



MICHIGAN BRFSS SURVEILLANCE BRIEF

Michigan BRFSS

A NEWSLETTER FROM THE CHRONIC DISEASE EPIDEMIOLOGY SECTION, MDHHS

Adverse Childhood Experiences among Michigan Adults

Background. Adverse childhood experiences (ACEs) involve stressful or traumatic events such as: verbal, psychological, physical, or sexual abuse (as a witness or the victim); living with household members who are substance abusers, mentally ill, suicidal or ever incarcerated; or living with parents who got divorced or separated. The landmark Kaiser study found that ACEs are common, they cluster; meaning children often experience multiple ACEs; and there is a dose-response relationship with many adverse outcomes.¹ Although learning to cope with adversity is a normal part of child development, children exposed to strong, frequent or prolonged childhood trauma activate their flight, fight or freeze system, which can physically damage their developing brain.² This type of stress response is referred to as toxic stress. Subsequently, children who experience ACEs have a greater likelihood of developmental delays and other problems.² Moreover, multiple studies have confirmed that childhood trauma can lead to poor outcomes in adulthood, including substance abuse, mental illness, chronic disease, incarceration and work issues such as absenteeism. In brief, events in early childhood can last a lifetime. We must recognize both the short-term and long-term consequences and address them, so that all Michigan children and adults are healthy, thriving and productive.

Methods. Questions related to ACEs, demographics, and selected health behaviors and outcomes were included within the 2013 Michigan Behavioral Risk Factor Surveillance System (MiBRFSS). The ACEs questions asked respondents about adverse events that happened during childhood that have impacted their health behaviors and outcomes as adults. These questions focused on adverse events such as living with an alcoholic or drug user, living with someone who served time in jail, parents being separated or divorced, and the respondent being physically, verbally, or sexually abused as a child. The complete list of these 2013 MiBRFSS ACEs questions can be found on the MiBRFSS website (www.michigan.gov/brfs).

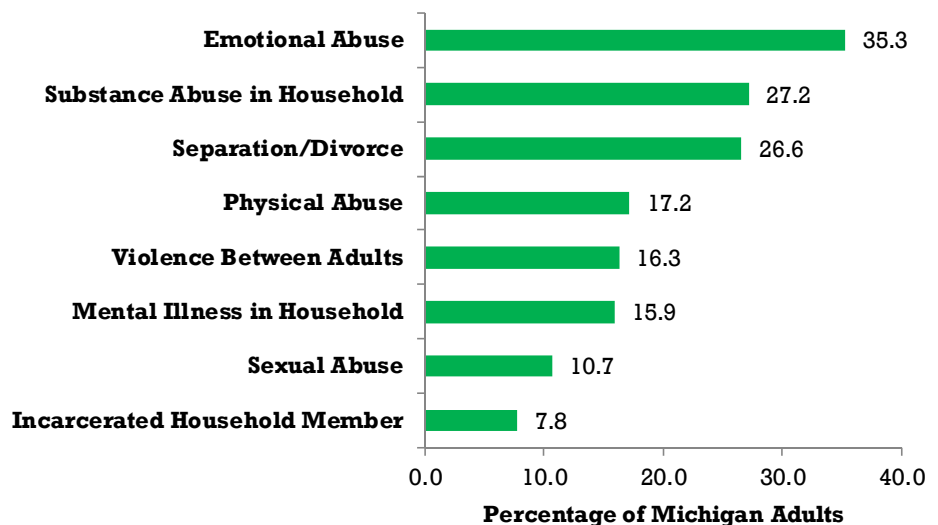
These data were used to determine the prevalence of specific adverse childhood experiences among the Michigan adult population and to assess how these adverse events have impacted the health behaviors and outcomes among this population. Subpopulations based on demographics, health behaviors and health outcomes were compared to determine if significant differences existed among these ACEs indicators.

Results. Based on 2013 MiBRFSS data, the most frequently reported adverse childhood experience was emotional abuse as a child at 35.3% of adults (Figure 1).

Approximately one in four Michigan adults reported the ACEs of substance abuse within the household and separation/divorce (27.2% and 26.6%, respectively). Furthermore, 17.2% reported physical abuse as a child and 1 in 10 (10.7%) reported some form of sexual abuse as a child.

In 2013, 38.1% of Michigan adults reported no ACEs, while 15.2% reported four or more ACEs (Table 1). The prevalence of four or more ACEs decreased significantly with age, but was similar by gender (Table 1). White and Black adults reported similar prevalence estimates for four or more ACEs, but Black adults reported a significantly lower prevalence of no ACEs. This would suggest that the overall ACEs prevalence among Black adults is higher than that of White

Figure 1. Adverse Childhood Experiences among Michigan Adults, 2013 Michigan BRFSS



MiBRFSS News

- The 2014 MiBRFSS annual tables should be released by August 2015.
- Data collection for the 2015 MiBRFSS continues according to plan.
- The 2014 CDC BRFSS Conference will be held in Atlanta, GA on June 22nd - June 26th, 2015.
- Did you miss an issue of *Michigan BRFSS Surveillance Brief*? Back issues are available on our website (www.michigan.gov/brfs).

adults. The prevalence of four or more ACEs decreased with increasing education, and disabled adults reported a significantly higher prevalence of four or more ACEs than non-disabled adults (23.1% vs. 12.5%). Furthermore, 64.4% of adults who reported the incarcerated household member ACE also reported experiencing four or more ACEs during their childhood (data not shown).

Figure 2 examines selected health behaviors and outcomes by ACE categories. Michigan adults who reported four or more ACEs were approximately four times more likely to report poor mental health and depression than adults who reported no ACEs (Figure 2). Furthermore, adults who reported four or more ACEs also reported significantly higher prevalence estimates for current smoking (35.1% vs. 12.3%) and current asthma (17.1% vs. 8.4%). Even after controlling for age, gender, race, education, and household income, adults with 4 or more ACEs were still between 1.9 and 4.5 times more likely to have reported these adverse behaviors and outcomes than adults with no ACEs. The majority of the other health behaviors and outcomes that were analyzed also exhibited similar results (data not shown).

Conclusions. All children should grow up in safe, stable, healthy households and environments. However, more than half of Michigan adults reported at least one ACE, with more than one out of every seven reporting four or more ACEs. The results of this study confirm the cumulative effect of ACEs over the life course and their impact on an individual’s physical health, mental health and health behaviors.

“It is easier to build strong children than to repair broken men.” [Fredrick Douglass] Although Fredrick Douglass lived in the 19th century, the concept remains true today. Numerous studies have shown that toddlers & children who have a secure relationship with parents or guardians are more resilient to stressful or adverse events. Early interventions, such as home visiting programs and parenting programs that teach parents new skills and behaviors, have been shown to decrease child maltreatment. In addition, not all children who experience long-term or multiple ACEs develop negative consequences. Research has shown that the toxic stress response can be affected by a genetic predisposition and stable, caring relationships in life as early as possible.³

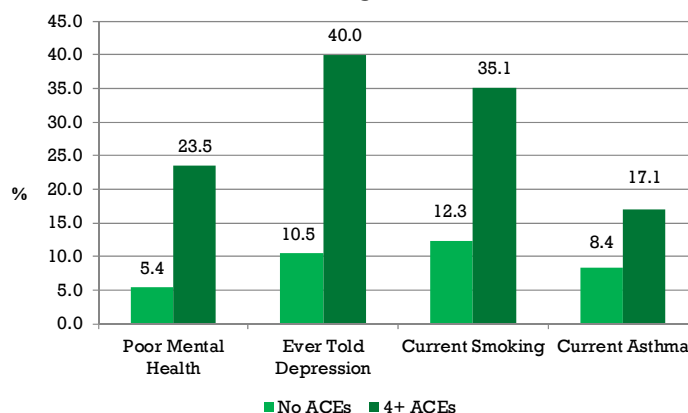
References

- ¹ Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Koss MP, Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine* 1998; 14:245–258.
- ² National Scientific Council on the Developing Child. (2006/2014). Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper 3. Updated Edition. Retrieved from www.developingchild.harvard.edu on May 11, 2015.
- ³ Centers on the Developing Child. Harvard University. Key Concepts: Toxic Stress Accessed at http://developingchild.harvard.edu/key_concepts/toxic_stress_response/ on May 11, 2015.

Table 1. ACE Categories among Michigan Adults, 2013 Michigan BRFSS

	No ACEs % (95% CI)	4+ ACEs % (95% CI)
Total (N = 3,610)	38.1 (36.1-40.2)	15.2 (13.6-16.9)
Age		
18-24 years	31.7 (24.6-39.8)	20.7 (14.8-28.1)
25-44 years	32.5 (28.5-36.7)	19.2 (16.0-22.9)
45-64 years	36.8 (33.9-39.9)	16.0 (13.8-18.5)
65+ years	53.1 (49.5-56.7)	5.0 (3.8-6.7)
Gender		
Male	40.1 (37.1-43.3)	13.2 (11.2-15.7)
Female	36.2 (33.5-39.1)	17.0 (14.7-19.5)
Race		
White	40.0 (37.9-42.3)	14.5 (12.9-16.3)
Black	26.0 (19.9-33.3)	15.6 (10.8-22.1)
Other	35.9 (25.9-47.2)	21.2 (14.0-30.8)
Education		
Less than high school	30.9 (22.9-40.4)	24.6 (17.1-34.2)
High school graduate	36.9 (33.3-40.5)	15.7 (13.1-18.8)
Some college	34.8 (31.4-38.4)	16.1 (13.6-19.0)
College graduate	47.5 (44.1-50.9)	9.0 (7.3-11.0)
Disability		
Disabled	28.3 (24.9-32.1)	23.1 (19.6-27.2)
Not disabled	41.4 (38.9-43.9)	12.5 (10.8-14.4)

Figure 2. Health Behaviors and Outcomes among Michigan Adults by ACE Categories, 2013 Michigan BRFSS



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 annual Michigan Behavioral Risk Factor Surveys (MiBRFS) 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 that adjusts 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.

Suggested citation: Fussman C, McKane P. The Impact of Adverse Childhood Experiences on the Health of the Michigan Adult Population. *Michigan BRFSS Surveillance Brief*. Vol. 9, No. 2. Lansing, MI: Michigan Department of Health and Human Services, Lifecourse Epidemiology and Genomics Division, Chronic Disease Epidemiology Section, June 2015.

