HEALTH RISK BEHAVIORS AMONG HISPANIC ADULTS WITHIN THE STATE OF MICHIGAN
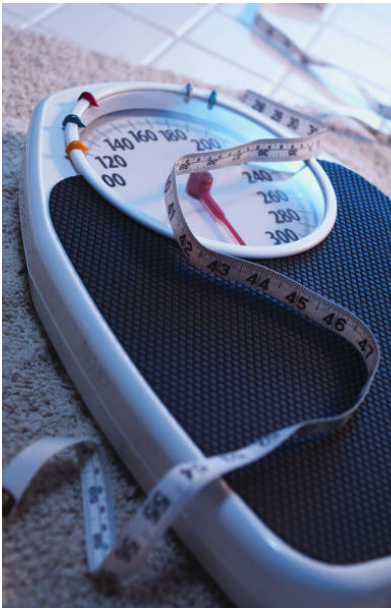
2012 HISPANIC BEHAVIORAL RISK FACTOR SURVEY

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Nick Lyon, Director

2012 Hispanic Behavioral Risk Factor Survey

Health Risk Behaviors Among Hispanic Adults Within the State of Michigan

www.michigan.gov/brfs
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Hispanics are now the largest racial/ethnic minority group in the United States, comprising 16.3% of the total population in 2010.[1,2] "Hispanic or Latino" is defined by the US Census as a "person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race".[1] Michigan is home to the second largest Hispanic population in the Midwest, with an estimated 4.4% of the statewide population Hispanic or Latino in 2010.[1] While the overall Michigan population decreased from 2000-2010, the Hispanic population in the state increased by more than one third (34.7%) during the same time period.[1,2] The Hispanic population growth has been fueled primarily by international immigration and migration from other US regions as well as local labor market opportunities (ex. agricultural and meatpacking industries).[3]

Although the Hispanic population is growing, 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 to improve the health of Hispanics in Michigan. Currently, the Michigan Behavioral Risk Factor Survey (MiBRFS) provides the state with these data at the population level and by race/ethnicity. However, due to the small number of Hispanic participants generally included in the survey annually, meaningful analysis within this group is limited. Therefore, a stand-alone survey of Hispanic adults in Michigan was conducted to help identify the gaps in the data among this population. A detailed description of the methodology of the survey are described at the end of the report and the results are described in the subsequent pages. Differences were considered significant if the 95% confidence intervals for the two estimates from different subpopulations did not overlap.

This report presents estimates from the 2012 Hispanic Behavioral Risk Factor Survey (HBRFS), a statewide landline and cell phone survey of Hispanic residents in Michigan aged 18 years and older. It 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 Hispanic adults in Michigan. The survey findings are used by public health agencies, academic institutions, non-profit organizations, and others to develop programs that promote the health of Hispanic adults in Michigan.

All of the results from the 2012 HBRFS presented within this report have been weighted as described in the methods section at the end of the report and can be interpreted as prevalence estimates among the Hispanic 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.[4] Nationwide, the Hispanic population is younger and of lower socioeconomic status compared to non-Hispanic Whites[5] and a similar pattern was found statewide in the 2012 HBRFS.

Selected Risk Factors - 2012 MiBRFS and 2012 HBRFS
Michigan vs. Hispanics Only
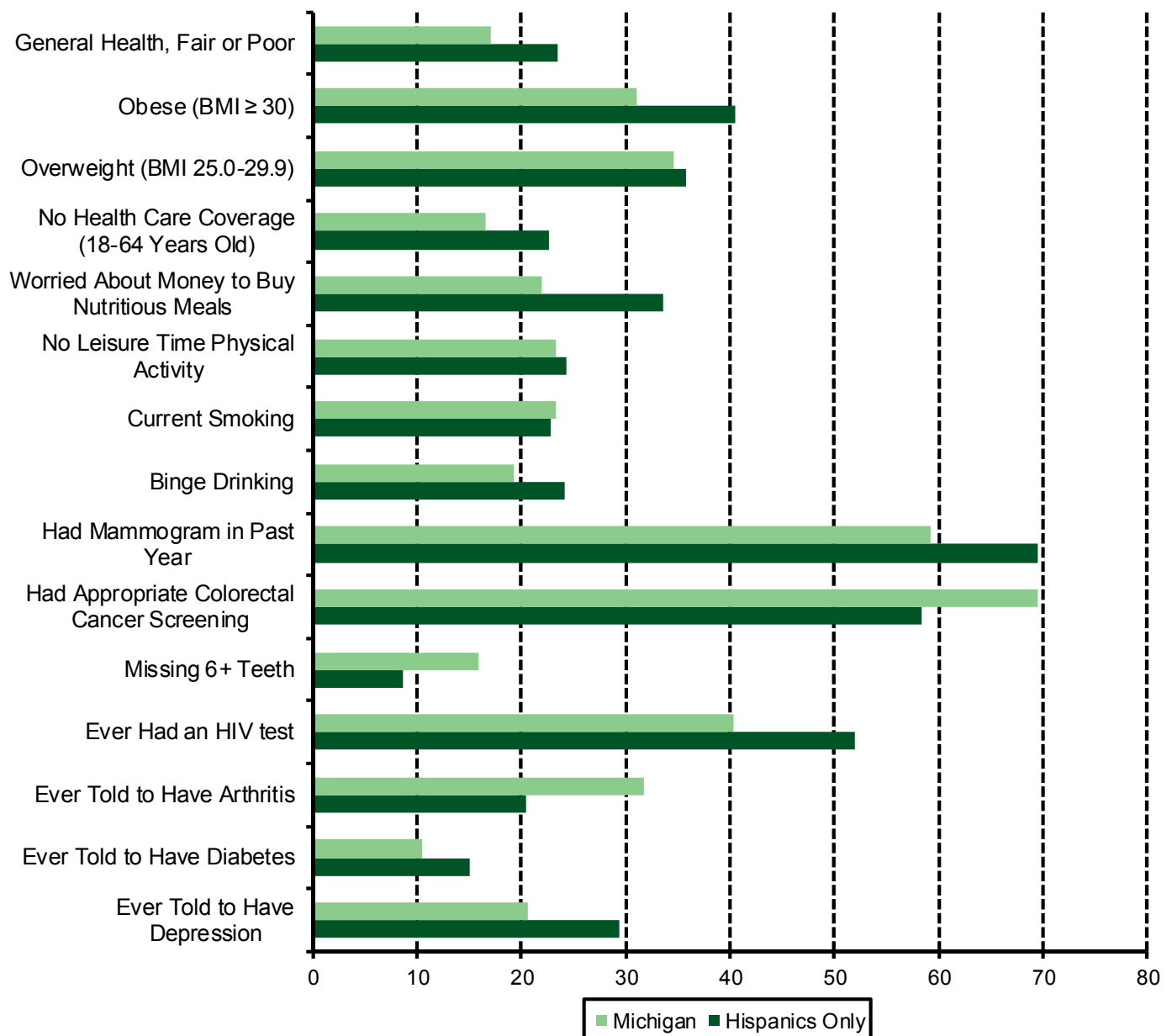
Public Health Implications of Findings

A number of themes emerge from the findings of the 2012 HBRFS that have implications for public health.

✂ Approximately 4 in 10 Hispanic adults in Michigan are obese.

In 2012, an estimated 40.5% of Hispanic adults in Michigan were considered obese compared to 31.1% of all Michigan adults. The prevalence of obesity among Hispanic adults is 1.4 times higher than the obesity prevalence among White, non-Hispanic adults (29.9%). A higher obesity prevalence among Hispanic adults compared to White non-Hispanic adults was also found at the national level.[6] Improvements in the prevalence of obesity are needed to have a positive impact on the prevalence of diseases, such as diabetes, cardiovascular disease, and arthritis, that are directly associated with obesity. MDCH has a number of programs designed to decrease obesity, increase physical activity and promote healthy eating among Michigan adults and children.

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

In 2012, an estimated 22.6% of Hispanic adults aged 18-64 years in Michigan reported having no health care coverage, compared to 16.6% of all Michigan adults aged 18-64 years. Additionally, 26.0% of Hispanic adults reported not seeing the doctor within the past 12 months due to cost, significantly higher than all Michigan adults (15.1%). Nationwide, Hispanics have the highest prevalence of being uninsured compared to all other racial/ethnic groups.[5] The high rate of uninsurance among Hispanics combined with cultural differences, language, and immigration status act as barriers to receiving appropriate and timely health care services.[7]

✂ About 1 in 3 Hispanic adults in Michigan report worrying about having enough money to buy nutritious meals.

In 2012, about 1 in 3 Hispanic adults (33.6%) reported worrying about having enough money to purchase nutritious meals within the past year, significantly higher than all Michigan adults (21.9%). Also, an estimated 44.5% of Hispanic adults in Michigan reported worrying about having enough money to pay their rent/mortgage within the past year, compared to 34.8% of all Michigan adults. Increased stress by way of financial difficulties can ultimately result in differences in underlying health status.[8] Furthermore, it is important to look at the impact of social factors on the prevalence of disease.

✂ Over half of Hispanic adults in Michigan report being tested for HIV.

In 2012, an estimated 52.0% of Hispanic adults in Michigan aged 18-64 years reported ever being tested for HIV, significantly higher than all Michigan adults aged 18-64 years (40.4%). The prevalence of HIV testing among Hispanic adults was 1.5 times higher than that of White, non-Hispanic adults in Michigan. 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.[9] Furthermore, the increased prevalence of HIV testing among Hispanic adults may help with preventing the further spread of the disease. MDCH helps fund projects which provide HIV data for Hispanic residents in Michigan related to quality and experience of care as well as laboratory data to monitor suppressed viral load.

✂ Approximately 1 in 5 Hispanic adults in Michigan report ever being told they had arthritis.

In 2012, an estimated 20.5% of Hispanic 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 (31.8%). Although arthritis is more common among adults aged 65 years and older[10], the Hispanic population in Michigan is primarily comprised of young adults (67.7% of Hispanic adults are between the ages of 18-44 years), therefore, this may help explain the lower prevalence of reported arthritis among Hispanics. MDCH helps support PATH (Personal Action Toward Health), a self-management program for adults in Michigan with chronic diseases such as arthritis, heart disease, diabetes, and depression. The program helps people learn daily and long-term management techniques for living with the conditions. MDCH is currently working to offer leader training for the Spanish version of PATH.

✵ Approximately 15% of Hispanics in Michigan report ever being told they had diabetes.

In 2012, an estimated 15.0% of Hispanic adults in Michigan reported that they had ever been told by a doctor that they had diabetes, compared to 10.5% of all Michigan adults. The prevalence of Hispanic adults (15.0%) who reported ever being told they had diabetes was 1.6 times that of White, non-Hispanics. MDCH works with hospitals across the state to certify out-patient self-management education programs for individuals with diabetes or those at risk of developing the disease. The programs help people assess their individual needs and self-management goals. These initiatives are especially important among Hispanics because this population is currently younger compared to the statewide population and if the prevalence of diabetes continues to increase as the Hispanic population ages, diabetes can be expected to become a more significant problem.

✵ Nearly 1 in 3 Hispanic adults in Michigan report being told they have a depressive disorder.

In 2012, an estimated 29.4% of Hispanic adults in Michigan reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. This was significantly higher than the prevalence among all adults (20.6%) in Michigan. The prevalence of depression among Hispanic females (41.0%) was 2.2 times that of Hispanic males (18.6%). Additionally, Hispanic adults reported depression 1.4 times that of White, non-Hispanics and 1.7 times that of Black, non-Hispanics. The risk of mental illness even varies among US Hispanics, with birthplace and acculturation playing important roles and research documenting an increased risk of mental illness among US born Hispanics versus immigrants.[11]

Future of the Hispanic Behavioral Risk Factor Survey

The MDCH Health Disparities Reduction and Minority Health Section is having the HBRFS conducted again in 2014. Ongoing implementation of the HBRFS will allow for a larger sample size, leading to more precise health estimates for Hispanic adults. Additionally, the continued collection of Hispanic-specific data will allow for changes over time to be measured.

Although data were not collected in the 2012 HBRFS on country of origin, these variables will be collected in the 2014 HBRFS. The addition of these variables will allow for the comparison of health indicators by geographic differences as a means of describing the heterogeneity among the Hispanic population.

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

- In 2012, a stand-alone BRFS-like survey was conducted among the Asian populations within Michigan.
- In 2013, a stand-alone BRFS-like survey was conducted among the Arab American populations within Michigan.

In conclusion, the HBRFS provides critical data related to health outcomes and behaviors among Hispanic adults not previously available by 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 Hispanics in Michigan. Moreover, they provide important information needed to develop effective, culturally appropriate programs and services.

Demographics

Nationwide, the Hispanic population is younger and of lower socioeconomic status compared to non-Hispanic Whites.[5] Differences in these demographic characteristics can directly and indirectly influence the prevalence of certain health conditions and related risk factors.[4] Therefore, the demographic profile of Hispanic participants involved in the 2012 HBRFS was compared to all participants involved in the 2012 MiBRFS.

♦ In 2012, the largest proportion of Hispanic adults were between the ages of 18 and 44 years (67.7%), significantly higher than the prevalence among all Michigan adults (44.6%). The proportion of Hispanic adults 65 years or older (9.1%) was significantly lower than the prevalence of all adults statewide (19.2%).

♦ Among both populations, there was an even distribution by gender.

♦ Hispanic adults (54.3%) were significantly more likely to report having a high school education or less compared to all Michigan adults (42.8%).

♦ Hispanic adults (40.1%) were significantly more likely to report a household income of less than $25,000 than all Michigan adults (29.6%).

Demographic Characteristics	Michigan Overall[a]		Hispanics Only[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Age				
18 - 44	44.6	(43.3-45.9)	67.7	(60.9-73.9)
45 - 64	36.2	(35.1-37.4)	23.2	(17.9-29.4)
65+	19.2	(18.4-19.9)	9.1	(6.6-12.5)
Gender				
Male	48.4	(47.1-49.8)	51.8	(43.7-59.8)
Female	51.6	(50.2-52.9)	48.2	(40.2-56.3)
Education				
HS graduate or less	42.8	(41.5-44.2)	54.3	(46.0-62.3)
Some college or more	57.2	(55.8-58.5)	45.7	(37.7-54.0)
Household Income				
< $25,000	29.6	(28.3-31.0)	40.1	(31.6-49.1)
$25,000 - $49,999	28.6	(27.3-29.9)	29.2	(22.5-37.1)
$50,000+	41.8	(40.4-43.1)	30.7	(23.2-39.4)

[a] Demographics of all participants in the 2012 MiBRFS. (N = 10,499)
[b] Demographics of Hispanic adults in the 2012 HBRFS. (N = 659)

Age Group by Race/Ethnicity, Michigan Overall vs Hispanic Only, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall used data from the 2012 Michigan BRFS.
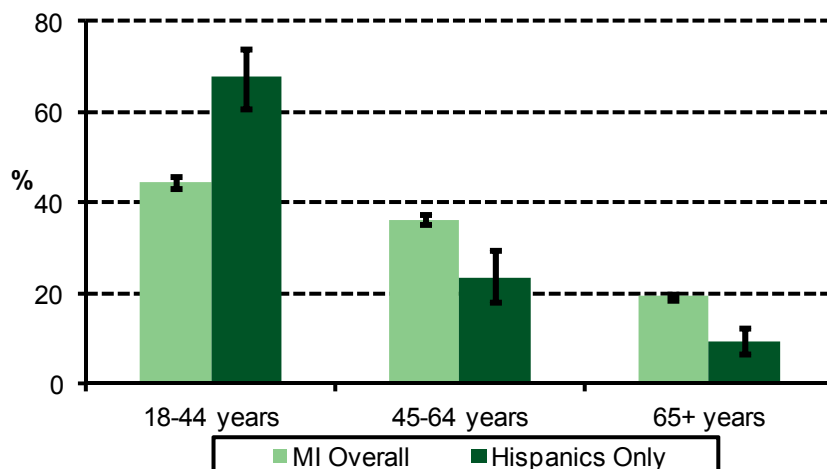
General Health Status

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.[12]

♦ In 2012, an estimated 23.5% of Hispanic adults in Michigan reported that their general health was either fair or poor, compared to 17.1% (95% CI: 16.1-18.1) of all Michigan adults. When th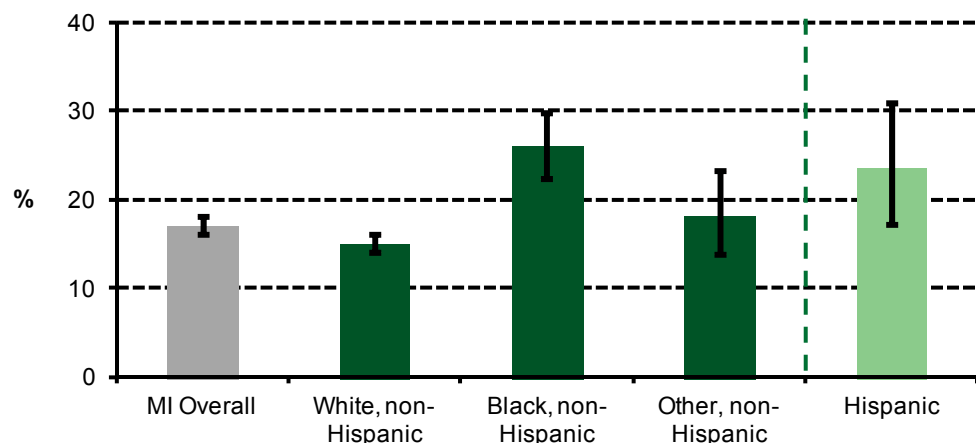e indicator was restricted to solely poor health, an estimated 7.7% of Hispanic adults in Michigan reported that their general health was poor (95% CI: 4.4-12.9) compared to 4.9% (95% CI: 4.3-5.5) among all adults in Michigan.

♦ The prevalence of fair or poor general health was similar by gender among Hispanic adults.

♦ Fair or poor general health generally increased with age and decreased with household income.

♦ Hispanic adults with a high school education or less (37.3%) reported a significantly higher prevalence of fair to poor health than Hispanic adults with some college or more (7.3%).

♦ In 2012, Hispanic adults (23.5%) reported a significantly higher prevalence of fair or poor general health than White, non-Hispanic adults (15.1%). In other words, Hispanic adults reported their health was either fair or poor 1.6 times that of White, non-Hispanic adults in Michigan. Prevalence among Hispanic adults did not significantly differ from that of Black, non-Hispanics and Other, non-Hispanics.

Hispanic Demographic Characteristics	General Health, Fair or Poor[a]	
	%	95% Confidence Interval
Total	**23.5**	**(17.3-31.0)**
Age		
18 - 44	18.0	(10.9-28.4)
45 - 64	36.1	(24.4-49.6)
65+	31.5	(19.9-45.9)
Gender		
Male	21.5	(14.1-31.5)
Female	25.6	(16.5-37.5)
Education		
HS graduate or less	37.3	(27.5-48.2)
Some college or more	7.3	(4.3-12.1)
Household Income		
< $25,000	35.7	(23.2-50.6)
$25,000 - $49,999	22.1	(12.6-35.7)
$50,000+	10.1[†]	(3.8-24.4)

[a] Among all Hispanic adults, the proportion who reported that their health, in general, was either fair or poor. (N = 657)
[†] This estimate should be used with caution due to its low reliability and precision.

General Health, Fair or Poor, by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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Quality of Life

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.

♦ In 2012, an estimated 11.8% of Hispanic Michigan adults reported poor physical health, and 16.8% reported poor mental health, compared to 13.5% (95% CI: 12.6-14.4) and 13.0% (95% CI: 12.1-14.0) of all Michigan adults, respectively.

♦ Although the prevalences of both indicators were higher among Hispanic females than Hispanic males, the differences were not significant.

♦ The prevalences of both indicators tended to decrease with increasing education level.

♦ In 2012, the prevalence of poor physical health among Hispanic adults did not significantly differ from that of other racial/ethnic groups in Michigan (data not shown).

♦ In 2012, although Hispanic adults (16.8%) reported a higher prevalence of poor mental health than White, non-Hispanics (12.0%) and Black, non-Hispanics (14.9%) in Michigan, the differences were not significant.

Hispanic Demographic Characteristics	Poor Physical Health[a]		Poor Mental Health[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**11.8**	**(7.9-17.1)**	**16.8**	**(11.8-23.4)**
Age				
18 - 44	6.1[†]	(3.0-12.0)	17.8	(11.3-26.9)
45 - 64	27.9	(17.1-42.0)	16.2[†]	(8.5-28.7)
65+	13.0[†]	(6.5-24.4)	10.9[†]	(4.7-23.4)
Gender				
Male	9.4[†]	(4.8-17.5)	12.8	(7.3-21.2)
Female	14.4	(8.8-22.6)	21.2	(13.2-32.1)
Education				
HS graduate or less	18.7	(12.1-27.8)	21.8	(14.2-32.1)
Some college or more	3.6[†]	(1.9-6.9)	10.9	(6.1-18.6)
Household Income				
< $25,000	18.4	(10.5-30.2)	26.7	(16.1-40.8)
$25,000 - $49,999	7.0[†]	(3.3-14.2)	8.4[†]	(3.2-20.0)
$50,000+	--[c]	---	10.5[†]	(4.6-22.4)

[a] Among all Hispanic 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 = 645)
[b] Among all Hispanic 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 = 649)
[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, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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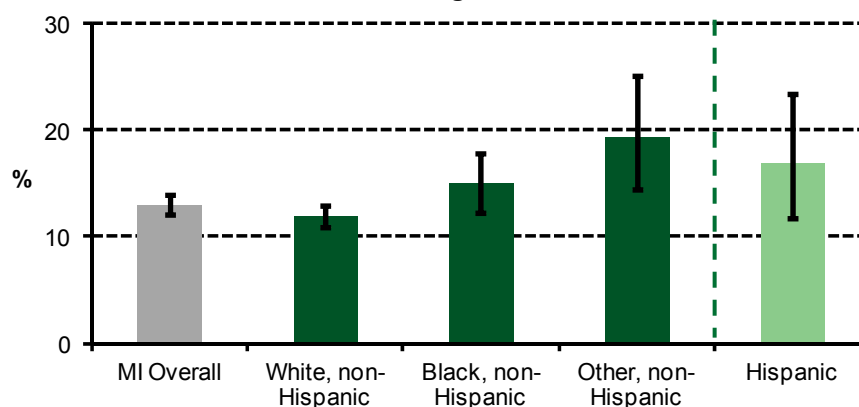
Disability

Through the Americans with Disabilities Act, an individual with a disability is defined as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history of such an impairment, or a person who is perceived by others as having such an impairment.[13]

- In 2012, an estimated 22.6% of Hispanic adults in Michigan 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 24.6% (95% CI: 23.5-25.7) of all Michigan adults.

- The prevalence of disability generally increased with age.

- Hispanic females (33.0%) reported a significantly higher prevalence of disability than Hispanic males (13.0%).
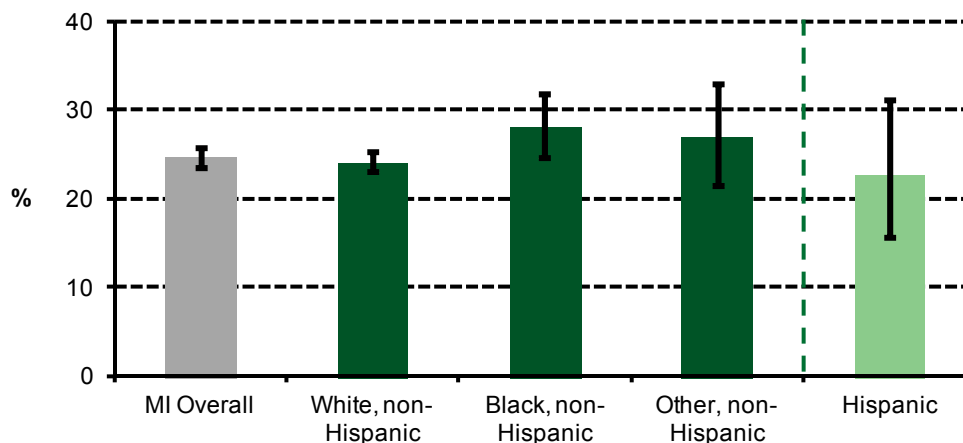
- The prevalence of disability generally decreased with increasing education and household income level.

- In 2012, the prevalence of disability among Hispanic adults did not significantly differ from that of other racial/ethnic groups in Michigan.

Hispanic Demographic Characteristics	Total Disability[a]	
	%	95% Confidence Interval
Total	22.6	(15.7-31.3)
Age		
18 - 44	19.1	(10.5-32.4)
45 - 64	31.0	(20.6-43.8)
65+	26.7	(16.5-40.2)
Gender		
Male	13.0	(8.2-19.8)
Female	33.0	(21.2-47.3)
Education		
HS graduate or less	26.7	(18.1-37.5)
Some college or more	17.7[†]	(8.3-34.0)
Household Income		
< $25,000	44.4	(29.8-60.0)
$25,000 - $49,999	11.7[†]	(5.7-22.5)
$50,000+	7.5[†]	(3.6-14.8)

[a] Among all Hispanic 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 = 653)
[†] This estimate should be used with caution due to its low reliability and precision.

Disability by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 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.[14] 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. BMI is defined as weight in kilograms divided by height in meters squared (w/h^2) and is calculated based on self-reported height and weight.

♦ In 2012, an estimated 40.5% of Hispanic adults in Michigan were classified as obese, with an additional 35.7% (95% CI: 28.5-43.7) of Michigan Hispanic adults being classified as overweight. The prevalence of obesity among all adults in Michigan was 31.1% (95% CI: 29.8-32.3), while the prevalence of overweight was 34.6% (95% CI: 33.3-35.8).

♦ The prevalence of obesity among Hispanic adults was highest among the 18-44 year age group followed by the 65+ year age group, although differences by age group were not significant.

♦ The prevalence of obesity was similar by gender.

♦ In 2012, Hispanic adults (40.5%) reported a significantly higher prevalence of obesity than White, non-Hispanics (29.9%). Hispanic adults were 1.4 times more likely to be classified as obese than White, non-Hispanic adults in Michigan. The prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

Hispanic Demographic Characteristics	Obese[a] %	95% Confidence Interval
Total	**40.5**	**(32.3-49.2)**
Age		
18 - 44	44.7	(33.6-56.4)
45 - 64	30.1	(20.7-41.5)
65+	36.4	(22.6-52.9)
Gender		
Male	39.8	(29.0-51.6)
Female	41.3	(29.4-54.3)
Education		
HS graduate or less	37.4	(28.0-47.9)
Some college or more	44.2	(31.1-58.2)
Household Income		
< $25,000	45.6	(31.2-60.8)
$25,000 - $49,999	38.7	(26.0-53.2)
$50,000+	42.4	(26.7-59.9)

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 Hispanic adults, the proportion of respondents whose BMI was greater than or equal to 30.0. (N = 623)

Obesity by Race/Ethnicity, Michigan, 2012
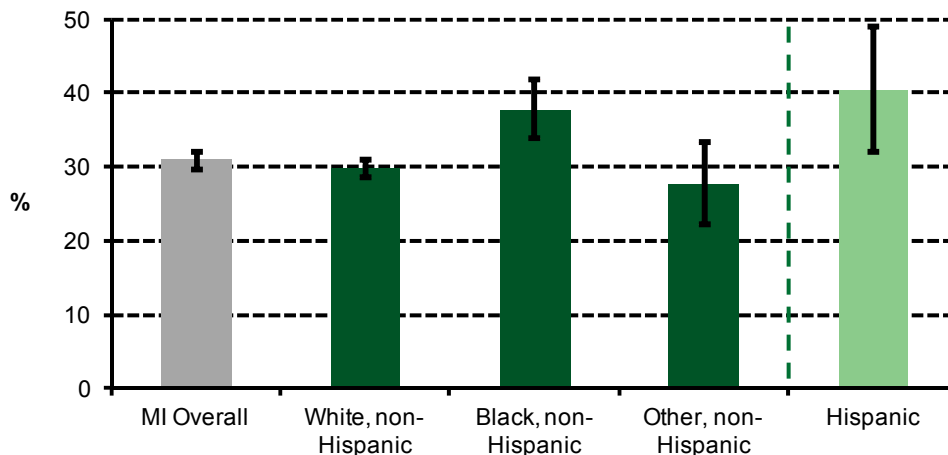
All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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.[15]

♦ In 2012, an estimated 22.6% of Hispanic adults aged 18-64 years in Michigan reported having no health care coverage compared to 16.6% (95% CI: 15.4-17.8) of all Michigan adults.

♦ The prevalence of no health care coverage generally decreased with age and education level.

♦ Although Hispanic males reported a higher prevalence of no health care coverage than Hispanic females, the difference was not significant.

♦ The prevalence of no health care coverage was similar by household income level.

♦ In 2012, although the prevalence of no health care coverage among Hispanic adults aged 18-64 years (22.6%) was higher than among White, non-Hispanics (15.1%) in Michigan, the difference was not significant. Prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

Hispanic Demographic Characteristics	No Health Care Coverage Among Adults 18-64 years[a]	
	%	95% Confidence Interval
Total	22.6	(15.8-31.2)
Age		
18 - 44	24.4	(16.1-35.3)
45 - 64	17.4[†]	(9.1-30.8)
Gender		
Male	27.0	(16.8-40.5)
Female	17.6	(10.7-27.7)
Education		
HS graduate or less	28.6	(19.5-39.8)
Some college or more	16.4[†]	(7.8-31.4)
Household Income		
< $25,000	27.3	(16.7-41.2)
$25,000 - $49,999	29.5	(17.4-45.4)
$50,000+	--[b]	---

[a] Among Hispanic 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 = 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.

No Health Care Coverage Among Adults Aged 18 to 64 Years by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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Limited Health Care Coverage

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.[16]

♦ In 2012, an estimated 18.9% of Hispanic adults in Michigan reported not having a personal health care provider, compared to 15.8% (95% CI: 14.8-16.9) of all Michigan adults. An estimated 26.0% of Hispanic adults reported not seeing the doctor within the past 12 months due to cost, significantly higher than among all Michigan adults (15.1% [95% CI: 14.1-16.1]).

♦ The prevalences of both indicators generally decreased with age and increasing education level.

♦ The prevalences of both indicators were similar by gender.

♦ In 2012, the prevalence of Hispanic adults (18.9%) that reported no personal health care provider did not significantly differ from other racial/ethnic groups in Michigan (data not shown).

Hispanic Demographic Characteristics	No Personal Health Care Provider[a]		No Health Care Access Due to Cost[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**18.9**	**(12.5-27.5)**	**26.0**	**(19.1-34.5)**
Age				
18 - 44	25.9	(16.9-37.6)	30.0	(20.6-41.5)
45 - 64	4.4[†]	(2.2-8.7)	23.9	(14.6-36.6)
65+	--[c]	---	--[c]	---
Gender				
Male	17.9	(11.2-27.3)	24.5	(15.2-37.1)
Female	20.0[†]	(10.1-35.6)	27.6	(18.1-39.6)
Education				
HS graduate or less	20.6	(13.4-30.2)	31.1	(21.8-42.2)
Some college or more	16.9[†]	(7.5-34.0)	20.0	(10.9-33.9)
Household Income				
< $25,000	24.7[†]	(12.1-43.6)	38.6	(25.7-53.4)
$25,000 - $49,999	28.1	(16.7-43.2)	23.9	(13.4-39.0)
$50,000+	--[c]	---	--[c]	---

[a] Among all Hispanic adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider. (N = 652)
[b] Among all Hispanic 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= 655)
[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 2012, Hispanic adults (26.0%) reported a significantly higher prevalence of not seeing the doctor within the past 12 months due to cost than White, non-Hispanics (13.5%). Thus, Hispanic adults reported not accessing health care due to cost 1.9 times that of White, non-Hispanic adults in Michigan. Prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

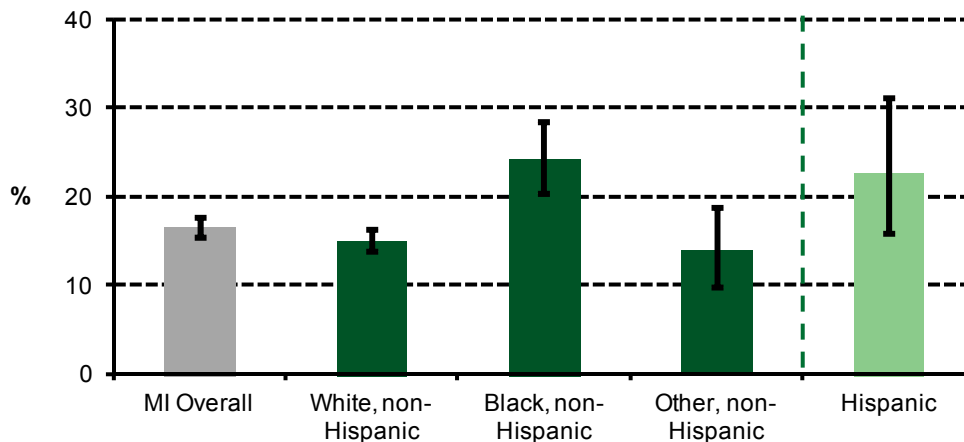**No Health Care Access Due to Cost by Race/Ethnicity, Michigan, 2012**

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.
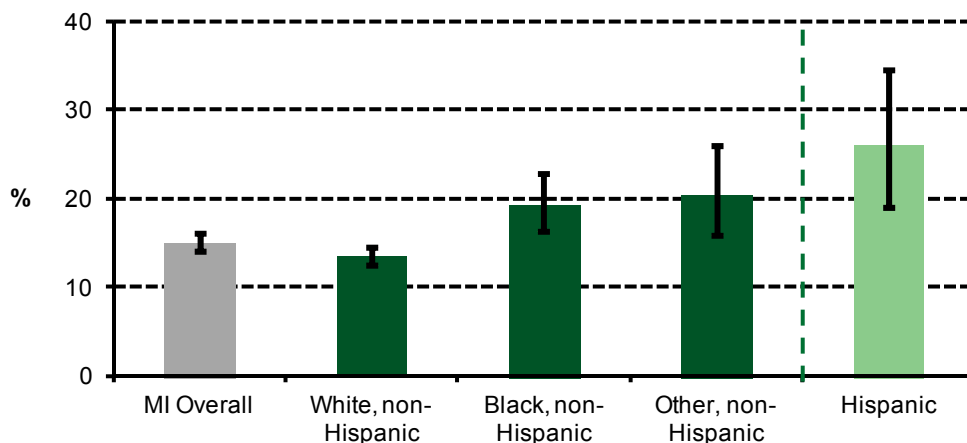
Social Context

Differences in health-related exposures and stresses throughout life often result in differences in underlying health status.[8] As a result, it is important to look at the impact of social factors on the prevalence of disease.

♦ In 2012, an estimated 44.5% of Hispanic adults in Michigan reported worrying about having enough money to pay their rent/mortgage within the past year, compared to 34.8% of all Michigan adults (95% CI: 33.4-36.2). An estimated 33.6% of Hispanic 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]).

♦ The prevalence of both of these indicators generally decreased with increasing age, education, and household income level.

♦ The prevalences of both indicators were similar by gender among Hispanic adults.

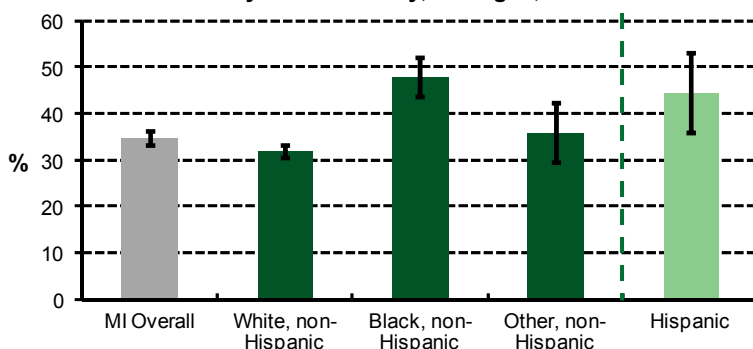| Hispanic Demographic Characteristics	Worried About Having Enough Money to Pay Rent/Mortgage[a]		Worried About Having Enough Money to Buy Nutritious Meals[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**44.5**	**(36.1-53.2)**	**33.6**	**(26.0-42.3)**
Age				
18 - 44	48.1	(36.7-59.7)	37.0	(26.7-48.6)
45 - 64	46.4	(33.4-59.8)	32.6	(21.5-45.9)
65+	11.8[†]	(5.7-22.6)	10.9[†]	(4.9-22.6)
Gender				
Male	45.8	(34.5-57.6)	32.5	(21.9-45.3)
Female	43.0	(30.9-55.9)	34.9	(24.5-46.9)
Education				
HS graduate or less	49.5	(38.7-60.4)	38.1	(28.4-48.8)
Some college or more	38.3	(26.5-51.6)	28.1	(16.8-43.0)
Household Income				
< $25,000	63.0	(45.3-77.8)	46.7	(32.4-61.6)
$25,000 - $49,999	44.0	(29.8-59.3)	31.8	(19.0-47.9)
$50,000+	28.3	(16.3-44.4)	23.9[†]	(10.3-46.4)

[a] Among all Hispanic adults, the proportion who reported always, usually, or sometimes being worried about having enough money to pay rent/mortgage in the past year. (N = 582)
[b] Among all Hispanic adults, the proportion who reported always, usually, or sometimes being worried about having enough money to buy nutritious meals in the past year. (N = 631)
[†] This estimate should be used with caution due to its low reliability and precision.

♦ In 2012, Hispanic adults (44.5% and 33.6%, respectively) reported a significantly higher prevalence of both indicators than White, non-Hispanics (31.9% and 19.8%, respectively) in Michigan. In other words, Hispanic adults reported worrying about having enough money to pay for rent/mortgage and nutritious meals 1.4 and 1.7 times that of White, non-Hispanic adults in Michigan. The prevalences among Hispanic adults for both indicators did not significantly differ from that of other racial/ethnic groups.

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

Worried About Money for Nutritious Meals by Race/Ethnicity, Michigan, 2012
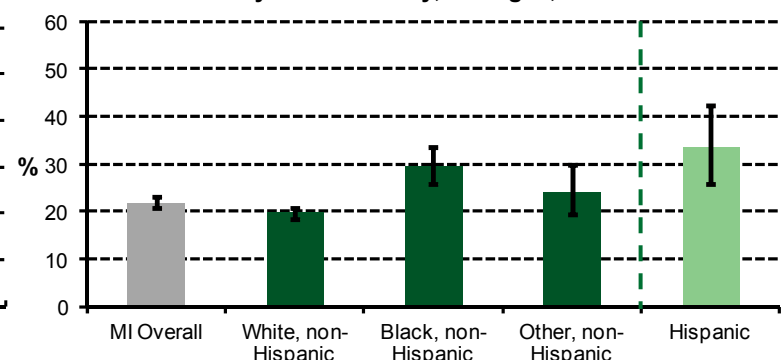
All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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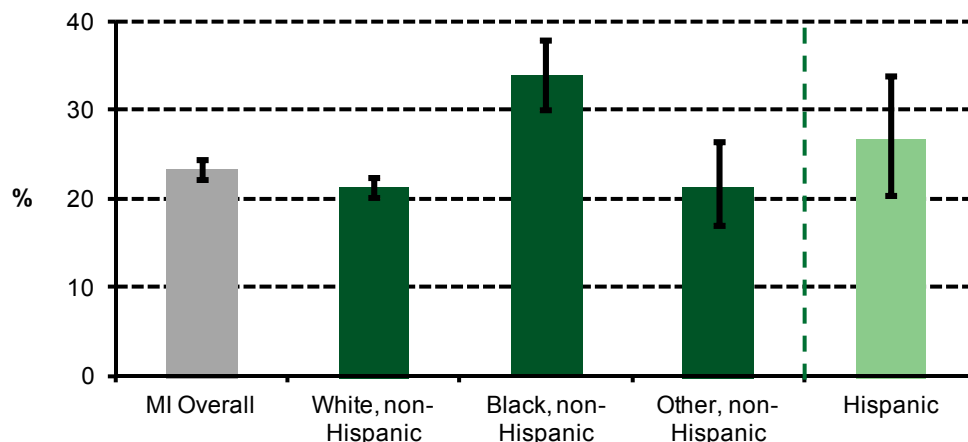. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and relieve symptoms of depression.[17]

♦ In 2012, an estimated 26.7% of Hispanic adults in Michigan reported no leisure time physical activity within the past month, compared to 23.3% of all Michigan adults (95% CI: 22.2-24.5).

♦ The prevalence of no leisure time physical activity generally increased with age and decreased with increasing education and household income level.

♦ The prevalence of no leisure time physical activity was similar by gender among Hispanic adults.

♦ In 2012, the prevalence of no leisure time physical activity among Hispanic adults (26.7%) did not significantly differ from that of other racial/ethnic groups in Michigan.

Hispanic Demographic Characteristics	No Leisure Time Physical Activity[a]	
	%	95% Confidence Interval
Total	26.7	(20.4-34.0)
Age		
18 - 44	22.1	(14.6-32.0)
45 - 64	32.7	(21.9-45.6)
65+	45.4	(30.7-60.8)
Gender		
Male	21.2	(14.0-30.8)
Female	32.6	(22.9-44.0)
Education		
HS graduate or less	28.3	(19.9-38.4)
Some college or more	24.8	(16.3-35.9)
Household Income		
< $25,000	28.6	(17.6-42.8)
$25,000 - $49,999	28.6	(18.2-41.8)
$50,000+	20.5	(10.9-35.4)

[a] Among all Hispanic 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 = 659)

No Leisure Time Physical Acitivity by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

9

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.[18]

♦ In 2012, an estimated 18.7% of Hispanic adults in Michigan met both the aerobic and muscle strengthening components of the new physical activity guidelines (i.e., adequate physical activity), similar to 19.7% of all Michigan adults in 2011 (95% CI: 18.6-20.9).

♦ When assessing each component individually, an estimated 50.8% (95% CI: 43.3-58.4) of Hispanic adults in Michigan met the aerobic physical activity component, while 31.7% (95% CI: 25.0-39.3) met the muscle strengthening component. This compared to 53.5% (95% CI: 52.1-55.0) and 28.8% (95% CI: 27.5-30.1) of all Michigan adults in 2011, respectively.

♦ Adequate physical activity generally decreased with increasing age and increased with increasing household income level.

♦ Although Hispanic males reported a higher prevalence of adequate physical activity than Hispanic females, the difference was not significant.

Hispanic Demographic Characteristics	Adequate Physical Activity[a]	
	%	95% Confidence Interval
Total	**18.7**	**(13.3-25.8)**
Age		
18 - 44	22.3	(13.7-34.1)
45 - 64	15.5	(9.8-23.6)
65+	13.3[†]	(4.8-31.4)
Gender		
Male	24.5	(16.1-35.6)
Female	11.3	(6.7-18.4)
Education		
HS graduate or less	19.2	(11.6-30.2)
Some college or more	18.2	(11.6-27.5)
Household Income		
< $25,000	12.9	(7.1-22.4)
$25,000 - $49,999	17.5	(9.9-28.8)
$50,000+	21.0	(12.3-33.5)

[a] Among all Hispanic 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 = 436)
[†] This estimate should be used with caution due to its low reliability and precision.

♦ In 2012, the prevalence of adequate physical activity among Hispanic adults (18.7%) was similar to other racial/ethnic groups in Michigan in 2011.

Adequate Physical Activity by Race/Ethnicity, Michigan, 2011-2012
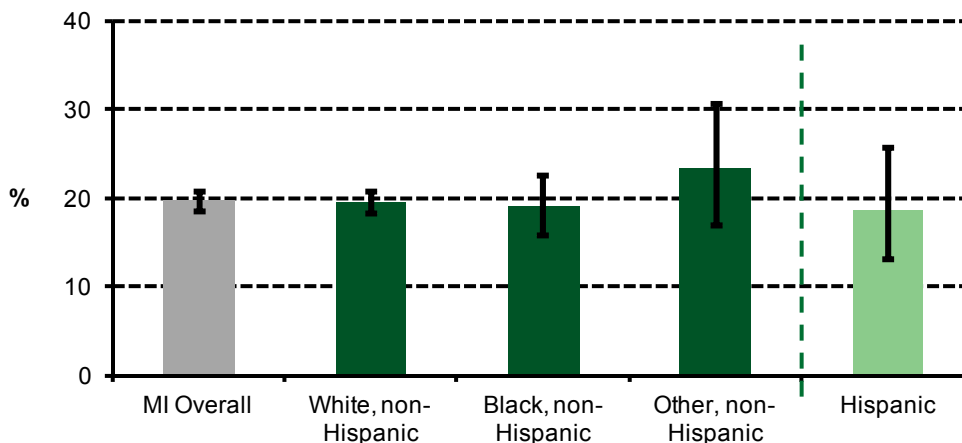
All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2011 Michigan BRFS.

Adequate Fruit and Vegetable Consumption

A healthy diet rich in fruits and vegetables may reduce the risk of cancer and other chronic conditions.[19] Adequate fruit and vegetable consumption is defined as consuming fruits (including 100% fruit juice, and fresh, frozen, and canned fruit) and vegetables (including cooked or canned beans, dark green vegetables, orange-colored vegetables, and other vegetables) on an average of five or more times per day.

- In 2012, an estimated 16.3% of Hispanic adults in Michigan reported consuming fruits and vegetables five or more times per day, compared to 17.8% of all Michigan adults in 2011 (95% CI:16.8-19.0).

- Hispanic adults in the 45-64 year age group (10.8%) reported the lowest prevalence of fruit and vegetable consumption compared to the other age groups, although the differences were not significant.

- Although Hispanic males reported a lower prevalence of adequate fruit and vegetable consumption than Hispanic females, the difference was not significant.

- In 2012, the prevalence of adequate fruit and vegetable consumption among Hispanic adults (16.3%) did not significantly differ from that of the other racial/ethnic groups in Michigan in 2011.

Hispanic Demographic Characteristics	Adequate Fruit & Vegetable Consumption[a]	
	%	95% Confidence Interval
Total	**16.3**	**(11.7-22.2)**
Age		
18 - 44	17.4	(11.0-26.3)
45 - 64	10.8	(6.4-17.8)
65+	23.2[†]	(10.3-44.4)
Gender		
Male	11.3	(6.7-18.4)
Female	22.8	(14.9-33.3)
Education		
HS graduate or less	13.4	(8.5-20.5)
Some college or more	19.9	(12.3-30.6)
Household Income		
< $25,000	20.6	(12.3-32.3)
$25,000 - $49,999	18.1[†]	(9.4-32.0)
$50,000+	15.3[†]	(8.1-26.9)

[a] Among all Hispanic adults, the proportion whose total reported consumption of fruits (including 100% fruit juice) and vegetables was five or more times per day. (N = 429)
[†] This estimate should be used with caution due to its low reliability and precision.

Adequate Fruit and Vegetable Consumption by Race/Ethnicity, Michigan, 2011-2012
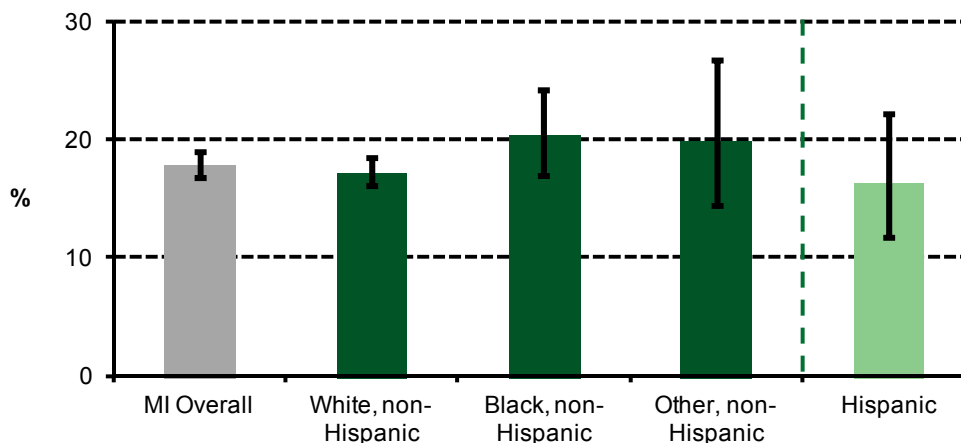
All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2011 Michigan BRFS.

11

Cigarette Smoking

Cigarette smoking is the leading cause of preventable death in the United States, accounting for more than 440,000 deaths each year.[20-21]

♦ In 2012, an estimated 22.8% of Hispanic adults in Michigan reported that they currently smoke cigarettes on a regular basis, similar to 23.3% of all Michigan adults (95% CI: 22.1-24.6).

♦ The prevalence of current smoking was similar by gender.

♦ Current smoking generally decreased with increasing education and household income level.

♦ In 2012, the prevalence of Hispanic adults (22.8%) that reported that they currently smoke cigarettes did not significantly differ from other racial/ethnic groups in Michigan.
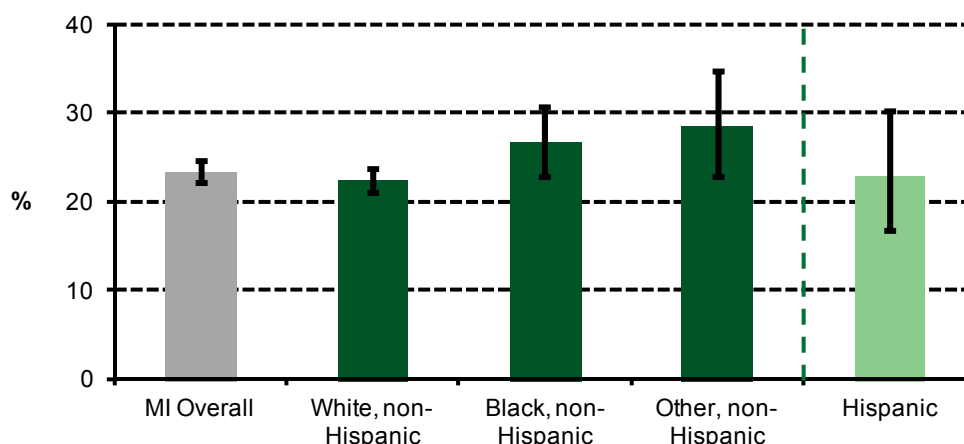
Hispanic Demographic Characteristics	Current Smoking[a]	
	%	95% Confidence Interval
Total	**22.8**	**(16.7-30.4)**
Age		
18 - 44	22.0	(14.6-31.9)
45 - 64	31.5	(19.4-46.7)
65+	--[b]	---
Gender		
Male	23.2	(15.2-33.8)
Female	22.4	(13.9-34.1)
Education		
HS graduate or less	28.9	(19.9-39.9)
Some college or more	15.7	(9.1-25.7)
Household Income		
< $25,000	32.4	(20.4-47.2)
$25,000 - $49,999	14.7[†]	(7.1-28.0)
$50,000+	12.4[†]	(5.0-27.6)

[a] Among all Hispanic 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 = 653)
[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.

Current Cigarette Smoking by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

12

Alcohol abuse has been associated with serious health problems, such as cirrhosis of the liver, high blood pressure, stroke, and some types of cancer.[22] It can also increase the risk for motor vehicle accidents, injuries, violence, and suicide.[22] 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, while heavy drinking is defined as consuming an average of more than two alcoholic drinks per day for men or more than one alcoholic drink per day for women in the past month.
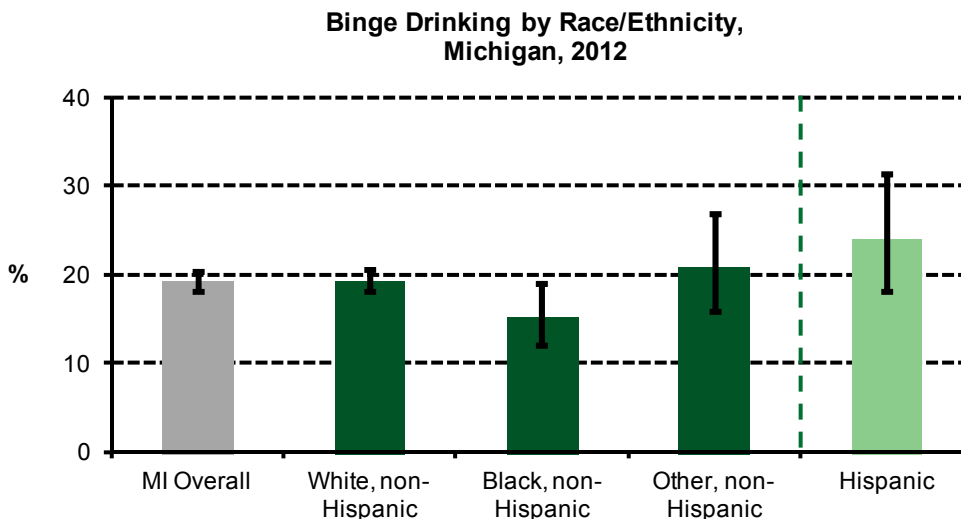
♦ In 2012, an estimated 59.5% (95% CI: 51.7-66.9) of Hispanic adults in Michigan reported some form of alcohol consumption within the past month. Furthermore, an estimated 24.1% of Hispanic adults in Michigan reported binge drinking on at least one occasion within the past month, and 6.4% (95% CI: 3.8-10.5) reported heavy drinking over the past month. This compared to 19.2% (95% CI: 18.1-20.3) and 6.1% (95% CI: 5.4-6.8) of all Michigan adults that reported binge drinking and heavy drinking, respectively.

♦ Although Hispanic males reported a higher prevalence of binge drinking than Hispanic females, the difference was not significant.

♦ Binge drinking was similar by education level.

Hispanic Demographic Characteristics	Binge Drinking[a]	
	%	95% Confidence Interval
Total	**24.1**	**(18.1-31.4)**
Age		
18 - 44	24.4	(16.8-34.0)
45 - 64	28.1	(17.1-42.5)
65+	13.0[†]	(6.2-25.5)
Gender		
Male	33.4	(23.9-44.5)
Female	14.5	(8.4-23.9)
Education		
HS graduate or less	24.6	(16.7-34.7)
Some college or more	23.6	(15.1-34.9)
Household Income		
< $25,000	16.9	(9.6-28.1)
$25,000 - $49,999	32.4	(20.5-47.1)
$50,000+	25.3	(13.9-41.5)

[a] Among all Hispanic adults, the proportion who reported consuming five or more drinks per occasion (for males) or four or more drinks per occasion (for women) at least once in the previous month. (N = 641)
[†] This estimate should be used with caution due to its low reliability and precision.

♦ In 2012, although Hispanic adults (24.1%) reported the highest prevalence of binge drinking compared to all other racial/ethnic groups in Michigan, the differences were not significant.

Binge Drinking by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

Adults with high blood pressure are at a higher risk for heart disease, stroke, congestive heart failure, and end-stage renal disease.[23]
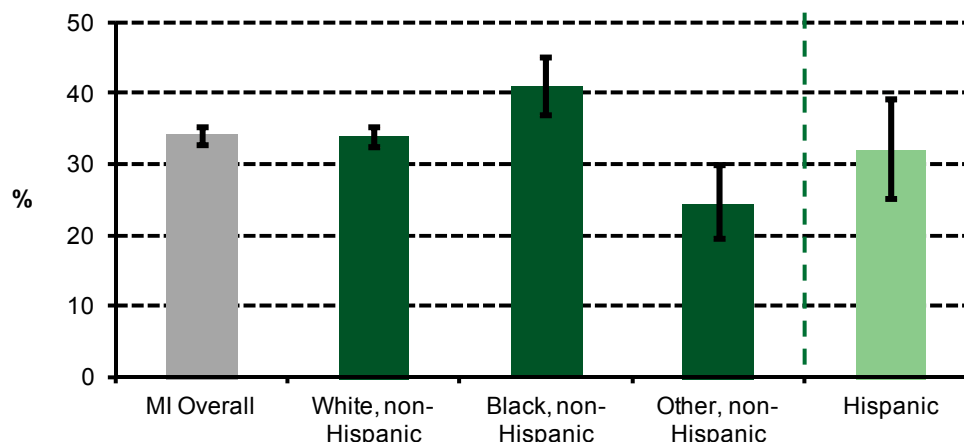
♦ In 2012, an estimated 31.9% of Hispanic adults in Michigan reported ever being told by a doctor that they had high blood pressure (HBP). Furthermore, 66.8% (95% CI: 53.8-77.6) of Hispanic adults with HBP were currently taking medications for their HBP. This compared to 34.2% (95% CI: 32.9-35.4) and 76.5% (95% CI: 74.4-78.5) of all Michigan adults in 2011, respectively.

♦ The prevalence of HBP generally increased with age.

♦ Although the prevalence of HBP was higher among Hispanic males than Hispanic females, the difference was not significant.

♦ The prevalence of HBP was significantly higher among Hispanic adults reporting a household income of less than $25,000 (43.7%) compared to Hispanic adults reporting a household income of $50,000 or more (17.2%).

♦ In 2012, the prevalence of HBP among Hispanic adults (31.9%) did not significantly differ from other racial/ethnic groups in Michigan in 2011.

Hispanic Demographic Characteristics	Ever Told HBP[a]	
	%	95% Confidence Interval
Total	**31.9**	**(25.3-39.2)**
Age		
18 - 44	16.6[†]	(8.9-28.9)
45 - 64	45.5	(34.5-56.9)
65+	57.2	(39.2-73.4)
Gender		
Male	36.8	(27.2-47.5)
Female	25.8	(18.2-35.2)
Education		
HS graduate or less	37.5	(28.0-48.0)
Some college or more	25.3	(17.6-35.1)
Household Income		
< $25,000	43.7	(31.8-56.4)
$25,000 - $49,999	33.1	(21.6-47.1)
$50,000+	17.2	(10.7-26.6)

[a] Among all 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 = 444)
[†] This estimate should be used with caution due to its low reliability and precision.

Ever Told High Blood Pressure by Race/Ethnicity, Michigan, 2011-2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2011 Michigan BRFS.

14

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.[24-26]

♦ In 2012, an estimated 74.7% (95% CI: 67.7-80.6) of Hispanic adults in Michigan reported trying to control or lose weight within the past 12 months. Furthermore, an estimated 53.7% of Hispanic adults in Michigan reported increasing their physical activity or exercise within the past 12 months, and 67.4% reported decreasing the amount of fat or calories in their diet within the past 12 months.

♦ Prevalence estimates at the state level were not conducted and therefore not available for comparison.

♦ The prevalence of Hispanic adults who reported increasing their physical activity or exercise tended to decrease with age but was similar by gender.

♦ Hispanic adults with some college or more (66.4%) reported a significantly higher prevalence of increased physical activity or exercise compared to Hispanic adults with a high school education or less (43.3%).

♦ The prevalence of Hispanic adults that reported decreasing the amount of fat or calories in their diet generally increased with age and education level.

Hispanic Demographic Characteristics	Increased Physical Activity or Exercise[a]		Decreased Fat/ Calories in Diet[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**53.7**	**(46.0-61.3)**	**67.4**	**(59.8-74.1)**
Age				
18 - 44	56.8	(45.1-67.8)	61.8	(50.5-71.9)
45 - 64	52.5	(40.7-63.9)	72.7	(59.7-82.7)
65+	45.3	(28.6-63.1)	76.6	(60.8-87.4)
Gender				
Male	54.9	(44.2-65.1)	63.6	(53.0-73.1)
Female	52.3	(41.2-63.1)	72.1	(61.5-80.8)
Education				
HS graduate or less	43.3	(33.6-53.5)	60.6	(50.2-70.0)
Some college or more	66.4	(54.6-76.4)	75.0	(63.7-83.7)
Household Income				
< $25,000	53.2	(40.8-65.2)	61.4	(48.5-72.9)
$25,000 - $49,999	50.6	(35.7-65.5)	72.4	(56.9-83.9)
$50,000+	65.9	(52.2-77.4)	64.4	(50.0-76.6)

[a] Among all Hispanic adults, the proportion who reported increasing their physical activity or exercise in the past 12 month. (N = 431)

[b] Among all Hispanic adults, the proportion who reported reducing the amount of fat or calories in their diet in the past 12 months. (N = 424)

Preventive Health Behaviors by Education, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS.
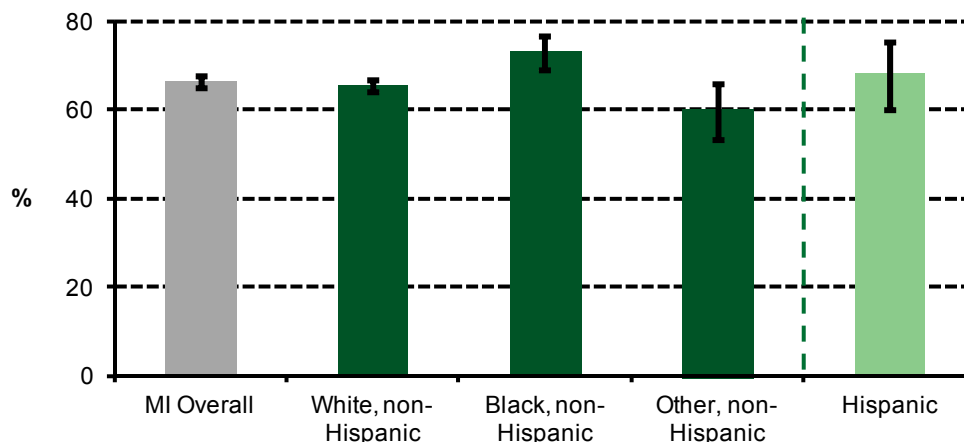
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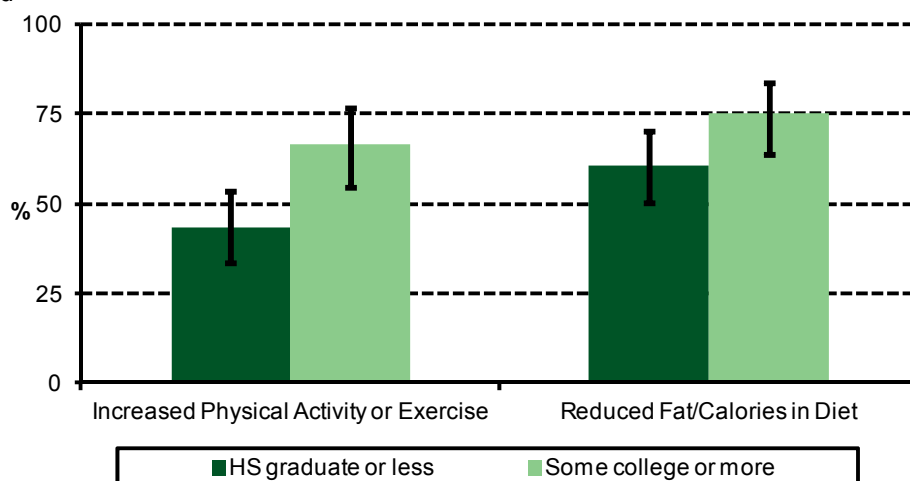
Routine Checkup in Past Year

A yearly routine checkup is a great way to remain proactive about one's health. The benefits of having an annual checkup include early diagnosis and treatment of existing conditions and prevention of future medical problems.[27]

♦ In 2012, an estimated 68.3% of Hispanic adults in Michigan reported having a routine medical checkup within the past year, compared to 66.5% of all Michigan adults (95% CI: 65.2-67.8).

♦ The prevalence of having a routine checkup within the past year generally increased with age.

♦ Although Hispanic females reported a higher prevalence of having a routine checkup within the past year than Hispanic males, the difference was not significant.

♦ The prevalence of having a routine checkup within the past year was similar by education and household income level.

♦ In 2012, the prevalence of Hispanic adults (68.3%) that reported having a routine medical checkup in the past year did not significantly differ from other racial/ethnic groups in Michigan.

Hispanic Demographic Characteristics	Had a Routine Checkup Within The Past Year[a]	
	%	95% Confidence Interval
Total	**68.3**	**(60.3-75.4)**
Age		
18 - 44	64.3	(53.3-73.9)
45 - 64	76.0	(63.0-85.6)
65+	79.2	(65.4-88.4)
Gender		
Male	62.2	(50.4-72.7)
Female	74.9	(64.5-83.0)
Education		
HS graduate or less	66.8	(56.4-75.8)
Some college or more	70.1	(56.9-80.5)
Household Income		
< $25,000	66.3	(52.5-77.8)
$25,000 - $49,999	68.7	(54.4-80.2)
$50,000+	69.9	(51.2-83.7)

[a] Among all Hispanic adults, the proportion who reported that they had a routine medical checkup within the past year. (N = 652)

Had Routine Checkup in Past Year by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

16

Breast Cancer Screening

Breast cancer is the second leading cause of cancer deaths among United States women.[28] In 2010, there were 1,492 deaths among Michigan women due to breast cancer, second only to that of lung cancer.[29] Early detection of breast cancer can occur through the use of screening tools such as mammography and clinical breast exams.

♦ In 2012, an estimated 69.4% of Hispanic women 40 years and older in Michigan reported having a mammogram within the past year, while 60.0% reported having both a clinical breast exam and a mammogram within the past year, compared to 59.2% (95% CI: 57.5-61.0) and 50.4% (95% CI: 48.6-52.2) among all women aged 40 years and older in Michigan, respectively.

♦ Breast cancer screening generally decreased with age among Hispanic women and was similar by education level.

♦ In 2012, although Hispanic women 40 years and older (60.0%) reported the highest prevalence of having both a clinical breast exam and a mammogram within the past year compared to all other racial/ethnic groups in Michigan, the differences were not significant.

Hispanic Demographic Characteristics	Had Mammogram in the Past Year 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	**69.4**	**(57.9-78.8)**	**60.0**	**(47.9-71.0)**
Age				
40 - 59	70.7	(56.8-81.6)	63.5	(48.6-76.3)
60+	67.0	(46.7-82.5)	53.3	(34.6-71.2)
Education				
HS graduate or less	69.7	(53.3-82.3)	56.8	(40.4-71.8)
Some college or more	69.0	(52.5-81.8)	64.2	(47.1-78.4)
Household Income				
< $25,000	64.6	(47.0-79.0)	55.8	(37.5-72.6)
$25,000 - $49,999	--[c]	---	--[c]	---
$50,000+	--[c]	---	--[c]	---

[a] Among women aged 40 years and older, the proportion who reported having a mammogram within the past year. (N = 188)
[b] Among women aged 40 years and older, the proportion who reported having a clinical breast exam and a mammogram within the past year. (N = 188)
[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 Clinical Breast Exam and Mammogram in Past Year Among Women Aged 40 Years and Older by Race/Ethnicity, Michigan, 2012
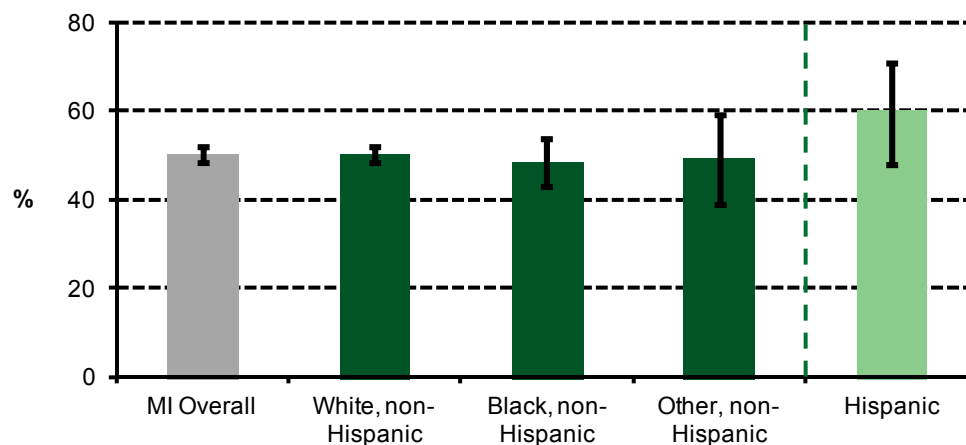
All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

Colorectal Cancer Screening

In 2010, colorectal cancer was the third leading cause of cancer-related deaths in Michigan with 1,791 deaths.[29] 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 2012, an estimated 44.5% of Hispanic adults in Michigan aged 50 years and older reported having a sigmoidoscopy or colonoscopy within the past five years, while 58.3% reported appropriate colorectal cancer screening, compared to 55.4% (95% CI: 53.8-57.0) and 69.4% (95% CI: 67.8-70.9) of all Michigan adults aged 50 years and older, respectively.

♦ The prevalence of appropriate colorectal cancer screening was similar by gender.

♦ The prevalence of appropriate colorectal cancer screening generally increased with increasing education and household income level.

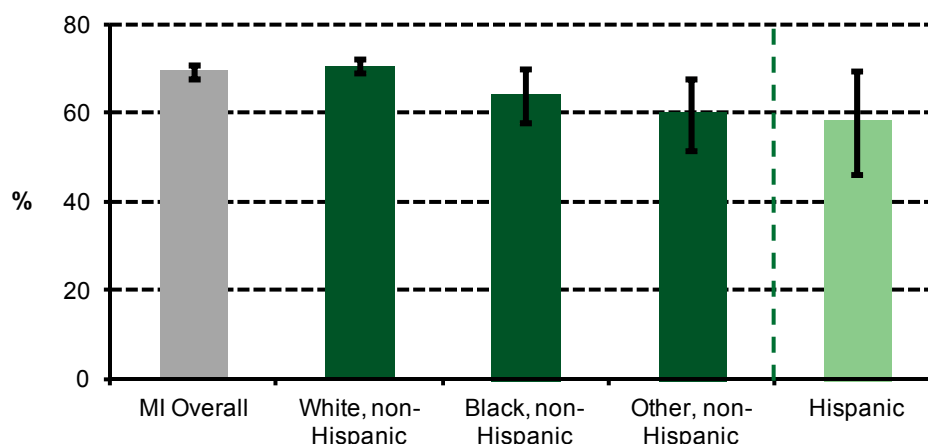| Hispanic Demographic Characteristics	Had Sigmoidoscopy or Colonoscopy in Past 5 Years[a]		Had Appropriate Colorectal Cancer Screening[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**44.5**	**(34.1-55.4)**	**58.3**	**(46.4-69.4)**
Gender				
Male	43.5	(29.5-58.5)	56.9	(40.1-72.2)
Female	45.9	(31.2-61.2)	60.1	(43.7-74.5)
Education				
HS graduate or less	39.4	(27.2-53.1)	52.2	(37.5-66.4)
Some college or more	53.2	(35.2-70.4)	68.3	(47.5-83.7)
Household Income				
< $25,000	33.7	(18.3-53.5)	39.7	(22.3-60.2)
$25,000 - $49,999	43.5	(27.5-60.9)	62.0	(43.4-77.6)
$50,000+	66.0[†]	(43.3-83.2)	83.9[†]	(70.7-91.9)

[a] Among Hispanic adults aged 50 years and older, the proportion who reported having a sigmoidoscopy or colonoscopy within the past five years. (N = 288)
[b] Among Hispanic 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 = 283)
[†] This estimate should be used with caution due to its low reliability and precision.

♦ Although the prevalence of appropriate colorectal cancer screening among Hispanic adults (58.3%) was lower compared to all other racial/ethnic groups in Michigan in 2012, the differences were not significant.

Appropriate Colorectal Cancer Screening by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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Oral Health

2012 HBRFS

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.[30] 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%).[31]
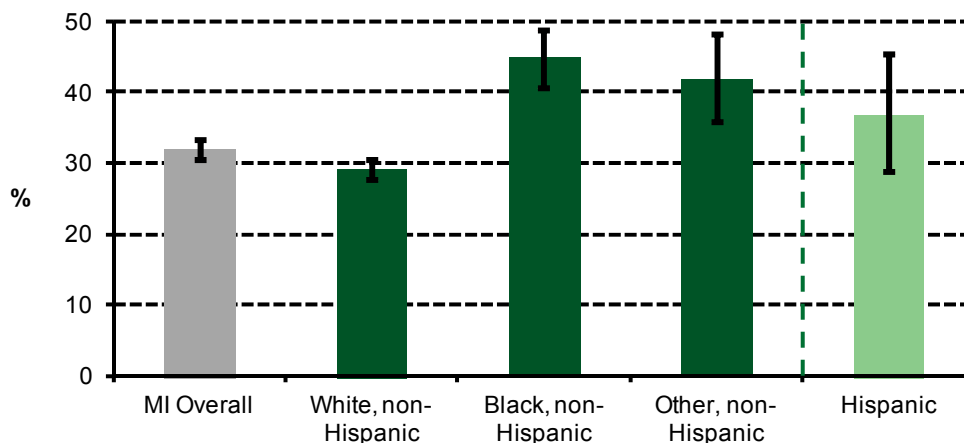
♦ In 2012, an estimated 36.8% of Hispanic adults in Michigan reported not having had a dental visit within the past year, compared to 32.0% (95% CI: 30.7-33.3) of all Michigan adults. An estimated 8.7% (95% CI: 5.5-13.7) of Hispanic adults reported having 6 or more teeth missing, significantly lower than all Michigan adults (15.8% [95% CI: 14.9-16.7]).

♦ Although Hispanic males were more likely to report not having a dental visit within the past year compared to Hispanic females, the difference was not significant.

♦ The prevalence of not having had a dental visit within the past year generally decreased with increasing education and household income level.

♦ The prevalence of having 6 or more teeth missing was significantly lower among Hispanic adults (8.7%) than White, non-Hispanics (15.3%) and Black, non-Hispanics (21.8%) (data not shown).

Hispanic Demographic Characteristics	No Dental Visit in Past Year[a]	
	%	95% Confidence Interval
Total	**36.8**	**(28.9-45.5)**
Age		
18 - 44	37.6	(27.1-49.5)
45 - 64	38.0	(26.0-51.6)
65+	28.0	(16.5-43.3)
Gender		
Male	43.2	(32.4-54.8)
Female	30.0	(19.3-43.5)
Education		
HS graduate or less	39.9	(30.5-50.1)
Some college or more	33.5	(20.8-49.0)
Household Income		
< $25,000	50.2	(35.7-64.7)
$25,000 - $49,999	29.6	(18.4-43.9)
$50,000+	31.8	(17.0-51.5)

[a] Among all Hispanic adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year. (N = 653)

♦ In 2012, although the prevalence of no dental visit within the past year among Hispanic adults (36.8%) was higher than White, non-Hispanics (29.1%) in Michigan, the difference was not significant. The prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

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

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.
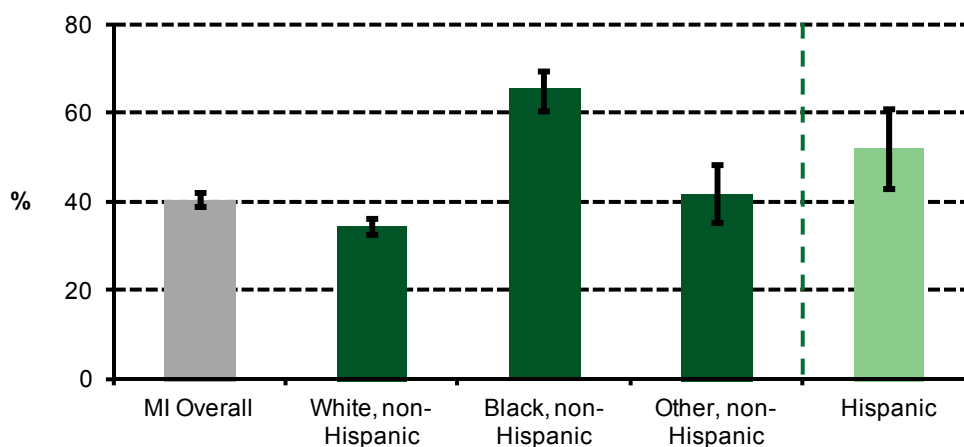
19

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.[9]

♦ In 2012, an estimated 52.0% of Hispanic adults in Michigan aged 18-64 years reported ever being tested for HIV, significantly higher than all Michigan adults aged 18-64 years (40.4% [95% CI: 38.9-42.0]).

♦ Hispanic adults aged 18-44 years (58.4%) reported a significantly higher prevalence of HIV testing than Hispanic adults aged 45-64 years (31.0%).

♦ Hispanic females (66.5%) reported a significantly higher prevalence of HIV testing than Hispanic males (39.4%).

♦ The prevalence of HIV testing generally decreased with increasing household income level.

♦ In 2012, Hispanic adults (52.0%) reported a significantly higher prevalence of HIV testing than White, non-Hispanics (34.6%). In other words, Hispanic adults reported ever being tested for HIV 1.5 times that of White, non-Hispanic adults in Michigan. The prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

Hispanic Demographic Characteristics	Ever Had an HIV Test[a]	
	%	95% Confidence Interval
Total	**52.0**	**(42.9-61.0)**
Age		
18 - 44	58.4	(47.2-68.8)
45 - 64	31.0	(20.3-44.4)
Gender		
Male	39.4	(28.4-51.7)
Female	66.5	(54.2-77.0)
Education		
HS graduate or less	48.5	(36.9-60.3)
Some college or more	55.9	(41.9-68.9)
Household Income		
< $25,000	64.9	(49.5-77.7)
$25,000 - $49,999	49.9	(34.2-65.6)
$50,000+	43.6	(28.2-60.3)

[a] Among Hispanic 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 = 504)

Ever Tested for HIV Among Adults Aged 18-64 Years by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

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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.[32]
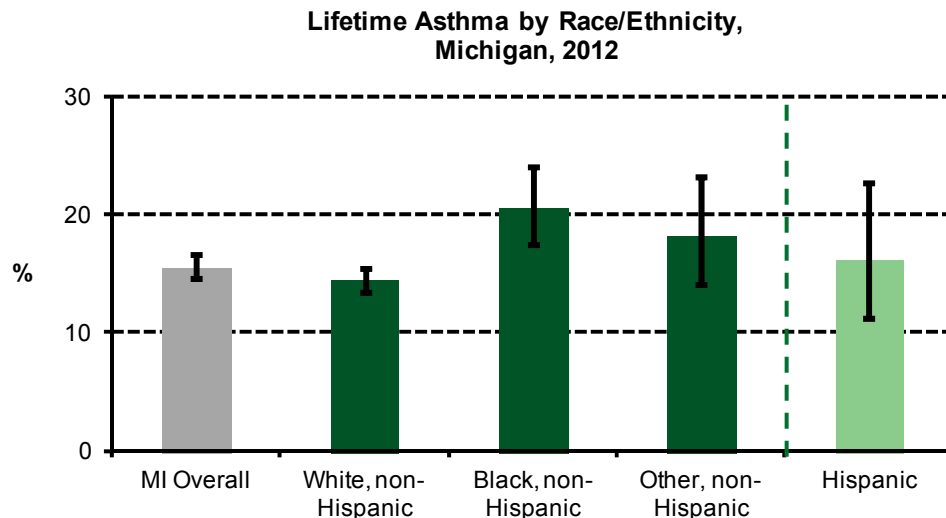
♦ In 2012, an estimated 16.2% of Hispanic adults in Michigan reported that they were ever diagnosed with asthma and 12.0% (95% CI: 7.6-18.4) reported that they currently have asthma. This compared to 15.5% (95% CI: 14.6-16.6) and 10.5% (95% CI: 9.7-11.4) of all Michigan adults, respectively.

♦ The prevalence of lifetime asthma generally decreased with age.

♦ Although Hispanic females reported a higher prevalence of lifetime asthma than Hispanic males, the difference was not significant.

♦ In 2012, the prevalence of Hispanic adults (16.2%) that reported ever being diagnosed with asthma did not significantly differ from other racial/ethnic groups in Michigan.

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Hispanic Demographic Characteristics	Lifetime Asthma[a]	
	%	95% Confidence Interval
Total	**16.2**	**(11.2-22.8)**
Age		
18 - 44	19.0	(12.2-28.5)
45 - 64	13.2	(7.4-22.5)
65+	2.6[†]	(1.0-6.2)
Gender		
Male	11.2[†]	(5.6-21.0)
Female	21.6	(13.9-31.9)
Education		
HS graduate or less	16.1	(9.4-26.3)
Some college or more	16.3	(9.9-25.8)
Household Income		
< $25,000	26.1	(15.6-40.2)
$25,000 - $49,999	--[b]	---
$50,000+	15.4[†]	(7.3-29.5)

[a] Among all Hispanic adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma. (N = 655)
[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.

Lifetime Asthma by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

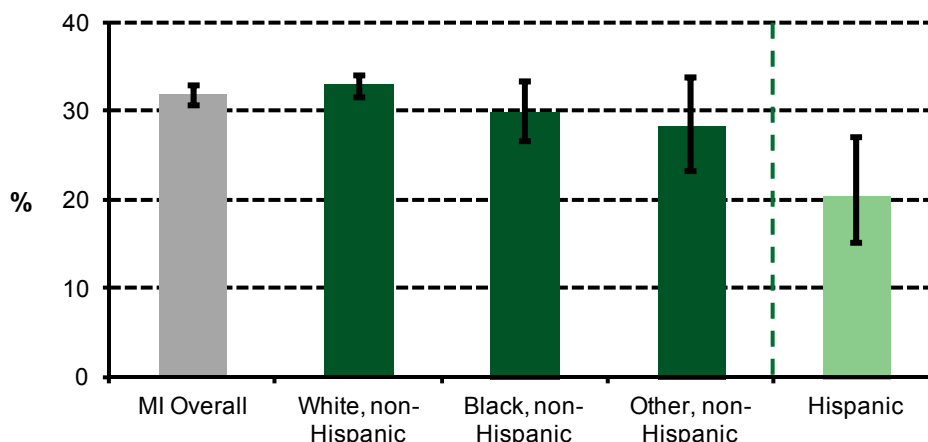Arthritis and rheumatism are the leading causes of disability within the United States.[33]

- In 2012, an estimated 20.5% of Hispanic 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 than all Michigan adults (31.8% [95% CI: 30.7-33.0]).

- The prevalence of arthritis among Hispanic adults generally increased with age.

- Although Hispanic females reported a higher prevalence of arthritis than Hispanic males, the difference was not significant.

- The prevalence of arthritis generally decreased with increasing education and household income level.

- In 2012, Hispanics (20.5%) reported a significantly lower prevalence of arthritis than White, non-Hispanics (33.0%). Thus, the prevalence of arthritis among White, non-Hispanics was 1.6 times that of Hispanics in Michigan. The prevalence among Hispanic adults did not significantly differ from that of other racial/ethnic groups.

Hispanic Demographic Characteristics	Ever Told Arthritis[a]	
	%	95% Confidence Interval
Total	**20.5**	**(15.3-27.1)**
Age		
18 - 44	7.3[†]	(3.2-15.6)
45 - 64	45.3	(33.0-58.3)
65+	54.1	(39.3-68.2)
Gender		
Male	17.0	(10.8-25.7)
Female	24.3	(16.2-34.6)
Education		
HS graduate or less	24.7	(16.9-34.6)
Some college or more	15.6	(9.9-23.8)
Household Income		
< $25,000	27.2	(17.0-40.5)
$25,000 - $49,999	18.5	(10.4-30.9)
$50,000+	14.5[†]	(7.3-26.9)

[a] Among all Hispanic 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 = 655)
† This estimate should be used with caution due to its low reliability and precision.

Ever Told Arthritis by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

22

In 2010, diabetes was the seventh leading cause of death.[34] 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.[35]
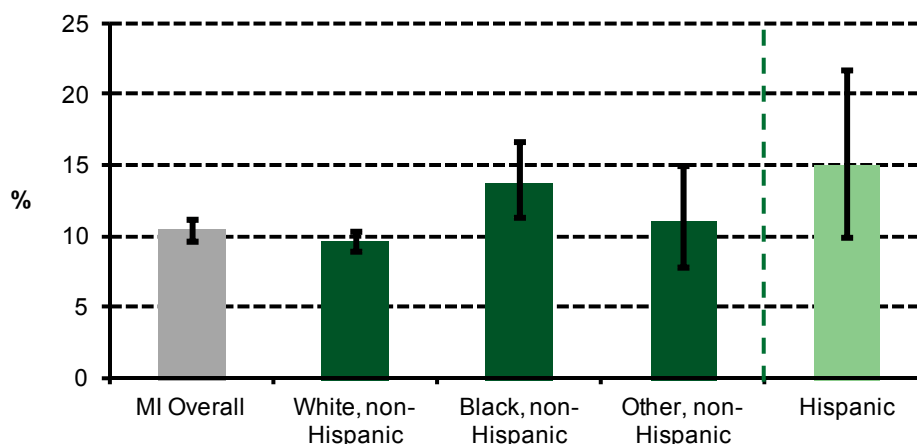
♦ In 2012, an estimated 15.0% of Hispanic adults in Michigan reported ever being told by a doctor that they had diabetes, compared to 10.5% (95% CI: 9.7-11.2) of all Michigan adults.

♦ The prevalence of diabetes generally increased with age but was similar by gender among Hispanic adults.

♦ The prevalence of diabetes generally decreased with increasing education level.

♦ In 2012, although the prevalence of Hispanic adults (15.0%) that reported ever being told they had diabetes was higher than all other racial/ethnic groups in Michigan, the differences were not significant.

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Hispanic Demographic Characteristics	Ever Told Diabetes[a]	
	%	95% Confidence Interval
Total	**15.0**	**(10.0-21.7)**
Age		
18 - 44	7.7[†]	(3.2-17.7)
45 - 64	22.4	(12.4-37.2)
65+	49.7	(35.0-64.4)
Gender		
Male	14.9	(8.7-24.3)
Female	15.0	(8.2-26.1)
Education		
HS graduate or less	22.0	(14.0-32.9)
Some college or more	6.7[†]	(3.5-12.2)
Household Income		
< $25,000	19.9[†]	(10.5-34.5)
$25,000 - $49,999	10.9[†]	(5.0-22.0)
$50,000+	10.9[†]	(4.3-25.0)

[a] Among all Hispanic 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 = 658)
[†] This estimate should be used with caution due to its low reliability and precision.

Diabetes by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

23

Depression

Depression is a common and treatable medical disorder that is more common among individuals with chronic conditions such as obesity, diabetes, and arthritis.[36]
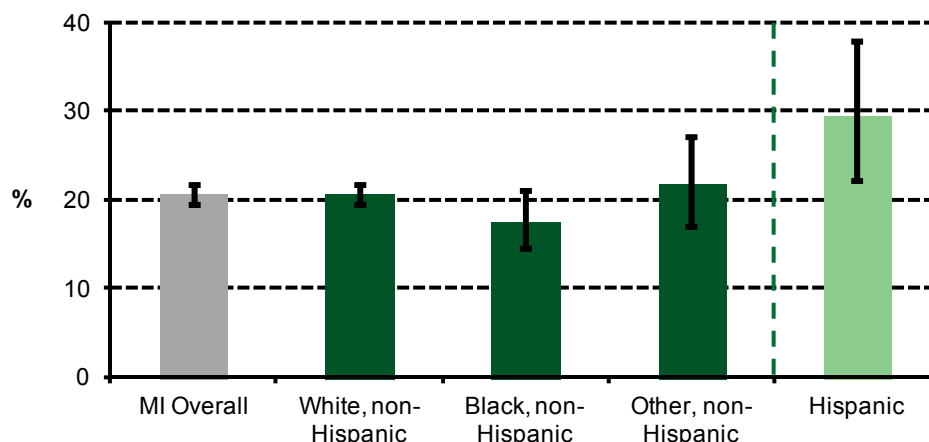
♦ In 2012, an estimated 29.4% of Hispanic adults in Michigan reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. This was significantly higher than the prevalence among all adults (20.6% [95% CI: 19.5-21.7]) in Michigan

♦ The prevalence of depression among Hispanic adults generally decreased with age.

♦ Hispanic females (41.0%) reported a significantly higher prevalence of depression than Hispanic males (18.6%). The prevalence of depression among Hispanic females was 2.2 times that of Hispanic males.

♦ The prevalence of depression generally decreased with increasing household income level among Hispanic adults.

♦ In 2012, Hispanic adults (29.4%) reported a significantly higher prevalence of depression than White, non-Hispanics (20.6%) and Black, non-Hispanics (17.5%) in Michigan. Thus, Hispanic adults reported depression 1.4 times that of White, non-Hispanics and 1.7 times that of Black, non-Hispanics.

Hispanic Demographic Characteristics	Ever Told Depression[a]	
	%	95% Confidence Interval
Total	**29.4**	**(22.1-37.9)**
Age		
18 - 44	30.9	(21.2-42.7)
45 - 64	29.4	(19.0-42.5)
65+	17.9	(9.7-30.7)
Gender		
Male	18.6	(11.4-28.7)
Female	41.0	(29.4-53.6)
Education		
HS graduate or less	26.7	(18.7-36.5)
Some college or more	32.6	(20.8-47.2)
Household Income		
< $25,000	44.7	(30.3-60.0)
$25,000 - $49,999	19.9	(10.8-33.9)
$50,000+	17.2[†]	(8.8-31.0)

[a] Among all Hispanic 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 = 657)
† This estimate should be used with caution due to its low reliability and precision.

Depression by Race/Ethnicity, Michigan, 2012

All Hispanic prevalence estimates used data from the 2012 HBRFS while estimates for Michigan overall as well as White, Black, and Other non-Hispanic estimates used data from the 2012 Michigan BRFS.

24

Reactions to Race

"Race" can be a strong predictor of health outcomes, even though "race" is widely recognized as a social construct with no inherent impact on the biological health of an individual.[37] 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.[37]

♦ In 2012, among self-assigned Hispanic adults in Michigan, an estimated 76.7% reported being classified by others in this country as Hispanic/Latino, 18.4% reported being classified as White, and 4.6% reported being classified as another race (excluding Asian).

♦ A higher proportion of Hispanic males reported being socially assigned as White (22.9% [95% CI:15.6-32.2]) compared to Hispanic females (12.2% [95% CI: 7.4-19.4]), although the difference was not significant.

♦ The proportion of Hispanic adults that reported being socially assigned by others as White increased with increasing household income, although the differences were not significant.

♦ Although the majority of Hispanic adults reported being treated the same as other races at work (88.1%) and having a similar health care experience as other races (80.4%), about 8% reported treatment and experiences worse than other races.

	%	95% Confidence Interval
"Socially Assigned Race"[a]		
White	18.4	(13.5-24.5)
Hispanic or Latino	76.7	(69.9-82.4)
Asian	--[d]	---
Other	4.6[†]	(2.1-9.8)
Treatment at Work Compared to Other Races[b]		
Worse than other races	7.8	(4.4-13.5)
The same as other races	88.1	(81.5-92.6)
Better than other races	4.1[†]	(1.8-9.0)
Health Care Experiences Compared to Other Races[c]		
Worse than other races	8.4	(5.0-13.8)
The same as other races	80.4	(74.0-85.5)
Better than other races	9.2	(5.9-14.1)
No health care in past 12 months	2.0[†]	(1.1-3.8)

[a] Among all self-identified Hispanic/Latino adults, their "socially assigned race" was measured by the response to the question, "How do other people usually classify you in this country?" (N = 411)
[b] Among all Hispanic adults, how they reported they were treated at work compared to other races, in the past 12 months. (N = 223)
[c] Among all Hispanic adults, how they reported their experiences, when seeking health care compared to other races, in past 12 months. (N = 403)
[d] 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.

"Socially Assigned Race" Among Self-Identified Hispanic Adults by Income, Michigan, 2012

■ <$25,000   ■ $25,000-$49,999   ■ $50,000+
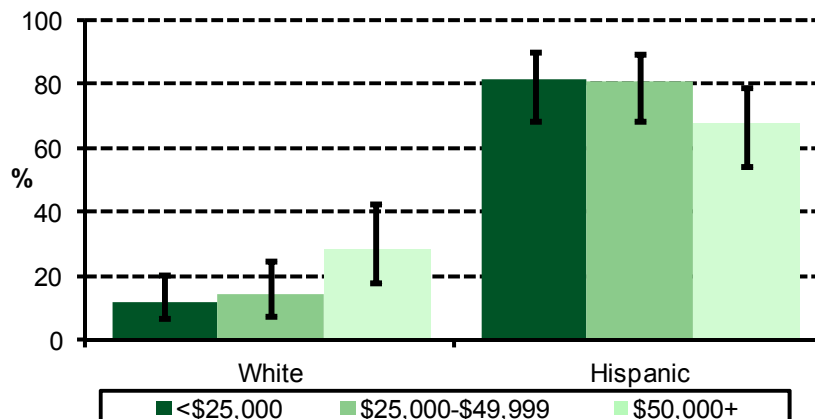
*The prevalence estimates for the socially assigned races Asian and Other were excluded from the graphs due to estimates equal to 0% or estimate having a denominator of less than 50 and/or a relative standard error of greater than 50%.

All Hispanic prevalence estimates used data from the 2012 HBRFS.

Reactions to Race, continued

How often a person thinks about their race can help explain the importance race plays in their daily interactions.[38] For example, a person that 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, particularly among Hispanics.[38]

- Over half (58.3%) of Hispanic adults reported thinking regularly about their race (at least monthly or more frequently) while 31.5% reported never thinking about their race.

- A higher proportion of Hispanic females reported never thinking about their race (41.6%) and thinking about their race once an hour to constantly (21.8%) compared to Hispanic males (23.8% and 12.3%, respectively), although the differences were not significant.

- An estimated 8.7% of Hispanic adults reported having physical symptoms as a result of how they were treated based on their race in the past 30 days, while 11.9% 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	16.4	(11.7-22.4)
Once a day	17.0	(11.8-23.8)
Once a week	12.5	(7.7-19.6)
Once a month	12.4	(8.0-18.7)
Once a year	10.3	(5.9-17.2)
Never	31.5	(25.0-38.8)
Physical Symptoms Due to How Treated Based on Race[b]	**8.7**	**(5.5-13.6)**
Emotional Symptoms Due to How Treated Based on Race[c]	**11.9**	**(7.4-18.5)**

[a] Among all Hispanic adults, race consciousness was measured by asking, "How often do you think about your race?" (N = 417)
[b] Among all Hispanic 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 = 427)
[c] Among all Hispanic 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 = 428)

Among Hispanic Adults, How Often Think About Race by Gender, Michigan, 2012
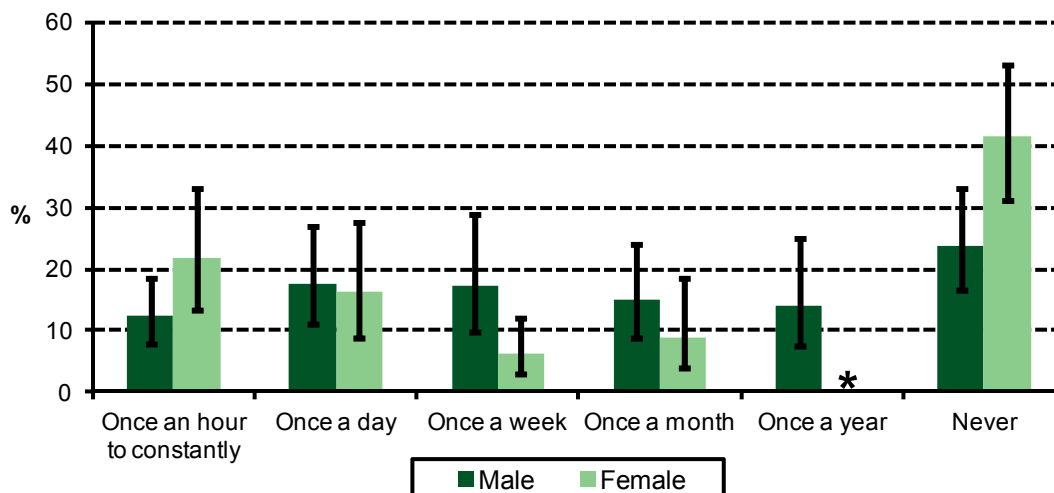
* The prevalence estimate for females for the response 'once a year' was not shown due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

All Hispanic prevalence estimates used data from the 2012 HBRFS.

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of 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 (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR) Office of Survey Research, and the Michigan Department of Community Health (MDCH). 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 Hispanic/Latino. Without special over-sampling, the typical MiBRFS sample includes too few Hispanic respondents to reliably estimate health outcomes and behaviors within the group. For example, only 509 Hispanics were included in the MiBRFS samples for years 2008, 2009, and 2010 combined. The MDCH Health Disparities Reduction and Minority Health (HDRMH) Section 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 HDRMH Section arranged for a stand-alone survey among Hispanics in Michigan, and in 2012, the Hispanic Behavioral Risk Factor Survey (HBRFS) was conducted in partnership with the Lifecourse Epidemiology Division. The HBRFS included interviews from two different data sources: (1) interviews from Michigan Hispanic adults (completed in either Spanish or English) conducted by a stand-alone survey overseen by the IPPSR and (2) Hispanic interviews included in the 2012 MiBRFS sample (completed only in English).

The 2012 HBRFS utilized data from both landline and cell phone respondents. The sample of landline telephone numbers for the 2012 MiBRFS was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density and listedness. The sample of cell phone numbers for the 2012 MiBRFS was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange. For the 2012 HBRFS stand-alone survey, the sample of landline telephone numbers was selected randomly from directory listed numbers belonging only to subscribers with surnames identified by the U.S. Census Bureau as being Hispanic or Latino. Cell phone numbers were not sampled because supplementing the surname-targeted landline frame with the cell phone frame was judged cost inefficient, particularly considering how rare the eligible individuals would be.

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 HBRFS 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.[39] If the 95% CIs for two estimates from different subpopulations did not overlap, they were considered to be statistically different. 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 Other non-Hispanic prevalence estimates were used from the 2012 MiBRFS. For three indicators (adequate physical activity, adequate fruit and vegetable consumption, hypertension awareness and medication use), the 2011 MiBRFS estimates were used as a comparison since the questions were not included in the 2012 MiBRFS.

The questionnaire for the 2012 HBRFS stand-alone survey included additional questions not asked in the 2012 MiBRFS. Therefore, the following indicators had results from the stand-alone survey interviews only: adequate physical activity, adequate fruit and vegetable consumption, hypertension awareness and medication use, preventive health behaviors, and reactions to race.

Although the 2012 HBRFS dataset contained a larger sample of Michigan Hispanic adults than the 2012 MiBRFS alone, estimates for some of the 2012 HBRFS indicators were not reported due to low reliability and precision. Results for the following indicators were not included in this report: cervical cancer screening, prostate cancer screening, chronic obstructive pulmonary disease (COPD), cardiovascular disease, cancer, and kidney disease. Additionally, some questions asked on the 2012 MiBRFS were not included in the 2012 HBRFS stand-alone survey and therefore not included in this report: secondhand smoke exposure, motor vehicle safety, adult immunizations, asthma in children, and prediabetes.

In addition to this report, the MDCH HDRMH Section will also be releasing Briefs that highlight additional results from the 2012 HBRFS. These publications will be posted on the MiBRFSS website (www.michigan.gov/brfs) and the HDRMH Section website (www.michigan.gov/minorityhealth).

Sample Results for the 2012 HBRFS

The total sample size for the 2012 HBRFS was 659 (stand-alone survey of Hispanic adults=442, Hispanic interviews from 2012 MiBRFS=215). Two individuals from the 2012 Michigan Asian BRFS indicated being Hispanic and were also included within the 2012 HBRFS. The AAPOR[40] response rate for the stand-alone survey portion of the 2012 HBRFS was 42.4% (landline only) while the AAPOR response rate for the landline portion of the 2012 MiBRFS was 50.1% and 33.3% for the cell phone portion of the survey, respectively. The overall weighted AAPOR response rate (landline and cell phones combined) for the 2012 MiBRFS was 47.3%.[41] The overall weighted U.S. median response rate for 2012 was 45.2%. The percentage of interviews in the 2012 HBRFS stand-alone survey portion conducted in Spanish was 17.9%.

Rationale for the 2012 Hispanic Stand-alone Survey

Since the 2012 HBRFS utilized a larger sample size than the Hispanic data available from the 2012 MiBRFS alone, results from the 2012 HBRFS allow for more precise estimates of the health of this population. Additionally, the Hispanic stand-alone survey allows for increased number of topics to be covered each year, including some of particular interest to this population, and enables the calculation of estimates by demographic subpopulations. Lastly, with the continuation of stand-alone surveys among Hispanics over multiple years, more accurate data will be available to monitor health behavior trends over time.

A comparison of the obesity prevalence estimate from the 2012 HBRFS versus the 2012 MiBRFS is shown in the graph below. An estimated 40.5% (95% CI: 32.3-49.2) of Hispanic adults in Michigan were classified as obese from the 2012 HBRFS, as compared to 37.0% (95% CI: 28.6-46.2) of Hispanic adults classified as obese from the 2012 MiBRFS. When 2012 MiBRFS data alone were used to compare the obesity prevalence estimates between race/ethnicities, there was not a significant difference found between the Hispanic and White, non-Hispanic estimates. However, there was a significant difference between the Hispanic estimate from the 2012 HBRFS (40.5%) and White non-Hispanic (29.9% [95% CI: 28.6-31.2]) from the 2012 MiBRFS. Therefore, the HBRFS data allow for significant differences to be captured between races that are otherwise not possible with MiBRFS data alone.

**Hispanic Obesity Estimates
Comparing 2012 HBRFS vs. 2012 MiBRFS**

Acknowledgements

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