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## **PREFACE: THE HOLE IN THE BRIDGE**

Picture a large group of friends having a spring picnic beside a river that flows through their town. Suddenly, they hear a cry from the river and see a child being swept downstream. One of them kicks off his shoes, jumps in, and brings the child to the riverbank where the others gather around to make sure she is okay. While taking care of her, they hear another child, and then another, followed by another, and another. Soon everyone is either rescuing children from the river or helping those pulled to shore recover from nearly drowning. Then they notice that one of the friends has left them and is running upstream. They call to her, saying, “Where are you going? We need you here!” to which she replies, “I’m going to find the hole in the bridge.”

When we first learned about the Adverse Childhood Experiences Study and saw the data linking childhood adversity with later risky health behaviors, chronic illnesses, poor developmental outcomes, and the links between early adversity and neurobiological adaptations to stress, we realized we had found the hole in the bridge. This is not to argue against pulling struggling children (and adults) out of the river—we can and should do all we can to keep them from being swept out to sea and help them recover once they are safely ashore. Our efforts must begin to focus, however, on finding and repairing the treacherous bridge that sent them into the river in the first place.

During the past 2 decades, multiple studies with thousands of people from diverse populations have established a strong and consistent connection between adverse childhood experiences (ACEs) and later health and chronic conditions. Many health professionals recognize this connection, but it is only now reaching a wider audience. Similarly, research by developmental psychologists on how to protect and compensate for childhood adversity has

yet to be disseminated to those committed to understanding and treating the effects of ACEs. This book combines existing knowledge about ACEs with developmental research on preventing, buffering, and treating the effects of adversity, stress, and trauma on child development and subsequent health and functioning.

Adversity can literally “get under the skin,” changing cells, the brain, and even DNA. The human body is programmed to respond to danger in ways that promote survival, enabling us to *fight*, *flee*, or *freeze*. This was adaptive for our ancestors, who literally encountered tigers and bears, but these responses in the face of modern-day stress are a leading cause of heart disease, cancer, obesity, substance abuse, and a host of mental health and relationship problems.

Just as the effects of ACEs influence development, so do nurturing experiences. The lifelong effects of positive childhood experiences can mitigate the detrimental effects of ACEs. As developmental psychologists, we have identified the most important of these protective and compensatory experiences (PACES). PACEs include experiences such as unconditional love from a parent or other adult, having family routines, developing talents and skills through hobbies and sports, and volunteering in the community.

In this book, we consolidate the most recent and scientifically sound research on childhood adversity and what developmental scientists know about preventing and treating the long-term consequences of ACEs. We describe relevant discoveries from psychology, neuroscience, biology, and integrative medicine. We begin with an overview of ACEs and PACEs (Chapters 1–2), then describe the neurobiological and intergenerational effects of ACEs and PACEs (Chapters 3–4), and end with research and ideas for helping adults, children, and communities develop plans for minimizing the negative effects of ACEs and promoting PACEs (Chapters 5–8). Many chapters have activities that aim to help readers apply the science to everyday life, and there is a list of resources and suggested readings, as well as questions for reflection, at the end of the book.

We wrote this book because we are looking for answers. Are ACEs real? If so, how do they change our bodies, our brains, and our behavior? What can we do about it? How can we apply decades of developmental research on resilience to the new science of ACEs? We found answers not only from our own discipline of developmental science but also from fields as diverse as epidemiology, epigenetics, immunology, neuroscience, and infant mental health. The answers are still coming. Like any vibrant scientific endeavor, new studies are raising new questions as quickly as they answer old ones. What we know now is that ACEs are real, but they can also be defeated by making future ACEs less common, ameliorating currently occurring ACEs, making PACEs more common, and acknowledging and treating the effects of past ACEs in our own lives and in our communities.

Most people reading this book will have had at least one ACE. We know this because every epidemiological study in large populations in the world has shown this to be true. Many of us in the helping professions have more than

one (Esaki & Larkin, 2013); thus, we assume that many readers will have a personal interest in this topic. That is why, unlike many academic books, we use figures, graphs, diagrams, and stories to engage the whole mind and body as much as possible. We also include activities and conclusions at the end of each chapter to organize and bring focus to the application of ACEs and PACEs science in our own lives and those around us. We have tried to make findings from multiple disciplines accessible to the “nonmajors” in those fields while ensuring that enough detail is included to be informative. Although we have used the terms *adverse childhood experiences*, *early life adversity*, *stress*, *toxic stress*, and *trauma* almost interchangeably throughout the text, we are certainly mindful of their different meanings and have tried to use the most appropriate word or term in describing various studies and situations in which they apply. Similarly, terms such as *resilience* and *protective factors* may not always be distinct. As research explicating the effects of ACEs and approaches to preventing and treating those effects progresses and is applied in ever widening contexts (Leitch, 2017), we expect that our language and terminology will also advance.

The audience for this book is students, researchers, clinicians, and health care providers who want to gain knowledge regarding the interdisciplinary science of early life adversity, lifelong resilience, and related intervention and prevention programming. This book can be used to reflect on one’s own history of adversity and resilience and to help others who are dealing with the lifelong effects of ACEs.

Finally, this book is intended to launch new investigations into ACEs and PACEs, to provide an interdisciplinary lens through which to view the multiple types of effects of enduring childhood experiences, and to recommend evidence-based approaches for protecting and buffering children and repairing the negative consequences of ACEs as adults. We take a “whole body” approach in this book and present interventions that integrate physiological, cognitive, emotional, and relational practices for healing from ACEs and promoting resilience. This book is not intended to be an alternative to psychotherapy or other clinical interventions in cases where trauma and stress have seriously impaired health and functioning. ACEs have cumulative effects on health and developmental outcomes, and serious physical and mental health consequences have been observed with increasing ACEs. We encourage readers to go beyond our book to access the resources and websites presented throughout the book and in the concluding section.



## ACKNOWLEDGMENTS

We are grateful to many people for their help and support as we wrote this book. Our editor, Ted Baroody, made invaluable suggestions, helping us craft a book that we believe will help move this field forward. We thank Christopher Kelaher at APA Books, who convinced us to write this book rather than the one we thought we wanted to write. Chris, you were right. We are especially appreciative for the two anonymous reviewers for their thoughtful insights and recommendations. Harriet Spain's reviews were enormously helpful and constructive. We are also grateful to our friend and colleague Joli Jensen, whose book (*Write No Matter What*) was published just exactly when we needed it.

We have many friends and colleagues who have guided our journey as we set out to learn about topics that were new to us. For Amanda, this involved gaining more neuroscience knowledge, and she is grateful to Kyle Simmons, Kara Kerr, Florence Breslin, Jerzy Bodurka, and Martin Paulus. For Jennifer, this involved learning about epigenetics, and she is especially grateful to Kent Teague and Ariel Grudo for their patient explanations. Thanks to Jason Beaman and others in our departments and colleges for supporting us. Jordan Love has assisted both of us in organizing our obligations so that everything got done and has been a great editor. Erin Ratliff assisted us in multiple read-throughs and final edits. We are grateful for the research support we have received from the National Institutes of Health (Grant P20GM109097) and the George Kaiser Family Foundation, which has allowed us to pursue our interest in adversity and resilience.

Most important, we are grateful to our families who made sacrifices so that we could write and rewrite for the past several years. Our husbands, who are great supporters of this effort, were also some of our best editors and sounding boards. They share our aspirations for a safe and nurturing world for all children.







# **THE EFFECTS OF ADVERSE AND PROTECTIVE CHILDHOOD EXPERIENCES**

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## 2 The Effects of Adverse and Protective Childhood Experiences

*You are the sum total of everything you've ever seen, heard, eaten, smelled, been told, forgot—it's all there.*

—MAYA ANGELOU

### INTRODUCTION

In this section, we begin Chapter 1 with a description of the landmark Adverse Childhood Experiences (ACE) Study conducted in California in the 1990s. We then discuss the research on ACEs and related types of adversity published during the past 2 decades in populations that differ in important ways from the original study. We provide evidence of the cumulative and co-occurring effects of ACEs and their prevalence throughout the world. We also discuss different approaches to defining adversity as new questions emerge from research with more diverse populations.

In Chapter 2, we present the antidote to ACEs: the protective and compensatory experiences (PACEs) that buffer the effects of adversity on development. When we began studying the effects of ACEs on development and health, we were surprised that little of the substantial literature on resilience had been incorporated into adversity science. In response, we developed PACEs based on the theoretical and empirical research on child development and resilience conducted during the past 50 years. PACEs focus on nurturing and supportive relationships and resources that provide children opportunities to develop and grow.

We end the chapters with surveys of childhood experiences, providing suggestions for ways to incorporate the surveys into clinical practice, research protocols, and self-reflection. As you read the first two chapters, we invite you to keep in mind the hole in the bridge story from the Preface, reflecting on the power of adversity and resilience to explain the enduring effects of childhood (ages 0–18) experiences on lifelong health and success.

# 1

## Adverse Childhood Experiences

*The largest, most important public health study you never heard of.*

—JANE ELLEN STEVENS

In 1998, Dr. Vincent Felitti, a physician with Kaiser Permanente Health Plan, and Dr. Robert Anda, a cardiovascular epidemiologist at the Centers for Disease Control and Prevention (CDC), published an article in the *American Journal of Preventive Medicine* that transformed the way we think about childhood adversity and resilience. The “Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study” (Felitti et al., 1998) was the first large-scale study showing that adverse childhood experiences (ACEs) are (a) common, (b) highly interrelated, (c) have cumulative impact, and (d) account for a large portion of our health and societal problems. Since that original publication, scores of studies have confirmed the scope of ACE effects, the neurobiological plausibility of a causal relationship between ACEs and later health, and potential protective factors to prevent or mitigate these effects. In this chapter, we describe the findings from the original sample of patients whose ACEs, health, and well-being have been thoroughly studied, the results of other epidemiological studies that expand these findings, and the questions kindled by this new frame of reference for understanding the enduring effects of early life experiences on development and health, touching briefly on the underlying mechanisms and processes linking childhood

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*Adverse and Protective Childhood Experiences: A Developmental Perspective*, by J. Hays-Grudo and A. S. Morris

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adversity with later health and well-being before turning our attention to protective and resilience-promoting experiences in Chapter 2 of this volume.

## **THE ADVERSE CHILDHOOD EXPERIENCES STUDY**

The origins of the ACEs study can be traced to the 1980s and the Kaiser Permanente Health Appraisal Center in San Diego, which has routinely provided comprehensive health evaluations for more than 1.3 million adult members of the Kaiser Foundation Health Plan in the San Diego area during the past 30 years (Felitti, 2019). As director of Preventive Medicine, Vincent Felitti created one of the largest and most effective health appraisal systems in the world as well as effective intervention programs to improve patient outcomes. The Kaiser Permanente obesity clinic was designed for patients needing to lose significant amounts of weight for health reasons, and their progress was closely monitored by Dr. Felitti and his colleagues. When they began to see a pattern, with a large proportion dropping out of the program after losing all or most of their goal weight rather than earlier in the process, they began asking questions. Interviews with more than 200 of the patients revealed that a majority had a history of childhood sexual abuse. Patients recounted story after story of using food and eating to cope with feelings of shame and worthlessness resulting from childhood abuse. Initially, Dr. Felitti was in disbelief. He thought, “This can’t be true. People would know if that were true. Someone would have told me in medical school” (Felitti, 2018). He began to realize that, from the patient’s perspective, obesity was not a problem but a solution: Eating made people feel better, and being overweight formed a type of protection from further abuse.

When Felitti (2018) presented these findings at a national obesity conference, he was soundly criticized by an obesity expert for believing “fabrications spun by patients seeking excuses for their failures.” Several researchers in the audience from the CDC, however, thought Felitti’s data and ideas were intriguing. They suggested he contact their colleague Dr. Robert Anda, who was studying the effects of depression and hopelessness on heart disease outcomes. Felitti and Anda saw the potential connection between the Kaiser Permanente patient experiences and the depression and heart disease in the CDC samples, and they developed plans to survey the entire Kaiser Permanente San Diego patient population. After more than a year of combing through the literature on the multiple forms of adversity described by Felitti’s obesity clinic patients, they created a scientifically sound, self-administered questionnaire. Approval to question patients about their childhood abuse histories was not easily obtained from the institution’s Review Board for the Protection of Human Subjects. In the film *Resilience* (Pritzker & Redford, 2016), Felitti shakes his head, remembering his colleagues’ resistance to asking these questions of their patients, as if repression was the established standard of treatment for trauma. After nearly a year, the study was approved, and the questionnaire

was mailed to more than 26,000 patients. More than 17,000 responded. The results were stunning. Dr. Anda recalls sitting in his study when he opened his laptop and clicked the link to the results from the CDC analytic team. He looked at the results and wept. Like Dr. Felitti, he never imagined there was so much trauma, so much pain, all around us. This middle-class, mostly college-educated, well-insured sample of adults repeatedly reported childhood histories of abuse, neglect, and family conditions that more powerfully predicted poor health than any risk factor ever before seen.

### **ACE Study Methods**

Members of the Kaiser Permanente Health Plan who came to the Health Appraisal Center for routine evaluations between August 1995 and March 1996 (survey Wave 1; response rate 70%) and between June and October 1997 (survey Wave 2; response rate 65%) were included in the study. At this appointment, patients also completed a standardized questionnaire that included health histories, health-related behaviors, and psychosocial evaluations, all of which were included in the ACEs Study database. They were mailed the ACEs Study Questionnaire 2 weeks after their appointment. The combined study cohort was 18,175 (68% average response rate); the average age was 56 years. More detailed descriptions of the study methodology are available (Anda et al., 2006; Dube, Anda, Felitti, Edwards, & Croft, 2002; Felitti et al., 1998).

All survey items referred to respondents' first 18 years of life. Items used in this questionnaire were adapted from a collection of existing measures and involved more complicated scoring than the 10-item questionnaire now typically used in clinical and research contexts, which has response choices of *yes* or *no*. For example, response options adapted from the Conflict Tactics Scale (Straus & Gelles, 1990) categories were *never*, *once or twice*, *sometimes*, *often*, or *very often*. The two categories of *physical neglect* and *emotional neglect* were added when the second wave of data was collected, along with other items shown to be of interest in Wave 1 (Dube et al., 2002). Thus, the final questionnaire had a total of three subcategories: *abuse*—emotional, physical, and sexual; *neglect*—emotional and physical; and *family dysfunction*—domestic violence, household substance abuse, household mental illness, parental separation or divorce, or household criminality. Exhibit 1.1 shows the wording and scoring of the original questionnaire. The major findings are summarized next.

### **ACE Study Results**

The initial findings surprised everyone. The results indicated that ACEs are common, cooccur, and have cumulative effects, effects previously not seen in epidemiological surveys. Because the data on Kaiser Permanente patients was so comprehensive, the ACEs study provided a rare opportunity to assess the effects of childhood traumas on current health problems and behavioral risk

**EXHIBIT 1.1**

**Original Adverse Childhood Experiences Study Questionnaire Items**

**Emotional abuse.** Two questions from the Conflict Tactics Scale (CTS) were used: “How often did a parent, stepparent, or adult living in your home

1. swear at you, insult you, or put you down?
2. threaten to hit you or throw something at you but didn’t do it?”

Responses of *often* or *very often* to either item defined emotional abuse in childhood were scored.

**Physical abuse.** Two questions from the CTS were used: “How often did a parent, stepparent, or adult living in your home

1. push, grab, slap, or throw something at you?
2. hit you so hard that you had marks or were injured?”

A respondent was defined as having been physically abused during childhood if the response was either *often* or *very often* to the first question or “sometimes, often, or very often” to the second.

**Sexual abuse.** Participants were asked the following four questions (Wyatt, 1985) about whether an adult, relative, family friend, or stranger who was at least 5 years older than themselves ever

1. had touched or fondled their body in a sexual way,
2. had them touch his or her body in a sexual way,
3. attempted to have any type of sexual intercourse with them (oral, anal, or vaginal), or
4. actually had any type of sexual intercourse with them (oral, anal, or vaginal).

Subjects were classified as having been sexually abused during childhood if they responded affirmatively to any of these questions.

**Emotional neglect.** Five statements were reverse-scored and summed:

1. “There was someone in my family who helped me feel important or special.”
2. “I felt loved.”
3. “People in my family looked out for each other.”
4. “People in my family felt close to each other.”
5. “My family was a source of strength and support.”

These five items from the CTS scale were reverse scored and summed; respondents with a score of 10 or higher (moderate to extreme) were considered to have experienced emotional neglect.

**Physical neglect.** Five statements were scored and summed, with Questions 2 and 5 reverse-scored:

1. “I didn’t have enough to eat.”
2. “I knew there was someone there to take care of me and protect me.”
3. “My parents were too drunk or too high to take care of me.”
4. “I had to wear dirty clothes.”
5. “There was someone to take me to the doctor if I needed it.”

Items 2 and 5 from the CTS scale were reverse scored and combined with Items 1, 2, and 4; respondents with a summed score of 10 or higher (moderate to extreme) were considered to have experienced physical neglect.

---

**EXHIBIT 1.1**

**Original Adverse Childhood Experiences Study Questionnaire Items  
(Continued)**

**Domestic violence.** Four questions were used, all of them preceded by the following statement: "Sometimes physical blows occur between parents. While you were growing up in your first 18 years of life, how often did your father (or stepfather) or mother's boyfriend do any of these things to your mother (or stepmother):

1. push, grab, slap, or throw something at her;
2. kick, bite, hit her with a fist, or hit her with something hard;
3. repeatedly hit her for at least a few minutes; or
4. threaten her with a knife or gun, or use a knife or gun to hurt her?"

A positive indication for witnessed domestic violence was a response of *sometimes*, *often*, or *very often* to at least one of the first two questions or any response other than *never* to at least one of the last two questions.

**Household substance abuse.** Two questions: "While you were growing up in your first 18 years of life, did you

1. live with anyone who was a problem drinker or alcoholic?
2. live with anyone who used street drugs?"

Subjects were classified as experiencing household substance abuse if they responded affirmatively to either question.

**Mental illness in household.** Two questions: "While you were growing up in your first 18 years of life,

1. was a household member depressed or mentally ill?
2. did a household member attempt suicide?"

Subjects were classified as experiencing mental illness in the household if they responded affirmatively to either question.

**Parental separation or divorce.** Participants were asked whether their parents had ever separated or divorced during their first 18 years.

**Criminal household member.** If anyone in the household had gone to prison during the respondent's childhood, the respondent was defined as having been exposed to a criminal household member.

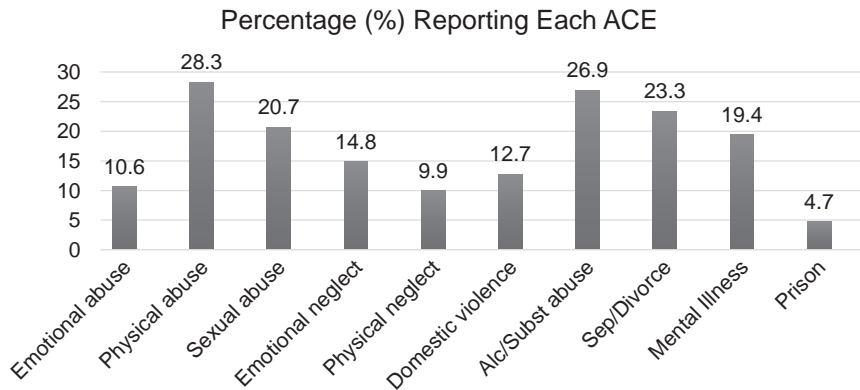
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*Note.* Data from Dong, Giles, et al. (2004, p. 1763) and Dube, Anda, Felitti, Edwards, and Croft (2002, pp. 715–717).

factors (Felitti, 2019). Each of the major findings is described in the following subsections.

**ACEs Are Common**

One of the most surprising initial findings of the original ACEs study was the prevalence of childhood abuse, neglect, and family dysfunction. Two-thirds of the well-educated, middle-class, middle-aged sample of adults had at least one ACE. The most commonly reported ACE was being physically abused

**FIGURE 1.1. Prevalence of Adverse Childhood Experiences by Category**

(28.3%), followed closely by parental substance or alcohol abuse (26.9%). Figure 1.1 shows the percent of the Kaiser respondents reporting each ACE category.

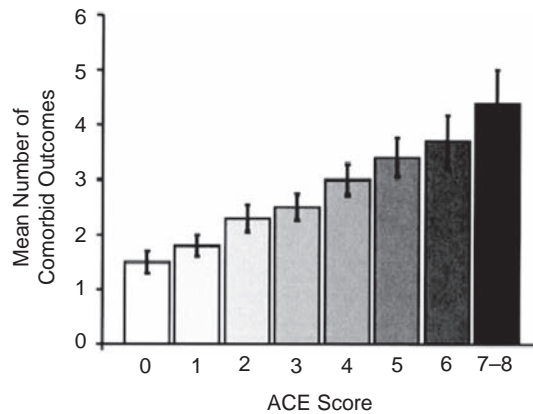
### **ACEs Are Interrelated**

Most clinicians and social service providers are only too aware that clients and participants in intervention programs have experienced multiple forms of mistreatment. However, most research on child abuse and neglect, family risk factors, and other types of adversity tends to focus on one, or perhaps several, categories of adversity. The ACEs study was the first large-scale study to document that adversities tend to cooccur: having suffered one form of adversity significantly increases the likelihood of having had at least one other form of adversity (Dong, Anda, et al., 2004). For example, drug abuse frequently cooccurs with criminality, domestic violence, and other forms of abuse and neglect.

### **ACEs Have Cumulative Impact**

Kaiser survey respondents were routinely asked about their past and current involvement in risky health behaviors; those responses were then linked with their health and clinic records. Analyses controlled for the potentially confounding effects of age, sex, race, and educational attainment on the relationship between ACEs and health behaviors and health status using logistic regression. For nearly every risk factor and health outcome studied, the results of these analyses indicated a strong, graded relationship, or “dose–response” effect. Thus, the higher the ACEs score, the higher the chance of risky behaviors and health problems. In 18 outcome categories, the odds ratios (ORs) depicting the increased risk of the behavior or health status show a pattern of increased risk with each added ACE (Anda et al., 2006). Figure 1.2 presents the mean number of cooccurring (comorbid) outcomes for each ACE score. The average number of comorbid outcomes in the full sample (Wave 1 + Wave 2) was 2.1. The increased risk is significant; the vertical bars represent 95% confidence intervals.



**FIGURE 1.2. Mean Number of Comorbid Outcomes by Adverse Childhood Experiences Score**

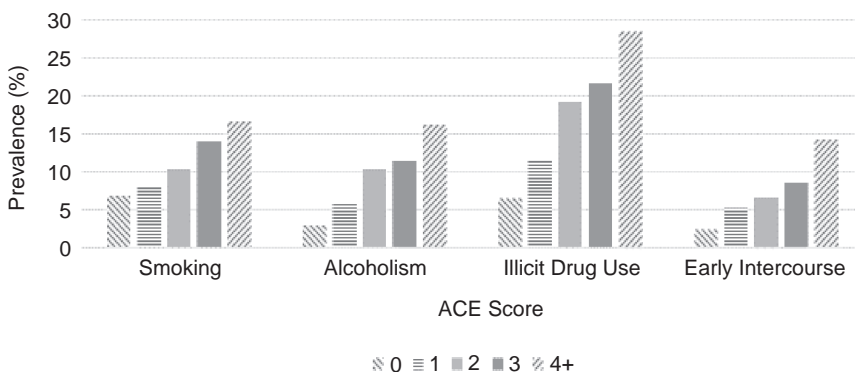
From "The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology," by R. F. Anda, V. J. Felitti, J. D. Bremner, J. D. Walker, C. Whitfield, B. D. Perry, S. R. Dube, and W. H. Giles, 2006, *European Archives of Psychiatry and Clinical Neuroscience*, 256, p. 179. Copyright 2006 by Springer Nature. Reprinted with permission.

### ACEs Increase Behavioral Risk Factors

The cumulative effect of ACEs on behavioral risk factors is illustrated in Figure 1.3, which graphs the percentage of individuals reporting four risky behaviors by number of reported ACEs. This dose-response effect, or staircase pattern, of increasing ACEs corresponding with increasing health-harming behavior is evident. For example, individuals with four or more ACEs have double the risk of smoking, their risk of alcoholism increases 7-fold, illicit drug use increases 4.5-fold, and having early intercourse increases 6.6-fold.

### ACEs Affect Health Status

ACEs were also significant predictors of major chronic diseases and health problems in the Kaiser sample. As was seen for behavioral risk factors,

**FIGURE 1.3. Adverse Childhood Experiences Score and Health Behavior Risk**

a dose–response relationship was observed for ACEs and chronic health problems, with the greatest risk for those with ACE scores of four or greater. Adjusted for age, sex, and educational attainment, having four or more ACEs was associated with a 90% increased risk of cancer, a 60% increased risk of diabetes, a 2.2-fold risk of ischemic heart disease, a 2.4-fold increased risk of stroke, and a 3.9-fold risk of chronic obstructive pulmonary disease (Felitti et al., 1998). Subsequent research documents other health problems associated with ACEs, including autoimmune disease (Dube et al., 2009), frequent headaches (Anda, Tietjen, Schulman, Felitti, & Croft, 2010), and liver disease (Dong, Dube, Felitti, Giles, & Anda, 2003). HIV and sexually transmitted illnesses also increase with higher ACEs (M. J. Brown et al., 2017), at least in part because of increased rates of risky sexual behaviors (Hillis, Anda, Felitti, & Marchbanks, 2001).

### **ACEs Predict Mental Health Problems**

The risk of lifetime or current depression increased incrementally with ACE scores (Chapman et al., 2004). With ACE scores of four or more, depression increases 4.6-fold (Felitti et al., 1998), high perceived stress doubles, difficulty controlling anger quadruples, perpetrating intimate partner violence increases 5.5-fold, and suicide attempts increase 12.1-fold (Anda et al., 2006). Dose–response effects were also found for mental health problems, as well as for the co-occurrence of multiple physical and mental health problems (Anda et al., 2006).

### **ACEs and Societal Problems**

The ACEs database has also been used to assess the relationship between early life adversity and later ability to function in society. Individuals with more ACEs experienced more residential mobility in childhood; the risk of moving eight or more times during childhood increased threefold with three ACEs, fourfold with four or five ACEs, and nearly sixfold with six or more ACEs. ACEs have also been associated with a significantly increased likelihood of both being a victim and perpetrator of intimate partner violence (Whitfield, Anda, Dube, & Felitti, 2003). The likelihood of unintended (Dietz et al., 1999) and adolescent pregnancies (Hillis et al., 2004) increases as ACEs scores climb, as does the risk of fetal death for both first and second pregnancies (Hillis et al., 2001). Even when adjusted for potential confounders (age and marital status at first pregnancy), unintended pregnancies are 50% more likely among women with four or more ACEs, particularly if their ACEs include emotional or physical abuse and witnessing intimate partner violence (Dietz et al., 1999). Analyses also show that the psychosocial problems linked with adolescent pregnancy (family, job, and anger problems, as well as high stress) also incrementally increase with ACEs.

### **ACEs Affect All-Cause Mortality**

In 2009, the CDC, Kaiser Permanente, and other researchers published the effects of ACEs on premature death (Brown et al., 2009). Using records from

the National Death Index, deaths were identified during the period between baseline appointment date and December 31, 2006. The results were sobering, revealing that, on average, individuals with six or more ACEs died nearly 2 decades earlier (at 61 years) than individuals with no ACEs (at age 79). ACEs also significantly increased the likelihood of a family member dying prematurely (i.e., before age 65). For every ACE item reported, the risk of family member's premature death increased by 13% (Anda et al., 2009).

### **ACEs STUDIES IN OTHER POPULATIONS**

Since the 1998 publication of the Kaiser study, many researchers have replicated these findings, investigating the prevalence and effects of ACEs in other populations and expanding the scope of adversity and outcome types. Using the original eight- or 10-item ACEs questionnaire, or creating facsimile measures using comparable questions in existing databases, studies have now been conducted with a number of large-scale population groups (Bellis, Lowey, Leckenby, Hughes, & Harrison, 2014; Campbell, Walker, & Egede, 2016; Danese et al., 2009), and more distinct subgroups, such as adolescents (Balistreri & Alvira-Hammond, 2016), juvenile offenders (Baglivio et al., 2014), and those in developing countries (Ramiro, Madrid, & Brown, 2010). Results of these studies consistently confirmed the findings of the Kaiser Permanente and CDC researchers: *Adverse childhood experiences are prevalent, are cumulative, and have enduring negative effects on a multitude of health and developmental outcomes in diverse populations.*

### **Global ACEs**

A large systematic review and meta-analysis of ACEs and subsequent risk calculated pooled odds ratios from 37 published studies with a total of 253,719 participants from around the world (Hughes et al., 2017). All studies used data from the general (nonclinical, low-risk) populations, with risk estimates for 23 health outcomes. The majority of participants across all studies reported at least one ACE (57%), and 13% reported at least four. Pooled ORs compared the risk between individuals with no ACEs and those with four or more. Analyses revealed a significant predictive effect of ACEs on every health-related behavior or outcome studied, ranging from relatively slight risk (increasing the risk of obesity by 39% and of diabetes by 52%) to moderate risk (more than doubling the likelihood of heart disease or cancer, and quadrupling the risk of adolescent pregnancy and depression), to truly staggering odds (raising the risk of drug abuse 10-fold and the risk of attempting suicide 30-fold). These data demonstrate that ACEs are common globally, a finding supported by a recent study of the prevalence of past-year victimization from physical, sexual, emotional, or multiple types of abuse for children aged 2 through 17 years. Globally, it is estimated that more than one billion children have experienced ACEs—that is, more than 50% of the world's future

adults—with children in Asia, Africa, and North America having the highest prevalence (Hillis, Mercy, Amobi, & Kress, 2016).

### **British Cohorts**

In 2018, investigators in the United Kingdom obtained survey responses from a representative sample of 3,885 British adults, using a questionnaire that included items from the original ACEs study and additional items related to British health policy (Bellis et al., 2014). Although prevalence rates were slightly lower than found in the original ACEs study, many of the findings replicated the Kaiser Permanente and CDC study findings. Controlling for sociodemographic variables, ACEs incrementally increased the likelihood of major risk behaviors, with increased adjusted odds ratios of numerous health-harming behaviors for those with four or more ACEs compared with none. These outcomes included smoking (OR = 3.3), binge drinking (OR = 2.1), using cannabis (OR = 6.2), having sex before age 16 (OR = 4.8), unintended teenage pregnancy (OR = 5.9), violence victimization (OR = 7.5), violence perpetration (OR = 7.7), lifetime incarceration (OR = 11.3), and poor dietary habits (OR = 2.0).

Data from the 1958 National Child Development Study (NCDS) birth cohort provided an opportunity to assess the effects of ACE-type items on premature mortality in another large British sample (Kelly-Irving et al., 2013). The NCDS included all live births in Great Britain occurring during 1 week in 1958. A measure of ACEs was developed using items from the ACEs study in the United States and childhood adversity research in other countries (Anda, Butchart, Felitti, & Brown, 2010; Benjet et al., 2009; Dong, Anda, et al., 2004; Rosenman & Rodgers, 2004). Responses to these items were then extracted from data collected at earlier assessment periods. Death records were obtained through December 2008 for all participants who were alive at the 16-year-old assessment in 1974. Analyses were run separately for males and females and controlled for demographic variables (e.g., maternal education). Overall, premature mortality was increased in both males (57%) and females (80%) who had two or more of the study's six ACE items. This relationship remained after controlling for early adulthood mediating factors, such as social class, education level, alcohol and tobacco use, body mass index (BMI), and depression (Kelly-Irving et al., 2013). The strengths of this study include its prospective design, with ACE-type items drawn from contemporaneous observations and assessments rather than participant recall.

### **U.S. State Surveys**

An increasing number of U.S. states have added ACEs questions to their annual Behavioral Risk Factor Surveillance System (BRFSS) survey, a cross-sectional, random-digit dialing telephone survey coordinated by the CDC and conducted by state health departments. In 2011, nearly 50,000 adults in five states responded to a survey that included 11 ACEs items and other questions

assessing health risk and comorbid conditions (Campbell et al., 2016). The findings from this sample confirm previously observed patterns: ACEs are prevalent, interrelated, and have cumulative negative effects on behavior and health. Fifty-five percent of respondents reported at least one ACE. Consistent with other studies, after adjusting for age, race, gender, marital status, education, employment, income, and region, ACEs significantly increased the odds of risky behaviors (binge and heavy drinking, smoking, high-risk HIV behavior), depression, and disability caused by poor health.

As more states include ACE items in their BRFSS surveys, it becomes possible to establish population-based estimates of ACE prevalence rates, assess trends over time, and identify differences in prevalence rates by demographic, racial/ethnic group, and other characteristics. CDC researchers (Merrick, Ford, Ports, & Guinn, 2018) analyzed data from a nationally representative telephone survey of 214,157 adults in 23 U.S. states. Respondents were asked if they had experienced the following eight ACE items: physical, emotional, or sexual abuse; household mental illness; incarceration; substance use; domestic violence; parental separation or divorce. Answers yielded ACE scores from 0 to 8; the percentage that reported experiencing 0, 1, 2, 3, or 4 or more are compared with the original ACEs sample in Table 1.1. Results suggest that the prevalence of ACEs is remarkably consistent across a 20-year time period. In the most recent BRFSS survey, individuals reported having experienced 1.57 ACEs, with women reporting slightly more than men. Other groups who reported higher average ACEs included younger respondents (1.87 and 1.95 for 18- to 24- and 24- to 35-year-olds, respectively); respondents identifying as bisexual (3.14) or gay/lesbian (2.19); respondents without a high school education or GED (1.97); respondents who were unemployed (2.30), unable to work (2.33), or with less than \$15,000 in annual income (2.16); and respondents identifying as multiracial (2.52). This study provides the largest and most diverse assessment of ACE exposure in the United States available to date. It indicates an association between ACEs and adult employment and economic outcomes that parallels the ACEs associations previously observed with health behaviors and chronic health conditions.

The original ACEs findings were drawn from a middle-aged, middle-class, and well-insured sample. Recent investigations have assessed ACEs in samples with less education attainment and lower income levels, in more racially and

**TABLE 1.1. ACE Exposure in 1998 California Sample and 2018 Multistate Sample**

ACE exposure(s)	Kaiser Permanente sample 1995–1997 <sup>a</sup> ( <i>N</i> = 17,337)	BRFSS 23-state sample 2018 <sup>b</sup> ( <i>N</i> = 214,157)
0	36.1	38.5
1	26.0	23.5
2	15.9	13.4
3	9.5	8.8
4+	12.5	15.8

*Note.* ACE = adverse childhood experience; BRFSS = Behavioral Risk Factor Surveillance System.

<sup>a</sup>Data from Anda et al. (2006).

<sup>b</sup>Data from Merrick, Ford, Ports, and Guinn (2018).

ethnically diverse samples, in socially marginalized groups, and in children and adolescents (Austin, Herrick, & Proescholdbell, 2016; Baglivio et al., 2014; Balistreri & Alvira-Hammond, 2016; Koss et al., 2003; Wade, Shea, Rubin, & Wood, 2014). A growing body of research is beginning to identify similarities and differences across different population groups, providing a better understanding of how prevalence rates vary and whether the effects of ACEs have similar effects on development and health outcomes in different populations.

## **ACEs IN CHILDREN AND ADOLESCENTS**

With a few notable exceptions (Finkelhor & Kendall-Tackett, 1997), before the ACEs study was published, research on adversity in childhood typically focused on a single type of trauma or adversity, such as the effects of divorce or sexual abuse or parent substance use. More recently, investigators have incorporated multiple types of adversity, sometimes using ACEs factors and sometimes constructing similar items, to assess the proximal effects of exposure for multiple types of abuse, neglect, and family dysfunction. Outcome measures include commonly occurring health diagnoses or general health ratings (e.g., asthma), physiological responses to stress (e.g., cortisol), behavioral problems, cognitive development and learning, and emotion regulation and other aspects of executive function (attention, memory, and self-regulation).

### **ACEs in U.S. Children**

Depending on the definition of the adversity, national samples of children and adolescents in the United States revealed that an estimated 20% to 48% have experienced multiple adverse experiences (Saunders & Adams, 2014). Using the National Survey of Children's Health (NSCH) database, researchers surveyed more than 33,000 parents of 12- to 17-year-olds and found the pattern of ACEs in adolescents similar to that observed in adults (Balistreri & Alvira-Hammond, 2016). ACEs were common, with 56% having already experienced at least one; interrelated; and have cumulative effects. Each ACE experienced increased the odds of reported poor health by 9% and the odds of emotional problems by 32%. Notably, for both health and emotional problems, family functioning—as measured by self-reported positive parenting behavior, frequent parent–child interactions, and low parent stress—influenced the effects of ACEs so significantly that their negative consequences were reduced in more high-functioning families. This suggests an ameliorating effect, as we discuss in Chapter 2.

Dr. Christina Bethell and colleagues (Bethell, Newacheck, Hawes, & Halfon, 2014) also used the 2011–2012 NSCH to assess the effects of ACEs on child and adolescent (ages 6–17 years) outcomes. Prevalence rates were comparable to the analyses of 12- through 17-year-olds, with 48% of parents in this sample reporting at least one of nine ACEs for their children and 22.6%

reporting two or more. The dose–response effect on health outcomes observed in previous studies was also found for children, as were social and learning difficulties. Children with two or more ACEs were nearly 3 times more likely to have repeated a grade in school than children with no ACEs, even after adjusting for demographic and health factors. Children with two more adverse experiences were also more likely to be at high or moderate risk for developmental, behavioral, or social delays. One of the study’s more interesting findings was the significant differences in prevalence rates by state, with New Jersey reporting the lowest percentage of children with two or more ACEs (16%) and Oklahoma reporting the highest (32%). Oklahoma has a history of trauma and adversity: the Dust Bowl of the 1930s (Arthi, 2014; Egan, 2006), the Tulsa Race Massacre of 1921 (Messer, Shriver, & Beamon, 2017), and the forced relocation of Native American tribes (Evans-Campbell, 2008). This may be one reason for the high prevalence of ACEs. We discuss the effects of historical trauma on families and communities in Chapter 7 and explore the challenges and opportunities for communities as a whole to heal from ACEs.

Although originally focused primarily on poverty, Gary Evans (2003) began a longitudinal research study of low-income rural children in the early 2000s that also assessed the effects of multiple types of adversity on physiological measures of stress regulation. Parents of 9-year-olds were asked about their children’s exposure to six adverse conditions: noise, crowding, other housing problems, family turmoil, separation from family, and exposure to violence. Stress regulation (or dysregulation) was calculated from six separate measures, including three stress hormones (cortisol, epinephrine, and norepinephrine), systolic and diastolic blood pressure, and BMI. In the initial study, cumulative risk (i.e., multiple types of adversity) predicted increased physiological measures of dysregulation and psychological distress and decreased child reported self-worth and lower observed delay of gratification. Follow-up research with these children and their families found persistent effects of early adversity on physiological stress responses when the children were 13 but only for children whose mothers were low in responsiveness (Evans, Kim, Ting, Tesher, & Shannis, 2007). This again indicates the buffering effects of positive family functioning, which we discuss in later chapters.

### **ACEs in British Children**

Using prospective data from the U.K. Avon Longitudinal Study of Parents and Children, Slopen, Kubzansky, McLaughlin, and Koenen (2013) assessed whether five types of early adversity (measured at seven times between birth and 8 years of age) predicted physiological measures of stress during childhood and adolescents. In this British cohort, cumulative risk during the first 8 years of life predicted C-reactive protein, a measure of inflammation associated with adult heart disease, at 10 and 15 years by cumulative risk during the first 8 years of life. Similarly, Essex and colleagues (2011) used



salivary cortisol, a stress hormone produced by activation of the hypothalamic-pituitary-adrenal [HPA] axis, to assess the effects of multiple adversities experienced in infancy and toddlerhood on physiological stress responses in later childhood. Salivary cortisol was collected at morning, afternoon, and evening because cortisol levels normally are highest in the morning and lowest in the evening, unless dysregulated by prolonged stress exposure. Differences between morning, afternoon, and evening levels were calculated at ages 9, 11, 13, and 15 to assess deviations from the normal pattern. Results indicated that adverse experiences in infancy and early childhood were associated with either high (hyperaroused) or low (hypoaroused) cortisol responses, with less normal variation throughout the day, indicating the dysregulating effects of adversity on child and adolescent stress responses.

### **ACEs and Child Poverty**

Children growing up in poverty are at increased risk of experiencing other forms of adversity (Evans & Kim, 2007). Dr. Nadine Burke Harris (2018), whose book *The Deepest Well: Healing the Long-Term Effects of Childhood Adversity* describes her experience applying ACEs science in a low-income urban pediatric clinic, writes eloquently about the effects of trauma and adversity (N. J. Burke, Hellman, Scott, Weems, & Carrion, 2011). Chart reviews of 701 pediatric patients in this clinic revealed that two thirds had already experienced at least one of nine ACEs. Having one or more ACEs increased the risk of having a diagnosed learning or behavior problem 10-fold, and having four or more increased the risk more than 32 times.

Data from the Fragile Families and Child Wellbeing Study (FFCW) revealed a number of similar patterns affecting a sample of young children from low-income families (Hunt, Slack, & Berger, 2017). The FFCW is a population-based, longitudinal birth cohort of 4,898 children born in large U.S. cities between 1998 and 2000 (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Participants were disproportionately (3:1) nonmarital to marital births and more likely to be of minority race and/or ethnicity, with lower educational attainment and income than the general population. Eight ACEs were assessed at age 5, and behavior problems were assessed at age 9. Results revealed that three quarters of the children (77%) had at least one ACE by age 5, with parental anxiety or depression the most prevalent (44%) adversity experienced. Race and ethnic differences were observed, with Black children having the highest reported prevalence of emotional and physical abuse and parental incarceration; White children having the highest rates of parental substance abuse, anxiety, or depression; and Hispanic children having the highest prevalence of domestic violence exposure. Children with three or more ACEs were at significantly greater risk of externalizing behavior (e.g., aggression), internalizing problems (e.g., anxiety, depression), and having an attention-deficit/hyperactivity disorder diagnosis by age 9.

Also using data from the FFCW cohort, researchers (Jimenez, Wade, Lin, Morrow, & Reichman, 2016) analyzed data for 1,007 children who had



teacher-reported outcomes at the end of the kindergarten year, as well as parent-reported information on ACEs at age 5. A majority had experienced at least one ACE, and 12% had experienced three or more. After adjusting for child age, gender, race, ethnicity, family income, maternal education, and parent relationship status at child's birth, ACEs significantly predicted teacher-reported ratings of academic, literacy, and behavior problems. Compared with children with no ACEs, the odds of having teacher-reported social and behavioral problems doubled for children with three or more ACEs, and attention problems were 3.5 times greater. ACEs also significantly contributed to poorer literacy and math skills.

In one of the first longitudinal studies investigating the effects of adverse experiences assessed in infancy and toddlerhood on later school performance in childhood, McKelvey, Edge, Mesman, Whiteside-Mansell, and Bradley (2018) analyzed data from the Early Head Start Research and Evaluation Project (Raikes, Brooks-Gunn, & Love, 2013). Information collected from parents when children were 1, 2, and 3 years old was used to construct a 10-item ACEs scale. Exposure to ACEs was common in this sample of infants and toddlers, with only one out of five having no ACEs during their first 3 years. ACEs predicted school performance at age 11, with the odds of having an individualized educational program (IEP) more than double for children with three or more ACEs compared with none, and double the odds of being retained a grade for those with two or more ACEs. As was observed in older children, exposure to ACEs increased the likelihood of having clinical behavior problems, with the risk of externalizing behavior nearly 3 times higher for children with two or more ACEs and more than 5 times higher for children with three or more ACEs. Similar results were observed for internalizing problems and for being diagnosed with attention-deficit disorder during schooling.

### **Children in the Child Welfare System**

As may be expected, children whose families have been referred to Children's Protective Services (CPS) are more likely to have been exposed to abuse, neglect, and family dysfunction, even in the absence of actionable cases of abuse or neglect (Clarkson Freeman, 2014). The first National Survey of Child and Adolescent Well-Being (NSCAW I) looked at a nationally representative sample of young children whose families were investigated by CPS. The prevalence of ACEs was high, with 42% of children already having four or more ACEs during the first 6 years of life. The dose-response effect between number of ACEs and risk of later problems, previously observed in adults, was also seen in this sample. Compared with children with no ACEs, having four or more adverse experiences during the first 6 years of life increased the later childhood risk of having externalizing problems by 3.5 times, and the risk of internalizing problems increased nearly 5 times. This pattern was also found for children in the second NSCAW II cohort, collected in 2008–2009 from parents of children 18 to 71 months (Kerker et al., 2015). A decade after the first survey, an even larger percentage (98%) of children was found to have at

least one ACE, with cumulative effects on behavior problems, social development, and chronic medical conditions.

### **Children in the Juvenile Justice System**

Not surprisingly, one of the most at-risk groups of youth is those already in the justice system. Researchers in Florida used data from juvenile offenders to investigate the prevalence of ACEs and their effect on risk of reoffending (Baglivio et al., 2014). Almost 65,000 youth were included; all had received full assessment screenings and aged out of the system (turned 18) between 2007 and 2012. The 10 original Kaiser–CDC ACE categories were extracted from existing assessment data. As expected, adversity prevalence in this population was considerably higher than in nationally representative populations, with almost all teens (97% of males and 98% of females) reporting at least one ACE. Nine out of 10 males and 92% of females reported multiple ACEs, with significantly more ACEs reported by females (average of 4.29) than males (average of 3.48). Witnessing family violence was the most frequently rated adversity for both males (81%) and females (84%). As observed in other studies, ACEs had cumulative effects, with each ACE incrementally and significantly predicting reoffending risk for males and females.

### **Children From Violent Neighborhoods**

To assess the effects of ACEs in a cohort of young adults who grew up in low-income urban neighborhoods, Mersky, Janczewski, and Topitzes (2017) analyzed data from the Chicago Longitudinal Study. The cohort included 1,539 children (93% African American, 7% Hispanic), born in 1979 or 1980 to low-income urban families. Using data from public databases and surveys of parents, teachers, and participants conducted since 1985, they constructed eight ACE variables: (a) CPS record of abuse or neglect, (b) victim or witness of violent crime, (c) parent substance abuse, (d) prolonged absence of parent, (e) divorce, (f) death of close friend or relative, (g) frequent family conflict, and (h) family financial problems. The ACE items were used to predict outcomes for participants who were surveyed between the ages of 22 and 24. Prevalence of ACEs was higher than that observed in the Kaiser Permanente sample, with four of five participants experiencing at least one ACE and nearly half reporting multiple ACEs. In this sample, as seen in previous studies, ACEs had a cumulative, dose–response effect on poor health, poor mental health, and substance use.

### **Youth-Defined ACEs**

Seeking to understand the experiences that at-risk youth themselves perceive as adverse, researchers conducted and analyzed responses from a series of focus groups with 105 young adults who grew up in low-income neighborhoods in Philadelphia (Wade et al., 2014). Participants were asked to list their

five most stressful childhood and adolescence experiences. Their responses included all the traditional 10 ACEs minus having a mentally ill caregiver or divorce/separation, reporting single parenthood as a factor instead. They added a number of unique adverse experiences, with stressful family relationships the most frequently reported general category of adversity. Substance abuse in the home was also frequently mentioned, followed by death and illness of family members, single-parent homes, and violence among family members. Participants frequently commented that their families lacked love, support, strong parenting, and guidance. Neighborhood violence and crime was the second most frequent response category; it was described as persistent and pervasive. These findings suggest that different population groups may experience adversities not captured in the original ACEs questionnaires and that self-reported adversities are similar to what is captured in the original questionnaire.

## DEFINING ACEs

As seen in the Philadelphia young adult study (Wade et al., 2014), there may be childhood events and experiences not included in previous or current ACE questionnaires that have negative consequences on later health and development. These experiences may differ by culture, geography, and age of exposure. For example, the World Health Organization (2012) compiled a list of adverse childhood experiences more prevalent in developing countries and in countries experiencing internal strife or warfare. This measure, the Adverse Childhood Experiences International Questionnaire (ACE-IQ), includes many of the same items in the original ACEs questionnaire (parent mentally ill, abusing substances, or incarcerated, divorced or separated; verbal, sexual, and physical abuse). Other items tap into different types of adversities, such as peer bullying, physical fighting, witnessing community or neighborhood violence, being a refugee, or being victimized by soldiers, militia, gangs, or police. Although relatively little research has been conducted using the ACE-IQ, it remains a valuable tool for assessing communities and populations who experienced war or community violence.

Dr. Christina Bethell, director of the Child and Adolescent Health Measurement Initiative at Johns Hopkins University, and her colleagues recently identified and compared 14 methods to assess ACEs among children and families within research, population surveillance, and clinical contexts (Bethell, Carle, et al., 2017). There was considerable overlap in content among measures, and all showed cumulative effects of ACEs exposure and poorer outcomes. The authors conclude with two relevant points for researchers and clinicians alike: *Assessing ACEs is acceptable to parents and families when done in clinical and research contexts and addressing ACEs can promote healing from trauma associated with family relationships and promote resilience in children with ACEs trauma.* The therapeutic use of ACEs screening with children and families is discussed in more detail in Chapter 7.

Dr. Martin Teicher and colleagues assessed the impact that age of exposure to trauma and adversity has on various outcomes by developing and testing new items and scales (Teicher & Parigger, 2015). The Maltreatment and Abuse Chronology of Exposure (MACE) scale was developed using item response theory and evaluated with a sample of 1,051 healthy young adults. The researchers followed a rigorous process, statistically selecting and eliminating items, assessing test–retest reliability and convergent validity, identifying clinical cutpoints, making comparisons with ACEs and the Childhood Trauma Questionnaire (CTQ; Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein et al., 2003), and assessing differences in age of exposure by maltreatment type (Teicher & Parigger, 2015). The resulting scale assesses emotional neglect, nonverbal emotional abuse, parent physical abuse, parent verbal abuse, peer emotional abuse, peer physical bullying, physical neglect, sexual abuse from family or peers, witnessing interparental violence, and witnessing violence done to siblings. Items are rated by severity, and age of occurrence is noted. This scale produces two types of scores: The MACE Multiplicity score indicates the number of types of abuse or neglect, ranging from 0 to 10, much like ACE scores, and correlates .70 with ACE scores. The MACE Severity score sums individual scores and ranges from 0 to 100; it correlates .74 with the CTQ. Initial results indicated that different types of maltreatment are associated with distinct developmental patterns. These patterns exert significant effects on brain development and subsequent clinical symptomatology (Andersen & Teicher, 2008), a topic we explore in Chapter 3. Both the MACE and a related scale, the Maltreatment and Abuse Exposure Scale, which consists of 52 items without age of exposure, are available through open access to facilitate their use as research tools (Teicher & Parigger, 2015).

## **KNOWING ONE’S ACE SCORE**

Researchers, clinicians, and others working to reduce children’s exposure to ACEs or to create programs and environments that protect and help children, adolescents, and adults recover from them have an obligation to address personal childhood experiences that may help or hinder those goals. If you have not already taken the ACEs questionnaire, we invite you to do so (see Figure 1.4).

Despite the grim statistics presented in this chapter that link ACEs with negative health and developmental outcomes in large samples, ACE scores do not predict individual outcomes. ACE scores are estimates of probabilities of population risks not meant to predict individual risk. However, identifying our own ACEs can alert us to potential concerns. ACEs serve as a marker of stress we have undergone and remind us that stress may still be influencing our bodies, our brains, and our behavior. When we count our ACEs, we review the experiences that have shaped us. Reviewing these experiences is not,

**FIGURE 1.4. ACEs Questionnaire**

<b>Adverse Childhood Experiences (ACEs)</b>		
<b>While you were growing up, during your first 18 years of life:</b>		
1. Did a parent or other adult in the household often or very often: Swear at you, insult you, put you down, or humiliate you <b>OR</b> act in a way that made you afraid that you might be physically hurt?	YES	NO
2. Did a parent or other adult in the household often or very often: Push, grab, slap, or throw something at you <b>OR</b> hit you so hard that you had marks or were injured?	YES	NO
3. Did an adult or person at least 5 years older than you ever: Touch or fondle you or have you touch their body in a sexual way <b>OR</b> attempt or actually have oral, anal, or vaginal intercourse with you?	YES	NO
4. Did you often or very often feel that: No one in your family loved you or thought you were important or special <b>OR</b> your family didn't look out for each other, feel close to each other, or support each other?	YES	NO
5. Did you often or very often feel that: You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you <b>OR</b> your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	YES	NO
6. Was your mother or stepmother or father or stepfather: Often or very often pushed, grabbed, slapped, or had something thrown at her/him <b>OR</b> sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard <b>OR</b> ever repeatedly hit for at least a few minutes or threatened with a knife or gun?	YES	NO
7. Were your parents ever separated or divorced?	YES	NO
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs or prescription drugs not as prescribed?	YES	NO
9. Was a household member depressed or mentally ill or did a household member attempt suicide?	YES	NO
10. Did a household member go to prison?	YES	NO
Other? _____	YES	NO

Data from Centers for Disease Control and Prevention (2018).

or does not need to be, an invitation to reexperience terror or distress. Sometimes this occurs and is an indicator that additional support and professional guidance is needed. There are mental health resources listed in the Appendix. In most cases when we have asked groups to take the ACEs questionnaire, individuals respond with hope and gratitude—that they have endured, have coped, are resilient, and will continue to recover and heal. Specific strategies to process and move on from childhood trauma and stress are described in Chapter 5. Becoming more cognizant of physiological responses to stress and behavioral patterns that may result from childhood adversity increases self-awareness, promotes continued growth, and offers opportunities to practice compassion for the others coping with the consequences of ACEs.