

204: Adverse Childhood Experiences Part 2: Measurement, Impact on Future Mental Health, Dissociation, and Timing of Trauma

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In this week's episode of the podcast, we will continue our discussion regarding adverse childhood experiences (ACEs) and their influence on the development of future mental health disorders. The greatest predictive factor of the relationship between ACEs and future mental health disorders has to do with the severity, duration, and number of traumatic events. We'll explore the Childhood Trauma Questionnaire and the data of how ACEs increase the risk of certain personality disorders and psychiatric conditions.

Current Evidence for ACEs Increasing Risk of Mental Health Disorders

We focus on prospective longitudinal studies that use a third-party (such as official documentation, parent, etc.) to verify ACE exposure, as retrospective and prospective reports show only moderate agreement ($r = .47$, $p < .001$; weighted Kappa = .31, 95% CI: .27–.35) ([Reuben et al., 2016](#)). However, it is worth mentioning that third-party verification leads to underreporting of ACEs ([Teicher et al., 2016](#)). In clinical experience, much trauma is never reported to anyone and held for decades before any disclosure to a mental health professional.

Due to heterogeneity in the literature and the limited use of the original ACE questionnaire, the term "ACEs" will apply to maltreatment and not to the specific ACEs in order to reflect the way it is used throughout the current literature.

The most commonly used self-report questionnaire is the Childhood Trauma Questionnaire (CTQ), which assesses five types of maltreatment experiences—emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect—using a Likert-scale approach. While this scale misses several elements detecting household dysfunction (substance abuse in the family, mental illness in the household, witnessing domestic violence, or having a family member in prison), it gains a greater discernment of maltreatment frequency, as opposed to the dichotomous approach with the ACE questionnaire.

Various mental health diagnoses have a higher odds of occurring with just one ACE:

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| Diagnosis | OR with one ACE |
|--------------------------------|---|
| SUD | 1.3-4.3 (prospective) ^{1,2,3} |
| Psychotic Disorder | 1.65-2.8 (prospective) ^{4,5} |
| Unipolar Depression* | 1.85-2.0 (prospective) ^{6,7} |
| Anxiety Disorder | 1.9-3.2 (prospective) |
| Cluster A Personality Disorder | 1.5 (cross-sectional) |
| Schizotypal | 2.28 |
| Schizoid | 1.32 |
| Cluster B | 2.0 (cross-sectional) |
| Borderline | 2.35* (cross-sectional); 1.61 (prospective) |
| Narcissistic | 1.74 |
| Histrionic | 1.38 |
| Antisocial | 2.23 |
| Cluster C | 1.17 (cross-sectional) |
| Avoidant | 1.17 (ns) |
| Dependent | 0.98 (ns) |
| Obsessive-compulsive | 1.16 (ns) |
| PTSD | 1.8-2.2 (prospective) ^{8,9} |
| cPTSD | 1.6 (cross-sectional)* |

Experiencing *just one ACE increases risk for a lifetime psychiatric diagnosis by about two-fold.*
**notice how only one ACE does not increase cPTSD or BPD more than other disorders (see below for the jump when multiple ACEs are added together).*

ACEs also increase the risk for earlier substance use (Cannabis: [Mills et al., 2017](#); alcohol/cannabis: [Yoon et al., 2020](#)), more frequent and problematic use ([Mills et al., 2017](#); [Yoon et al., 2020](#); [Widom et al., 2006](#)), and polysubstance use ([Shin, 2012](#); [Davis et al., 2021](#)).

The odds ratio for psychotic disorders is 1.65-2.8, suggesting that genetics as well as ACEs can contribute to the development of schizophrenia.

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A cross-sectional study of over 34,000 participants by [Afifi et al. \(2011\)](#) has been one of the best studies to date that demonstrates the association between ACEs and personality disorders. Results from this study showed that experiencing a single ACE is associated with a greater likelihood of developing a personality disorder, even when controlling for sociodemographic characteristics, or other diagnoses (such as mood disorders or substance use disorders). These numbers only reflect one ACE. A meta analysis of 97 studies (mostly cross-sectional) on patients with borderline personality disorder (BPD) by [Porter et al. \(2020\)](#) showed that participants with BPD were 13.91 (CI 11.11-17.43; $p < 0.001$) times more likely to have experienced any form of adversity compared to other participants, including participants with other mental health diagnoses.

A thoughtful and holistic treatment approach is necessary to help minimize the impact of adverse childhood experiences.

To our knowledge, there are no prospective studies assessing bipolar disorder diagnosis. However some studies suggest ACEs are associated with earlier onset, worse affective and psychotic symptoms, and higher likelihood of rapid cycling ([Agnew-Blais et al., 2016](#)).

ACEs increase risk for psychiatric diagnosis in a dose-dependent manner

There are few prospective studies reporting the impact of multiple (i.e., 4 or more) ACEs. One might hypothesize that more ACEs might lead to more challenges throughout the lifetime.

A handful of prospective cohort studies on SUD and psychosis show that for each additional ACE, the likelihood of experiencing either of these disorders increases by about 20-70% ([Croft et al., 2019](#); [LeTendre and Reed, 2017](#)).

Meanwhile, for depression, a monumental meta-analysis of cross-sectional studies by [Humphreys et al. \(2019\)](#) looked at how CTQ scores correlate with depression diagnosis and depression symptoms. Pooling 39 studies, total CTQ scores had a pooled effect size of 1.07 (.95-1.19) for predicting lifetime diagnosis of depression, and pooling 70 studies showed a Z-correlation of .35 between CTQ and depressive symptoms. In other words, for each 1 standard deviation increase in total CTQ scores, depression scores are expected to increase by .35 standard deviations. Of note, emotional abuse and emotional neglect had the strongest associations. One study found emotional neglect was specifically linked to anhedonic depression. Think of emotional abuse as leading to a negative internalized self-reflective stance.

Similarly, a cross-sectional study of over 29,000 adolescents from the 2016-2017 National Survey of Children's Health (NSCH) on the likelihood of a current mental health disorder

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diagnosis according to parental report ([Bomysoad and Francis 2020](#)). The results showed a dose-dependent increase in psychiatric disorder diagnosis:

Table 2

Adjusted odds ratio of current mental health conditions by ACE score compared to no ACEs

| Outcome by ACE score | Odds ratio (95% CI) |
|-----------------------------|---------------------|
| One ACE | |
| Depression | 2.38 (1.80–3.13) |
| Anxiety | 2.00 (1.65–2.41) |
| Behavioral/conduct problems | 1.78 (1.24–2.56) |
| ADHD | 1.43 (1.15–1.80) |
| Substance use disorder | 5.29 (1.46–19.18) |
| Two ACEs | |
| Depression | 3.94 (2.95–5.26) |
| Anxiety | 2.54 (2.03–3.16) |
| Behavioral/conduct problems | 2.50 (1.69–3.71) |
| ADHD | 1.91 (1.47–2.49) |
| Substance use disorder | 3.96 (1.06–14.80) |
| Three ACEs | |
| Depression | 6.50 (4.65–9.09) |
| Anxiety | 4.75 (3.60–6.27) |
| Behavioral/conduct problems | 3.57 (2.38–5.35) |
| ADHD | 2.80 (2.04–3.78) |
| Substance use disorder | 8.95 (2.39–33.53) |
| Four or more ACEs | |
| Depression | 10.27 (7.81–13.50) |
| Anxiety | 5.37 (4.27–6.76) |
| Behavioral/conduct problems | 7.44 (5.00–11.06) |
| ADHD | 4.14 (3.12–5.48) |
| Substance use disorder | 15.71 (4.41–55.91) |

ACE = adverse childhood experience; ADHD = attention-deficit/hyperactivity disorder; CI = confidence interval.

- ACEs are linked to more severe psychiatric symptoms ($g = .2$ for depression), more psychiatric comorbidities, earlier onset, and increased suicidality ([Lippard and Nemeroff, 2020](#); [Childhood Trauma Meta-Analysis Study Group, 2022](#)).
- Within the data, there is no consistent association between a specific type of ACE and a specific coinciding psychiatric disorder. For instance, some authors break down ACEs into threat vs. deprivation (abuse vs. neglect), and findings have been largely inconsistent. Other studies suggest that all forms of ACEs

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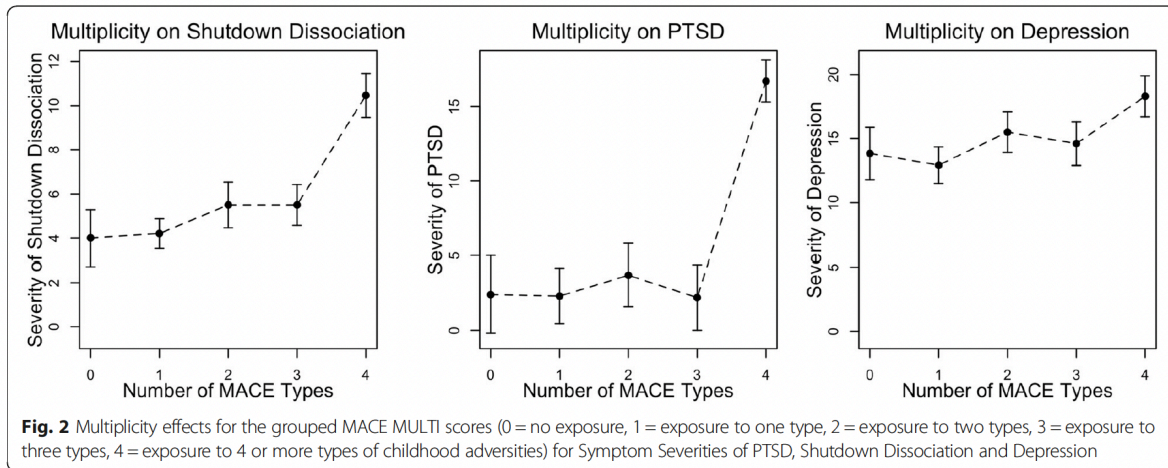
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increase risk for affective disorders ([Norman et al., 2012](#)). This may suggest that the dose is most predictive.

- In a study looking at type and timing, [Schalinski et al., 2016](#), found that:
 - Childhood trauma that starts earlier has a longer duration, therefore could lead to a more severe psychiatric symptoms in adulthood
 - Shutdown/dissociation (two main sensitivity periods age 3-6 and 12-14)
 - Physical neglect at age 5 Highest importance
 - Age 3-5 associated with hippocampus development, especially vulnerable for later dissociation/PTSD
 - Emotional neglect age 4, 6, 8, 13 had predictive strength
 - Non-verbal emotional abuse age 14
 - Sexual abuse age 12
 - Depression
 - Emotional neglect age 9 was peak impact
 - Sexual abuse age 12
 - PTSD: two sensitivity periods ages 5-6 and 12-16
 - Physical neglect age 5
 - “When considering physical neglect for a 2-year window (age 5–6, importance $M = 4.16$, $SD = 1.95$), the predictive strength of physical neglect at ages 5–6 for PTSD symptoms was not better than the predictive strength of MACE overall severity ($t_9 = 0.34$, $p = .721$) or multiplicity ($t_9 = 0.62$, $p = .552$).”
 - Meaning- it was as important. Key to PTSD is MACE overall severity, physical neglect 5-6 and MACE multiplicity.
 - Emotional neglect age 6, 14, 16
 - Sexual abuse age 12
 - Non-verbal emotional abuse age 14
 - As you can see in Fig. 2 below, there is a step up in dissociation/PTSD with increased ACE types. Notice this is not a linear effect.

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- However, other studies report different effects with respect to timing and type of ACE (see [Herzog and Schmahl, 2018](#)).

Consider the patient's developmental stage when the traumatic event occurred, and how this exposure may have impacted the life trajectory. For instance, maybe a 5-year-old who experienced emotional neglect and emotional abuse could disrupt the development of critical social skills as the child is entering into kindergarten or grade school, and throughout the lifespan. A child lacks coping skills to handle a traumatic event, therefore trauma disrupts normal development. An individual with childhood trauma may turn to maladaptive coping mechanisms later in life, as they never learned how to properly cope with extreme stress.

Following severe trauma, individuals may lose their sense of identity. Trauma is often associated with "fight-or-flight mode", or dissociation. It is important to help the patient explore their personal narrative and understand what helps them make sense of their lives. We don't want the patient to be stuck seeing themselves through their mental health disorder. Helping patients identify and relate to their positive attributes can help rebuild a stable sense of self. As mental health providers, we help our patients identify their strengths, abilities, spiritualities, creativities, so that they are able to live a healthy, meaningful and productive life.

How could ACEs increase risk for all forms of psychiatric disorders?

In summary, adverse childhood experiences result in an increased risk for mental health diagnoses across the lifespan. One might expect ACEs to play a role in the later onset of PTSD or BPD. However, based on the above review, we note that ACEs also have an impact on psychotic illnesses, substance use disorders, mood disorders, and personality disorders. Emotional abuse and emotional neglect in childhood are strongly associated with a depression diagnosis. Furthermore, there is increased risk for borderline personality disorder in association

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with five or more different types of trauma. Based on our review, a greater number of ACEs leads to a greater risk of mental health challenges. Understanding the impact of childhood trauma can help mental health providers reframe the meaning of patients' maladaptive behaviors. These behaviors often function as powerful coping mechanisms, allowing individuals to escape the lingering effects of trauma.

As mental health providers, engaging with empathy, fostering a strong therapeutic alliance, and establishing a safe environment not only opens the door to difficult conversations, but also plants the seeds for profound personal growth. In this collaborative journey, our aim is to help our patients achieve their mental health goals, and also to help them find the strength to lead a life rich with purpose, meaning, and personal fulfillment.

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