ACE RESEARCH BRIEF: 11

Adverse Childhood Experiences in South Carolina:

Considerations of Race and Ethnicity

Aditi Srivastav, MPH[1, 2], Melissa Strompolis, PhD[1], Mary Ann Priester, MSW[3], Charlie Bruner, PhD[4], & Whitney Tucker, MPH[1]

Children's Trust of South Carolina has produced a series of research briefs on adverse childhood experiences (ACEs). The research brief topics include the data collection process, an overview of ACEs, the prevalence of ACEs in various populations, and the relationship between ACEs and health and social outcomes.

In 2014, Children's Trust partnered with the South Carolina Department of Health and Environmental Control (SC DHEC) to collect data from South Carolina adults on exposure to adverse childhood experiences (ACEs). This partnership developed because, as the state leader in prevention of child abuse and neglect, Children's Trust values data-driven decision-making to improve the environments of vulnerable children and families. Currently, ACE data is being collected annually via the Behavioral Risk Factor Surveillance System (BRFSS; Centers for Disease Control and Prevention [CDC], 2016a).

Children's Trust has developed a series of research briefs to outline the ACE data collection process (see Morse & Strompolis & Srivastav 2017a) and to highlight important findings from the data collected. Eleventh in this series is an analysis of ACEs by race and ethnicity in South Carolina. First, an overview of ACEs in South Carolina by race and ethnicity is provided (e.g., prevalence [yes or no to any ACE], followed by cumulative ACEs by race and ethnicity [0, 1, 2, 3, or 4+ ACEs reported], and the prevalence of ACE types by race and ethnicity [abuse: physical, emotional, sexual; household dysfunction: household mental illness, substance use, domestic violence, incarceration, parental separation/ divorce]). We conclude with implications for further research and next steps in prevention of ACEs.

ACE Survey Items

In 2014-2016, ACE Survey items were collected via the BRFSS in South Carolina and modeled the original ACE Study survey questions (see Morse & Strompolis 2016a, and Morse, Strompolis & Srivastav 2017a for additional information). Eight ACE types were assessed (abuse: physical, sexual, emotional; household dysfunction: mental illness, substance use, incarceration, divorce, domestic violence). Table 1 outlines the 11 survey items administered to South Carolina adults (18 or older). Two items assessed household substance use (alcohol, drugs), and three items assessed sexual abuse (inappropriate touch, involuntary sexual intercourse). Items in these categories were collapsed for analytic purposes and are consistent with previous ACE research (e.g., Anda et al., 2006; Felitti et al., 1998). Item responses only indicated whether a participant had experienced an ACE. Thus, ACE survey items do not capture intensity or frequency of ACE exposure, but do measure cumulative exposure to ACEs.

Table 1

ACE Types and Survey Items	
ACE TYPE	**SURVEY ITEM(S)**
Household Mental Illness	Lived with anyone who was depressed, mentally ill, or suicidal?
Household Substance Use	Lived with an alcoholic? or Lived with a drug user?
Household Incarceration	Lived with anyone who served time in prison?
Parental Separation/ Divorce	Parents separated or divorced?
Household Domestic Violence	Physical abuse among parents?
Physical Abuse	Parental physical abuse?
Emotional Abuse	Parental verbal abuse?
Sexual Abuse	Did anyone ever touch you sexually? *or* make you touch them sexually? *or* force you to have sex?

1. Children's Trust of South Carolina
2. University of South Carolina, Arnold School of Public Health
3. University of South Carolina, College of Social Work
4. Child and Family Policy Center

scChildren.org/aces

ACEs and other BRFSS data are weighted by the CDC so that the data is representative of the adult population of South Carolinians who have landline and cellular telephones. Weighting ensures that groups who are under-represented in the data can be accounted for during data analysis. BRFSS data is weighted to ensure unbiased population estimates by accounting for complex sampling, nonresponse, and noncoverage (e.g., landline versus cell phone data collection; CDC, 2016b). Thus, a "weight" is assigned to every survey respondent. Under-represented respondents have a higher weight, whereas over-sampled or represented respondents have a lower weight (Kish, 1992). See Weighting of BRFSS Data (CDC, 2016b) for more information.

Significance of Race and Ethnicity in South Carolina

The original ACEs Study found high rates of adversity in a homogeneous (and seemingly advantaged) sample that had health coverage and access to healthcare (CDC, 2016a). When factoring in known fundamental causes of disease and health disparities, such as racism and discrimination, the impact of ACEs is likely to be even more detrimental. As racial and ethnic diversity grows in South Carolina, it is important to understand the context of ACEs within each respective population to better understand adversity. This will help in determining the best, and most culturally appropriate, prevention and intervention efforts.

Some research studies suggest that racial and ethnic minorities are more likely to experience stress associated with racism and discrimination, leading to many health disparities (Phelan & Link, 2015; Thoits, 2010; Williams, 2012). Negative stress, whether the result of economic hardship, social exclusion, or adverse experiences (particularly when there are no mitigating or protective responses to cope with and overcome that stress) are recognized as major causes of morbidity and mortality (World Health Organization, n.d.). For young children, unmitigated stress can become toxic and affect all aspects of well-being: physical health, emotional health, educational development, and social ties (Center for the Developing Child, 2017). In parents, economic disadvantage and blocked opportunities result in heightened likelihood of producing ACEs for their children.

Thus, race and ethnicity are important factors to consider when examining health issues such as ACEs. However, when assessing health conditions and outcomes by race or ethnicity, it is important to consider that race, except for select hereditary conditions, is a socially constructed concept, meaning that a racial group is not biologically pre-disposed to a certain condition or prone to specific behaviors leading to poor health (Gibbons 2005; Phelan & Link, 2015; Williams & Jackson 2005). Thus, the relationships observed between racial and ethnic groups and ACEs should not be viewed as causal, but rather indicative of another lens through which to assess prevalence of ACEs in the general population.

Prevalence of ACEs in South Carolina

Sixty percent of South Carolinians reported experiencing at least one ACE, with 35% reporting experiencing more than one ACE (see Morse, Strompolis, Priester, Wooten, & Srivastav 2017b). Parental divorce/separation, emotional abuse, and household member substance use were the most frequently reported ACE types; household member incarceration was reported the least as indicated in Table 3. Examining ACE prevalence by demographic characteristics revealed several disparities by race and ethnicity, income, education, and age (see Morse, Strompolis, Priester, & Wooten 2016b for additional information), warranting further analysis.

Prevalence of ACEs by Race and Ethnicity

While prior research has recognized that race and ethnicity may play a role in the impact of childhood adversity, more emphasis has been placed on the impact of ACEs across populations, which continues to contribute to a need to understand how ACEs impact different groups. This information is crucial to develop targeted prevention techniques and to better understand contextual factors that may be linked to race and ethnicity. Thus, we examined the prevalence of ACE type (abuse: physical, emotional, sexual; household dysfunction: household mental illness, substance use, domestic violence, incarceration, parental separation/divorce) by healthcare access.

Table 2

ACE Prevalence by Type in South Carolina	
ACE	**PREVALENCE**
Any ACE	60%
Parental Separation/Divorce	31%
Emotional Abuse	30%
Household Substance use	28%
Household Domestic Violence	19%
Household Mental Illness	16%
Physical Abuse	14%
Sexual Abuse	12%
Household Incarceration	9%

The BRFSS measures ACEs in three ways. The questionnaire breaks down racial categories into White, Black or African American, Asian, American Indian or Alaska Native, Pacific Islander and Hispanic. Asian and Hispanic race groups are further disaggregated into subcategories of varying ethnicities. For the purposes of this brief, we use the larger racial and ethnic categories, which include White, Black, Asian, American Indian/Alaskan Native, Other Race because the racial ethnic subgroup sample sizes do not allow for appropriate statistical analyses. Across racial and ethnic groups, the percentage of people that have experienced at least one ACE is substantial, ranging from 37% to 76%. In all minority groups (except for those who identify as Asian), more than half the population reported experiencing more than one ACE, and had higher percentages of ACE prevalence compared to those who identify as White. Further analysis and research should be conducted to understand some of the nuances that may be playing a role in the prevalence of ACEs in minority racial groups in South Carolina.

Prevalence of ACE Types by Race and Ethnicity

Similar trends as the state-wide prevalence (Table 2) were observed when looking at ACE types by race and ethnicity; however, the percentages of each ACE type varied across groups (see Table 5). As noted earlier, the total population of each group should be considered when comparing the variation in prevalence of individual ACEs across race and ethnicity.

Observing ACE prevalence by race and ethnicity yielded results that present opportunities to discuss the roles of varying levels of disadvantage, privilege, and cultural nuances. The prevalence may also shed light on the way different groups perceive adversity, or the extent to which they are willing to report it. As can be seen in Table 5, American Indian/ Alaskan Natives had higher rates of household mental illness or substance use than most other groups, Hispanics were more likely to experience domestic violence, and Blacks most frequently reported divorce. Asians reported lowest ACE prevalence of ACE types. For all prevalence estimates, sample size should be considered when understanding the association between ACEs and race and ethnicity.

Household mental illness. Individuals that identified as Other Race or American Indian/Alaskan Native experienced the highest prevalence of household mental illness, while those who identified as Asian reported mental illness least frequently.

Household Substance Use. Those who identified as Other Race had the highest prevalence of substance use (44%) in the home. Those who identified as Black (26%) or Asian individuals (8%) had the lowest prevalence.

Household Incarceration. Individuals who identified as Other Race (19%) or American Indian/Alaskan Native (21%) experienced the highest prevalence of incarceration of a household member; while Asian individuals had the lowest prevalence (3%).

Parental Divorce/Separation. Those who identified as Black, Hispanic, or Other Race reported a high prevalence of divorce or separation ranging from 33% to 46%. Those who identified as Asian reported the least (9%).

Household Domestic Violence. Individuals identifying as Hispanic reported the highest prevalence of domestic violence (34%) in the home. White and Asian individuals experienced the least domestic violence in the home, (17%).

Emotional Abuse. Across races there was a high prevalence of emotional abuse ranging from 20% to 46% with those identifying as Other Race reporting the highest prevalence and those identifying as Asian reporting the least.

Physical Abuse. Individuals who identified as Other Race reported the most prevalence (26%), Asian individuals reporting the least (9%). Black and Asian individuals experienced similar rates of physical abuse (9-10%) as their White counterparts (15%).

Sexual Abuse. Of all the ACE types, sexual abuse had the lowest range in prevalence across all groups. Individuals identifying as Other Race reported the highest exposure to sexual abuse (22%), followed by Hispanic individuals (17%). Black and White individuals reported almost equivalent numbers with a 2% difference in prevalence.

Table 3

Cumulative ACEs in South Carolina	
0 ACE	40%
1 ACE	25%
2 ACEs	14%
3 ACEs	9%
4+ ACEs	12%

Table 4

ACE Prevalence by Race and Ethnicity			
Race/Ethnicity	**Percentage of SC Population**	**ACE**	**No ACE**
White	66%	58%	42%
Black	26%	65%	35%
Asian	1%	37%	63%
American Indian/ Alaskan Native	1%	70%	30%
Hispanic	4%	67%	33%
Other Race	2%	76%	24%

Note: All percentages may not total 100% due to rounding.

Table 5

Prevalence of ACE Types by Race and Ethnicity								
Race/Ethnicity	Household Mental Illness	Household Substance Use	Household Incarceration	Parental Divorce/ Separation	Household Domestic Violence	Emotional Abuse	Physical Abuse	Sexual Abuse
White	18%	29%	7%	28%	17%	31%	15%	13%
Black	10%	26%	14%	40%	21%	26%	10%	11%
Asian	9%	8%	3%	9%	17%	20%	9%	6%
American Indian/Alaskan Native	28%	38%	21%	31%	26%	36%	20%	16%
Hispanic	12%	29%	8%	33%	34%	34%	25%	17%
Other Race	28%	44%	18%	44%	30%	46%	26%	22%

Note: All percentages may not total 100% due to rounding.

Table 6

Cumulative ACEs by Demographic Variables					
Race/Ethnicity	No ACEs	1 ACE	2 ACEs	3 ACEs	4+ ACEs
White	42%	23%	14%	9%	13%
Black	35%	32%	15%	9%	9%
Asian	63%	20%	9%	4%	4%
American Indian/ Alaskan Native	30%	26%	8%	15%	20%
Hispanic	33%	28%	15%	13%	11%
Other Race	24%	22%	14%	16%	24%

Note: All percentages may not total 100% due to rounding.

Cumulative ACEs by Race and Ethnicity

Some research suggests a dose-response relationship between ACEs and health and social outcomes. That is, as the number of ACEs increases, likelihood of negative biopsychosocial outcomes also increases (ex. Felitti et al., 1998). Other research suggests that this dose-response relationship may impact racial and ethnic minorities differently than their White counterparts (Geronimus, Hicken, Keene, & Bound, 2006) For example, the "weathering" hypothesis posits that minorities experience early health deterioration due to the cumulative impact of repeated social or economic adversity and political marginalization (Geronimus, Hicken, Keene, & Bound, 2006. Exposure to these adversities leads to persistent, high-effort coping associated with acute and chronic stressors which has a severe impact on health and well-being (Geronimus, Hicken, Keene, & Bound, 2006). Geronimus and colleagues (2006) found that Blacks are more likely to experience health deterioration including morbidity and mortality at an earlier age compared to Whites.

Individuals who identify as Other Race had the highest prevalence of 4 or more ACEs (4+; 24%), followed by American Indian/Alaskan Native individuals (20%). Almost all minority groups (except Asians) reported higher exposure to 2 or 3 ACEs compared to White individuals. Black individuals reported 4+ ACEs less frequently than their White or Hispanic counterparts, which is inconsistent with many theories around health disparities and inequities (Anda et al., 2006; Braveman & Barclay, 2009; Geronimus et al., 2006; Phelan & Link, 2015).

Understanding the prevalence of ACEs in South Carolina by race and ethnicity provides a new lens for prevention of negative health outcomes and an opportunity to address racial health disparities. It is important to recognize that the relationships between race and ethnicity and ACEs are not causal; therefore, more research is needed to provide insight on the various social, environmental, and cultural factors that may contribute to exposure to adversity in childhood. The data presented in this brief can serve as a foundation for conversations about tailored prevention and mitigation strategies and for future research.

Conclusion:

ACEs are common among South Carolinians and across racial and ethnic groups. Most minority groups reported experiencing more than one ACE and had higher prevalence of ACEs than White individuals. In addition, prevalence of individual ACE types varied across groups.

The high prevalence of childhood adversity in South Carolina and nationwide requires a universal goal of ACEs prevention for all children, with differing efforts needed for race and ethnicity. Prevention can be achieved by addressing social determinants of health through targeted approaches that address social, political, and institutional factors. These factors, which have led to systemic inequalities amongst racial and ethnic minorities, also lead to disproportionate exposure to stress from discrimination among racial and ethnic minorities (Powell, 2012). Stress has profound implications across the lifespan and may be associated not only with intergenerational ACEs but also the intergenerational transmission of disease (Pearlin, 2010; Thoits, 2010).

It should be noted that there are very significant differences in morbidity and in life expectancy rates between White and Black Americans – and between Americans with higher and with lower socio-economic status (Gibbons, 2005). ACEs may demonstrate the consequences of the stressors resulting from disadvantage or discrimination that different racial groups experience because of personal, institutional, and structural racism – ones that can also contribute to lower socio-economic status (Brondolo, Gallo & Myers 2009). Reducing the incidence of ACEs or mitigating the impact when children experience adversity likely requires actions to address some of these underlying causes related to stress, exclusion, and inequity.

Understanding the prevalence of ACEs in South Carolina by race and ethnicity provides a new lens for prevention of negative health outcomes and an opportunity to address racial health disparities. It is important to recognize that the relationships between race and ethnicity and ACEs are not causal; therefore, more research is needed to provide insight on the various social, environmental, and cultural factors that may contribute to exposure to adversity in childhood. The data presented in this brief can serve as a foundation for conversations about tailored prevention and mitigation strategies and for future research.

References:

Braveman, P., & Gottlieb, L. (2014). The social determinants of health: It's time to consider the causes of the causes. *Public Health Reports, 129*(Suppl 2), 19–31.

Brondolo, E., Gallo, L. C., & Myers, H. F. (2009). Race, racism and health: Disparities, mechanisms, and interventions. *Journal of Behavioral Medicine, 32*(1), 1. https://doi.org/10.1007/s10865-008-9190-3

Centers for Disease Control and Prevention. (2016a, April 1). *Adverse childhood experiences (ACEs)*. Retrieved March 3, 2017, from https://www.cdc.gov/violenceprevention/acestudy/index.html

Centers for Disease Control and Prevention. (2016b, August 26). *About the behavioral risk factor surveillance system*. Retrieved March 3, 2017, from https://www.cdc.gov/brfss/

Center for the Developing Child. (2017). *Toxic Stress*. Retrieved May 9, 2017, from http://developingchild.harvard.edu/science/key-concepts/toxic-stress/

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). 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, 14*(4), 245–258.

Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *American Journal of Public Health, 96*(5), 826–833. https://doi.org/10.2105/AJPH.2004.060749

Gibbons, M. C. (2005). A historical overview of health disparities and the potential of eHealth solutions. *Journal of Medical Internet Research, 7*(5). e(50). https://doi.org/10.2196/jmir.7.5.e50

Morse, M., & Strompolis, M. (2016a). *Adverse childhood experiences data collection: An overview of the Behavioral Risk Factor Surveillance System (BRFSS) (Research Brief No. 1)*. Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M, & Srivastav, A. (2017a). *The adverse childhood experiences study: Lessons learned and future directions (Research Brief No. 2)*. Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M., Priester, M., Wooten, N.R., & Srivastav, A. (2017b). *Adverse childhood experiences in South Carolina: A summary of dichotomous and cumulative ACEs and demographic prevalence (Research Brief No. 3)*. Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M., Priester, M. A., & Wooten, N. R. (2016b). *Adverse childhood experiences in South Carolina: A summary of individual ACEs and demographic prevalence (Research Brief No. 4)*. Retrieved from http://scchildren.org/public/files/docs/Prevention_Learning_Center/ACE-Research-Brief-4-SC-Demographics-Individual-ACEs.pdf

Kish, L. (1992). Weighting for Unequal Pi - ProQuest. *Journal of Official Statistics, 8*(2), 183–200.

Pearlin, L. I. (2010). The life course and the stress process: Some conceptual comparisons. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 65B(2)*, 207–215. https://doi.org/10.1093/geronb/gbp106

Phelan, J. C., & Link, B. G. (2015, August). *Is racism a fundamental cause of inequalities in health?* Retrieved March 3, 2017, from https://www.researchgate.net/publication/276506030_Is_Racism_a_Fundamental_Cause_of_Inequalities_in_Health

Powell, J. A. (2012). Racing to justice: *Transforming our conceptions of self and other to build an inclusive society.* Bloomington, Indiana: Indiana University Press.

Thoits, P. A. (2010). Stress and health: Major findings and policy implications. *Journal of Health and Social Behavior, 51* Suppl, S41-53. https://doi.org/10.1177/0022146510383499

Williams, D. R. (2012). Miles to go before we sleep: Racial inequities in health. *Journal of Health and Social Behavior, 53*(3), 279–295. https://doi.org/10.1177/0022146512455804

Williams, D. R., & Jackson, P. B. (2005). Social sources of racial disparities in health. Health Affairs, 24(2), 325–334. https://doi.org/10.1377/hlthaff.24.2.325

World Health Organization. (n.d.). Social determinants of health: The basic facts. Retrieved May 9, 2017, from http://www.who.int/social_determinants/en/

Centers for Disease Control and Prevention. (2016a, April 1). Adverse childhood experiences (ACEs). Retrieved March 3, 2017, from https://www.cdc.gov/violenceprevention/acestudy/index.html

Centers for Disease Control and Prevention. (2016b, August 26). About the behavioral risk factor surveillance system. Retrieved March 3, 2017, from https://www.cdc.gov/brfss/

Center for the Developing Child. (2017). Toxic Stress. Retrieved May 9, 2017, from http://developingchild.harvard.edu/science/key-concepts/toxic-stress/

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). 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, 14(4), 245–258.

Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. American Journal of Public Health, 96(5), 826–833. https://doi.org/10.2105/AJPH.2004.060749

Gibbons, M. C. (2005). A historical overview of health disparities and the potential of eHealth solutions. Journal of Medical Internet Research, 7(5). e(50). https://doi.org/10.2196/jmir.7.5.e50

Morse, M., & Strompolis, M. (2016a). Adverse childhood experiences data collection: An overview of the Behavioral Risk Factor Surveillance System (BRFSS) (Research Brief No. 1). Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M, & Srivastav, A. (2017a). The adverse childhood experiences study: Lessons learned and future directions (Research Brief No. 2). Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M., Priester, M., Wooten, N.R., & Srivastav, A. (2017b). Adverse childhood experiences in South Carolina: A summary of dichotomous and cumulative ACEs and demographic prevalence (Research Brief No. 3). Retrieved from http://scchildren.org/prevention_learning_center/adverse_childhood_experiences_aces/research_briefs/

Morse, M., Strompolis, M., Priester, M. A., & Wooten, N. R. (2016b). Adverse childhood experiences in South Carolina: A summary of individual ACEs and demographic prevalence (Research Brief No. 4). Retrieved from http://scchildren.org/public/files/docs/Prevention_Learning_Center/ACE-Research-Brief-4-SC-Demographics-Individual-ACEs.pdf

Kish, L. (1992). Weighting for Unequal Pi - ProQuest. Journal of Official Statistics, 8(2), 183–200.

Pearlin, L. I. (2010). The life course and the stress process: Some conceptual comparisons. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 65B(2), 207–215. https://doi.org/10.1093/geronb/gbp106

Phelan, J. C., & Link, B. G. (2015, August). Is racism a fundamental cause of inequalities in health? Retrieved March 3, 2017, from https://www.researchgate.net/publication/276506030_Is_Racism_a_Fundamental_Cause_of_Inequalities_in_Health

Powell, J. A. (2012). Racing to justice: Transforming our conceptions of self and other to build an inclusive society. Bloomington, Indiana: Indiana University Press.

Thoits, P. A. (2010). Stress and health: Major findings and policy implications. *Journal of Health and Social Behavior, 51* Suppl, S41-53. https://doi.org/10.1177/0022146510383499

Williams, D. R. (2012). Miles to go before we sleep: Racial inequities in health. *Journal of Health and Social Behavior, 53*(3), 279–295. https://doi.org/10.1177/0022146512455804

Williams, D. R., & Jackson, P. B. (2005). Social sources of racial disparities in health. *Health Affairs, 24*(2), 325–334. https://doi.org/10.1377/hlthaff.24.2.325

World Health Organization. (n.d.). *Social determinants of health: The basic facts*. Retrieved May 9, 2017, from http://www.who.int/social_determinants/en/