ADVERSE CHILDHOOD EXPERIENCES DATA REPORT:
Behavioral Risk Factor Surveillance System (BRFSS), 2013-2019
An Overview of Adverse Childhood Experiences in California
SUGGESTED CITATION


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Purpose, Use, and Development

The Adverse Childhood Experiences Data Report: Behavioral Risk Factor Surveillance System (BRFSS), 2013-2019: An Overview of Adverse Childhood Experiences in California was produced by the California Essentials for Childhood (EfC) Initiative, a project of the California Department of Public Health, Injury and Violence Prevention Branch (CDPH/IVPB) and the California Department of Social Services, Office of Child Abuse Prevention (CDSS/OCAP). This data report provides an overview of the 2013-2019 Adverse Childhood Experiences (ACEs) data from the California Behavioral Risk Factor Surveillance System (BRFSS).

A key function for governmental public health and social services agencies in addressing child maltreatment and Adverse Childhood Experiences (ACEs) is to collect and analyze data to better understand the problem, identify risk and protective factors, and support the development of data-informed interventions that reduce risk factors and support protective factors to mitigate child abuse and neglect and ACEs. Access to relevant and up-to-date data is essential in the development of targeted, effective, and sustainable child adversity prevention strategies.

This data report provides a broad overview of the prevalence and burden of ACEs, reported among adults retrospectively, in California from 2013 through 2019 and is a follow-up to the 2020 “Adverse Childhood Experiences Data Report: Behavioral Risk Factor Surveillance System (BRFSS), 2011-2017: An Overview of Adverse Childhood Experiences in California”, which included California ACEs data from 2011 to 2017.

Acknowledgements

We acknowledge and appreciate the efforts of the California Department of Public Health, Injury and Violence Prevention Branch’s Violence Prevention Initiative; the California Essentials for Childhood Initiative’s Data Subcommittee; and the many other partners who contributed to the development and review of this report.
Introduction

Overview of ACEs

Adverse Childhood Experiences (ACEs) are traumatic events, including child maltreatment and other household and community challenges, that occur before age 18. ACEs can disrupt healthy brain development, alter the immune and endocrine systems, and change how the body responds to stress.\(^1\) ACEs can also negatively impact education, employment, earnings, and health outcomes over the life course and across generations.\(^1\) Experiencing four or more ACEs is associated with increased risk for several leading causes of death in adulthood, including heart disease, stroke, cancer, chronic obstructive pulmonary disease (COPD), diabetes, Alzheimer’s, and suicide.\(^1,2\)

The Adverse Childhood Experiences Study (ACE Study) was a groundbreaking research study conducted from 1995 to 1997 by Kaiser Permanente and the Centers for Disease Control and Prevention (CDC).\(^3\) It was the first large scale study to look at the relationship between adversity in childhood and health outcomes in adulthood. The original study included 9,508 Kaiser Health Plan members from Southern California and measured nine specific childhood exposures, including three categories of abuse (physical, emotional, and sexual), four categories of household challenges (untreated mental illness, substance use, domestic violence, and incarceration of a loved one), and two measures of neglect (physical and emotional).\(^3\) Later studies added divorce or family separation as a tenth ACE, which is included in the BRFSS ACEs module. Key findings from the Kaiser study were published in the American Journal of Preventive Medicine in 1998 and highlighted the following:\(^3\)

- ACEs are very common; two-thirds of study participants had experienced at least one ACE category, and one in eight individuals had experienced four or more ACEs.\(^3\)

- Higher ACE scores are linked to higher risk of developing long-term health problems such as heart disease, stroke, cancer, and diabetes.\(^3\)

Since the original ACE study was published, other studies have identified additional childhood adversities, including systemic factors and community-level indicators that may also influence long-term health.\(^6-10\) These additional childhood adversities include witnessing violence, experiencing discrimination, living in an unsafe neighborhood, being bullied, poverty, and involvement in the foster care system.\(^4-10\) These forms of adversity and others are included in commonly-used screening tools like the Traumatic Events Screening Inventory (TESI)\(^11\) and Culturally Informed Adverse Childhood Experiences Framework (C-ACE),\(^12\) but are not included in the BRFSS ACEs module.\(^4\)
Figure 1 displays the different categories and types of ACEs.

Adverse Childhood Experiences (ACES)

<table>
<thead>
<tr>
<th>Abuse</th>
<th>Neglect</th>
<th>Household Challenges</th>
<th>Other Forms of Adversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Physical (including food restriction)</td>
<td>Divorce &amp; family separation</td>
<td>Bullying &amp; violence</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional</td>
<td>Substance use</td>
<td>Poverty</td>
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<tr>
<td>Sexual</td>
<td></td>
<td>Untreated mental illness/suicidality</td>
<td>Discrimination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Domestic violence</td>
<td>Natural disasters &amp; war</td>
</tr>
</tbody>
</table>

ACES are potentially traumatic childhood events that can result in toxic stress. Prolonged exposure to ACEs can create a toxic stress response, which can damage the developing brain and body of children, affect overall health, and cause long-term health problems.

The above image was adapted from the Robert Wood Johnson Foundation.5-13

Data Report Introduction

This report presents aggregated data from the 2013, 2015, 2017, and 2019 California Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual, state-level, random-digit dial telephone survey of non-institutionalized U.S. adults aged 18 and over regarding health conditions and behaviors. In California, BRFSS is implemented in collaboration with the CDC; the California State University, Sacramento; and CDPH.

The BRFSS ACEs module was adapted from the original CDC-Kaiser ACE Study and collects information about abuse and household challenges experienced during the respondent’s first 17 years of life.4 In California, the BRFSS ACEs module has been included in the BRFSS on a biannual basis since 2009. The current analysis calculated a total ACEs score (range: 0-8) that denotes the number of ACEs categories to which an individual was exposed.

Included in this report:
- The impact of ACEs
- Statewide prevalence and trends
- Demographic disparities
Eight of 10 ACEs are included in the module, while emotional and physical neglect are not captured. Exposure was determined if an individual answered “yes” or at least “once” to one or more of the following questions:

- “Did you live with anyone who was depressed, mentally ill, or suicidal?”
- “Did you live with anyone who was a problem drinker or an alcoholic?”
- “Did you live with anyone who used illegal street drugs or who abused prescription medications?”
- “Did you live with anyone who served time or who was sentenced to serve time in a prison, jail, or other correctional facility?”
- “Were your parents separated or divorced?”
- “How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?”
- “How often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way?”
- “How often did a parent or adult in your home ever swear at you, insult you, or put you down?”
- “How often did anyone at least 5 years older than you or who was an adult ever touch you sexually, try to make you touch them sexually, or force you to have sex?”

BRFSS questions pertaining to neglect are not included and data presented in this report are from BRFSS only. Estimates were weighted to be representative of the adult population in California based on age, sex, and race. Limitations of BRFSS data include that the data is self-reported and retrospective in nature.

In California, the BRFSS is used along with other data from sources such as the National Survey of Children’s Health (NSCH) and the Maternal and Infant Health Assessment (MIHA) to understand ACEs as these sources present a rich perspective on childhood adversity across the lifespan (i.e., data for children, pregnant women, and all adults) and provide complementary data to inform and facilitate interventions. (See KidsData – Childhood Adversity and Resilience topic for more information).
Changes from 2020 Report

The total number of respondents included in this report was 13,983, a decline from the over 20,000 respondents who were included in the 2020 report. This difference is due to variation in the number of BRFSS respondents to the ACEs module between years.

It is important to note that some figures in this report that refer to relative prevalence of specific ACEs are not comparable to prior ACEs BRFSS data reports for several reasons. First, the data analyzed in this report (from 2013, 2015, 2017, and 2019) overlaps with the data analyzed in the 2020 report (2011, 2013, 2015, and 2017). Secondly, childhood emotional abuse was only coded as “yes” if it had occurred more than once in prior analyses but was coded as “yes” if it occurred one or more times in this analysis. This coding change was made to align with standard methods for coding the BRFSS ACEs module, as outlined by the CDC. This coding change dichotomizes responses to show exposure status, ensuring that this variable (i.e., childhood emotional abuse) follows the same response convention as other items in the BRFSS ACEs module.

Prevalence of ACEs

Distribution of ACEs scores

Between 2013 and 2019, 13,983 California residents aged 18 and over completed the BRFSS ACEs module and retrospectively reported on ACEs they faced before the age of 18. The prevalence of experiencing one or more ACEs before the age of 18 did not change from the 2020 report (likely due to the overlap in data sources). Between 2013 and 2019, 66% of respondents to the BRFSS ACEs module indicated having experienced one or more ACEs before age 18 and 17% indicated having experienced four or more ACEs before age 18. This shows that having experienced at least one ACE before the age of 18 is relatively common among adult residents in California.
Between 2013 and 2019, 66% of respondents to the BRFSS ACEs module indicated having experienced one or more ACEs before age 18 and 17% indicated having experienced four or more ACEs before age 18.

Prevalence of Individual Types of ACEs

The prevalence of eight types of ACEs were measured among almost 14,000 California residents between 2013 and 2019. Among ACEs that were reported in the module, the most reported ACE was childhood emotional abuse; 40% of respondents reported experiencing emotional abuse before age 18. Parental separation/divorce (30%) and living with someone who used/misused substances, including alcohol, street drugs, or prescription medications (29%) were the second most prevalent ACEs. The type of ACE that was least commonly reported was living with someone who had been formerly incarcerated (8%).

Figure 3: Prevalence of each type of ACE among BRFSS respondents, 2013-2019 (n=13,983)

Prepared by: California Department of Public Health, Injury and Violence Prevention Branch
Demographic Disparities

ACEs by Race and Ethnicity

Clear differences exist in the prevalence of ACEs among racial/ethnic groups in California (Figure 4). Among the 13,983 California residents sampled between 2013 and 2019, a higher percentage of people who identified as Black reported experiencing one to three ACEs (57%) than California residents who identified as Hispanic (50%), White (49%), or Some Other Race (44%). A higher percentage of respondents who were Hispanic reported experiencing four or more ACEs (20%) than those who identified as White (18%), Black (18%), or Some Other Race (11%).

While these results show disparities between racial and ethnic groups due to structural barriers that suggest areas for potential intervention, the way in which race and ethnicity were grouped in this survey for 2013-2019 limits the ability of this report to fully demonstrate prevalence of ACEs in many racial and ethnic groups in California. A limitation of the BRFSS is that the sample size does not result in enough respondents from certain racial and ethnic groups to report reliably for those groups, limiting our ability to capture the prevalence of ACEs among groups beyond those listed here.

Figure 4: Prevalence of number of ACEs experienced, by race/ethnicity, among BRFSS respondents, 2013-2019 (n=13,983).

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ACEs by Sexual Orientation

Stark disparities were found in the number of ACEs reported based on sexual orientation. Of those respondents identifying as Heterosexual, 17% indicated that they had experienced four or more ACEs, equal to the overall prevalence in California of 17% (Figure 5). However, 28% of those identifying as Homosexual, 39% of those identifying as Bisexual, and 50% of those identifying as “Other” indicated that they had experienced four or more ACEs before the age of 18. This indicates that among those who identified their sexual orientation as Homosexual, there was a prevalence of four or more ACEs that was almost twice that of Heterosexual respondents. The prevalence of four or more ACEs among people who identified as Bisexual and “Other” respondent groups were 2.3 and 2.9 times that of respondents who are Heterosexual, respectively.

Figure 5: Prevalence of number of ACEs experienced, stratified by sexual orientation, among BRFSS respondents, 2013-2019 (n=13,983).
ACEs by Educational Attainment

The number of ACEs experienced was distributed more evenly across levels of educational attainment (Figure 6). The prevalence of experiencing 1-3 ACEs ranged between 47% and 49% across education level groups. Those who reported having some post-graduate education had the lowest prevalence of four or more ACEs at 13%, while those who reported having some college or technical school education had the highest prevalence of four or more ACEs at 23%. While one might expect the group with less than a high school diploma to have the highest prevalence of four or more ACEs, this analysis shows that individuals across education levels in California have experienced high numbers of ACEs.

Figure 6: Prevalence of number of ACEs experienced, by level of educational attainment, among BRFSS respondents, 2013-2019 (n=13,983).

ACEs by Income Level

Prevalence of 1-3 ACEs remained relatively constant across income levels (Figure 7), with 48% of respondents with household incomes of less than $20,000, 49% of those with household incomes of $20,000-$49,999, 51% of those with household incomes of $50,000-$74,999, 47%
of those with household incomes of $75,000-$99,999, and 49% of those with household incomes of $100,000 or greater reporting having experienced 1-3 ACEs before age 18.

Figure 7: Prevalence of number of ACEs experienced, by level of household income, among BRFSS respondents, 2013-2019 (n=13,983).

ACEs by Current Health Insurance Coverage

The prevalence of the number of ACEs experienced before age 18 varied by current type of health insurance coverage. Respondents with healthcare coverage by Alaska Native, Indian Health, or Tribal Health demonstrated the highest prevalence of more than one ACE. All other insurance coverage groups demonstrated a more than 45% prevalence of one to three ACEs, indicating that experiencing one to three ACEs by age 18 is common across insurance coverage types. Those with Medi-Cal, some other coverage type, or no coverage had over 20% prevalence of four or more ACEs, while respondents covered by employer or purchased plans (e.g., Medicare, Tricare, VA, or Military insurance plans) had under 20% prevalence of four or more ACEs.
Figure 8: Prevalence of number of ACEs experienced, stratified by type of healthcare coverage, among BRFSS respondents, 2013-2019 (n=13,983).

Next Steps

The literature shows that experiencing four or more ACEs increases the likelihood of poor mental health, risky behaviors such as acute drinking and smoking, and chronic disease, including heart disease, diabetes, stroke, COPD, obesity, and asthma, suggesting that preventing ACEs may in turn reduce many of these conditions later in the life course. The BRFSS ACEs data presented in this report give insight into the prevalence of ACEs in California and can be used to encourage prevention efforts to support and protect the health and wellbeing of children in California, as well as support treatment and healing for adults. This report provides evidence that:

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Two-thirds of adult BRFSS respondents in California experienced one or more ACEs before age 18 and almost one-fifth of those respondents indicated that they had experienced four or more ACEs before age 18. These results suggest that ACEs are common in the state of California.

Experiencing four or more ACEs is more common among Californians who are Hispanic, among people with lower household incomes, and people with no healthcare coverage or MediCal. Experiencing four or more ACEs is particularly high among people who do not identify as heterosexual and Californians with Alaska Native, Indian Health Service, or Tribal health coverage.

Primary prevention efforts to reduce occurrence of ACEs and promote life-long health and success include interventions that create social norm change and policies that strengthen economic support for families. In California, the California Earned Income Tax Credit (CalEITC) and Paid Family Leave (PFL) programs are two examples of actions taken at the state-level to improve family access to enhanced economic stability. For more information about strategies that create change and improve the lives of children, please see the CDC’s Technical Package, “Preventing Child Abuse and Neglect: A Technical Package for Policy, Norm, and Programmatic Activities.”

California has a majority demographic split between people who are White and Hispanic, and health disparities are apparent between different demographic groups in our state. Children of color are typically disproportionately impacted by ACEs due to stressful environments, socioeconomic inequalities, and lack of systemic support and resources for families of color. This report further demonstrates these disparities, identifying racial and ethnic differences in the number of ACEs adult California residents reported experiencing in their childhoods. Socioeconomic disparities and elevated prevalence of ACEs among respondents who do not identify as heterosexual are also highlighted in this report. Primary prevention efforts to reduce the occurrence of ACEs should take these disparities into account and should target these at-risk communities.

Additionally, the “Roadmap for Resilience: California Surgeon General’s Report on Adverse Childhood Experiences, Toxic Stress, and Health” provides more information on the underlying science of how ACEs can lead to toxic stress and the associated health and social outcomes, as well as offers a blueprint for how a coordinated cross-sector response across six different sectors can function to achieve primary, secondary, and tertiary prevention and treatment
strategies to enhance resilience and further equity. It also summarizes existing efforts underway within California to address ACEs and toxic stress and a vision for how to extend these efforts.

**Additional Resources and Tools**

1) [PACES Connection](#)
   - [Map the Movement (shinyapps.io)](#) shares information on states in the US who have undertaken ACE surveys
2) [CDC website on ACEs](#)
3) [CDC Violence Prevention Technical Packages](#)
   - [CDC Technical Package on Preventing ACEs](#)
4) [KidsData](#)
5) [EfC Initiative Resources](#)
6) [American Academy of Pediatrics](#)
7) [ACEs Aware](#)
8) [Office of the California Surgeon General](#)
   - [Roadmap for Resilience: The California Surgeon General’s Report on ACEs, Toxic Stress, and Health](#)
Essentials for Childhood Initiative

The Essentials for Childhood (EfC) Initiative is a coalition led in partnership by the California Department of Public Health, Injury and Violence Prevention Branch (CDPH/IVPB) and the California Department of Social Services, Office of Child Abuse Prevention (CDSS/OCAP). The Essentials for Childhood Initiative:

- Seeks to address child maltreatment and ACEs as public health issues,
- Aims to raise awareness and commitment to promoting safe, stable, nurturing relationships, and environments (SSNR&E),
- Creates the context for healthy children and families through social norms change, programs, and policies, and
- Utilizes data to inform actions.

The EfC Initiative recognizes that child maltreatment and ACEs are preventable and utilizes a primary prevention approach, working upstream to address underlying causes to prevent child adversity from occurring in the first place.

The EfC Initiative is comprised of a coalition body and four subcommittees: Data, Policy and Strengthening Economic Supports, Trauma-informed Practices, and Equity.

Utilizing a collective impact model, the EfC Initiative advances the common agenda of multiple agencies and stakeholders through the alignment of activities, programs, policies, and funding so that all California children, youth, and their families attain safe, stable, nurturing relationships, and environments.

If you have feedback, questions, or would like to know more about the methods used in this data report, please contact: ivpb@cdph.ca.gov.
References


