

MICHIGAN BRFSS SURVEILLANCE BRIEF



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Disability and Race/Ethnicity Among Michigan Adults

As racism resonates as a public health crisis, it is increasingly important to identify its effect on other identities with which it intersects. Race and disability are both sources of disadvantage related to systemic inequality, but they are not experienced as separate from one another. Instead, they result in layers of identity and impact.

Background

One in every three Michiganders has a disability (see the methods section below for how disability is defined). However, data about the general population can mask disparities in disability prevalence among different races and ethnicities. This surveillance brief investigates the impact of race on the prevalence of disability, including different categories of disability. We also examine the effect of race on income, education and insurance status among people with disabilities, and provide recommendations for public health and healthcare professionals.

Methods

The Michigan Behavioral Risk Factor Surveillance System (BRFSS) is a telephone-based health survey of adult Michigan residents that provides statewide prevalence of chronic health conditions, health-related behaviors, medical conditions, and preventive health care practices. The Michigan BRFSS provides cross-sectional data, and a temporal relationship cannot be established. This surveillance brief reviews disability status data in relation to the social determinants of health by race/ethnicity among Michigan adults.

To improve the generalizability of the data, making it possible to draw conclusions about the health of Michiganders, CDC weighted survey data using iterative proportional fitting, also known as raking, to account for demographic differences between the survey sample and Michigan's population.

The 2019 Michigan BRFSS survey included six nationally recognized disability status questions (Table 1). Respondents who answered "yes" to one or more questions about hearing, vision, cognition, mobility, self-care, and/or independent living disability were classified as having a disability. Respondents who said "no" to all six questions were classified as not having disabilities.

What is the Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)?

The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The MiBRFSS follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various health behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Landline and cell phone interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a raking weighting factor is used to adjust for the distribution of the Michigan adult population based on eight demographic variables. All analyses are performed using SAS-callable SUDAAN® to account for the complex sampling design.

The prevalence of disability was assessed by race/ethnicity and disability type. For each disability type, the prevalence of disability was compared among racial/ethnic groups. In addition, the prevalence of social determinants of health was evaluated and compared by race/ethnicity among Michigan adults with disabilities. Weighted logistic regression analyses were run to examine the associations between the disability and social determinants of health, controlling for race/ethnicity.

1. Are you deaf or do you have serious difficulty hearing? (hearing)
2. Are you blind or do you have serious difficulty seeing, even when wearing glasses? (vision)
3. Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions? (cognition)
4. Do you have serious difficulty walking or climbing stairs? (mobility)
5. Do you have difficulty dressing or bathing? (self-care)
6. Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor’s office or shopping? (independent living)

Results

Based on 2019 Michigan BRFSS data, an estimated one in three (30.4 percent) Michigan adults reported one or more disabilities (Table 2):

- 7.9% reported a hearing disability.
- 4.4% reported a vision disability.
- 13.4 % reported a cognitive disability.
- 15.2% reported a mobility disability.
- 4.7% reported a self-care disability.
- 8.7% reported an independent living disability.

The prevalence of disability was assessed by race/ethnicity and disability type. Hispanic adults reported a significantly higher prevalence of any disability than white, non-Hispanic adults (39.6 percent vs 29.4 percent). The prevalence of vision disability was significantly higher among Black, non-Hispanic and Hispanic adults than white, non-Hispanic adults (8.5 percent and 8.4 percent vs 3.5 percent). Hispanic adults reported cognitive disability more frequently than white, non-Hispanic adults (22.8 percent vs 12.0 percent). Compared to white, non-Hispanic adults, Black, non-Hispanic adults reported significantly higher rates of self-care disability (8.2 percent vs 3.9 percent) (Table 2).

Table 2. Prevalence of Disability by Race/Ethnicity and Disability Type, Michigan, BRFSS 2019

	Any disability % (95% CI)	Hearing disability % (95% CI)	Vision disability % (95% CI)	Cognition disability % (95% CI)	Mobility disability % (95% CI)	Self-care disability % (95% CI)	Independent living disability % (95% CI)
Overall	30.4 (29.2-31.6)	7.9 (7.3-8.5)	4.4 (3.9-5.0)	13.4 (12.5-14.4)	15.2 (14.3-16.1)	4.7 (4.2-5.3)	8.7 (7.9-9.5)
White, non-Hispanic	29.4 (28.1-30.7)	8.0 (7.4-8.7)	3.5 (3.0-4.0)	12.0 (11.0-13.0)	15.1 (14.1-16.1)	3.9 (3.4-4.4)	8.1 (7.3-8.9)
Black, non-Hispanic	33.2 (29.3-37.3)	7.0 (5.0-9.7)	8.5 (6.3-11.4)	15.6 (12.7-19.1)	16.9 (14.1-20.1)	8.2 (6.1-10.8)	10.8 (8.5-13.7)
Other, non-Hispanic	24.7 (20.2-29.8)	6.1 (4.0-9.0)	3.2 (1.9-5.2)	15.0 (11.3-19.7)	10.6 (7.8-14.3)	3.3 (1.9-5.8)	7.9 (5.3-11.6)
Hispanic	39.6 (32.3-47.4)	8.9 (5.2-14.7)	8.4 (4.9-13.9)	22.8 (16.7-30.3)	13.6 (9.4-19.4)	6.5 (3.7-11.0)	11.6 (6.9-19.1)

CI = confidence interval.

* Bold number indicates the prevalence of disability among that specific racial/ethnic group was significantly different compared to the prevalence among white, non-Hispanic adults.

The prevalence of social determinants of health was compared by race/ethnicity among Michigan adults with disabilities. In general:

- 17.0% of Michiganders with disabilities reported less than high school education;
- 29.2% reported low household income (below \$20,000); and
- 9.7% reported uninsured.

Black, non-Hispanic adults with disabilities reported less than high school education more frequently than white, non-Hispanic adults with disabilities (27.0 percent vs. 14.0 percent). Black, non-Hispanic adults with disabilities and other, non-Hispanic adults with disabilities reported higher prevalence of low household income than white, non-Hispanic adults with disabilities (49.0 percent and 39.3 percent, respectively vs. 24.7 percent). Compared to white, non-Hispanic adults with disabilities, Hispanic adults with disabilities reported significantly higher rates of being uninsured (23.6 percent vs. 7.6 percent) (Table 3). After controlling for race/ethnicity, significant associations were observed between disability and education or household income. However, there was no significant association between disability and insurance in the adjusted model.

Table 3. Prevalence of Social Determinants of Health by Race/ethnicity Among Adults with Disabilities, Michigan, BRFSS 2019

	Overall % (95% CI)	White, non- Hispanic % (95% CI)	Black, non-Hispanic % (95% CI)	Other, non- Hispanic % (95% CI)	Hispanic % (95% CI)
Less than high school education	17.0 (14.7-19.5)	14.0 (11.6-16.7)	27.0 (20.0-35.2)	25.1 (15.6-37.8)	24.1 (12.7-40.8)
Less than \$20,000 household income	29.2 (26.7-31.8)	24.7 (22.2-27.3)	49.0 (40.8-57.2)	39.3 (27.8-52.1)	34.9 (22.1-50.3)
Uninsured	9.7 (8.2-11.4)	7.6 (6.2-9.4)	10.1 (6.4-15.8)	15.2 (8.8-24.8)	23.6 (14.2-36.7)

CI = confidence interval.

* Bold number indicates the prevalence of social determinants of health among that specific racial/ethnic adults with disabilities was significantly different compared to the prevalence among white, non-Hispanic adults with disabilities.

Discussion

Racial disparities among people with disabilities continue to be significant. Only in the Hispanic population was there a significant difference in overall disability rates, but we see increasing disparities when look at disability by type. In three of the six functional categories of disability (mobility, cognitive, and vision), there are significant differences in at least one race/ethnicity.

Some of this may be explained by the disparities among three social determinants of health: education, income, and insurance status. For example, Black non-Hispanic adults reported lower rates of high school education and less household income, and Hispanic adults are significantly less likely to be insured. All of these factors are associated with rates of disability. These data may also have implications for healthcare in people whose race puts them at risk for specific categories of disability.

We propose the following recommendations to both increase understanding of these disparities, as well as to address them:

- Involve representatives from disability justice organizations in coalitions to build inclusive communities, health systems and public health programs. (Disability justice organizations are most often led by people at the intersection of disability and other identities, such as BIPOC and/or LGBTQ+).
- Include standard disability indicators in public health surveillance systems, and be able to cross-reference disability with race to identify racial disparities within the disability population.
- Use disability status as a demographic variable in all data collection, analysis and reporting.

- Recognize the disproportional impact of disability and race on social determinants of health such as income, education and insurance status.
- Advocate for health systems that are accessible and inclusive.
- Fund and promote interventions and systems that ensure preventive health screenings for people with disabilities – particularly those who are at additional risk for secondary conditions due to their race.

One limitation noted that the Michigan BRFSS provides cross-sectional data, and a temporal relationship cannot be established. We can only examine the association between disability and social determinants of health and cannot assess the causation relationship from the Michigan BRFSS data.

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