

EDITORIAL

Child Maltreatment as a Root Cause of Mortality Disparities

A Call for Rigorous Science to Mobilize Public Investment in Prevention and Treatment

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Child maltreatment is a debilitating problem and a global public health issue.¹ According to the World Health Organization, 1 in 4 adults report having been physically maltreated and 1 in 5 women disclose having been sexually abused in childhood.



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The extent of the problem is even larger when considering neglect as well as psychological and emotional abuse, affecting more than half of the population in many parts of the world.² The child who is exposed to maltreatment may experience immediate physical injuries (eg, brain injury, fractures, bruises, and burns) as well as increased risk for longer-term suicide attempts; psychosocial, behavioral, and mental health disorders (eg, depression, anxiety, and/or substance abuse); chronic health conditions (eg, obesity-related diseases³; cancer, fibromyalgia, and ischemic heart disease²; and risk for psychosexual and reproductive health problems (eg, teen pregnancy and/or sexually transmitted diseases⁴). Evidence even suggests that child maltreatment can influence clinical symptoms and course of illness as well as treatment response in mental disorders,⁵ highlighting that disorders that have manifested in the context of child maltreatment may be biologically distinct. Overall, the child maltreatment-morbidity connection makes up a large fraction of the global burden of disease. The economic burden is estimated at \$124 billion aggregate, which includes loss of productivity and educational and adult health services.⁶ In this issue of *JAMA Psychiatry*, Chen et al⁷ extend current knowledge and add a novel end-of-life view, suggesting that childhood maltreatment is associated with all-cause mortality in women, indicating a grim end to lifelong sequelae.

Since the landmark Adverse Childhood Experiences study began,⁸ an ever-growing body of research has suggested that childhood maltreatment can exert a major effect on etiology of late-life physical and mental health diseases.^{3,9} While reports of childhood deaths/fatalities as a direct consequence of the abuse exist,² whether the same adverse exposures can also predict reduced longevity in survivors has not yet been extensively clarified, despite a few previous attempts.^{3,10} Chen and colleagues,⁷ by using retrospective reports in the 20-year longitudinal survey of Midlife Development in the United States study, observed associations between childhood physical and emotional abuse and the risk of all-cause mortality in women, but not in men. Findings further suggest that both physical as well as emotional types of abuse are related to all-cause mor-

tality and that increasing types of abuse can result in greater risk of premature death. The study also indicates that the increased mortality risk cannot be explained by childhood socioeconomic status, personality traits, or adult depression, raising important questions about underlying mechanisms and possible points of intervention.

There are several pathways by which childhood physical and emotional abuse can lead to early mortality. Most obvious perhaps is that the ramifications of increased physical and mental health problems include reduced longevity. A second route can be through adoption of negative health risk behaviors, such as drug and alcohol abuse, as a means to cope with unresolved trauma. From a biological health standpoint, the early-life programming of biological systems suggests a life-long trajectory of increased morbidity. For example, the developmental-origin-of-health-and-disease model indicates that adverse conditions during early development are associated with increased risk of cardiovascular disease, cognitive problems, and early mortality.¹¹ This biological embedding is likely mediated by stable epigenetic modifications,¹¹ leaving a fingerprint that can result in an enduring phenotype of dysfunctional physiological and neurobiological function. This biological embedding may also help to explain the wide variation in evidence-based treatment response among survivors of child maltreatment. Although much research is needed to elucidate plausible mechanisms, Chen et al⁷ put forth the premise that child maltreatment is a chief contributor of reduced longevity, but only for women. There may be several reasons for this sex specificity that have yet to be explored. From an evolutionary, life-history perspective, organisms facing risks that could reduce their chances of surviving to reproductive age should, if possible, accelerate their development and thereby increase their prospects of passing on genes to future generations before becoming unable to do so owing to an early death.¹² Ultimately, the organism trades off longer-term health costs involved in accelerating development for increased probability of reproducing before dying. In this context, the biological embedding of child maltreatment may interact with this life-history perspective to amplify accelerated biological processes, such as increased rate of telomere shortening, placing women survivors of child abuse at increased risk of early mortality.¹³ This is a theoretical proposition that has not yet been tested in humans. Of note, only a subset of child maltreatment survivors experienced increased morbidity and reduced longevity, highlighting the possibility for indicators of

resilience, genetic insusceptibility, and other aspects of adaptive functioning that are likely involved in this differential response.

A notable limitation in the study by Chen et al⁷ includes the retrospective assessment of child maltreatment. Recall bias, inaccurate descriptions of abuse, lack of information regarding age at onset, or developmental periods of exposure can undermine strong inference. Furthermore, retrospective vs prospective measures of adverse childhood experiences may predict different outcomes and can correlate with personality factors.¹⁴ To increase the validity of the findings, there is a need for a prospective, longitudinal evaluation beginning very early in life. While a few cohorts exist with assessments of early-life childhood abuse, decades are needed to document associations with all-cause mortality outcomes. Comparative analyses using animal models may provide a more rapid and controlled investigation. There are some promising animal models where maternal deprivation and stress adaptively have been examined¹⁵; however, animal studies are limited because there are aspects of maltreatment that have not yet been operationalized (eg, emotional abuse), thus limiting the translational properties of this work. Until future research can replicate the findings of Chen et al⁷ in existing prospective cohorts, the field will continue to rely on retrospective reports for clues that will help illuminate the avenues for mortality risk experienced by maltreatment survivors.

The Chen et al article⁷ underscores the fact that we need to generate new knowledge that will fill critical gaps in what is known about mechanisms involved in deleterious outcomes for children who have been abused. Gaps will be ad-

ressed by assembling large cohorts, obtaining pristine baseline data that can bolster strong inferences, characterizing biological embedding as a mechanism of maldevelopment, gathering multilevel biopsychosocial data that can illuminate the most potent targets for intervention, tracking outcomes, and demonstrating the costs of maltreatment. Furthermore, interventions implemented during sensitive developmental periods early in life may yield a higher efficacy and economic return through potential long-term programming of adaptive responses. Late-life interventions, on the other hand, may have to focus on reversibility of biological embedding processes. These scientific strategies may evoke change in the health and development trajectories for survivors, mobilize public investment in child maltreatment prevention and treatment, and accelerate the translation of science to practice. Standard trauma treatments are largely focused on reducing posttraumatic stress disorder symptoms and behavior problems. The Chen et al article⁷ clearly demonstrates that survivors experience maladies that go beyond these current foci, suggesting that, in addition to behavioral and mental health treatment, there should be periodic assessments of health status and health habits to help eradicate health and mortality disparities for survivors over the life course. A comprehensive, multilevel approach will point to new areas of intervention that will promote the long-term global well-being of survivors and improve the probability that they can lead healthy, productive lives. The Chen et al article⁷ is an impressive step in calling for policy makers and society at large to adopt an obligation to eradicate these life-long inequities for survivors of child maltreatment.

ARTICLE INFORMATION

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