Adverse early life experiences (AELEs) are social interactions experienced by infants, children, and adolescents that may be inconsistent, threatening, neglectful, frightening, traumatic, or harmful and are risk factors for poor health outcomes. They involve interactions with individuals, the social or physical environment, the community, or society in general. AELEs are more broadly associated with unstable or unsafe out-of-home environments, as well as other factors such as poverty and food insecurity, which can all contribute to the magnitude of children’s and ado-

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CME

lescents’ negative experiences. The impact of AELEs is significant since they can affect the socio-emotional development of children and adolescents and set the stage for mental health problems, which often begin by age 14.1 Risk factors for mental disorders can be malleable or non-malleable. AELEs are typically malleable; thus, negative mental health outcomes can be averted if AELEs are prevented. These social interactions involving problematic behavior of caregivers or peers interacting with the developing child, or unstable and unsafe environments that interfere with caregiving, are social determinants of poor mental health. AELEs may lead to childhood disorders, as well as disorders across the lifespan.

THE PREVALENCE OF AELEs IN THE UNITED STATES

Epidemiological studies show that AELEs are widespread.2-4 In 1998, Felitti and colleagues2 published a groundbreaking study examining responses from a self-administered questionnaire of more than 17,000 health maintenance organization (HMO) members about their early adverse experiences before the age of 18 and their current health. This was called the Adverse Childhood Experiences Study (ACE Study), and demonstrated that 10 adverse childhood experiences (ACEs), categorized as three types of child abuse, two types of child neglect, and five types of family dysfunction (Table 1)2,3,5 were common in the population: 63.6% of the respondents reported one or more ACEs (Figure 1). The Centers for Disease Control and Prevention (CDC) organized follow-up ACE studies in a group of states using a more representative population, interviewing adults through the Behavioral Risk Factor Surveillance System (BRFSS), which confirmed that ACEs were prevalent in the population (Table 1).3,4

A 2008 national survey, in which caregivers of children and adolescents were interviewed, assessed young persons’ exposure to direct and indirect violence (witnessing violence or hearing about a close family member or friend who had a serious violent encounter at home, in the community, or at school). The majority of children and adolescents were exposed to violence; for example, in the past year, more than 60% of children were exposed to direct or indirect violence, nearly 50% of children or adolescents were assaulted at least once, 25% saw a violent act, 10% witnessed a family member assault another, and 10% experienced child maltreatment. Multiple victimizations were also common.6

According to reports from state child protective agencies, in 2011, of 3,000,000 children upon whom reports were made, an estimated 681,000 children in the U.S. were victims of substantiated abuse and neglect.7 AELEs also occur outside of the home, for instance, in schools, where bully-

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**TABLE 1. Prevalence of Adverse Childhood Experiences in Three Studies**

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>ACE Study</th>
<th>CDC Behavioral Risk Factor Surveillance System, 5-State ACE Study</th>
<th>CDC Behavioral Risk Factor Surveillance System, 10-State ACE Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>17,337</td>
<td>26,229</td>
<td>53,998</td>
</tr>
<tr>
<td>Study site(s)</td>
<td>San Diego, CA</td>
<td>AR, LA, NM, TN, WA</td>
<td>DC, HI, ME, NE, NV, OH, PA, UT, VT, WA, WI</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>28.3%</td>
<td>14.8%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Sexual abuse</td>
<td>20.7%</td>
<td>12.2%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Emotional abuse</td>
<td>10.6%</td>
<td>25.9%</td>
<td>35.1%</td>
</tr>
<tr>
<td>Parents separated/divorced</td>
<td>23.3%</td>
<td>26.6%</td>
<td>28.1%</td>
</tr>
<tr>
<td>HM with an alcohol or drug problem</td>
<td>26.9%</td>
<td>29.1%</td>
<td>21.7% (alcohol) 9.4% (drug)</td>
</tr>
<tr>
<td>HM with a mental illness</td>
<td>19.4%</td>
<td>19.4%</td>
<td>16.4%</td>
</tr>
<tr>
<td>HM incarceration</td>
<td>4.7%</td>
<td>7.2%</td>
<td>5.9%</td>
</tr>
<tr>
<td>HM intimate partner violence</td>
<td>12.7% (mother only)</td>
<td>16.3%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Physical neglect†</td>
<td>9.9%</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Emotional neglect†</td>
<td>14.8%</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*10 States and the District of Columbia.
†Questions included only in ACE Study Wave 2 (n = 8,667).

ACE Study = Adverse Childhood Experiences Study; CDC = U.S. Centers for Disease Control and Prevention; HM = household member.
ing is commonplace. Children living in foster care (400,540 in 2011), in homelessness (1,600,000 in 2010), or in other unstable environments (eg, juvenile detention, post–man-made or natural disaster, or as refugees) are at even greater risk for AELEs due to repeated maltreatment, separations, irregular school attendance, and compromised care from their caregivers, who themselves are often traumatized and stressed.

AELEs AS A SOCIAL DETERMINANT OF MENTAL HEALTH

The ACE Study Pyramid (Figure 2) was the conceptual model for the ACE Study. It demonstrates the progression from ACEs to adolescent risk behaviors; to adult disease, disability, and social problems; and finally, to premature death. The blue arrows indicate “scientific gaps” regarding the characteristics of early risk factors that might lead to later health and mental health outcomes. Research from the ACE Study has since determined that particular ACEs, or multiple ACEs, are risk factors for a range of eventual health and behavioral problems, such as depression, alcoholism, hallucinations, and suicide attempts. In addition to the individual association between ACEs and later mental health outcomes, there was a cumulative effect whereby greater numbers or clusters of ACEs were associated with an increased risk of negative health and mental health outcomes over one’s lifetime, as well as a shorter life expectancy. With an increasing number of ACEs, risk for mental disorders such as depression increased in a graded fashion. Suicide attempts increased even more steeply as ACEs increased (Figure 1). Further studies confirm the associations between AELEs and poor mental health outcomes. The link between child sexual abuse and adult mental disorders is well documented. A 2012 meta-analysis reviewing 124 studies, including 16 prospective studies in high-income countries, established that physical abuse, emotional abuse, and neglect were also strongly associated with poor behavioral health outcomes, namely depressive and anxiety disorders, drug abuse, suicidal behaviors, sexually transmitted infections,
and risky sexual behavior (Table 2).16 These findings validate conclusions from the ACE Study, associating maltreatment with a number of poor mental health outcomes. Whereas specific types of abuse have been studied in relation to specific psychiatric diagnoses, recent research moves beyond accepted diagnostic categories to include psychological distress and dysfunction more broadly.17

Researchers at the National Scientific Council on the Developing Child have described how AELEs can lead to toxic stress, a pathway to biological changes that can lead to poor mental health.18 They report that toxic stress “results from intense adverse experiences that may be sustained over a long period of time,” such as childhood maltreatment.19 This activates a prolonged stress response, which can lead to changes in brain development, the hypothalamic-pituitary-adrenal (HPA) axis, the immune response, structures in the brain, and gene expression.18,19 There has been tremendous growth in research in the past two decades exploring biological changes induced by stress in childhood.18,20-23 Protective factors, such as having nurturing adults in a safe and predictable environment, can lessen this impact by reducing the stress reaction.18,19 The CDC emphasizes the importance of promoting safe, stable, and nurturing relationships as a way to reduce the social determinants that lead to toxic stress and subsequent poor mental health outcomes.24

**AELEs AT THE CLINICAL LEVEL**

Ms. Rachel Jones, a 19-year-old mother who is 3 months postpartum, is referred to Dr. Lois Adams, a psychiatrist in an urban community health center, because of depression. Her symptoms include fatigue, insomnia, loss of appetite, tearfulness, poor concentration, and irritability. She worries about her ability to care for her infant, Andrew, as she has not been able to return to work since he was born. For the past year, Ms. Jones has been living with her boyfriend, who contributes to the rent; however, the couple has financial difficulties and has recently been arguing more frequently.

In obtaining a psychosocial history with Ms. Jones, Dr. Adams evaluated her exposure to AELEs such as child abuse and family dysfunction, as well as her exposure to interpersonal violence. Dr. Adams determined that Ms. Jones’ father likely had an alcohol use disorder, and Ms. Jones had been subjected to threats, insults, and criticisms from her father throughout her childhood. Ms. Jones also witnessed her father physically abusing her mother during childhood. Furthermore, Ms. Jones’ mother has a history of recurrent depression. Ms. Jones therefore had the following AELEs: a history of witnessing interpersonal violence between her parents, emotional abuse from her father, her father having had a substance use disorder, and her mother having suffered from depression.

This cluster of AELEs increases her risk of suicide attempts, depressive disorders, and substance use disorders. Ms. Jones had no history of previous depression or suicide attempts, no history of manic or hypomanic episodes, and no history of substance use disorders. Ms. Jones’ postpartum depression could put Andrew at risk for neglect if there are no other caregivers in her household. Given the multiple AELEs, it may be important to involve her family in the evaluation to determine her social supports and their need for individual or family interventions. Moreover, referral to a social worker is indicated to explore financial assistance.

Immediate therapeutic intervention involves treating Ms. Jones for her postpartum depression with psychotherapy and/or medication and ensuring health check-ups for Andrew. For follow-up, Ms. Jones receives ongoing care with a mental health professional for treatment and monitoring of her depression and for ongoing support around her relationship with her baby.

Based on Ms. Jones’ history of AELEs, preventive interventions are

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*Figure 2. The Adverse Childhood Experiences Study Pyramid. (From US Centers for Disease Control and Prevention)*
indicated. Since she may be at risk for maltreating Andrew, preventive interventions recommended are nurse home-visiting, parent skills training by a pediatric nurse, or a parent support group in a clinic or community setting. Home-visiting programs associated with child care centers and family support programs have been shown to be effective in promoting healthy development among at-risk mothers and their children.25

Overall, it is important for psychiatrists to be prevention-minded by being proactive in reducing potential risk factors and promoting protective factors.26 Routinely, psychiatrists can keep in mind the importance of screening for AELEs, and if such risk factors are present, pay special attention to the possibility of poor mental health outcomes such as suicide attempts, substance use disorders, and depression. Always considering an intergenerational approach, it is worthwhile to evaluate family members of patients who may be at risk for a mental disorder or substance abuse and implement appropriate interventions for them, as well. If there is a history of a substance use disorder, presence of interpersonal violence should be explored. Screening for depression, smoking, and substance abuse should be done regularly in pregnant and postpartum women given that depression is often overlooked, smoking is harmful to the fetus and thus later to the child, and alcohol abuse can lead to fetal alcohol syndrome.

Trauma-focused cognitive-behavioral therapy has been shown to be an effective treatment for children and adolescents diagnosed with posttraumatic stress disorder or other significant behavioral problems following trauma.27 The principles of trauma-informed care used in public service settings for those experiencing complex trauma can be adapted more widely.28,29 Finally, collaborating with other professionals (eg, nurse practitioners who can provide parent skills training or social workers who can help patients connect to needed services) is advisable.

**AELs AT THE SOCIETAL LEVEL**

The widespread prevalence of AELEs and their contribution to the development of poor mental health and mental illnesses highlights the importance for society to prevent abuse, neglect, family dysfunction, and violence. AELEs not only lead to personal suffering of children and adolescents, but also contribute to lifelong health disorders, which in turn lead to personal suffering for those individuals as adults as well as their families. These disorders, such as substance use disorders and depression, may also compromise school and work performance. The economic burden is two-fold, represented by the loss of productive workers and the cost to society of providing mental health care to these individuals and their families. Furthermore, those having experienced AELEs may be at risk for transmitting their problems from one generation to the next by perpetrating abuse in their own families.

What can clinicians do, given the prevalence of AELEs and the need for additional interventions beyond the walls of the clinic? Mental health providers can play a policy role, advocating to their professional societies to promote practice guidelines to screen for AELEs among their patients. Additionally, they can practice and train other mental health professionals in trauma-informed care.

Working with communities, an important first policy step would be to educate the public about the prevalence of AELEs and their risks to society — in particular, how toxic stress can lead to serious lifelong mental health problems. Such education can motivate people to advocate for prevention. A next step would be to educate policy makers about the need to expand effective preventive interventions and enact and sustain policies to better protect children from abuse and violence. Finally, with adequate resources and policies in place, the goal would be to scale-up programs that promote safe, stable, and nurturing environments for all infants, children, adolescents, and

| Physical Abuse | Depressive Disorders | 1.54 (1.16-2.04) | Drug Use | 1.92 (1.67-2.20) | Suicide Attempts | 3.40 (2.17-5.32) | Sexually Transmitted Infections and Risky Sexual Behavior | 1.78 (1.50-2.10) |
| Emotional Abuse | Depressive Disorders | 3.06 (2.43-3.85) | Drug Use | 1.41 (1.11-1.79) | Suicide Attempts | 3.37 (2.44-4.67) | Sexually Transmitted Infections and Risky Sexual Behavior | 1.75 (1.49-2.04) |
| Neglect | Depressive Disorders | 2.11 (1.61-2.77) | Drug Use | 1.36 (1.21-1.54) | Suicide Attempts | 1.95 (1.13-3.37) | Sexually Transmitted Infections and Risky Sexual Behavior | 1.57 (1.39-1.78) |

Adapted from Norman et al24

**TABLE 2.**

**Associations Between Adverse Early Life Experiences and Mental Health Outcomes, Odds Ratios, and 95% Confidence Intervals: Results from a Meta-Analysis of 124 Studies**

Routinely, psychiatrists transmitting their problems from one to the next can keep in mind the importance of screening for AELEs and the need for additional interventions beyond the walls of the clinic? Mental health providers can play a policy role, advocating to their professional societies to promote practice guidelines to screen for AELEs among their patients. Additionally, they can practice and train other mental health professionals in trauma-informed care.

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their caregivers. Indeed, all sectors of society — such as local communities, government, education, health, criminal justice, faith, and media — should embrace evidence-based and promising programs and policies that can reduce the risk for lifelong mental, emotional, and behavioral disorders. Robust leadership efforts are needed at the national, state, and local level. For example, psychiatrists can promote the expansion of evidence-based programs such as the Nurse Family Partnership, a home-visiting program for at-risk pregnant women lasting through the child’s second birthday, as well as quality early childhood education such as the High/Scope Perry Pre-School Program, which is associated with many Head Start Programs. Evidence-based anti-bullying programs and policies should be more universally adopted in schools across grade levels. Other examples of preventive interventions are given in detail in the 2009 National Research Council and Institute of Medicine report, Preventing Mental, Emotional, and Behavioral Disorders Among Young People.

CONCLUSIONS

AELEs are social determinants of poor mental health and mental disorders throughout the lifespan. The pioneering ACE Study and subsequent prevalence studies demonstrated that ACEs within the household before the age of 18 are very common. The more ACEs experienced by young people, the higher their risk of physical and mental health disorders throughout their lifespan. AELEs also are common in neighborhoods through direct and indirect exposure to violence and victimization, and in schools through bullying. Furthermore, unsafe and unstable environments, such as homelessness and juvenile detention settings, are AELEs and social determinants of mental health.

Whereas AELEs are social determinants of mental disorders, there are macro-level social determinants such as poverty, income inequality, racial discrimination, and poor access to health care that also contribute to ongoing adverse experiences. Mental health professionals are in a position to reduce and address AELEs through clinical and societal approaches. Above all, clinicians should be prevention-minded in daily practice, because reducing and addressing AELEs will not only improve the mental health of their patients, but also that of the next generation and of society in general.

REFERENCES


