[a] Among all Arab adults, the proportion who reported always, usually, or sometimes being worried about having enough money to pay rent/mortgage in the past year. (N = 339)

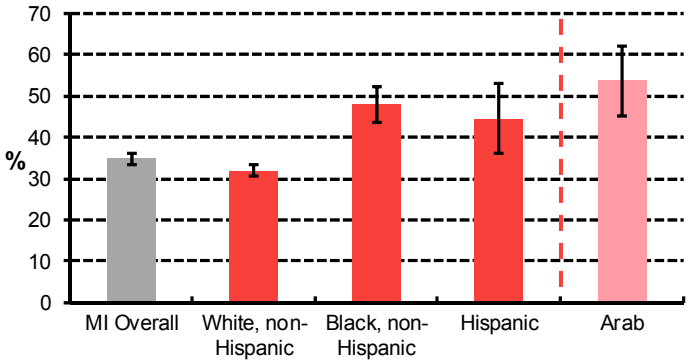
[b] Among all Arab adults, the proportion who reported always, usually, or sometimes being worried about having enough money to buy nutritious meals in the past year. (N = 361)

[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

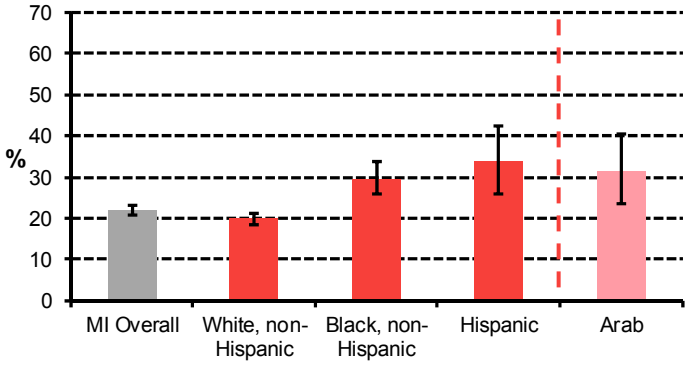
† This estimate should be used with caution due to its low reliability and precision.

- In 2013, Arab adults (53.7% and 31.5%, respectively) reported a significantly higher prevalence of both indicators than White, non-Hispanics (31.9% and 19.8%, respectively) in Michigan in 2012. In other words, Arab adults reported worrying about having enough money to pay for rent/mortgage and nutritious meals 1.7 and 1.6 times that of White, non-Hispanic adults in Michigan. The prevalence among Arab adults for both indicators did not significantly differ from that of Black, non-Hispanic and Hispanic adults in Michigan in 2012.

Worried About Money for Rent/Mortgage by Race/Ethnicity, Michigan, 2012-2013



Worried About Money for Nutritious Meals by Race/Ethnicity, Michigan, 2012-2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White and Black used data from the 2012 Michigan BRFS. Hispanic estimates were used from the 2012 Hispanic BRFS.

2013 Arab BRFS

No Leisure Time Physical Activity

Regular physical activity among adults has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon and breast cancers, and osteoporosis. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and relieve symptoms of depression.[26]

- In 2013, an estimated 31.2% of Arab adults reported no leisure time physical activity within the past month, compared to 24.4% of all Michigan adults (95% CI: 23.4-25.5).
- Arab adults aged 45 to 64 years had the highest prevalence of no leisure time physical activity, although differences by age group were not significant.
- The prevalence of no leisure time physical activity was significantly higher among Arab females (42.8%) compared to Arab males (20.6%).
- Arab adults with a high school education or less reported a higher prevalence of no leisure physical activity than Arab adults with some college or more, although the difference was not significant.
- The prevalence of no leisure time physical activity generally decreased with increasing household income level.
- In 2013, Arab adults (31.2%) reported a significantly higher prevalence of no leisure time physical activity than White, non-Hispanics adults (23.2%) in Michigan.

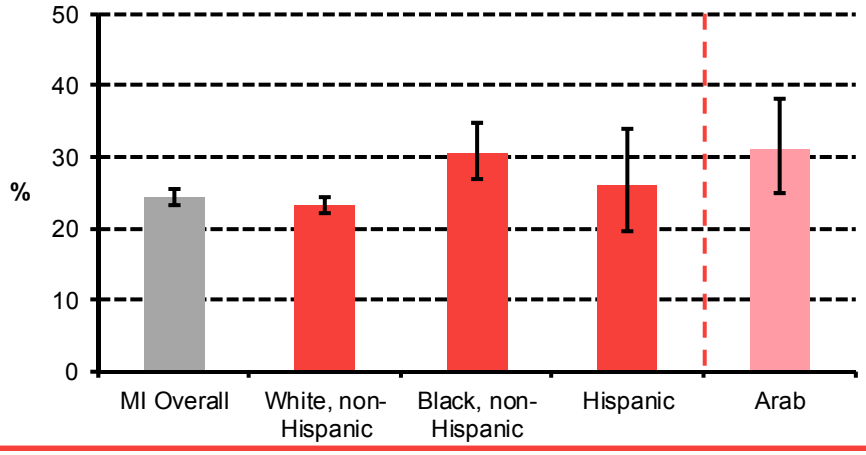
Arab Demographic Characteristics	No Leisure Time Physical Activity[a] %	95% Confidence Interval
Total	**31.2**	**(24.9-38.1)**
Age		
18 - 44	27.5	(19.9-36.8)
45 - 64	40.4	(28.1-54.1)
65+	25.8	(15.1-40.5)
Gender		
Male	20.6	(13.2-30.6)
Female	42.8	(34.4-51.8)
Education		
HS graduate or less	40.7	(30.8-51.4)
Some college or more	22.8	(15.7-32.0)
Household Income		
< $25,000	44.4	(33.6-55.7)
$25,000 - $49,999	29.0†	(14.7-49.1)
$50,000+	12.5†	(5.9-24.4)

[a] Among all Arab adults, the proportion who reported not participating in any leisure time physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise during the past month. (N = 514)

† This estimate should be used with caution due to its low reliability and precision.

- The prevalence of no leisure time physical activity among Arab adults did not significantly differ from that from that of Black, non-Hispanic and Hispanic adults in Michigan.

No Leisure Time Physical Activity by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

2013 Arab BRFS

Adequate Physical Activity

In 2008, the U.S. Department of Health and Human Services released the new physical activity guidelines for Americans. These guidelines recommend that adults participate in moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities **and** also participate in muscle strengthening activities on two or more days per week.[27]

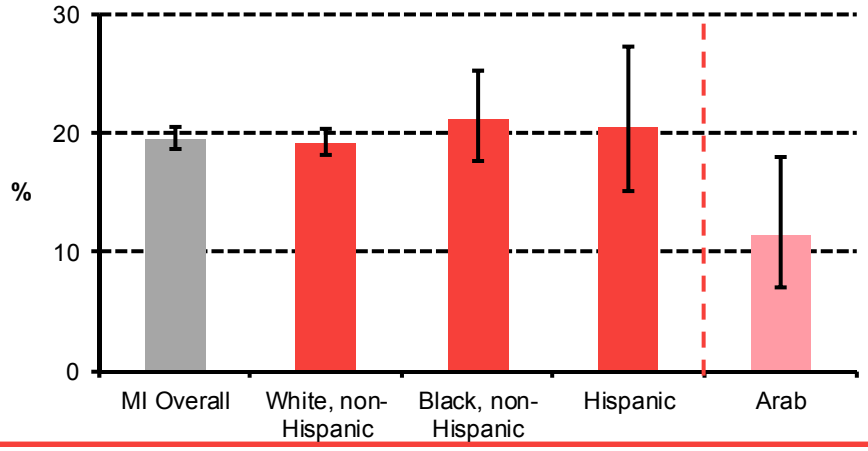
- In 2013, an estimated 11.4% of Arab adults met both the aerobic and muscle strengthening components of the new physical activity guidelines (i.e., adequate physical activity), significantly lower than 19.5% of all Michigan adults (95% CI: 18.6-20.5).
- When assessing each component individually, an estimated 37.0% (95% CI: 29.2-45.5) of Arab adults met the aerobic physical activity component, significantly lower than 53.1% of all Michigan adults (95% CI: 51.8-54.3). An estimated 22.0% (95% CI: 15.2-30.7) of Arab adults met the muscle strengthening component, compared to 28.8% (95% CI: 27.7-30.0) of all Michigan adults in 2013.
- The prevalence of adequate physical activity was relatively similar by gender.
- In 2013, Arab adults (11.4%) reported a significantly lower prevalence of adequate physical activity than White, non-Hispanics adults (19.2%) in Michigan. Although Arab adults also reported a lower prevalence of adequate physical activity than Black, non-Hispanic and Hispanic adults, the differences were not significant.

Arab Demographic Characteristics	Adequate Physical Activity[a] %	Adequate Physical Activity[a] 95% Confidence Interval
Total	**11.4**	**(7.0-18.0)**
Age		
18 - 44	14.3	(7.8-24.8)
45 - 64	6.2†	(2.6-13.9)
65+	12.2†	(6.3-22.3)
Gender		
Male	13.3†	(6.0-26.7)
Female	9.7	(5.7-15.9)
Education		
HS graduate or less	11.3†	(4.8-24.5)
Some college or more	11.5	(7.2-17.8)
Household Income		
< $25,000	14.2†	(6.2-29.2)
$25,000 - $49,999	7.2†	(3.4-14.7)
$50,000+	8.6†	(3.9-18.0)

[a] Among all Arab adults, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 75 minutes per week, or an equivalent combination of moderate and vigorous physical activities and also participate in muscle strengthening activities on two or more days per week. (N = 456)

† This estimate should be used with caution due to its low reliability and precision.

Adequate Physical Activity by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Cigarette Smoking

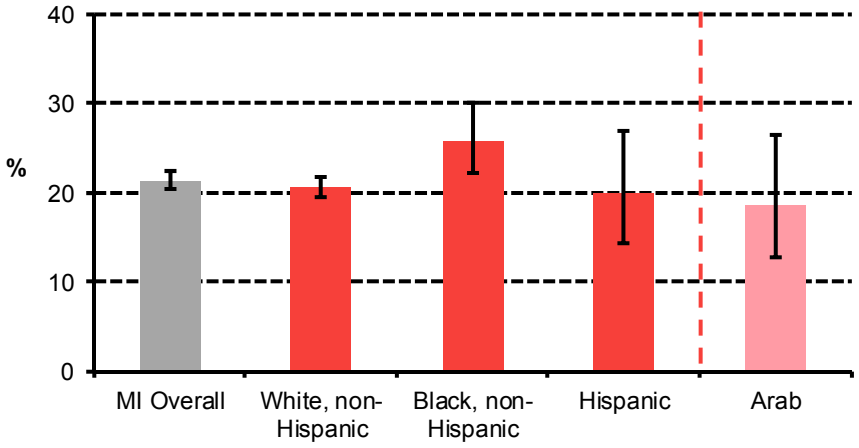
Cigarette smoking is the leading cause of preventable death in the United States, accounting for more than 480,000 deaths each year.[28]

- In 2013, an estimated 18.6% of Arab adults reported that they currently smoke cigarettes on a regular basis, compared to 21.4% of all Michigan adults (95% CI: 20.3-22.5).
- The prevalence of current smoking tended to decrease with increasing age.
- Although the prevalence of current smoking was higher among Arab males than Arab females, the difference was not significant.
- The prevalence of current smoking was higher among Arab adults with a high school education or less compared to those with some college or more, although the difference was not significant.
- In 2013, the prevalence of Arab adults that reported that they currently smoke cigarettes did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Current Smoking[a] %	95% Confidence Interval
Total	**18.6**	**(12.7-26.5)**
Age		
18 - 44	22.6	(13.6-35.1)
45 - 64	12.9	(8.4-19.3)
65+	11.6†	(6.0-21.4)
Gender		
Male	24.6	(15.1-37.4)
Female	12.1	(6.9-20.4)
Education		
HS graduate or less	24.4	(14.2-38.7)
Some college or more	13.7	(8.5-21.5)
Household Income		
< $25,000	20.7	(13.4-30.6)
$25,000 - $49,999	33.0†	(12.1-63.8)
$50,000+	11.2†	(4.6-24.7)

[a] Among all Arab adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days. (N = 517)
† This estimate should be used with caution due to its low reliability and precision.

Current Smoking by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Secondhand Smoke Exposure

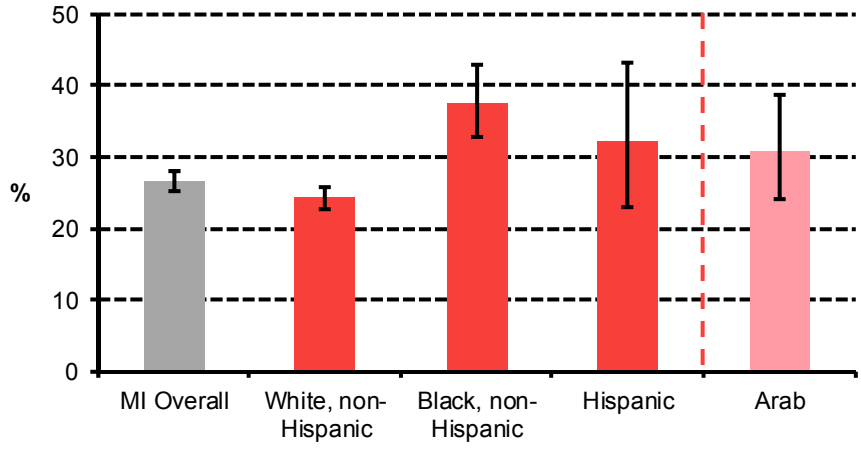
Among adults who have never smoked, secondhand smoke exposure causes an estimated 34,000 heart disease deaths and 7,300 lung cancer deaths within the United States each year.[28]

- In 2013, an estimated 30.9% of Arab adults reported that they were exposed to secondhand smoke in their home or car within the past seven days, compared to 26.7% (95% CI: 25.3-28.1) of all Michigan adults.
- Secondhand smoke exposure generally decreased with both increasing age and household income level.
- Although Arab males reported a higher prevalence of secondhand smoke exposure than Arab females, the difference was not significant.
- The prevalence of secondhand smoke exposure was similar by education level.
- In 2013, the prevalence of Arab adults who reported that they were exposed to secondhand smoke did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Secondhand Smoke Exposure[a] %	95% Confidence Interval
Total	**30.9**	**(24.0-38.7)**
Age		
18 - 44	37.7	(28.4-47.9)
45 - 64	26.9	(15.4-42.5)
65+	7.4†	(2.8-18.2)
Gender		
Male	36.1	(24.7-49.3)
Female	25.7	(18.2-34.9)
Education		
HS graduate or less	30.2	(21.2-41.0)
Some college or more	31.4	(21.4-43.5)
Household Income		
< $25,000	40.6	(29.5-52.8)
$25,000 - $49,999	36.3	(21.1-54.9)
$50,000+	23.7†	(11.0-43.8)

[a] Among all Arab adults, the proportion who reported being exposed to secondhand smoke in their home or a car within the past seven days. (N = 463)
† This estimate should be used with caution due to its low reliability and precision.

Secondhand Smoke Exposure by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Hookah Usage

2013 Arab BRFS

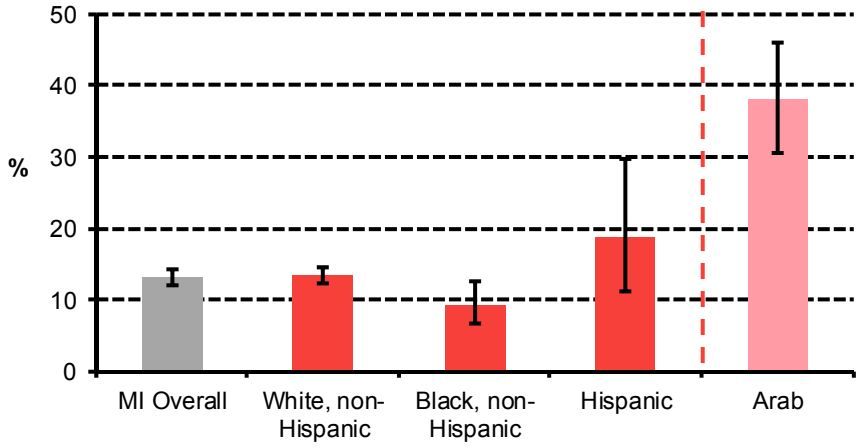
Hookahs are water pipes that are used to smoke tobacco. There is widespread misbelief that hookah smoking is a safe alternative to cigarette smoking. However, hookah smoke offers many of the same health risks as cigarette smoke.[13]

- In 2013, an estimated 38.1% of Arab adults reported that had ever smoked hookah in their lifetime, significantly higher than 13.2% (95% CI: 12.1-14.3) of all adults in Michigan.
- In 2013, an estimated 13.7% of Arab adults reported they had used hookah in the past 30 days, significantly higher than 3.2% of all adults in Michigan (95% CI: 2.5-3.9).
- The prevalence of both lifetime and current hookah usage generally decreased with increasing age.
- Although Arab males reported higher prevalence of both lifetime and current hookah usage than Arab females, the differences were not significant.
- In 2013, Arab adults (38.1%) reported a significantly higher prevalence of lifetime hookah usage compared to all other race/ethnicities in Michigan (White, non-Hispanic (13.4%), Black, non-Hispanic (9.2%), Hispanic (18.7%)).

Arab Demographic Characteristics	Ever Smoked Hookah[a]		Current Hookah Use[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**38.1**	**(30.7-46.1)**	**13.7**	**(9.4-19.6)**
Age				
18 - 44	50.5	(40.9-60.0)	21.1	(14.0-30.4)
45 - 64	26.7	(15.1-42.8)	3.7†	(1.9-7.0)
65+	8.5†	(3.6-18.6)	--[c]	---
Gender				
Male	46.7	(34.2-59.6)	17.9	(10.6-28.6)
Female	29.8	(21.5-39.6)	9.7	(5.9-15.5)
Education				
HS graduate or less	27.5	(18.6-38.6)	11.0	(6.9-17.2)
Some college or more	47.5	(36.0-59.3)	16.1	(9.4-26.3)
Household Income				
< $25,000	32.4	(21.8-45.2)	10.6	(6.1-17.6)
$25,000 - $49,999	43.7	(27.7-61.2)	12.6†	(5.5-26.3)
$50,000+	48.5	(30.4-67.0)	17.1†	(7.1-35.8)

[a] Among all Arab adults, the proportion who reported ever smoking tobacco from a hookah, narghile, or water pipe. (N = 462)
[b] Among all Arab adults, the proportion who reported using hookah on at least one or more day in the past 30 days. (N = 461)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Lifetime Hookah Usage by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Alcohol Consumption

Excessive alcohol use contributes to approximately 88,000 deaths each year within the United States.[29] Binge drinking is defined as consuming five or more alcoholic drinks per occasion (for men) or four or more alcoholic drinks per occasion (for women) at least once in the past month. For Muslims, there are strict prohibitions related to drinking alcohol, therefore religious and social discouragement are factors to consider when examining reported alcohol consumption.

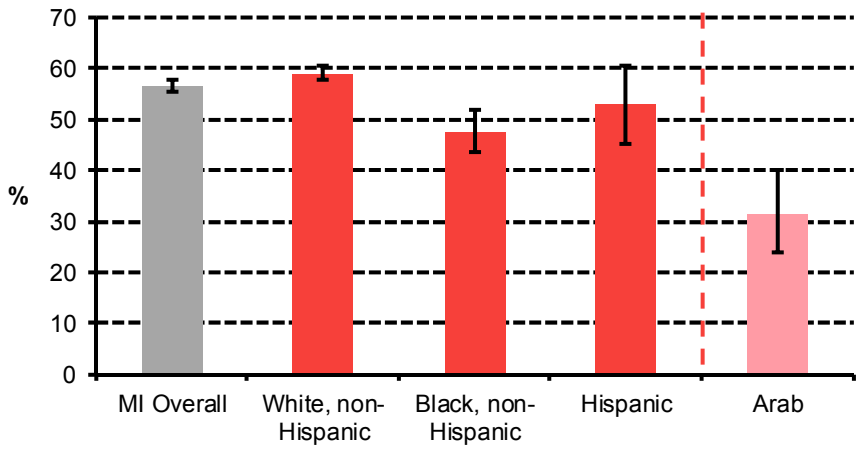
- In 2013, an estimated 31.5% of Arab adults reported some form of alcohol consumption within the past month, significantly lower than 56.6% (95% CI: 55.3-57.8) of all Michigan adults. Furthermore, an estimated 8.4% (95% CI: 4.6-14.9) of Arab adults reported binge drinking on at least one occasion in the past month, significantly lower than 18.9% (95% CI: 17.9-19.9) of all adults in Michigan.
- Although Arab males reported a higher prevalence of any alcohol consumption than Arab females, the difference was not significant.
- Arab adults with a household income of $50,000 or more (55.0%) reported a significantly higher prevalence of any alcohol consumption than Arab adults with a household income of less than $25,000 (19.4%).

Arab Demographic Characteristics	Any Alcohol Consumption[a] %	95% Confidence Interval
Total	**31.5**	**(24.0-40.2)**
Age		
18 - 44	35.9	(25.5-47.8)
45 - 64	22.8	(12.2-38.5)
65+	30.4	(17.7-47.1)
Gender		
Male	41.8	(29.3-55.5)
Female	20.2	(13.0-30.0)
Education		
HS graduate or less	23.6	(13.2-38.5)
Some college or more	38.3	(28.0-49.8)
Household Income		
< $25,000	19.4	(11.8-30.2)
$25,000 - $49,999	37.0[†]	(15.2-65.7)
$50,000+	55.0	(37.2-71.6)

[a] Among all Arab adults, the proportion who reported consuming at least one drink of any alcoholic beverage in the previous month. (N = 526)
[†] This estimate should be used with caution due to its low reliability and precision.

- In 2013, Arab adults (31.5%) reported a significantly lower prevalence of any alcohol consumption compared to all of the other race/ethnicities in Michigan (White, non-Hispanic (59.1%), Black, non-Hispanic (47.7%), Hispanic (52.9%)).

Any Alcohol Consumption by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Hypertension Awareness and Medication Use

2013 Arab BRFS

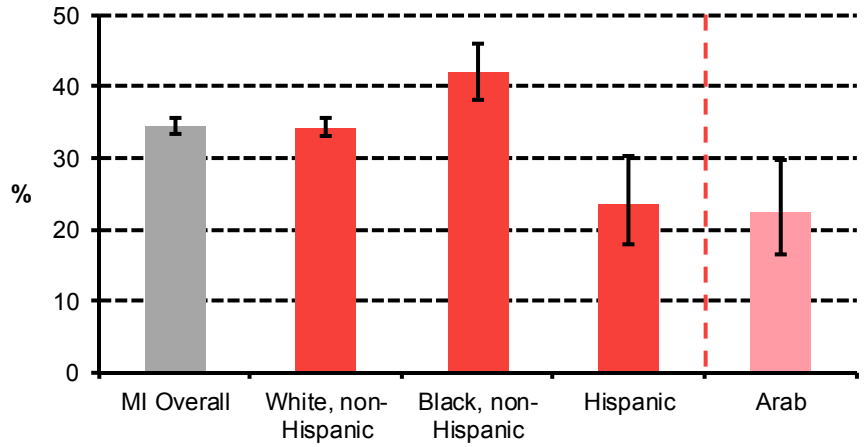
Adults with high blood pressure (HBP) are at a higher risk for heart disease, stroke, congestive heart failure, and end-stage renal disease.[30]

- In 2013, an estimated 22.5% of Arab adults reported ever being told by a doctor that they had high blood pressure (HBP), significantly lower than all adults in Michigan (34.6% [95% CI: 33.5-35.7]). Furthermore, 82.4% (95% CI: 70.2-90.2) of Arab adults with HBP were currently taking medications for their HBP, compared to 75.7% (95% CI: 73.8-77.5) of all Michigan adults.
- The prevalence of HBP generally increased with age.
- Although the prevalence of HBP was higher among Arab adults with a high school education or less compared to Arab adults with some college or more, the difference was not significant.
- In 2013, the prevalence of HBP among Arab adults (22.5%) was significantly lower than White, non-Hispanics (34.3%) and Black, non-Hispanics (42.0%). Thus, the prevalence of HBP was 1.5 times higher among White, non-Hispanics and 1.9 times higher among Black, non-Hispanics than Arab adults in Michigan in 2013. The Arab prevalence of HBP did not significantly differ from that of Hispanics in Michigan.

Arab Demographic Characteristics	Ever Told HBP[a] %	Ever Told HBP[a] 95% Confidence Interval
Total	**22.5**	**(16.6-29.8)**
Age		
18 - 44	11.7[†]	(4.6-26.6)
45 - 64	31.4	(23.5-40.4)
65+	59.1	(42.1-74.1)
Gender		
Male	24.9	(15.3-37.8)
Female	20.1	(14.7-26.7)
Education		
HS graduate or less	31.4	(20.9-44.2)
Some college or more	15.3	(10.4-21.9)
Household Income		
< $25,000	26.4	(18.5-36.1)
$25,000 - $49,999	38.3[†]	(17.1-65.2)
$50,000+	9.8[†]	(5.0-18.4)

[a] Among all Arab adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed. (N = 529)
[†] This estimate should be used with caution due to its low reliability and precision.

Ever Told High Blood Pressure by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

2013 Arab BRFS

Preventive Health Behaviors

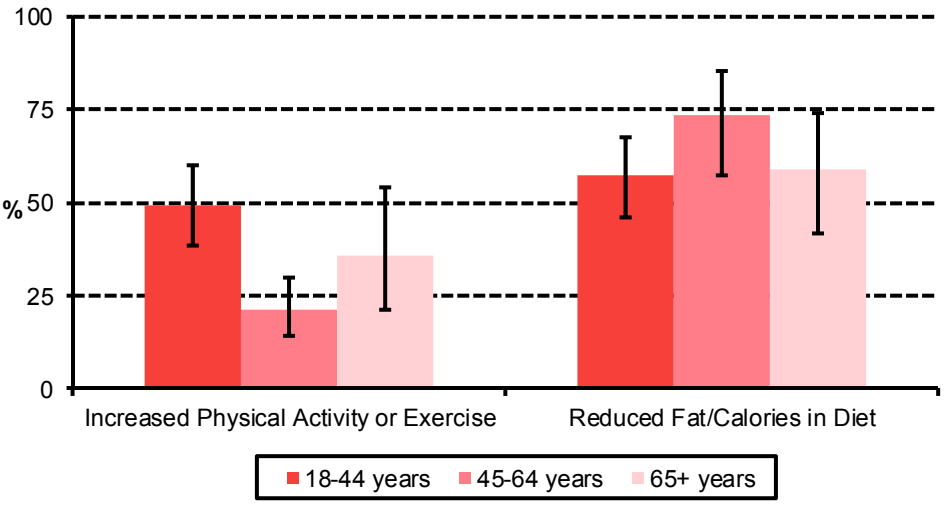
Weight management, diet, and adequate physical activity have been shown to be help prevent and control many chronic diseases such as diabetes, heart disease, stroke, and some forms of cancer.[31-33]

- In 2013, an estimated 65.6% (95% CI: 59.1-71.6) of Arab adults reported trying to control or lose weight within the past 12 months. Furthermore, an estimated 38.6% of Arab adults in Michigan reported increasing their physical activity or exercise within the past 12 months, and 63.2% reported decreasing the amount of fat or calories in their diet within the past 12 months.
- These questions were not asked at the state level and therefore are not available for comparison.
- While Arab adults aged 45-64 years reported the lowest prevalence of increased physical activity or exercise, they also reported the highest prevalence of decreased fat or calories in diet compared to the other age group categories, although differences by age group were not significant.
- Although Arab females reported a higher prevalence for both indicators, the differences were not significant.
- Arab adults with some college or more reported a higher prevalence of increased physical activity or exercise compared to Arab adults with a high school education or less, although the difference was not significant.
- Both indicators were relatively even across household income levels.

Arab Demographic Characteristics	Increased Physical Activity or Exercise[a]		Decreased Fat/ Calories in Diet[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**38.6**	**(30.5-47.3)**	**63.2**	**(54.7-70.9)**
Age				
18 - 44	49.1	(38.4-59.9)	57.3	(46.2-67.7)
45 - 64	21.1	(14.2-30.1)	73.5	(57.1-85.2)
65+	35.9	(21.1-53.9)	58.7	(41.8-73.8)
Gender				
Male	35.2	(22.4-50.6)	59.6	(45.1-72.5)
Female	41.4	(32.2-51.3)	66.5	(58.0-74.0)
Education				
HS graduate or less	30.5	(20.7-42.5)	63.5	(54.3-71.9)
Some college or more	48.0	(34.9-61.3)	62.8	(48.4-75.3)
Household Income				
< $25,000	39.7	(27.7-53.1)	64.4	(53.0-74.4)
$25,000 - $49,999	39.4	(23.4-58.1)	68.9	(52.0-81.9)
$50,000+	40.8	(20.8-64.4)	60.6†	(35.6-81.1)

[a] Among all Arab adults, the proportion who reported increasing their physical activity or exercise in the past 12 month. (N = 367)
[b] Among all Arab adults, the proportion who reported reducing the amount of fat or calories in their diet in the past 12 months. (N = 366)
† This estimate should be used with caution due to its low reliability and precision.

Preventive Health Behaviors by Age Group, Arab Adults in Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS.

2013 Arab BRFS

Routine Checkup in Past Year

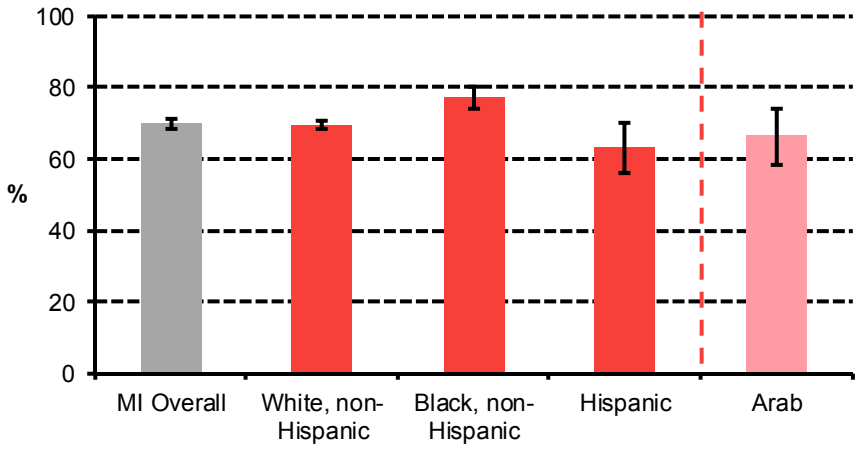
The benefits of having an annual checkup include early diagnosis and treatment of existing conditions and prevention of future medical problems.[34]

- In 2013, an estimated 66.8% of Arab adults reported having a routine medical checkup within the past year, similar to 69.9% of all Michigan adults (95% CI: 68.7-71.0).
- The prevalence of having a routine checkup within the past year generally increased with age. Arab adults aged 45 to 64 years (77.2%) reported a significantly higher prevalence of having a routine medical checkup in the past year compared to Arab adults aged 18 to 44 years (57.3%).
- Although Arab females reported a higher prevalence of having a routine checkup within the past year than Arab males, the difference was not significant.
- The prevalence of having a routine checkup within the past year generally decreased with increasing education and household income level, although the differences were not significant.
- In 2013, the prevalence of Arab adults that reported having a routine medical checkup in the past year did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Had a Routine Checkup Within The Past Year[a] %	95% Confidence Interval
Total	**66.8**	**(58.4-74.1)**
Age		
18 - 44	57.3	(46.0-67.9)
45 - 64	77.2	(68.9-83.8)
65+	93.5†	(84.9-97.3)
Gender		
Male	62.6	(49.1-74.4)
Female	71.3	(63.0-78.4)
Education		
HS graduate or less	69.7	(56.6-80.2)
Some college or more	64.2	(53.1-74.0)
Household Income		
< $25,000	75.6	(66.8-82.6)
$25,000 - $49,999	50.2	(28.4-71.9)
$50,000+	64.5	(45.0-80.1)

[a] Among all Arab adults, the proportion who reported that they had a routine medical checkup within the past year. (N = 531)
† This estimate should be used with caution due to its low reliability and precision.

Routine Checkup by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Cholesterol Screening and Awareness

2013 Arab BRFS

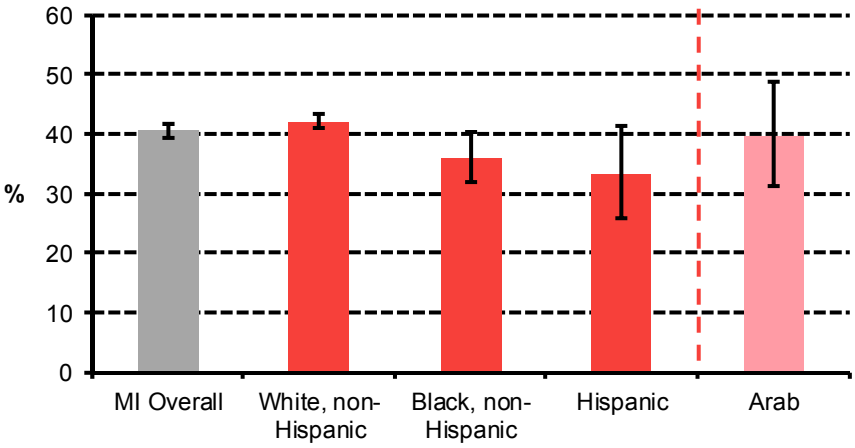
High blood cholesterol is a major risk factor for coronary heart disease, the leading cause of death in the United States.[35]

- In 2013, an estimated 76.8% of Arab adults reported having their cholesterol checked within the past five years, compared to 79.4% (95% CI: 78.3-80.5) of all Michigan adults.
- Among Arab adults who have ever had their cholesterol checked, an estimated 39.8% have been told by a doctor that they had high blood cholesterol, similar to 40.6% of all adults in Michigan (95% CI: 39.4-41.8).
- The prevalence of both indicators generally increased with increasing age.
- Although the prevalence of both indicators were higher among Arab males than Arab females, the differences were not significant.
- The prevalence of both indicators were similar by education level.
- With increasing household income level, the prevalence of cholesterol screening within the past five years generally increased while the prevalence of having been told to have high cholesterol generally decreased.
- In 2013, the prevalence of Arab adults that reported having their cholesterol checked within the past five years did not significantly differ that of any of the other racial/ethnic groups in Michigan (data not shown).
- In 2013, the prevalence of Arab adults that had been told by a doctor that they had high blood cholesterol did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Cholesterol Checked Within the Past 5 Years[a] %	95% Confidence Interval	Ever Told High Cholesterol[b] %	95% Confidence Interval
Total	**76.8**	**(70.6-82.0)**	**39.8**	**(31.4-48.9)**
Age				
18 - 44	68.5	(59.0-76.8)	24.6	(16.0-35.9)
45 - 64	89.2	(82.0-93.7)	55.2	(40.1-69.4)
65+	91.4†	(78.9-96.8)	67.7	(50.5-81.1)
Gender				
Male	80.5	(72.5-86.5)	43.6	(30.5-57.8)
Female	72.8	(63.4-80.4)	35.1	(26.1-45.3)
Education				
HS graduate or less	78.3	(70.1-84.7)	39.4	(28.9-51.0)
Some college or more	75.5	(66.0-83.1)	40.1	(27.9-53.6)
Household Income				
< $25,000	71.1	(59.7-80.3)	49.9	(37.2-62.5)
$25,000 - $49,999	75.7	(58.7-87.2)	27.9†	(13.4-49.0)
$50,000+	94.3†	(86.5-97.7)	31.1	(16.2-51.3)

[a] Among all Arab adults, the proportion reporting that they have had their blood cholesterol checked within the past five years. (N=518)
[b] Among Arab adults who have had their blood cholesterol checked, the proportion reporting that a doctor, nurse, or other health professional had told them that their cholesterol was high. (N=421)
† This estimate should be used with caution due to its low reliability and precision.

Ever Told High Cholesterol by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Breast Cancer Screening

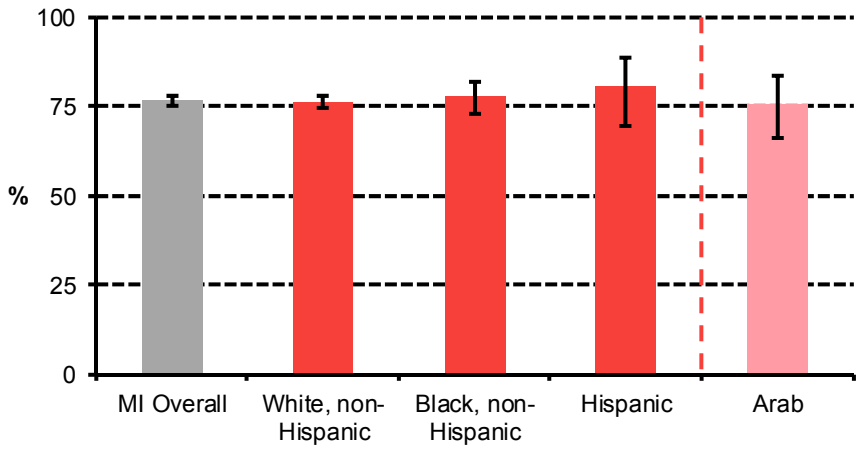
Breast cancer is the second leading cause of cancer deaths among United States women.[36] In 2012, there were 1,424 deaths among Michigan women due to breast cancer, second only to that of lung cancer.[37] Early detection of breast cancer can occur through the use of screening tools such as mammography and clinical breast exams.

- In 2013, an estimated 76.0% of Arab women 40 years and older reported having a mammogram in the past two years, similar to 76.6% (95% CI: 75.0-78.1) of all women aged 40 years and older in Michigan in 2012.
- In 2013, an estimated 40.4% of Arab women 40 years and older reported having both a clinical breast exam and a mammogram within the past year compared to 50.4% (95% CI: 48.6-52.2) of all women aged 40 years and older in Michigan in 2012.
- In 2013, the prevalence of Arab women 40 years and older who reported having a mammogram within the past two years did not significantly differ from that of any of the other racial/ethnic groups in Michigan in 2012.

Arab Demographic Characteristics	Had Mammogram in the Past Two Years Among Women Aged 40 Years and Older [a]		Had Clinical Breast Exam and Mammogram in Past Year Among Women Aged 40 Years and Older[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**76.0**	**(66.3-83.7)**	**40.4**	**(29.0-52.9)**
Age				
40 - 59	80.4	(69.5-88.0)	46.0	(31.9-60.7)
60+	--[c]	---	--[c]	---
Education				
HS graduate or less	74.3	(62.6-83.3)	37.5	(25.8-50.7)
Some college or more	--[c]	---	--[c]	---
Household Income				
< $25,000	75.1	(60.8-85.5)	39.7	(25.7-55.6)
$25,000 - $49,999	--[c]	---	--[c]	---
$50,000+	--[c]	---	--[c]	---

[a] Among Arab women aged 40 years and older, the proportion who reported having a mammogram within the past two years. (N = 122)
[b] Among Arab women aged 40 years and older, the proportion who reported having a clinical breast exam and a mammogram within the past year. (N = 120)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

Had a Mammogram in the Past Two Years Among Women Aged 40 Years and Older by Race/Ethnicity, Michigan, 2012-2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White and Black used data from the 2012 Michigan BRFS. Hispanic estimates were used from the 2012 Hispanic BRFS.

Cervical Cancer Screening

2013 Arab BRFS

Current guidelines for cervical cancer screening recommend that Pap testing should begin within three years after the onset of sexual intercourse, or at least by 21 years of age. Once three or more annual tests have been normal, at the discretion of the physician, Pap tests can be performed less frequently, but at least once every three years.[38]

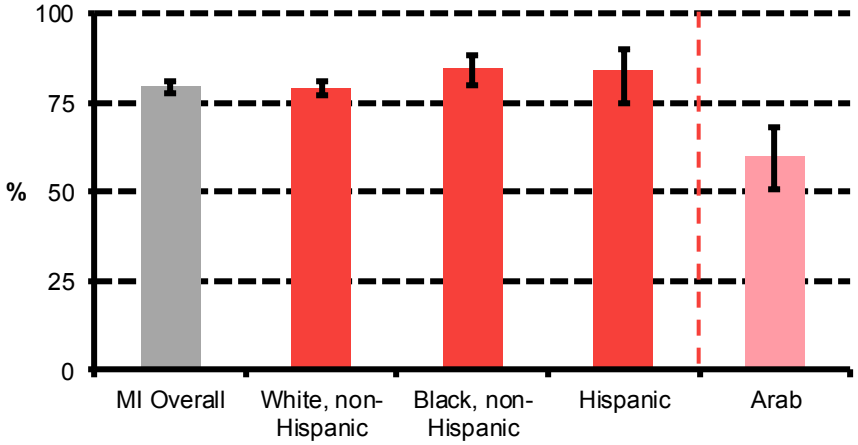
- In 2013, an estimated 68.9% of Arab women aged 18 years and older reported ever having a Pap test, significantly lower than 92.1% (95% CI: 90.6-93.4) of all women in Michigan aged 18 years and older in 2012.
- In 2013, an estimated 59.8% of Arab women reported having had a Pap test within the past three years, significantly lower than 79.4% (95% CI: 77.6-81.1) of all women in Michigan aged 18 years and older in 2012.
- The prevalence of both indicators was relatively even by education level.
- In 2013, the prevalence of Arab women 18 years and older (68.9%) who reported ever having a Pap test was significantly lower than White, non-Hispanic (93.1%) and Black, non-Hispanic (91.3%) women in Michigan in 2012. The Arab prevalence did not significantly differ from that of Hispanics in Michigan in 2012 (data not shown).

Arab Demographic Characteristics	Ever Had a Pap Test[a] %	Ever Had a Pap Test[a] 95% Confidence Interval	Had Appropriately Timed Pap Test[b] %	Had Appropriately Timed Pap Test[b] 95% Confidence Interval
Total	**68.9**	**(60.2-76.5)**	**59.8**	**(50.5-68.4)**
Age				
18 - 49	67.2	(56.4-76.4)	59.6	(48.3-70.0)
50+	73.1	(57.5-84.5)	59.3	(43.5-73.4)
Education				
HS graduate or less	70.0	(58.7-79.2)	59.7	(47.8-70.5)
Some college or more	67.8	(54.0-79.1)	59.9	(45.5-72.7)
Household Income				
< $25,000	73.5	(59.5-84.0)	62.2	(47.2-75.2)
$25,000 - $49,999	--[c]	---	--[c]	---
$50,000+	--[c]	---	--[c]	---

Note: Data includes diagnostic tests and excludes women who have had a hysterectomy.
[a] Among Arab women aged 18 years and older, the proportion who reported ever having a Pap test. (N = 179)
[b] Among Arab women aged 18 years and older, the proportion who reported having a Pat test within the previous three years. (N = 177)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

- In 2013, the prevalence of Arab women 18 years and older (59.8%) who reported having a Pap test within the past year was significantly lower than White, non-Hispanic (78.9%), Black, non-Hispanic (84.5%), and Hispanic women (84.0%) in Michigan 18 years and older in 2012.

Had a Pap Test in the Past Three Years Among Women Aged 18 Years and Older by Race/Ethnicity, Michigan, 2012-2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White and Black used data from the 2012 Michigan BRFS. The Hispanic estimates were from the 2012 Hispanic BRFS.

2013 Arab BRFS

Colorectal Cancer Screening

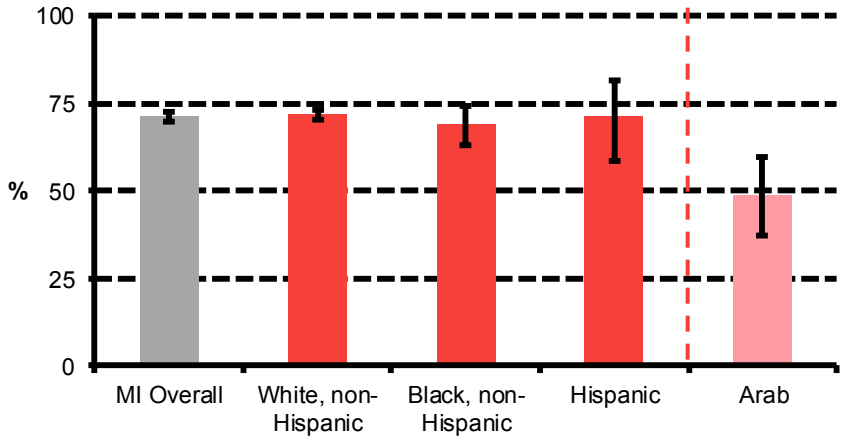
In 2012, colorectal cancer was the second leading cause of cancer-related deaths in Michigan with 1,721 deaths.[37] Fecal occult blood tests, sigmoidoscopy, and colonoscopy are screening procedures that are performed to detect colorectal cancer in the early stages. Appropriate colorectal cancer screening consists of a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

- In 2013, an estimated 34.9% of Arab adults aged 50 years and older reported having a sigmoidoscopy or colonoscopy within the past five years, significantly less than 56.4% (95% CI: 54.9-57.8) of all Michigan adults aged 50 years and older.
- In 2013, an estimated 48.5% of Arab adults aged 50 years or older reported appropriate colorectal cancer screening, significantly less than 71.0% (95% CI: 69.6 -72.4) of all Michigan adults aged 50 years and older.
- Although the prevalence of both indicators were higher among Arab males than Arab females, the differences were not significant.
- The prevalence of having a sigmoidoscopy or colonoscopy in the past five years was higher among Arab adults with a high school education or less compared to those with a college degree or more, although the difference was not significant.
- In 2013, the prevalence of having a sigmoidoscopy or colonoscopy within the past five years among Arab adults (34.9%) was significantly lower than all of the other racial/ethnic groups (White, non-Hispanic (56.3%), Black, non-Hispanic (58.9%), Hispanic (62.1%)) in Michigan (data not shown).
- In 2013, the prevalence of appropriate colorectal cancer screening among Arab adults (48.5%) was significantly lower than White, non-Hispanics (71.8%) and Black, non-Hispanics (68.9%) in Michigan. The Arab prevalence did not significantly differ from that of Hispanics.

Arab Demographic Characteristics	Had Sigmoidoscopy or Colonoscopy in Past 5 Years[a]		Had Appropriate Colorectal Cancer Screening[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**34.9**	**(24.4-47.1)**	**48.5**	**(37.5-59.6)**
Age				
50 - 64	31.5	(18.8-47.9)	46.3	(32.8-60.4)
65+	41.5	(25.2-60.0)	52.6	(33.4-71.1)
Gender				
Male	40.7	(22.9-61.2)	59.0	(41.3-74.6)
Female	29.2	(19.3-41.5)	37.8	(26.6-50.4)
Education				
HS graduate or less	42.3	(29.5-56.2)	48.9	(36.1-61.8)
Some college or more	23.3	(13.2-37.8)	47.8	(27.1-69.3)
Household Income				
< $25,000	31.8	(18.2-49.4)	37.0	(22.6-54.2)
$25,000 - $49,999	--[c]	---	--[c]	---
$50,000+	27.5†	(11.9-51.7)	67.6†	(40.1-86.7)

[a] Among Arab adults aged 50 years and older, the proportion who reported having a sigmoidoscopy or colonoscopy within the past five years. (N = 231)
[b] Among Arab adults aged 50 years and older, the proportion who reported having a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years. (N = 228)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Appropriate Colorectal Cancer Screening Among Adults Aged 50 Years and Older by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Oral Health

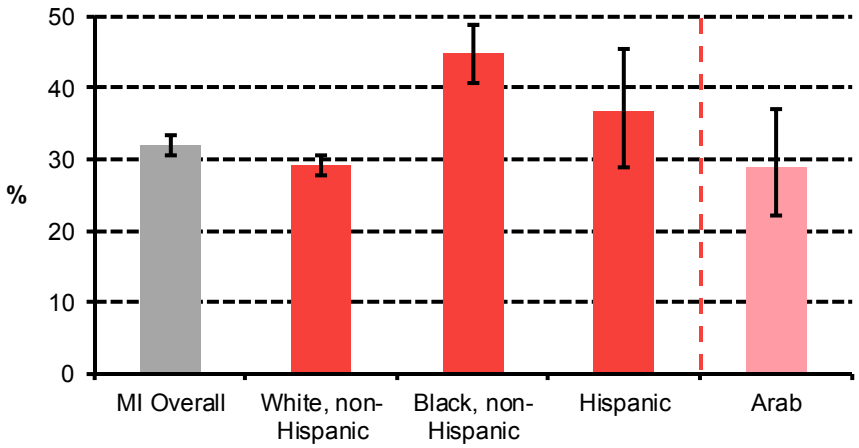
Oral health is an important part of one's general health and quality of life. Regular dental care includes preventive dental services such as teeth cleaning, and permits early diagnosis and treatment of tooth decay and periodontal diseases.[39] It has been estimated that low income adults are 2.5 times more likely to have at least one untreated decayed tooth compared with higher income adults (40% vs. 16%).[40]

- In 2013, an estimated 29.0% of Arab adults reported not having had a dental visit within the past year, similar to 32.0% (95% CI: 30.7-33.3) of all Michigan adults in 2012. An estimated 15.7% (95% CI: 11.2-21.4) of Arab adults reported having 6 or more teeth missing, also similar to all Michigan adults (15.8% [95% CI: 14.9-16.7]) in 2012.
- The prevalence of not having had a dental visit within the past year was relatively even by gender.
- Although the prevalence of not having had a dental visit within the past year was higher among Arab adults with a high school education or less than Arab adults with some college or more, the difference was not significant.
- In 2013, the prevalence of not having a dental visit within the past year among Arab adults (29.0%) was significantly lower than Black, non-Hispanic (44.8%) adults in Michigan in 2012. The prevalence among Arab adults did not significantly differ from that of White, non-Hispanic or Hispanic adults in 2012.

Arab Demographic Characteristics	No Dental Visit in Past Year[a] %	95% Confidence Interval
Total	**29.0**	**(22.0-37.1)**
Age		
18 - 44	31.7	(21.5-44.0)
45 - 64	24.5	(17.2-33.5)
65+	29.4	(18.4-43.6)
Gender		
Male	30.1	(18.7-44.6)
Female	27.9	(21.2-35.8)
Education		
HS graduate or less	32.5	(24.8-41.3)
Some college or more	25.3	(14.5-40.4)
Household Income		
< $25,000	28.4	(20.5-37.8)
$25,000 - $49,999	38.7	(23.4-56.6)
$50,000+	--[b]	---

[a] Among all Arab adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year. (N = 399).
[b] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

No Dental Visit in Past Year by Race/Ethnicity, Michigan, 2012-2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White and Black used data from the 2012 Michigan BRFS. Hispanic estimates were used from the 2012 Hispanic BRFS.

HIV Testing

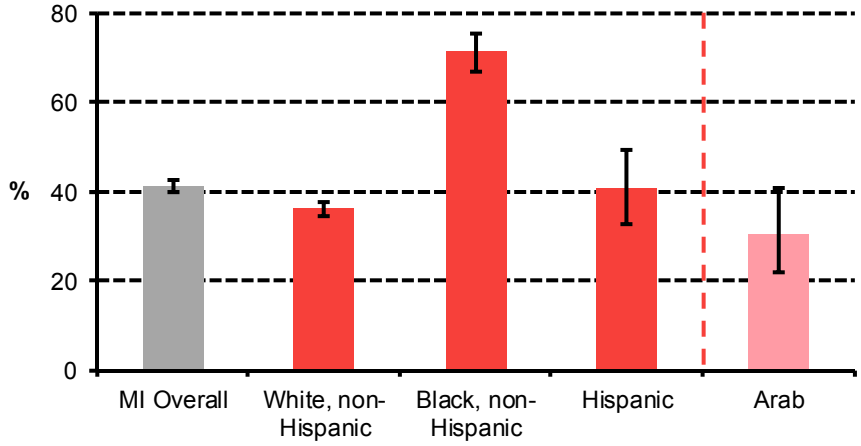
Early awareness of an HIV infection through HIV testing can prevent further spread of the disease, and an early start on antiretroviral therapy can increase the quality of life among those who are living with HIV/AIDS.[41]

- In 2013, an estimated 30.5% of Arab adults aged 18-64 years reported ever being tested for HIV compared to 41.2% of all Michigan adults aged 18-64 years (95% CI: 39.8-42.7)
- The prevalence of HIV testing tended to decrease with increasing age.
- Although Arab males reported a higher prevalence of HIV testing than Arab females, the difference was not significant.
- The prevalence of HIV testing generally increased with increasing education and household income level.
- In 2013, Arab adults (30.5%) reported a significantly lower prevalence of HIV testing than Black, non-Hispanics (71.2%). In other words, Black, non-Hispanic adults reported ever being tested for HIV 2.3 times that of Arab adults in Michigan. The prevalence of testing among Arab adults did not significantly differ from that of White, non-Hispanic and Hispanic adults.

Arab Demographic Characteristics	Ever Had an HIV Test[a] %	95% Confidence Interval
Total	**30.5**	**(21.8-41.0)**
Age		
18 - 44	36.9	(25.7-49.6)
45 - 64	17.6†	(8.0-34.4)
Gender		
Male	39.4	(25.3-55.6)
Female	20.3	(12.8-30.7)
Education		
HS graduate or less	25.9†	(12.8-45.2)
Some college or more	34.2	(23.2-47.2)
Household Income		
< $25,000	27.9	(16.7-42.8)
$25,000 - $49,999	37.4†	(15.1-66.8)
$50,000+	42.2	(23.8-63.1)

[a] Among Arab adults aged 18-64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation. (N = 395)

HIV Testing by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Asthma

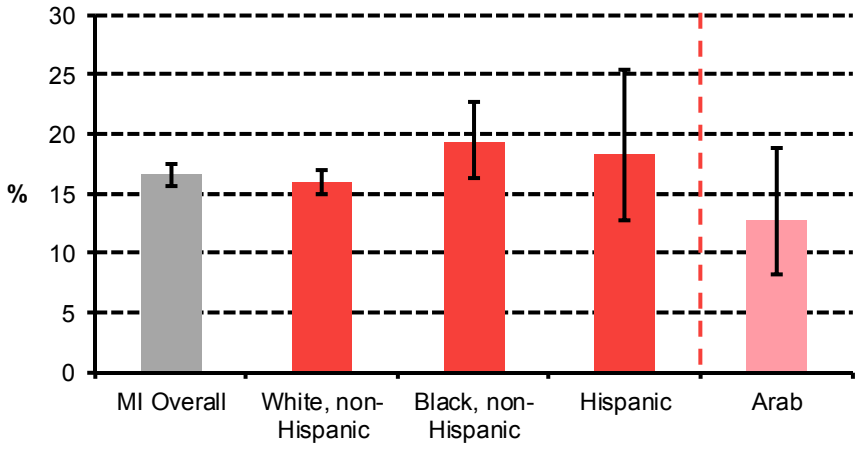
Asthma is a chronic inflammatory disorder of the lungs, characterized by wheezing, coughing, difficulty breathing, and chest tightness. Allergies, a family history of asthma or allergy, low birth weight, and exposure to tobacco smoke are just a few of the potential risk factors that are associated with the development of asthma.[42]

- In 2013, an estimated 12.7% of Arab adults reported that they were ever diagnosed with asthma and 7.9% reported that they currently have asthma. This compared to 16.6% (95% CI: 15.7-17.5) and 11.5% (95% CI: 10.7-12.3) of all Michigan adults, respectively.
- The prevalence of lifetime asthma tended to decrease with increasing age.
- The prevalence of both indicators generally decreased with increasing education level.
- In 2013, the prevalence of Arab adults who reported ever being diagnosed with asthma did not significantly differ from that of any of the other racial/ethnic groups in Michigan.
- In 2013, the prevalence of Arab adults who reported current asthma did not significantly differ from that of any of the other racial/ethnic groups in Michigan (data not shown).

Arab Demographic Characteristics	Lifetime Asthma[a] %	Lifetime Asthma[a] 95% Confidence Interval	Current Asthma[b] %	Current Asthma[b] 95% Confidence Interval
Total	**12.7**	**(8.3-18.9)**	**7.9**	**(5.2-11.9)**
Age				
18 - 44	13.9	(7.8-23.5)	6.6†	(3.4-12.2)
45 - 64	10.8	(5.9-18.8)	10.4†	(5.6-18.5)
65+	10.5†	(3.8-26.0)	--[c]	---
Gender				
Male	14.0†	(7.1-25.7)	7.1†	(3.5-13.7)
Female	11.3	(7.2-17.5)	8.8	(5.3-14.4)
Education				
HS graduate or less	15.4	(8.4-26.7)	10.7	(6.1-18.1)
Some college or more	10.2	(5.9-17.2)	5.5†	(2.9-10.4)
Household Income				
< $25,000	17.4	(9.7-29.4)	10.3	(5.9-17.5)
$25,000 - $49,999	--[c]	---	--[c]	---
$50,000+	10.1†	(4.0-23.2)	--[c]	---

[a] Among all Arab adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma. (N = 533)
[b] Among all adults, the proportion reporting that they still have asthma. (N = 532)
[c] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Lifetime Asthma by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Arthritis

2013 Arab BRFS

Arthritis and rheumatism are the leading causes of disability within the United States. These conditions have been diagnosed in an estimated 50 million U.S. adults.[14]

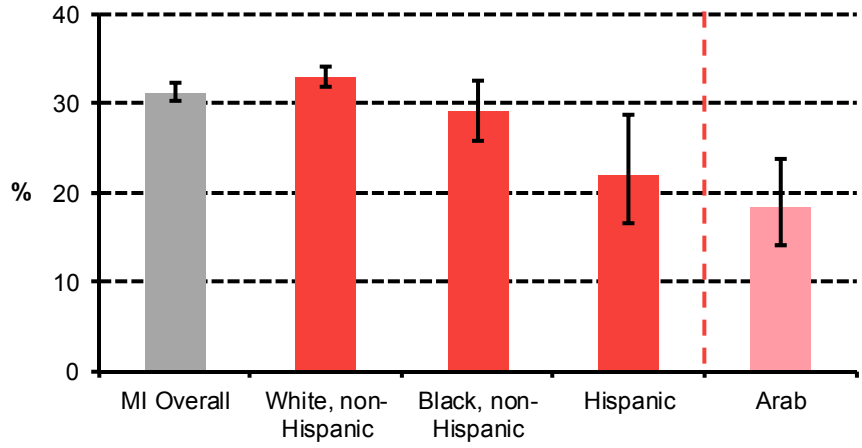
- In 2013, an estimated 18.4% of Arab adults reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia, significantly less than all Michigan adults (31.3% [95% CI: 30.3-32.4]).
- The prevalence of arthritis among Arab adults increased with age. Arab adults aged 18 to 44 years (6.5%) were significantly less likely to report having arthritis compared to Arab adults aged 45 to 64 years (36.1%) and 65 years and older (39.1%).
- Although Arab females reported a higher prevalence of arthritis than Arab males†, the difference was not significant.
- Arab adults with a high school education or less (30.1%) were significantly more likely to have arthritis than Arab adults with some college or more (8.6%).
- The prevalence of arthritis generally decreased with increasing household income level.
- In 2013, Arabs (18.4%) reported a significantly lower prevalence of arthritis than White, non-Hispanics (32.9%) and Black, non-Hispanics (29.1%). Thus, White, non-Hispanics had a prevalence 1.8 times that of Arabs and Black, non-Hispanics had a prevalence 1.6 times that of Arabs in Michigan. The prevalence among Arab adults did not significantly differ from that of Hispanics.

Arab Demographic Characteristics	Ever Told Arthritis[a] %	95% Confidence Interval
Total	**18.4**	**(14.1-23.7)**
Age		
18 - 44	6.5	(4.0-10.6)
45 - 64	36.1	(24.6-49.5)
65+	39.1	(24.0-56.5)
Gender		
Male	11.4†	(6.1-20.2)
Female	26.0	(20.1-33.0)
Education		
HS graduate or less	30.1	(21.9-40.0)
Some college or more	8.6	(5.8-12.6)
Household Income		
< $25,000	23.0	(15.6-32.6)
$25,000 - $49,999	19.7†	(8.9-38.1)
$50,000+	7.4†	(3.8-13.7)

[a] Among all Arab adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. (N = 523)

† This estimate should be used with caution due to its low reliability and precision.

Arthritis by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Cardiovascular Disease

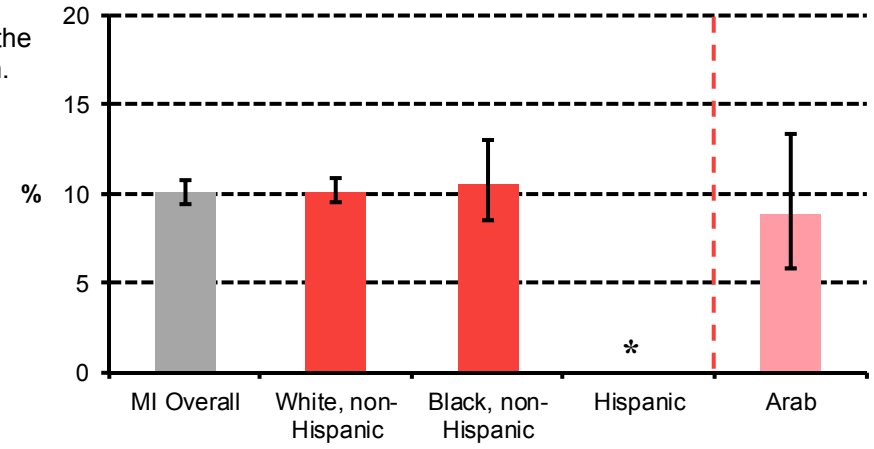
Heart disease and stroke are the first and fourth leading causes of death, respectively, in both Michigan and the United States.[43]

- In 2013, an estimated of 5.3† (95% CI: 2.8-9.8) of Arab adults had ever been told by a doctor that they had a heart attack, 5.6% (95% CI: 3.2-9.9) had ever been told they had angina or coronary heart disease and 1.9%† (95% CI: 0.8-4.2) had ever been told they had a stroke. This compared to 5.2% (95% CI: 4.7-5.7), 5.2% (95% CI: 4.8-5.7), and 3.6% (95% 3.2-4.0) of all adults in Michigan, respectively.
- When combining all three measures into one indicator, an estimated 8.8% of Arab adults have ever been told by a doctor that they had some form of cardiovascular disease, compared to 10.1% (95% CI: 9.4-10.8) of all Michigan adults.
- The prevalence of cardiovascular disease generally increased with age. Arab adults aged 65 years and older (39.3%) were significantly more likely to report being told to have cardiovascular disease compared to Arab adults aged 45 to 65 years (11.3%).
- The prevalence of cardiovascular disease generally decreased with increasing education and household income levels.
- In 2013, the prevalence of Arab adults who reported ever being diagnosed with cardiovascular disease did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Ever Told Some Form of Cardiovascular Disease[a] %	95% Confidence Interval
Total	**8.8**	**(5.8-13.3)**
Age		
18 - 44	2.7†	(1.0-7.0)
45 - 64	11.3	(7.0-17.7)
65+	39.3	(21.0-61.1)
Gender		
Male	10.1†	(5.5-17.9)
Female	7.5	(4.2-12.9)
Education		
HS graduate or less	11.8	(7.3-18.5)
Some college or more	6.4†	(2.8-14.1)
Household Income		
< $25,000	12.4†	(6.6-22.1)
$25,000 - $49,999	8.0†	(3.0-19.8)
$50,000+	--[b]	---

[a] Among all Arab adults, the proportion who reported that had been told by a doctor that they had a heart attack or myocardial infarction, they had angina or coronary heart disease, or they had a stroke. (N = 527)
[b] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Ever Told Some Form of Cardiovascular Disease by Race/Ethnicity, Michigan, 2013



*The Hispanic prevalence estimate was excluded from the graph due to the denominator being less than 50 and/or a relative standard error of greater than 30%.

All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Diabetes

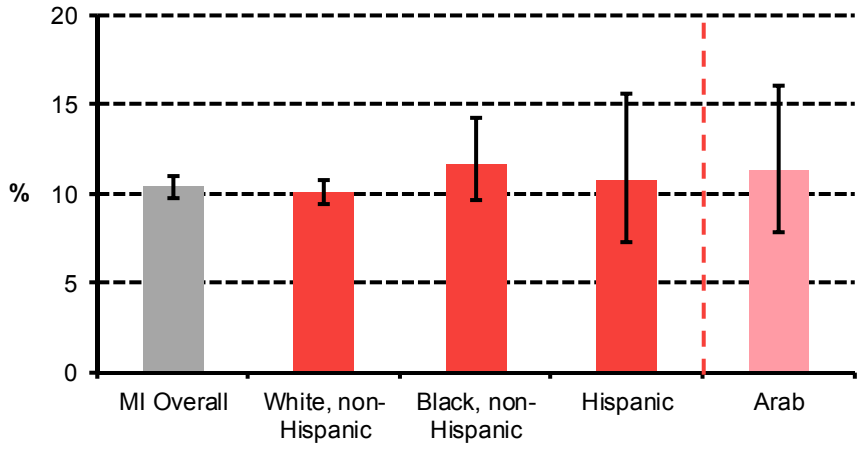
Diabetes is the seventh leading cause of death in both Michigan and the United States.[43] Obesity, poor diet, physical inactivity, and high blood pressure are just a few of the known risk factors that are associated with the development of diabetes.[44]

- In 2013, an estimated 11.3% of Arab adults reported ever being told by a doctor that they had diabetes, similar to 10.4% (95% CI: 9.7-11.0) of all Michigan adults.
- The prevalence of diabetes generally increased with age, but decreased with increasing education and household income level.
- The prevalence of diabetes was relatively even by gender.
- In 2013, the prevalence of Arab adults who reported ever being diagnosed with diabetes did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Ever Told Diabetes[a] %	95% Confidence Interval
Total	**11.3**	**(7.8-16.1)**
Age		
18 - 44	4.2†	(1.5-10.8)
45 - 64	19.7	(11.5-31.5)
65+	29.7	(17.4-45.8)
Gender		
Male	9.0†	(4.8-16.4)
Female	13.8	(8.8-21.0)
Education		
HS graduate or less	15.1	(9.4-23.2)
Some college or more	8.1†	(4.3-14.5)
Household Income		
< $25,000	20.1	(12.5-30.8)
$25,000 - $49,999	5.6†	(2.5-12.1)
$50,000+	3.0†	(1.3-6.9)

[a] Among all Arab adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed. (N = 534)
† This estimate should be used with caution due to its low reliability and precision.

Ever Told Diabetes by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

Depression

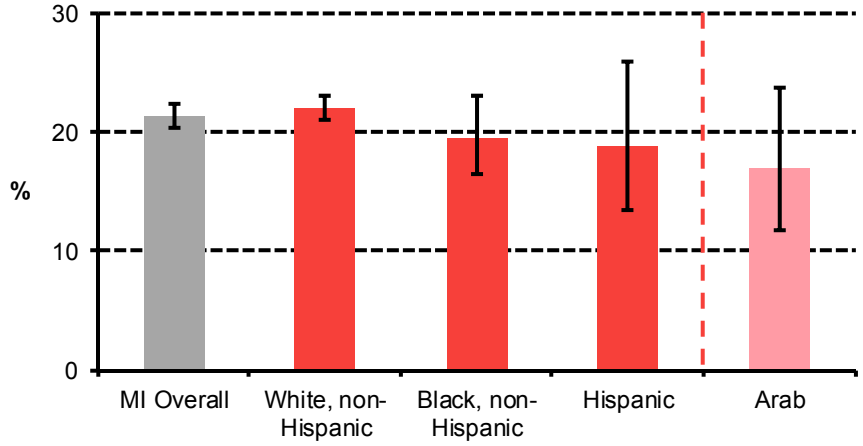
Depression is a common and treatable medical disorder that is more common among individuals with chronic conditions such as obesity, diabetes, and arthritis.[45]

- In 2013, an estimated 17.0% of Arab adults reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. This compared to 21.3% of all adults in Michigan (95% CI: 20.4-22.3).
- Arab females reported a higher prevalence of depression than Arab males†, although the difference was not significant.
- The prevalence of depression generally decreased with increasing education and household income level but differences were not significant.
- In 2013, the prevalence of Arab adults who reported ever being diagnosed with depression did not significantly differ from that of any of the other racial/ethnic groups in Michigan.

Arab Demographic Characteristics	Ever Told Depression[a] %	95% Confidence Interval
Total	**17.0**	**(11.8-23.8)**
Age		
18 - 44	13.8†	(7.2-24.8)
45 - 64	24.5	(17.6-33.2)
65+	14.0†	(6.6-27.0)
Gender		
Male	10.8†	(4.5-23.5)
Female	23.6	(16.8-32.0)
Education		
HS graduate or less	18.9	(13.3-26.1)
Some college or more	15.3†	(7.9-27.6)
Household Income		
< $25,000	23.4	(15.8-33.3)
$25,000 - $49,999	7.9†	(3.0-19.2)
$50,000+	--[b]	---

[a] Among all Arab adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. (N = 529)
[b] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
† This estimate should be used with caution due to its low reliability and precision.

Depression by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

2013 Arab BRFS

Adverse Childhood Experiences

Adverse childhood experiences can include physical, verbal, or sexual abuse, as well as family dysfunction (e.g., physical abuse in the household between adults, parent separation/ divorce, someone in the family had substance abuse problems, mental illness, incarceration).[46] These have been linked to adverse health outcomes later in adulthood, including depression, substance abuse, chronic conditions such as diabetes, cardiovascular disease and cancer, as well as premature mortality.[47-49]

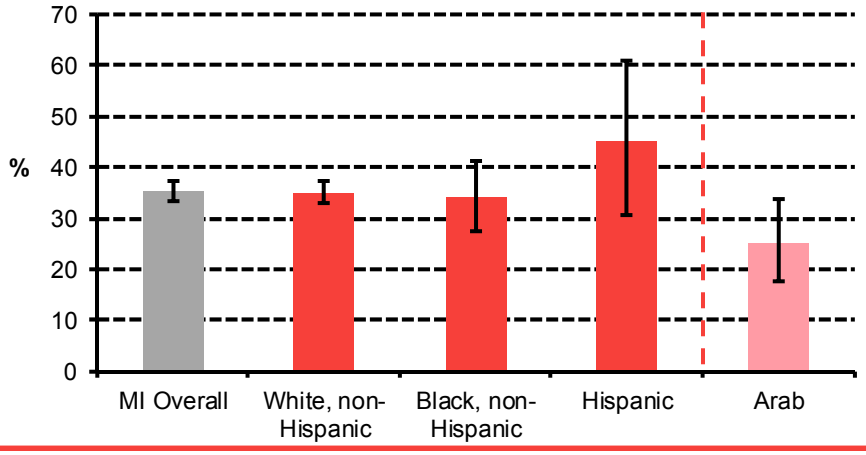
- In 2013, an estimated 10.9% of Arab adults reported being physically abused one or more times as a child, compared to 17.2% (95% CI: 15.6-18.9) of all Michigan adults.
- An estimated 25.0% of Arab adults reported being verbally abused one or more times as a child, compared to 35.3% (95% CI: 33.2-37.4) of all adults in Michigan.
- An estimated 16.6% of Arab adults reported being in a household as a child where one adults were physically violent to one another, similar to 16.3% (95% CI: 14.8-18.0) of all adults in Michigan.
- In 2013, the prevalence of Arab adults who reported being physically abused one or more times as a child or being in a household where adults were physically violent to one another as a child did not significantly differ from that of any of the other racial/ethnic groups in Michigan (data not shown).
- Although the prevalence of being verbally abused one or more times as a child among Arab adults (25.0%) was lower compared to all other racial/ethnic groups in Michigan in 2013, the differences were not significant.

	%	95% Confidence Interval
Physically Abused as a Child[a]	**10.9**	**(6.2-18.2)**
Verbally Abused as a Child[b]	**25.0**	**(17.7-33.9)**
Adults in Household Physically Violent to One Another One or More Time[c]	**16.6**	**(9.8-26.7)**
Parents Were Separated/Divorced[d]	**11.8†**	**(6.4-20.8)**
Lived with Someone with Mental Illness[e]	**11.1†**	**(5.3-21.9)**
Lived with an Alcoholic[f]	**7.6†**	**(3.0-18.1)**
Lived with Someone Who Used Drugs[g]	**6.5†**	**(2.4-16.5)**
Lived with Someone Who Served Time in Jail[h]	**3.4†**	**(1.3-8.4)**

Adverse childhood experiences referred to the time period before the respondents were 18 years of age. Among all Arab adults the proportion who reported: [a] being physically abused as a child one or more times (N = 396), [b] being verbally abused as a child one or more times (N = 386), [c] having adults in the household that were physically violent to one another as a child (N = 386), [d] that their parents separated or divorced as a child (N = 403), [e] living with someone with a mental illness as a child (N = 401), [f] living with an alcoholic as a child (N = 403), [g] living with someone who used drugs as a child (N = 402), [h] living with someone who served time in jail as a child (N = 404).

† This estimate should be used with caution due to its low reliability and precision.

Verbally Abused as a Child by Race/Ethnicity, Michigan, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS while estimates for Michigan overall as well as White, Black, and Hispanic estimates used data from the 2013 Michigan BRFS.

2013 Arab BRFS

Reactions to Race

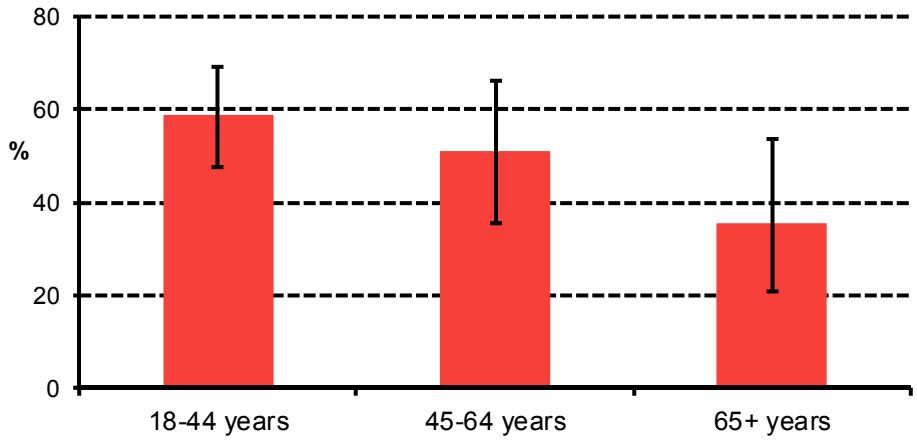
"Race" can be a strong predictor of health outcomes, even though "race" is widely recognized as a social construct.[50] A person's self-assigned race/ethnicity can often be distinct from their race assigned by society. Research using BRFSS data from various states found advantages in health status among Hispanics socially assigned as White compared to those socially assigned as Hispanic.[50]

- In 2013, among self-identified Arab adults, an estimated 54.2% reported being classified by others in this country as White and 45.8% reported being classified as another race.
- The proportion of Arab adults who reported being socially assigned by others as White decreased with increasing age, although the differences were not significant.
- A higher proportion of Arab females reported being socially assigned as White (59.9% [95% CI: 50.5-68.5]) compared to Arab males (47.9% [95% CI: 34.0-62.2]), although the difference was not significant (data not shown).
- Although the majority of Arab adults reported being treated the same as other races at work (86.1%) and having a similar health care experience as other races (79.3%), about 5% reported treatment and experiences worse than other races.

	%	95% Confidence Interval
"Socially Assigned Race"[a]		
White	54.2	(45.9-62.3)
Other	45.8	(37.7-54.1)
Treatment at Work Compared to Other Races[b]		
Worse than other races	5.4†	(2.9-10.0)
The same as other races	86.1	(77.5-91.7)
Better than other races	8.5†	(3.9-17.5)
Health Care Experiences Compared to Other Races[c]		
Worse than other races	5.2†	(2.8-9.7)
The same as other races	79.3	(73.2-84.3)
Better than other races	12.8	(8.8-18.1)
No health care in past 12 months	2.7	(1.5-4.8)

[a] Among all self-identified Arab adults, their "socially assigned race" was measured by the response to the question, "How do other people usually classify you in this country?" (N = 368)
[b] Among all Arab adults, how they reported they were treated at work compared to other races, in the past 12 months. (N = 146)
[c] Among all Arab adults, how they reported their experiences, when seeking health care compared to other races, in past 12 months. (N = 350)
† This estimate should be used with caution due to its low reliability and precision.

Among Arab Adults, Proportion Classifed by Others in Society as White by Age Group, 2013



All Arab prevalence estimates used data from the 2013 Arab BRFS.

Reactions to Race, continued

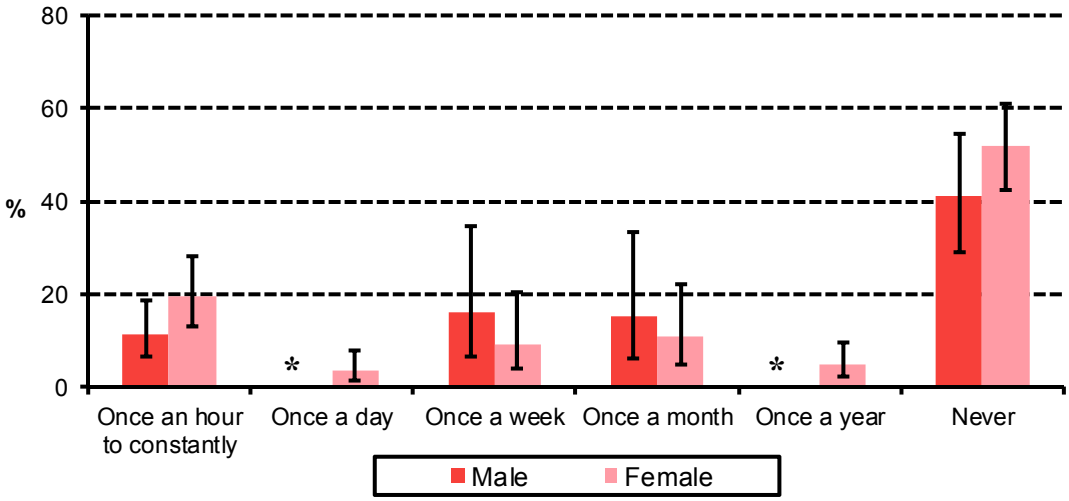
How often a person thinks about their race can help explain the importance race plays in their daily interactions.[51] For example, a person who thinks frequently about their race would be expected to make choices more often based on their race, which could influence healthy behaviors. A study using BRFSS data from various states found that persons who constantly thought about their race were less likely to be screened for colorectal cancer.[51]

- Almost half (46.6%) of Arab adults reported never thinking about their race while 15.6% reported thinking about their race once an hour to constantly.
- A higher proportion of Arab females reported never thinking about their race (51.8%) and thinking about their race once an hour to constantly (19.5%) compared to Arab males (41.1% and 11.4%, respectively), although the differences were not significant.
- Even though a higher proportion of Arab adults with less than a high school education (57.5% [95% CI: 46.7-67.7]) reported never thinking about their race compared to Arab adults with some college or more (34.8% [95% CI: 23.0-48.8]), the difference was not significant.
- An estimated 3.8%† of Arab adults reported having physical symptoms as a result of how they were treated based on their race in the past 30 days, while 8.5% reported having emotional symptoms as a result of how they were treated based on race in the past 30 days.

	%	95% Confidence Interval
Race Consciousness[a]		
Once an hour to constantly	15.6	(11.4-21.0)
Once a day	5.0†	(2.2-11.3)
Once a week	12.7†	(6.8-22.4)
Once a month	13.0	(7.1-22.7)
Once a year	7.0†	(3.2-14.9)
Never	46.6	(38.8-54.6)
Physical Symptoms Due to How Treated Based on Race[b]	**3.8†**	**(2.1-6.9)**
Emotional Symptoms Due to How Treated Based on Race[c]	**8.5**	**(4.7-14.9)**

[a] Among all Arab adults, race consciousness was measured by asking, "How often do you think about your race?" (N = 357)
[b] Among all Arab adults, the proportion who reported experiencing any physical symptoms, for example, a headache, an upset stomach, tensing of muscles, or a pounding heart, as a result of how they were treated based on their race within the past 30 days. (N = 366)
[c] Among all Arab adults, the proportion who reported experiencing emotionally upset, for example angry, sad, or frustrated, as a result of how they were treated based on their race within the past 30 days. (N = 366)
† This estimate should be used with caution due to its low reliability and precision.

Among Arab Adults, How Often Think About Race by Gender, Michigan, 2013



*The prevalence estimates were excluded from the graph due to the denominator being less than 50 and/or a relative standard error of greater than 30%.

All Arab prevalence estimates used data from the 2013 Arab BRFS.

2013 Arab BRFS

Arab BRFS Methods

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of non-institutionalized Michigan adults, aged 18 years and older, conducted to collect prevalence data of the adult population related to risk factors and conditions associated with many of the leading causes of morbidity and mortality. The MiBRFS is a collaborative effort among the Population Health Surveillance Branch of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health and Human Services (MDHHS). Michigan Behavioral Risk Factor Surveillance System (MiBRFSS) data contribute to the CDC Behavioral Risk Factor Surveillance System (BRFSS) that is conducted within every state, the District of Columbia, and within several U.S. territories.

Although nearly 10,000 adults are interviewed each year in the MiBRFS, the sample contains relatively few respondents who are Arab. Without special over-sampling, the typical MiBRFS sample cannot reliably estimate health outcomes and behaviors within this group. Therefore, estimates for health outcomes and behaviors among Arab adults in Michigan are generally not available on a yearly basis and multiple years of data must be combined.

The MDHHS Health Disparities Reduction and Minority Health Section (HDRMHS) has as a priority to improve the availability of health related data for racial and ethnic minorities in Michigan. In keeping with this priority, the HDRMHS arranged for a stand-alone survey among Arabs in Michigan, and in 2013, the Arab Behavioral Risk Factor Survey (BRFS) was conducted in partnership with the Lifecourse Epidemiology and Genomics Division. The project was a multidisciplinary effort with assistance from MSU IPPSR, MSU Office of University Outreach and Engagement, Wayne State University, Saginaw Valley State University, and the Arab Community Center for Economic and Social Services (ACCESS). The Arab BRFS included interviews from two different data sources: (1) interviews from Michigan Arab adults conducted by a stand-alone survey overseen by the IPPSR and (2) Arab interviews included in the 2013 MiBRFS sample.

Sampling companies have developed surname targeted databases for populations such as Hispanics/Latinos and Asians/Pacific Islanders, but they have not done so for Arab/Chaldeans. Dr. Kendra Schwartz at Wayne State University's School of Medicine and a team under her direction developed an Arab/Chaldean surname database used primarily for medical studies. The surname database was developed by compiling the first and last names of individuals who identified their race/ethnicity as Arab or Chaldean or their birthplace/ancestry from a country in the Arab League (Algeria, Bahrain, Djibouti, Egypt, Ethiopia, the Gaza Strip, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, North Africa, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen, and the Western Sahara). Names were extracted from sources including birth and death certificates, cancer registries, telephone directories, internet queries, and lists from local community/religious centers.[52] The resulting database contained 9,225 unique surnames, which was later enhanced to include more than 12,000 unique surnames.[52-53] The surname database was found to have a validity of 90.8%.[53]

For purposes of sampling, the percentage of the population with Arab/Chaldean ancestry was examined for each census tract in Michigan using data from the American Community Survey. Those tracts in which the percentage of residents with Arab/Chaldean ancestry was greater than or equal to 10% were aggregated to form a high density stratum. Those in which the percentage was greater than or equal to 4% but less than 10% were aggregated to form a medium density stratum. Lastly, those with a percentage of the population less than 4% were aggregated to form a low density stratum. Addresses of the directory-listed subscribers were placed into the stratum in which each listed phone number belonged. Telephone numbers were randomly selected from within each of the three strata, with the low density stratum being sampled at a lower rate. The name and address of the listed subscriber for each sampled telephone number was extracted along with the phone number. The resulting samples of phone numbers and subscriber names were then evaluated by Schwartz's team to identify subscriber names that matched surnames in the surname database. Those that matched were identified for subsequent calling. Those that did not match were excluded from subsequent calling as ineligible. Although this study did not include a sample of unlisted landline phone numbers, a disproportionately stratified cell phone sample was selected and called. Since cell phone numbers cannot be directly connected to the street address of the subscriber, the geographic stratification to correspond to that used for the landline sample was an approximation at best.

Arab BRFS Methods, continued

The screening of landline-listed samples against Schwartz's surname database found 2,082 matches for the 7,450 listed phone numbers in the high density stratum. The medium density stratum had 664 matches for the 10,700 listed phone numbers and the low density stratum had 519 matches for the 29,100 listed phone numbers. Yield rates closely matched expected rates based on Census profiles of tracts.

OSR mailed advance notice letters in both English and Arabic to the address listed portions of the sample roughly one week prior to releasing a random subset of the entire available sample for calling. ACCESS provided cultural training to interviewers at OSR. Interviews were conducted in both Arabic and English.

A detailed description of the 2013 MiBRFS methodology can be found in the annual report that is available online (www.michigan.gov/brfs). A weighting methodology known as iterative proportional fitting or raking was used to allow for the incorporation of cell phone data and to improve the accuracy of prevalence estimates based on MiBRFS and Arab BRFS data. Estimates based on this weighting methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of the Michigan adult population by telephone source (landline or cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status.

Prevalence estimates and asymmetric 95% confidence intervals (95% CIs) were calculated using SAS-Callable SUDAAN (version 11.0.1), a statistical computing program that was designed for analyzing data from multistage sample surveys.[54] If the 95% CIs for two estimates from different subpopulations did not overlap, they were considered to be statistically different. When prevalence estimates had low reliability and precision, general comparisons and trends were noted. Unless otherwise specified, respondents who answered that they did not know or refused to answer were not included in the calculation of estimates. For comparison purposes, the statewide prevalence estimates as well as White non-Hispanic, Black non-Hispanic, and Hispanic prevalence estimates were used from the 2013 MiBRFS. For the indicators related to social context, breast cancer screening, cervical cancer screening and oral health, the 2012 MiBRFS estimates were used as a comparison since the questions were not included in the 2013 MiBRFS. When 2012 data were used, Hispanic estimates from the 2012 Hispanic BRFS estimates were used in place of the 2012 MiBRFS Hispanic estimates.

The questionnaire for the 2013 Arab BRFS stand-alone survey included additional questions not asked in the 2013 MiBRFS. Therefore, the following indicators had results from the stand-alone survey interviews only: cultural characteristics, health care location, language used with doctor, preventive health behaviors, and reactions to race. Some of the 2013 Arab BRFS indicators were not reported due to low reliability and precision and these included: chronic obstructive pulmonary disease (COPD), cancer, and kidney disease. Additionally, some questions asked on the 2013 MiBRFS were not included in the 2013 Arab BRFS stand-alone survey and therefore are not included in this report: fruit and vegetable consumption, motor vehicle safety, adult immunizations, and asthma in children.

In addition to this report, the MDHHS HDRMHS will also be releasing Briefs that highlight additional results from the 2013 Arab BRFS. These publications will be posted on the MiBRFSS website (www.michigan.gov/brfs) and the HDRMHS website (www.michigan.gov/minorityhealth).

Sample Results for the 2013 Arab BRFS

The total sample size for the 2013 Arab BRFS was 536 (stand-alone survey of Arab adults=400, Arab interviews from 2013 MiBRFS=136). The AAPOR[55] response rate for the stand-alone survey portion of the 2013 Arab BRFS was 31.9% for the landline portion and 43.7% for the cell phone portion. The AAPOR response rate for the landline portion of the 2013 MiBRFS was 48.2% and 33.6% for the cell phone portion of the survey. The overall weighted AAPOR response rate (landline and cell phones combined) for the 2013 MiBRFS was 44.0%, while the overall weighted U.S. median response rate for 2013 was 46.4%.[56] About half (50.5%) of the Arab BRFS interviews were conducted in Arabic. Nine Arab respondents included in the sample from the 2013 MiBRFS were both Arabic and Hispanic. These respondents were included in both the Hispanic and Arab group estimates. Therefore, Arab respondents in this report are of both Hispanic and non-Hispanic origin.

2013 Arab BRFS

Acknowledgements

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