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Pathways linking childhood maltreatment and adult physical health☆

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ABSTRACT

Objectives: This study examined whether a self-reported history of childhood maltreatment (physical, emotional, and sexual abuse and physical and emotional neglect) is related to poor adult physical health through health risk behaviors (obesity, substance dependence, and smoking), adverse life events, and psychological distress.
Methods: Two hundred and seventy nine (279) women aged 31–54, primarily poor, urban, and African American with a history of substance use during pregnancy, were assessed for perceived physical health status using the Health Status Questionnaire (SF-36) and any reported chronic medical condition. Hierarchical multiple and logistic regression were used to test mediation, as well as to assess relative contributions of multiple mediators on physical health.
Results: More than two-thirds ($n = 195$, 70%) of the sample reported at least 1 form of childhood maltreatment, with 42% ($n = 110$) having a lifetime history of substance dependence and 59% ($n = 162$) having a chronic medical condition. Controlling for age, education, and race, childhood maltreatment was related to increased likelihood of lifetime history of substance dependence (OR = 1.19, 95% CI = 1.01–1.39), more adverse life events ($\beta = .14$), and greater psychological distress ($\beta = .21$). Psychological distress and adverse life events partially mediated the relationship between childhood maltreatment and perceived physical health, accounting for 42% of the association between childhood maltreatment and perceived physical health. Adverse life events accounted for 25% of the association between childhood maltreatment and chronic medical condition.
Conclusions: Our findings provide additional evidence that the ill health effects associated with childhood maltreatment persist into adulthood. Adverse life events and psychological distress were key mechanisms shaping later physical health consequences associated with childhood maltreatment among relatively young urban women with a history of substance use.
Practice implications: Health care providers should be aware that childhood maltreatment contributes to adult health problems. Interventions aimed at preventing child maltreatment and addressing life stress and psychological distress will improve long-term physical health among abused children, adults with such histories, as well as children who are likely to be affected by maternal history of childhood maltreatment.

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Introduction

Child maltreatment is a serious public health problem, with nearly 3 million children or 1 child in every 25 in the United States affected in 2005–2006 (Sedlak et al., 2010). A recent community survey involving a large nationally representative sample reported that approximately 32% of girls aged 14–17 had experienced at least 1 form of maltreatment (Finkelhor, Turner, Ormrod, & Hamby, 2009). Several prevalence studies have estimated that between 26% and 32% of women have been sexually abused in the general female population (Briere & Elliott, 2003; Kendler et al., 2000; MacMillan et al., 2001).

A growing body of literature has documented associations between childhood maltreatment and poor physical health in adulthood in both population-based community samples and clinical samples (Goodwin & Stein, 2004; Greenfield, 2010; Wegman & Stetler, 2009). A history of childhood maltreatment is associated with higher rates of medical problems (Sachs-Ericsson, Blazer, Plant, & Arnow, 2005; Shaw & Krause, 2002), such as bronchitis and ulcers (Springer, 2009), liver disease (Dong, Dube, Felitti, Giles, & Anda, 2003), poor self-rated health (Bonomi, Cannon, Anderson, Rivarad, & Thompson, 2007; Thompson, Arias, Basile, & Desai, 2002), inflammation (Danese, Pariante, Caspi, Taylor, & Poulton, 2007), cardiovascular disease (Batten, Aslan, Maciejewski, & Mazure, 2004; Goodwin & Stein, 2004), chronic pain symptoms (Chartier, Walker, & Naimark, 2007; Davis, Luecken, & Zautra, 2005; Walsh, Jamieson, MacMillan, & Boyle, 2007), functional disability (Chartier et al., 2007), and, thus, higher health care utilization in adulthood (Chartier et al., 2007; Walker et al., 1999).

Findings from physiological research suggest that childhood maltreatment may adversely affect the volume and functionality of brain structures including the hippocampus, corpus collosum, and amygdala. Additionally, childhood maltreatment appears to alter neuroendocrinological mechanisms involved in mediating the stress response such as the hypothalamic–pituitary–adrenal axis (Nemeroff, 2004). These early changes predispose vulnerability for developing disorders and health problems in adulthood (Felitti et al., 1998; Hertzman, 1999). Yet, childhood maltreatment may also act indirectly as a catalyst for an array of behavioral, emotional, and social problems that are more proximal causes of morbidity in adulthood (Kendall-Tackett, 2002; Springer, 2009).

To date, only two studies (Chartier, Walker, & Naimark, 2009; Springer, 2009) have examined the specific mechanisms through which the experience of childhood maltreatment affect adult physical health, and there is limited understanding of the underlying mechanisms linking childhood maltreatment and adult health (Leserman, 2005; Whitaker, Lutzker, & Shelley, 2005). Further, previous studies have failed to assess the relative importance of different pathways that may be reciprocally interrelated over time. Given the pervasive effects of child maltreatment across multiple life domains, identifying salient intermediate variables that lie in the causal path between child maltreatment and adult physical health could provide critical points of intervention and, thus, improve prevention efforts aimed at reducing the lifelong burden of childhood maltreatment.

Life-course model and mediators linking childhood maltreatment to adult physical health

The life-course model provides a framework to understand the link between childhood maltreatment and later adult health by incorporating biological, behavioral and psychosocial pathways operating across an individual's life course in determining adult health (Ben-Shlomo & Kuh, 2002; Braveman & Barclay, 2009). From the life-course model, childhood maltreatment may be linked to adult health through behavioral strategies to cope with maltreatment (i.e., substance use), psychological responses (i.e., depression and anxiety), and subsequent secondary stressors that were triggered by childhood maltreatment (i.e., interpersonal problems; Pearlin, 1989; Springer, 2009), and these various behavioral, psychosocial factors influence health independently, cumulatively, and interactively (Ben-Shlomo & Kuh, 2002; Hertzman, 1999). Converging evidence from prospective and retrospective studies suggests that child maltreatment increases the risk of smoking (Chartier et al., 2009; Spratt et al., 2009), alcohol problems (Gilbert et al., 2009; Horwitz, Widom, Mclaughlin, & White, 2001; Lown, Nayak, Korcha, & Greenfield, 2011) and illicit drug use (Min, Farkas, Minnes, & Singer, 2007; Widom, Marmostein, & White, 2006), all of which have been independently associated with poorer health outcomes (Hall & Degenhardt, 2009; Minnes et al., in press; Nolen-Hoeksema, 2004; Strandberg et al., 2008). Increased risk for developing obesity has also been linked with childhood sexual abuse (Chartier et al., 2009; Noll, Zeller, Trickett, & Putnam, 2007), physical abuse (Springer, 2009), and neglect (Lissau & Sorensen, 1994). Obesity is a well-known risk factor for poor health and has been related to multiple health problems, poor self-rated health, disability, high emergency department use, high use of health professionals (Chartier et al., 2009) and a variety of medical diagnoses (Springer, 2009).

Childhood maltreatment is also associated with increased exposure to adverse life events, including interpersonal difficulties (Cook et al., 2005), family instability (Collishaw, Dunn, O'Connor, Golding, & the ALSPAC Study Team, 2007), and revictimization (Arata, 2002), all of which contribute to additional ongoing life stress (Pearlin, Schieman, Fazio, & Meersman, 2005). Stress is responsible for the etiology and progression of disease and contributes to overall vulnerability to illness by producing a cascade of neuroendocrine, cardiovascular, and immunological changes (Baum & Posluszny, 1999; Kiecolt-Glazer, McGuire, Robles, & Glaser, 2002; McEwen, 1998). Few prior studies have examined how subsequent adverse life events and stressors shape the later physical health consequences of childhood maltreatment. Mental health is another possible pathway through which childhood maltreatment can cause adult health problems. Extensive studies have documented an association between childhood maltreatment and a wide range of psychological symptomatology (e.g., Callahan, Price, & Hilsenroth, 2003; Min et al., 2007) and psychiatric disorders (e.g., Bryer, Nelson, Miller & Krol, 1987; Horwitz et al., 2001; Kendler et al., 2000). Population-based studies reported that depressive symptoms (Springer, 2009) and lifetime occurrence