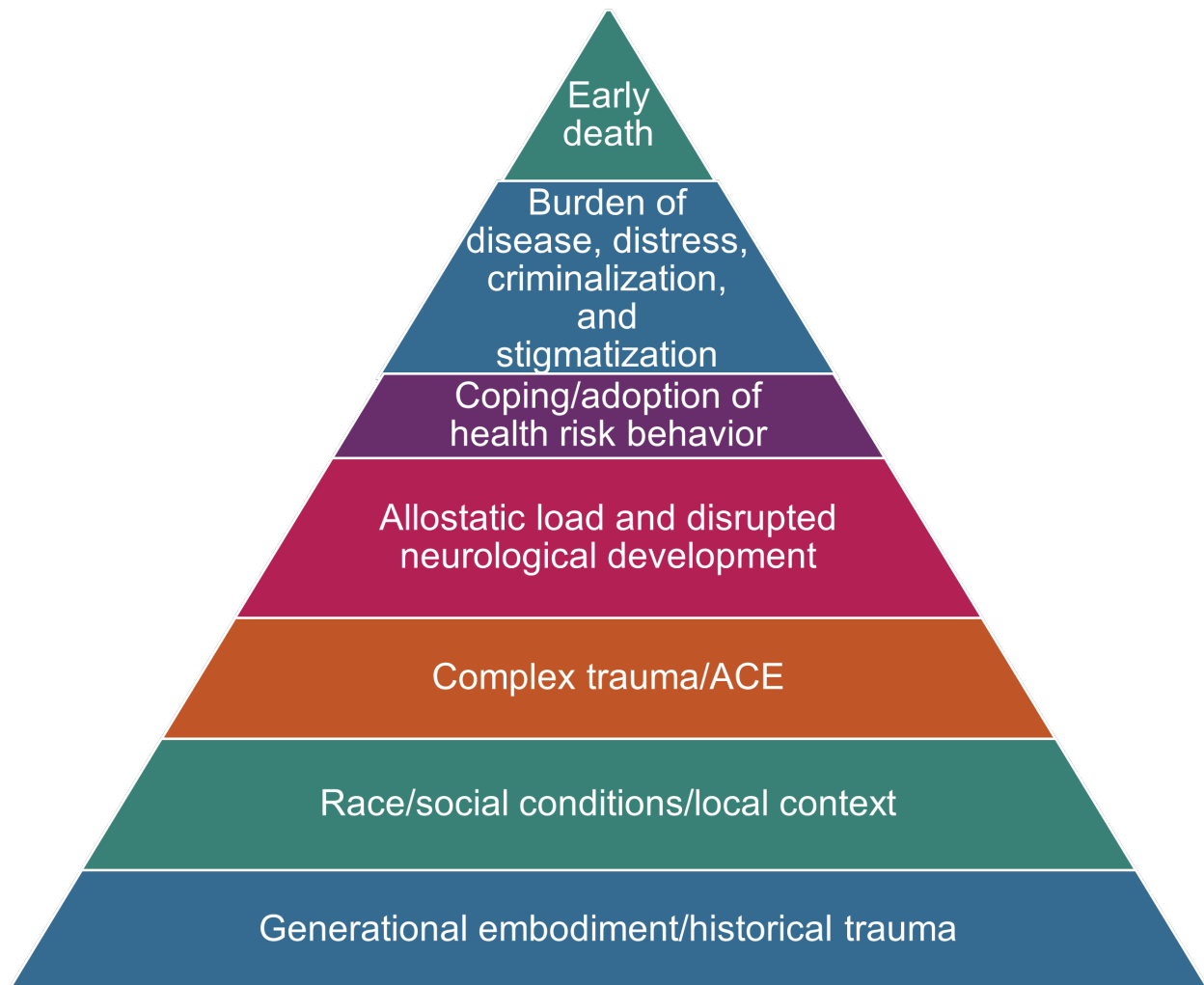


The Original ACE Study

The foundational [ACE Study](#) was conducted by the Centers for Disease Control and Kaiser Permanente in the mid-1990s with a group of patients insured through Kaiser Permanente. The initial study focused on how traumatic childhood events may negatively affect adult health. The 17,000 participants surveyed were asked about their experiences with childhood maltreatment, family dysfunction, and current health status and behaviors. The ACEs Pyramid on the left side of the image below represents the conceptual framework created, which illustrates how strongly ACEs are related to a person's well-being throughout their lifespan.

The ACE study found a direct link between childhood trauma and adult onset of chronic disease, incarceration, and employment challenges. The higher the number of ACEs, the greater the incident of [negative outcomes](#) as captured in the ACE Pyramid. In 2015, the RYSE Center adapted the pyramid as seen on the right side of the image below to include two layers on the bottom that account for the role historical trauma and social location play in a person's health outcome. This revised model aligns better with the Socio-Ecological Model and accounts for the influences of each sphere on health outcomes.



1. Adverse Childhood Experiences 2. Disrupted Neurodevelopment 3. Social, Emotional, and Cognitive Impairment 4. Adoption of Health-risk Behaviors 5. Disease, Disability, and Social Problems 6. Early Death

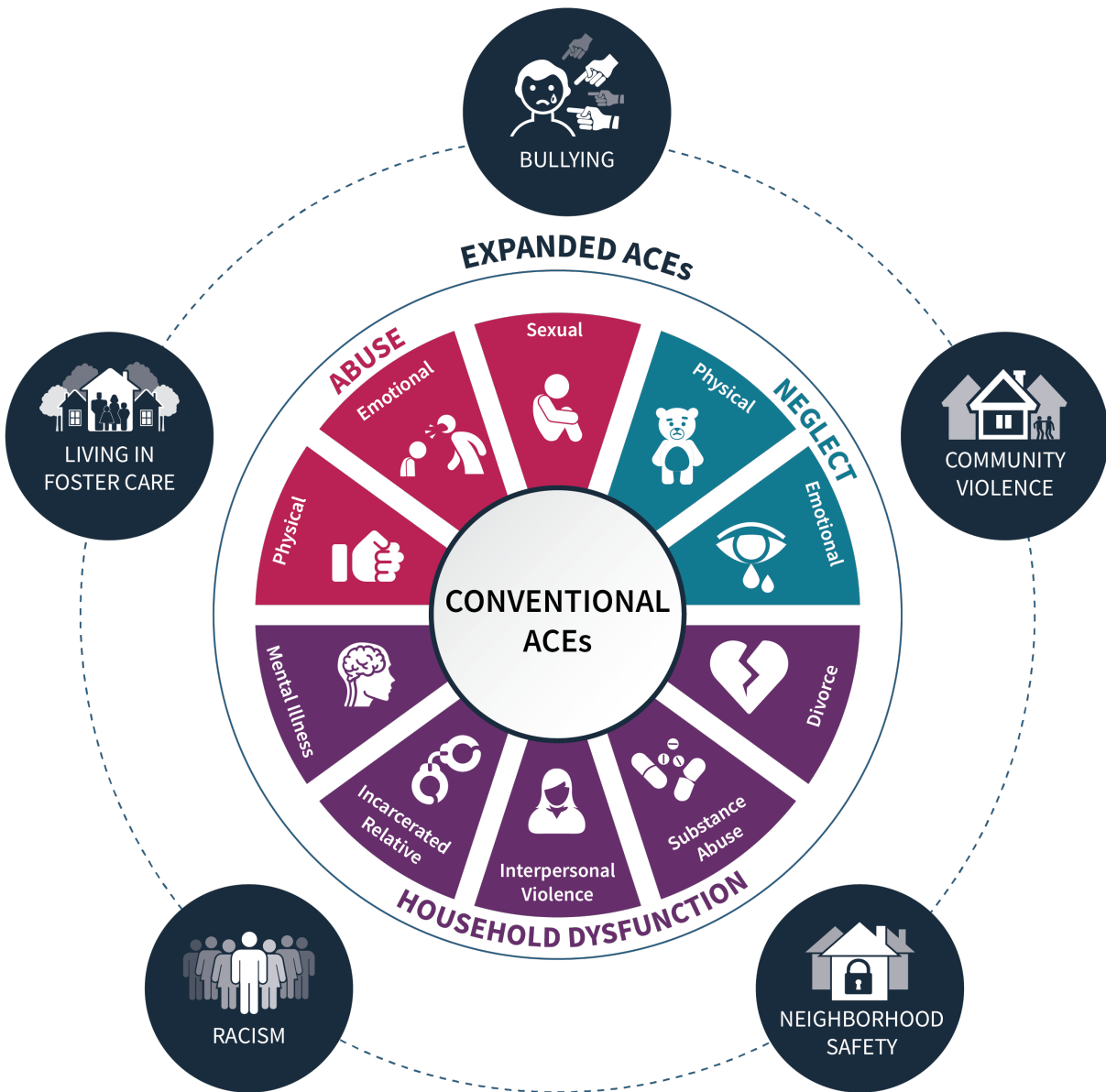
Source: Centers for Disease Control and Prevention. (2016). Violence prevention: *The ACE pyramid* (adapted by RYSE Youth

Center). <https://www.cdc.gov/violenceprevention/cestudy/about.html>

The Expanded ACE Survey

Subsequent studies, like [The Philadelphia ACE Project](#), have expanded the research to include a look at ACEs among inner-city youth and the implications of intergenerational trauma. In the first study conducted by Kaiser Permanente and the CDC of 17,000 participants, 69.9 percent of participants had at least one ACE. In the expanded ACEs study conducted by the Philadelphia ACE Project, 83.2 percent of participants had at least one ACE. The graphic below captures the original types of ACEs (i.e., childhood abuse, neglect, and

household dysfunction) as well as the expanded ACEs, whereby the expanded ACEs consists of additional items that measure exposure to bullying, community violence, neighborhood safety, racism, and living in foster care.



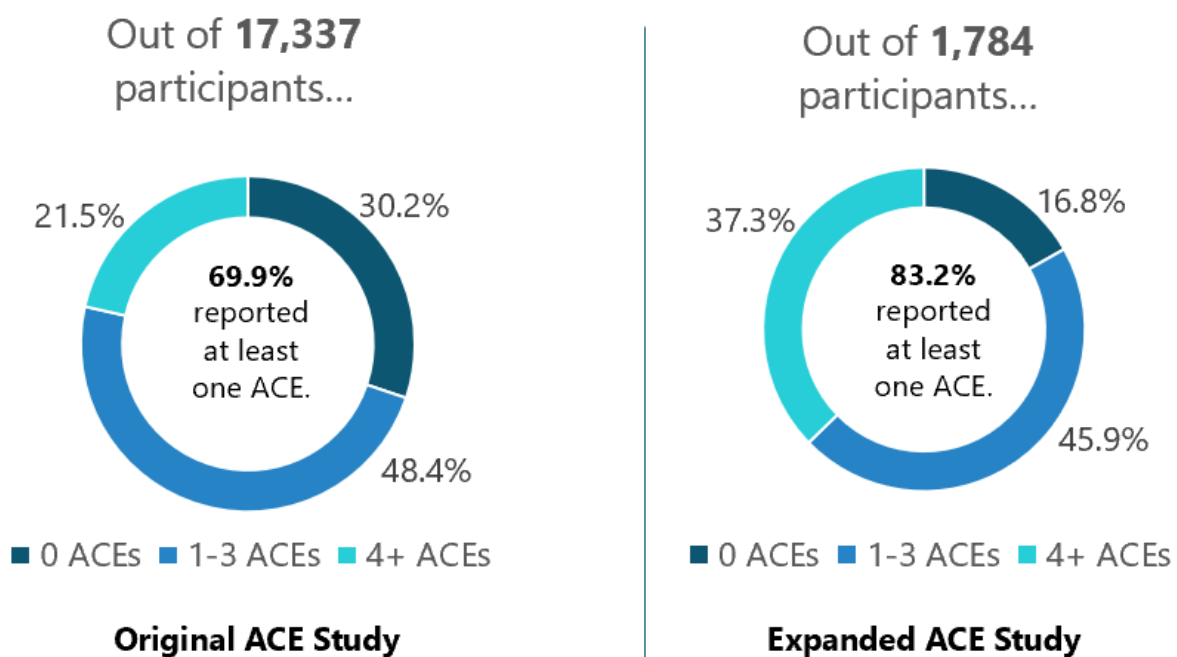
Source: Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., Pachter, L. M., & Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. *American Journal of Preventive Medicine*, 49(3), 354–361.

1. Adverse Childhood Experiences
2. Disrupted Neurodevelopment
3. Social, Emotional, and Cognitive Impairment
4. Adoption of Health-risk Behaviors
5. Disease, Disability, and Social Problems
6. Early Death

Prevalence of ACEs

The charts below display data on the prevalence of ACEs from the original ACEs study, shown on the left, and the expanded ACEs study, shown on the right. In the first study conducted by Kaiser Permanente and the Centers for Disease Control, of 17,000 participants, 69.9% of participants had at least one ACE. In the expanded ACEs study conducted by the Philadelphia ACE Project, 83.2% of participants had at least one ACE.

Take a moment to consider the differences between the prevalence of ACEs in the original ACE study and the expanded ACE study, which included community-level stressors.



Merritt, M.B., Cronholm, P., Davis, M., Dempsey, S., Fein, J., Kuykendall, S.A.,... Wade, R. (2013). *Findings from the Philadelphia Urban ACE Survey*. Institute for Safe Families. <https://www.rwjf.org/en/library/research/2013/09/findings-from-the-philadelphia-urban-ace-survey.html>