ACEs

The Effects of Adverse Childhood Experiences in Snohomish County

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Executive Summary

Adverse Childhood Experiences (ACEs) are stressful or traumatic events that occur to people before the age of 19. ACEs can affect health and health-related behaviors later in life. Risk factors for the leading causes of death (e.g., obesity, smoking) are more prevalent in people who have experienced ACEs than in those who have not. The more ACEs a person has experienced, the greater their chances of having such risk factors. ACEs are very common in the population. Approximately two-thirds of adults experienced one or more ACEs.

In Snohomish County, adults with high ACEs scores:

- Experienced more days of poor health than those with low ACEs scores;
- Were more likely to experience poor mental health;
- Were more likely to suffer from disabilities;
- Were more likely to smoke cigarettes and marijuana;
- Were more likely to be in a high-risk group for contracting HIV;
- Were more likely to have been incarcerated as an adult.

In Snohomish County youth, having ACEs were associated with:

- Greater chance of poor academic performance;
- Greater chance of using alcohol, cigarettes and illicit drugs;
- Greater chance of being involved in violence;
- Greater chance of having diabetes, asthma, or being obese.

Although ACEs are powerful predictors of poor health in later life, they often go undetected. However, failure to address ACEs means failure to address an important cause of poor health and health-related behaviors. In addition, identifying and treating the effects of ACEs in people who interact with children may prevent their intergenerational transmission.

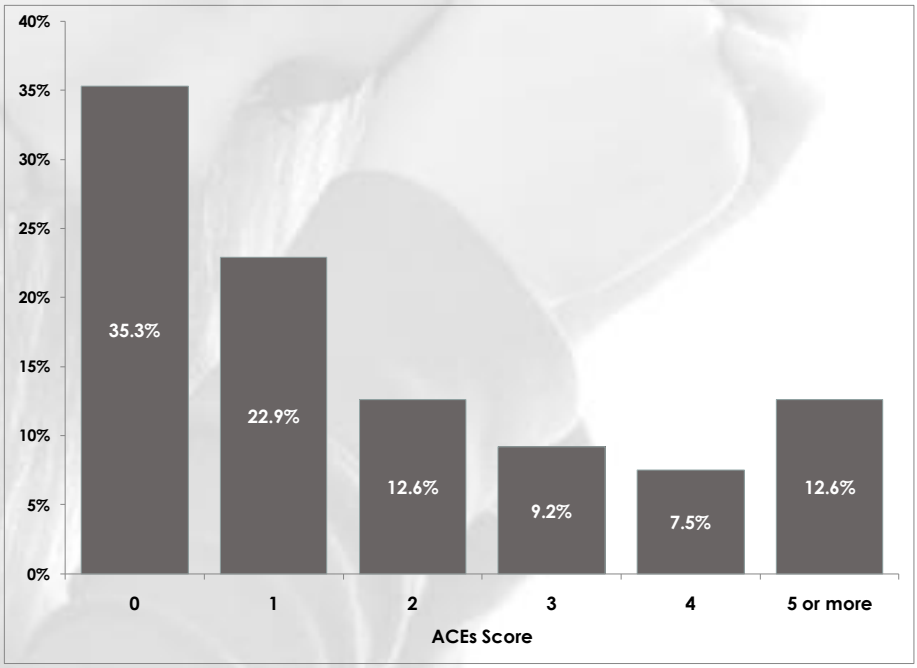
Introduction

Adverse Childhood Experiences (ACEs) are stressful or traumatic events, such as childhood abuse and household dysfunction, that occur to people before the age of 19 (1). A large-scale study by the US Centers for Disease Control and Prevention (CDC) and the Kaiser-Permanente Department of Preventive Medicine found that such experiences are common and can affect health and health-related behaviors later in life (2). Many risk factors for the leading causes of death (e.g., obesity, smoking) are more prevalent in people who have experienced ACEs than in those who have not. The more ACEs a person has experienced, the greater his or her chances of having such risk factors (3).

The ACEs scale measures whether an individual experienced any of eight possible stressful or traumatic events as a child. It measures three kinds of abuse and five kinds of household dysfunction. An individuals' score is the total number of these experiences to which they were exposed as children. Individuals who experienced none of these adverse experiences have an ACEs score of 0, while those exposed to four of them would have a score of 4, etc. (3). Appendix A includes the questions that define the ACEs scale.

ACEs are very common in the population. Less than one-third of the people in the CDC/Kaiser study reported having experienced no ACEs, while 1 in 10 (10.5%) had an ACEs score of five or greater (2). Data from the 2010 Snohomish County Behavioral Risk Factor Surveillance System (BRFSS) survey showed a similar distribution of ACEs scores.

Figure 1. ACEs Scores
Snohomish County BRFSS, 2010
(n=1,194)

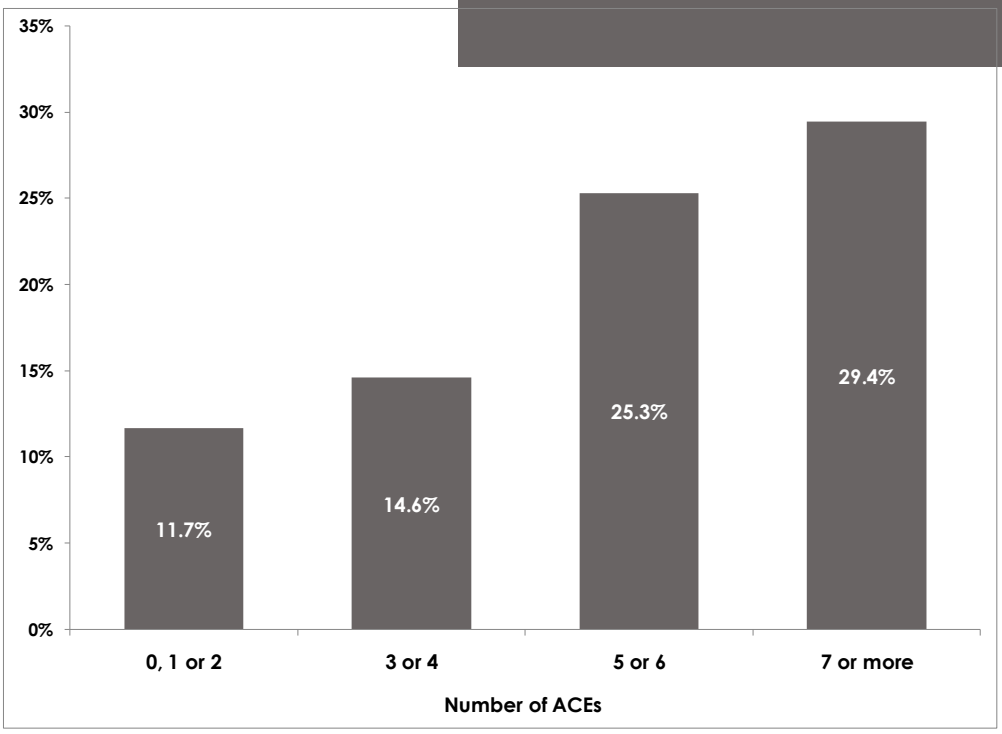


Evidence from the CDC/Kaiser-Permanente study shows that high ACEs scores are associated with a greater prevalence of emotional disorders and organic diseases (2). Furthermore, ACEs are related to these conditions in a dose-response relationship: the greater an individual's ACEs score, the greater his or her likelihood of engaging in harmful behaviors like smoking and of developing pathological conditions like chronic obstructive pulmonary disease (COPD).

Below is an example of a dose-response relationship between ACEs scores and smoking prevalence in Snohomish County. Note how smoking prevalence increases with ACEs score.

The connection between ACEs and adverse health outcomes is thought to be biologically based (4). Converging evidence from neurobiology and epidemiology suggests that early life stress such as abuse and other adverse experiences cause enduring brain dysfunction that affects health and quality of life throughout the lifespan. Childhood maltreatment has been linked to changes in brain structure (4). A higher ACEs score reflects a greater degree of childhood maltreatment and thus greater changes in brain structure and function (1). Greater changes in brain structure are associated with greater degrees of behavioral and organic pathologies, which may explain the dose-response relationship shown between ACEs scores and these pathologies.

Figure 2.
Smoking Prevalence
by ACEs Score
Snohomish County BRFSS, 2010



ACEs in Snohomish County

Behavioral Risk Factor Surveillance System

Evidence for the effects of ACEs in Snohomish County come from the 2010 BRFSS survey, which included an eight-question ACEs scale (see Appendix A). Answers from this scale allowed an ACEs score to be calculated, with each positive answer to an ACEs question being counted as one point.

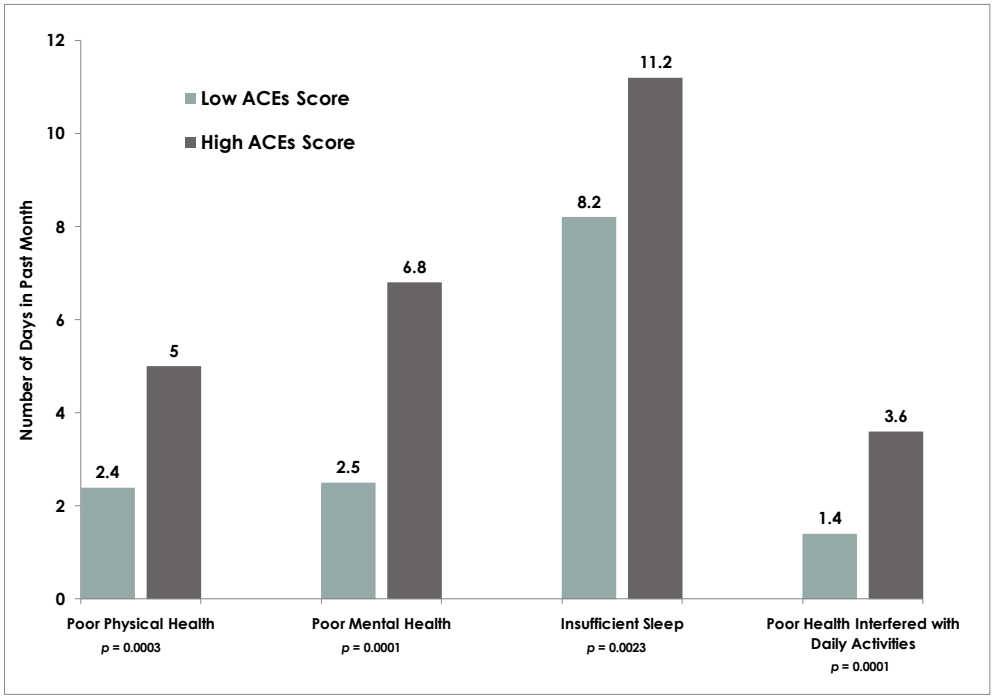
The distribution of scores was similar to that found in the original CDC/Kaiser Permanente study (see page I). Subjects were divided into low- and high-scoring groups, with those having scores of three or more being defined as having high ACEs scores.

Approximately one-quarter (29%) of respondents in the 2010 BRFSS survey were in the high-scoring group. Analyses of ACEs scores' relationships with other variables in this report are based on comparing the high-scoring group to the low-scoring one. This report includes only a sample of the health problems that have been shown to be affected by ACEs.

Unhealthy Days

Respondents with high ACEs scores reported more than twice as many days of poor physical and mental health as those with low ACEs scores. They also reported significantly more nights of poor sleep and more days on which poor mental or physical health interfered with their daily activities.

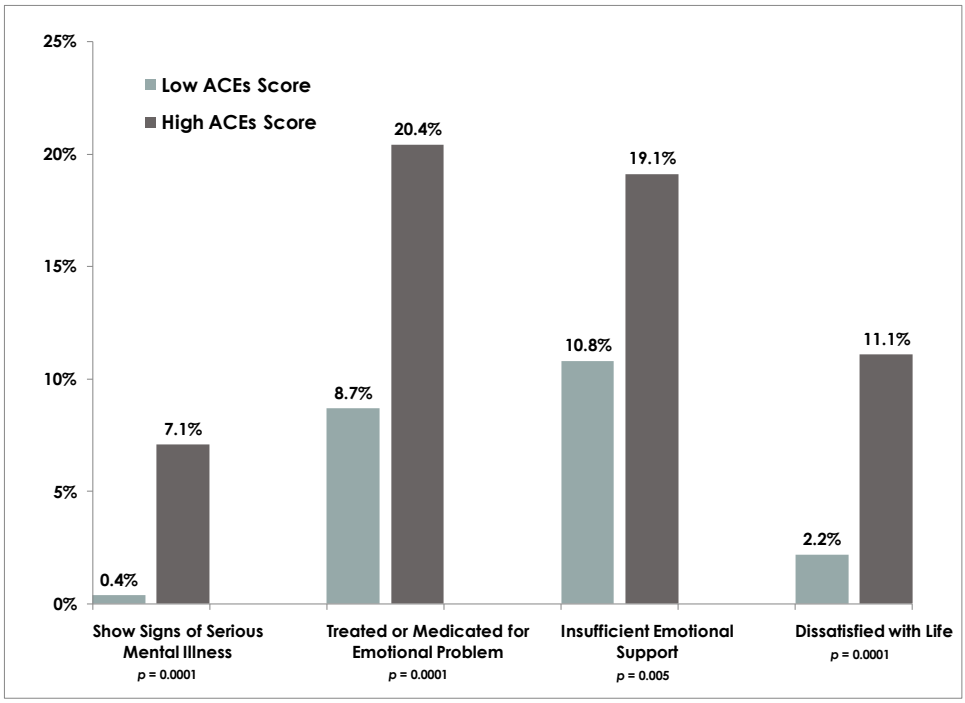
Figure 3. Average Days of Poor Health by ACEs Score
Snohomish County BRFSS, 2010



Mental Health

Mental health measures showed the most reliable association with ACEs score in the Snohomish County BRFSS sample. In addition to suffering from more days of poor mental health than respondents with low ACEs scores (see previous page), those with high ACEs scores were 16 times more likely than others to show signs of serious mental illness as determined by a mental health scale included in the BRFSS survey. More than 80% of those showing signs of serious mental illness had a high ACEs score. Respondents with a high ACEs score were twice as likely to be receiving treatment and/or medication for an emotional problem. In addition, they were more likely to report not receiving adequate emotional support and being generally dissatisfied with life.

Figure 4. Mental Health Measures by ACEs Score
Snohomish County BRFSS, 2010



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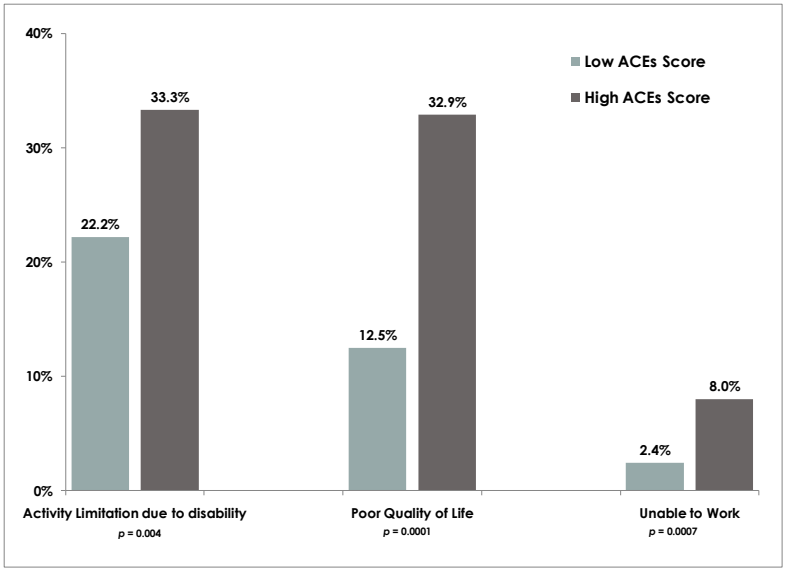
Disability

High ACEs scores were associated with several measures of disability. People with high ACEs scores were more likely to have activity limitations to their daily activities. They were also more than twice as likely to suffer from poor quality of life (defined as 14 or more days of poor physical or mental health in a 30-day period), and were three times more likely to report being unable to work.

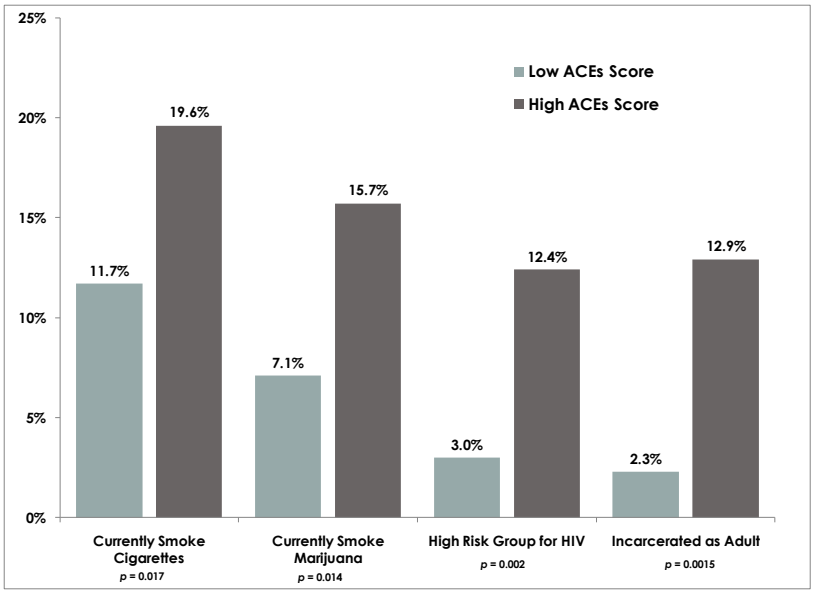
Figure 5. Disability by ACEs Score
Snohomish County BRFSS, 2010



Behavioral Risks

Individuals with high ACEs scores tend to engage in high-risk health behaviors more frequently than those with low ACEs scores. For example, they were more likely to smoke cigarettes and marijuana. Respondents with high ACEs scores were four times more likely to be a member of a high-risk group for contracting HIV (Includes intravenous drug users, people treated for a sexually-transmitted disease, those who have given or received money for sex, or had anal sex without a condom). High ACEs respondents were five times more likely to have been in jail or prison as an adult.

Figure 6. Behavioral Risks by ACEs Score
Snohomish County BRFSS, 2010

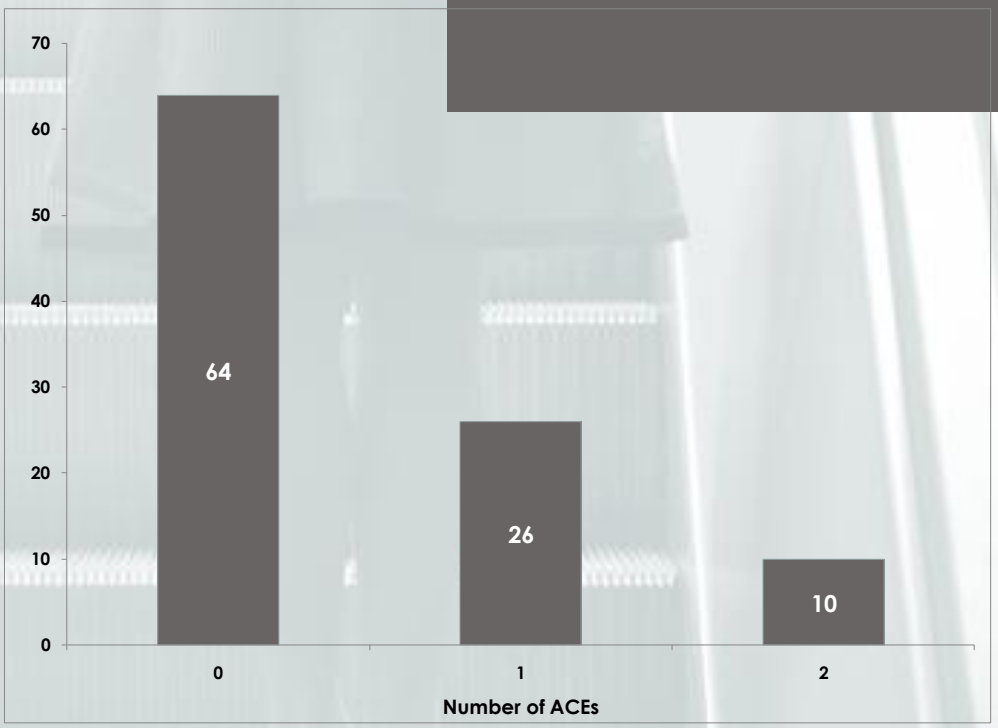


Washington Healthy Youth Survey

The 2010 Healthy Youth Survey (HYS) included two questions that were part of the ACEs scale. The first asked if the student had been physically abused by a parent, and the second asked if the student had witnessed violence between adults. These two questions are useful proxies for the full ACEs scale because research has shown they are strongly correlated with suffering other adverse experiences (5).

In Snohomish County, having experienced either of these situations put students at higher risk for substance use, academic failure, violence and chronic diseases. More than one-third of students who participated in the 2010 HYS acknowledged having one or both of these adverse experiences. This was similar to findings from the 2002 and 2006 statewide Washington State HYS (5). In this report, analyses compare high school students who suffered either experience to those who experienced neither.

Figure 7.
Number of ACEs
Snohomish County HYS,
Grades 10 & 12, 2010
(n=3,261)

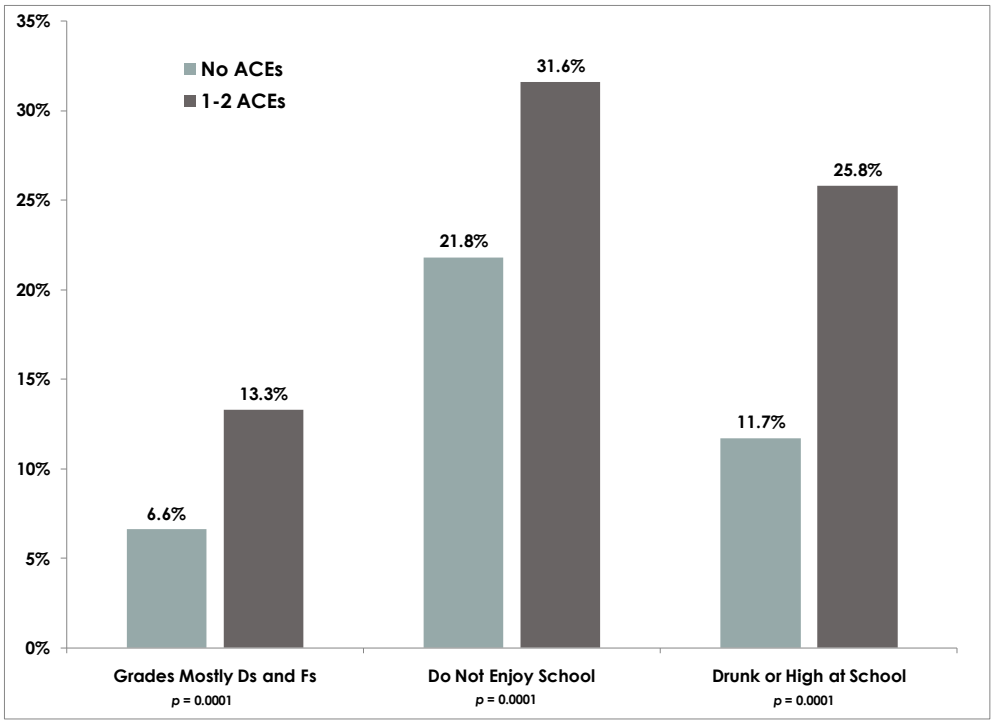


ACEs in Snohomish County

Academic Indicators

Having ACEs was associated with greater probability of academic failure. Students with ACEs were twice as likely as those without ACEs to report their grades were mostly Ds and Fs. They were also less likely to enjoy school. Students with ACEs reported being drunk or high at school twice as often as students with no ACEs .

Figure 8. Academic Indicators by ACEs Score
Snohomish County HYS, Grades 10 & 12, 2010



"Our society has bought into a set of misconceptions. Here are a few:

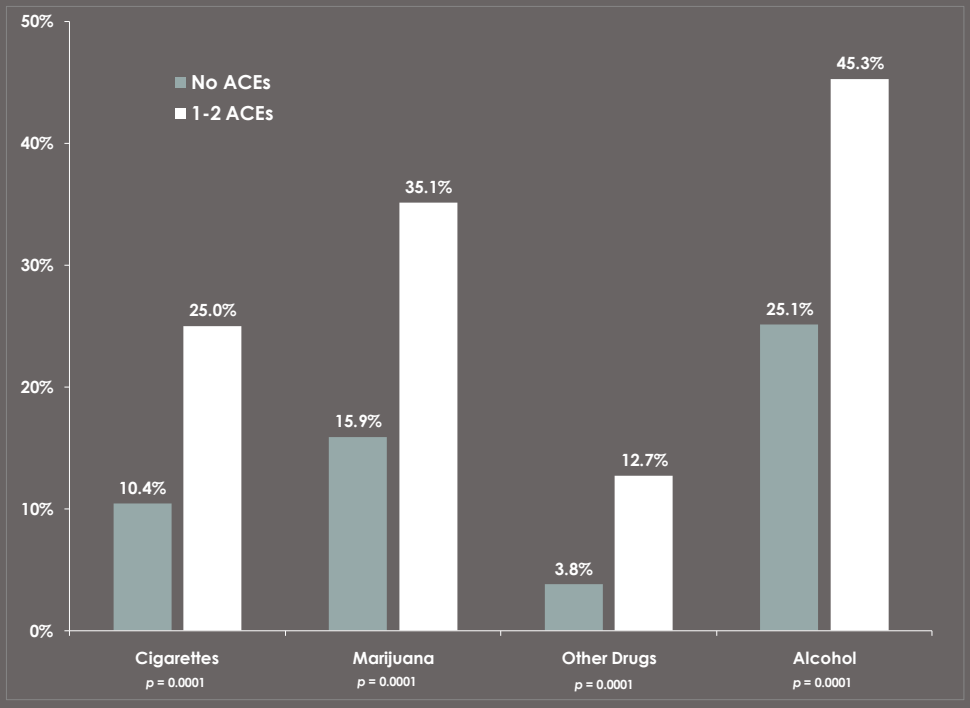
- ACEs are rare and they happen somewhere else.
- They are perpetrated by monsters.
- Some, or maybe most, children can escape unscathed, or if not, they can be rescued and healed by emergency response systems.
- Then these children vanish from view…and randomly reappear - as if they are new entities - in all of your service systems later in childhood, adolescence, and adulthood as clients with behavioral, learning, social, criminal, and chronic health problems."

~ Robert Anda, MD, MS

Substance Use

Student with ACEs were more likely to use cigarettes, alcohol and drugs than those without ACEs. They were twice as likely to smoke cigarettes and marijuana and three times more likely to use other illegal drugs. One-quarter of students with ACEs smoked cigarettes and one-third reported smoking marijuana. Students with ACEs were also significantly more likely to drink alcohol than other students. Nearly half of students with ACEs reported drinking, compared to one-quarter of those with no ACEs.

Figure 9. Substance Use by ACEs Score Snohomish County HYS, Grades 10 & 12, 2010

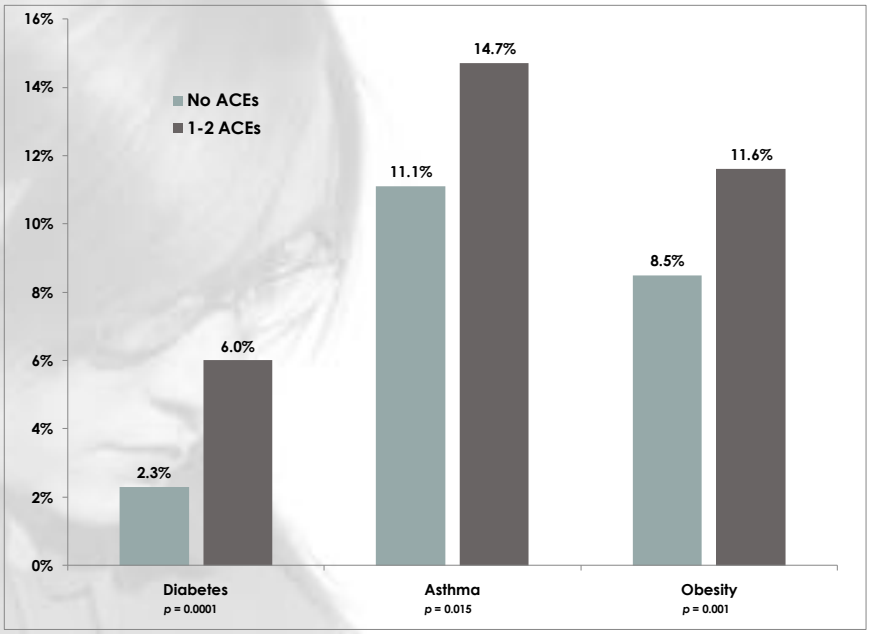


ACEs in Snohomish County

Chronic Disease

Students with adverse experiences were more likely than students without such experiences to suffer from chronic diseases. They were twice as likely to have been diagnosed with diabetes. They were also more likely to suffer from asthma and to be obese, which are risk factors for developing several chronic diseases later in life.

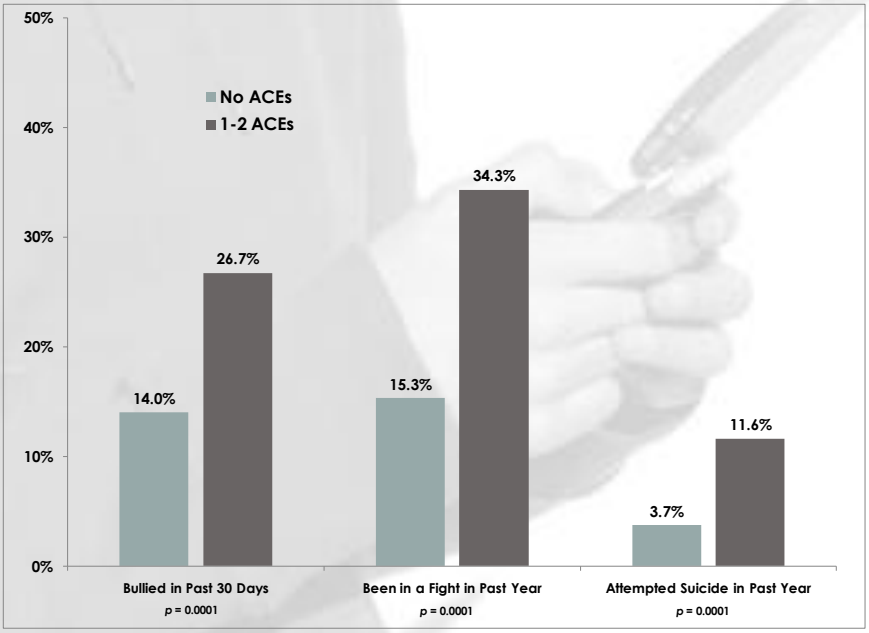
Figure 10. Chronic Disease Indicators by ACEs Score
Snohomish County HYS, Grades 10 & 12, 2010



Violence

ACEs were associated with being involved in violent behavior. Students with ACEs were at greater risk of being bullied. They were twice as likely to have been in a physical fight, and three times more likely to have attempted suicide. One in ten students with ACEs said they had attempted suicide in the previous year.

Figure 11. Violent Behaviors by ACEs Score
Snohomish County HYS, Grades 10 & 12, 2010



Summary

The data in this report demonstrate that Adverse Childhood Experiences are associated with mental distress and poor health in Snohomish County adults. These effects likely extend beyond what is measured in the BRFSS survey (1). In addition to these late-term effects, data from students in Snohomish County schools suggest that experiencing stressful or traumatic events have immediate effects upon the well-being of children.

The prevention and treatment of ACEs have potential for improving health and well-being (1). Although they are powerful predictors of poor health later in life, they often go undetected, in part due to social taboos that prevent people from discussing such things with their health care providers (2). These same taboos prevent health care providers from asking about these experiences. However, failure to address ACEs means failure to address an important cause of poor health and poor health-related behaviors.

In addition, identifying and treating the effects of ACEs among persons who interact with children may prevent their intergenerational transmission (1). Further study of how to prevent adverse childhood experiences from occurring should be a priority for public health agencies and health care providers.

"Early childhood abuse sets off hormonal changes that lead individuals into social isolation, hostility, depression, addiction, and heightened risk for obesity, diabetes and cardiovascular disease. Efforts to reduce exposure to severe early stress in life may have far reaching impact on medical and psychiatric health. Our brains are sculpted by our early experiences, maltreatment is a chisel that shapes the brain to contend with anticipated strife, but at the cost of deep, enduring wounds."

~ Martin Teicher, MD, PhD
2005 Keynote Address
Family Policy Council
Partners' Summit

Additional Resources

For more information about ACEs and how they affect adult health, refer to the following sources:

- Snohomish County Federated Health and Safety Networks
  www.youtube.com/watch?v=HGjQNBQ1HRs
- Washington Family Policy Council
  www.fpc.wa.gov
- The Adverse Childhood Experiences Study
  www.acestudy.org
- Centers for Disease Control and Prevention
  www.cdc.gov/ace/index.htm
- Cavalcade Productions (Video Series on the ACEs Study)
  www.cavalcadeproductions.com/ace-study.html

Appendix A

ACEs Questions in the 2010 Washington Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System is a telephone survey of adults sponsored by the US Centers for Disease Control and Prevention. It is performed every year and generates reliable statistics for Snohomish County. In 2010 it included a module to measure ACEs consisting of the following questions.

1. Did you live with anyone who was depressed, mentally ill, or suicidal?
2. Did you live with anyone who was a problem drinker or alcoholic?
3. Did you live with anyone who used illegal street drugs or who abused prescription medications?
4. Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?
5. Were your parents divorced or separated?
6. How often did your parents or adults in your home ever slap, kick, punch, or beat each other up?
7. Before age 10, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way (do not include spanking)?
8. How often did a parent or adult in your home ever swear at you, insult you, or put you down?
9. How often did anyone at least 5 years older than you or an adult ever touch you sexually?
10. How often did anyone at least 5 years older than you or an adult try to make you touch them sexually?
11. How often did anyone at least 5 years older than you or an adult force you to have sex?

ACEs Questions in the 2010 Washington Healthy Youth Survey (HYS)

The Washington Healthy Youth Survey is administered every two years to a representative sample of students in the 6th, 8th, 10th, and 12th grades. In 2010 it included the following ACEs-related questions.

1. Have you ever been physically abused by an adult?
2. Not counting TV, movies, video games, and sporting events, have you ever seen an adult hit, slap, punch, shove, kick, or otherwise physically hurt another adult more than one time?

Sources

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3. Felitti VJ. The Relationship of Adverse Childhood Experiences to Adult Health: Turning gold into lead. Translated from Zeitschrift für Psychosomatische Medizin und Psychotherapie, vol 48 no 4, 2002.
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5. Longhi, D. Adverse Experiences and Academic, Social & Health Impact. Washington State Family Policy Council, June 2010.