

Trauma across generations: A novel look at Adverse Childhood Experiences using the Behavioral Risk Factor Surveillance System

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INTRODUCTION

- The adverse childhood experiences (ACEs) study was one of the first to demonstrate the robust, life-long effects of family dysfunction, child maltreatment, and neglect during childhood.
- The initial study of well-educated, middle-class adults indicated that early life traumatic events are common and frequently co-occur with more than 66% reporting having at least 1 ACE and over 20% with 3 or more.
- Subsequent studies representative of the general population have identified higher rates of 3 or more ACEs.
- There is a dose-response relationship with the ACEs accumulated and a range of adverse health outcomes
- The effects of ACEs appear to drive lasting behavioral and biological adaptations that may increase the risk for ACEs in future generations.

METHODS

- We performed cross-sectional analysis of data from the 2020 Behavioral Risk Factor Surveillance System (BRFSS).
- To assess trends in ACEs by year of birth, we summed the ACE items from the BRFSS ACEs module and calculated the mean number of ACEs by reported participant age with survey design and sampling weights provided by BRFSS.
- To determine participants' year of birth, we subtracted the reported age from the survey year (2020).
- We then used an autoregressive integrated moving average (ARIMA) to forecast the birth year when US residents surpass a mean of 3 cumulative ACEs—a benchmark in which multiple studies have shown the disparities in comorbid diseases and disrupted education increases significantly.

RESULTS

- Of the participants reporting ACEs (n=116,378; N=63,076,717), the average number of participants per yearly age from 18-79 was 1714.6 (SD=535.9) and 10,071 respondents in the 80+ grouping.
- The mean number of ACEs reported by participants 80 years or older (born in or before 1940) was 0.79 (95%CI 0.74-0.85), while the highest ACEs were reported by respondents who were 22 years of age (born in 1998; Figure 1).
- The forecasted model shows that individuals born in 2018 will, on average, surpass a cumulative of 3 ACEs.

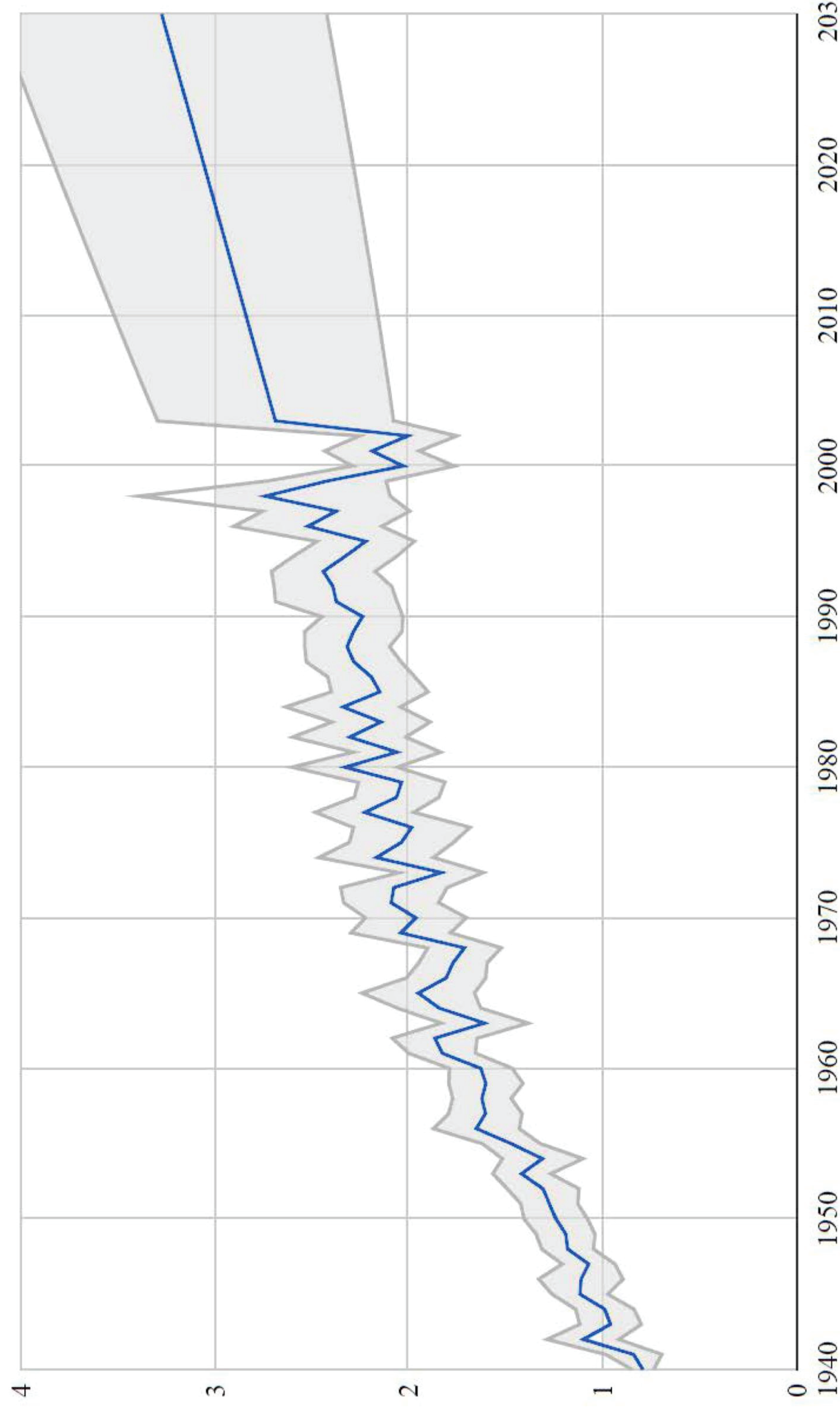


Figure 1. Mean ACEs of respondents from 2020 BRFSS aged 18-80+ plotted by year of birth in the United States with forecasting to 2030.

CONCLUSION

- The accumulation of ACEs across the past 80 years supports behavioral and biological theories regarding the transmission of intergenerational trauma.
- Further, these analyses estimate that U.S. children born in 2018 will, on average, experience more than 3 ACEs.

CLINICAL IMPLICATIONS

- Implementation of resilience practices is necessary in order to prevent the continued intergenerational accumulation of ACEs and associated mental and physical comorbidities. CDC Guidelines for
- Preventing ACEs including strengthening economic support to families, teaching skills (social-emotional learning, parenting, healthy relationships) to families, and early intervention by trauma-informed primary care and victim-centered services may affect this trajectory.
- Not all children exposed to ACEs experience poor health outcomes; indeed, future research target inclusion of measures and interventions on protective factors associated with resilience.

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