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Research article

Childhood adversity and behavioral health outcomes for youth: An investigation using state administrative data

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ABSTRACT

This study aimed to measure the relative contribution of adverse experiences to adolescent behavioral health problems using administrative data. Specifically, we sought to understand the predictive value of adverse experiences on the presence of mental health and substance abuse problems for youth receiving publicly funded social and health services. Medicaid claims and other service records were analyzed for 125,123 youth age 12–17 and their biological parents. Measures from administrative records reflected presence of parental domestic violence, mental illness, substance abuse, criminal justice involvement, child abuse and/or neglect, homelessness, and death of a biological parent. Mental health and substance abuse status of adolescents were analyzed as functions of adverse experiences and other youth characteristics using logistic regression. In multivariate analyses, all predictors except parental domestic violence were statistically significant for substance abuse; parental death, parental mental illness, child abuse or neglect and homelessness were statistically significant for mental illness. Odds ratios for child abuse/neglect were particularly high in both models. The ability to identify risks during childhood using administrative data suggests the potential to target prevention and early intervention efforts for children with specific family risk factors who are at increased risk for developing behavioral health problems during adolescence. This study illustrates the utility of administrative data in understanding adverse experiences on children and the advantages and disadvantages of this approach.

Youth from families involved in multiple social and health services often have complex problems, experiences and service needs. There has been much study of the associations between adverse childhood experiences and behavioral health and other chronic medical problems in adulthood. The first Adverse Childhood Experiences (ACE) study established clear links between the number of childhood experiences and chronic medical problems in adulthood (Felitti, Anda, Nordenberg, Williamson, Spitz, & Edwards, 1998; Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, et al., 1998). The majority of subsequent efforts on ACEs have focused on adults and their self-reported experiences and symptoms, as well as health outcomes recorded in medical records. This study is an attempt to use state administrative data to identify adverse experiences that occur in the family of origin and other household risk factors similar to those presented in the ACE studies, and to quantify adolescent behavioral health problems associated with these experiences and risk factors.

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The original ACE study documented long-term health problems associated with experiencing multiple types of abuse and risk factors during childhood, including ischemic heart disease, cancer, and chronic lung disease (Felitti, Anda, Nordenberg, Williamson, Spitz, & Edwards, 1998; Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, et al., 1998). Several studies have since expanded the findings to alcohol and drug abuse (Dube, Anda, Felitti, Edwards, & Croft, 2002; Dube et al., 2003), depression and prescribed psychotropic medication (Anda et al., 2002, 2007; Chapman et al., 2004), lifetime suicide attempts (Dube et al., 2001), sexual risk behavior (Hillis, Anda, Felitti, & Marchbanks, 2001), obesity (Williamson, Thompson, Anda, Dietz, & Felitti, 2002), and smoking in adulthood (Anda et al., 1999). Other studies have focused on associations between number of adverse childhood experiences and specific chronic health outcomes such as number of medical diagnoses, physical symptoms and mental illness in adulthood (Springer, Sheridan, Kuo, & Carnes, 2007) and early death (Brown et al., 2009). Additionally, Chartier and her colleagues found that the cumulative impact of adverse experiences was predictive of a number of health outcomes, including multiple health problems, disability, pain, emergency room use, and utilization of medical professional services (Chartier, Walker, & Naimark, 2010). This study demonstrated that, although the impacts of adverse experiences overlap, childhood physical and sexual abuse have stronger influences than other experiences in relation to health outcomes.

In addition to the ACE studies, there is much literature documenting the long-term consequences of traumatic experiences among adults (Sachs-Ericsson, Cromer, Hernandez, & Kendall-Tackett, 2009; Turner, Finkelhor, & Ormrod, 2006) and the cumulative impact of multiple experiences (Banyard, Williams, Saunders, & Fitzgerald, 2008; Finkelhor, Ormrod, & Turner, 2007a, 2007b). Research on the cumulative impact of traumatic events has primarily focused on the long-term psychological sequelae, adult revictimization (Banyard et al., 2008; Kendall-Tackett, 2002), and sexual risk behavior during later adolescence and adulthood (Hillis et al., 2001; Kimerling, Armistead, & Forehand, 1999).

In one attempt to examine the complex ways that multiple traumatic events may impact long-term mental health, Banyard et al. (2008) found that exposure to multiple types of trauma was associated with more severe mental health symptoms, and that this relationship was mediated by other childhood risks such as family environment and interpersonal violence experienced in adulthood. Lu, Mueser, Rosenberg, and Jankowski (2008) found that the number of ACEs significantly increased the odds of suicide attempts, hospitalization before age 17, substance abuse diagnosis, multiple health problems, increased physician visits, homelessness and sex risk behavior. Additionally, the number of ACEs was strongly related to physical and sexual victimization in adulthood, putting these adults at further risk of posttraumatic stress disorder (PTSD) and other behavioral health problems. In a study of homeless women living in shelters, Stein, Nyamathi, and Leslie (2002) found that childhood abuse predicted a wide range of negative outcomes such as revictimization, depression, and chronic homelessness, but that only parental substance abuse was a direct predictor of drug and alcohol problems in adulthood. In one of the only studies to address the impact of ACEs in a pediatric population Burke and colleagues (Burke, Hellman, Scott, Weems, & Carrion, 2011) found that children with four or more ACEs were twice as likely to be obese and much more likely to have learning or behavior problems than those with less than four ACEs (51.2% vs. 2.3% of those with 0 ACEs and 20.7% of those with 1–3 ACEs). As with several other studies, ACEs were measured with a trauma screen, which involved self-report of caregivers, and health outcomes were captured via medical chart review.

The majority of studies addressing adverse experiences during childhood and associated health risks have relied upon retrospective self-report of childhood events that may have occurred at a very early age, for which adults may have difficulty with recall (Della Femina, Yeager, & Lewis, 1990). Other studies have identified both childhood experiences and outcomes from national surveys (Afifi, Boman, Fleisher, & Sareen, 2009; Greenfield & Marks, 2010; Springer et al., 2007). To date there has been very little investigation of the use of administrative data to understand the short- and long-term health outcomes of adverse childhood experiences. The studies that do exist have used a combination of self-reported experiences and clinical data for outcomes. Using this approach, Anda and colleagues found a very strong, graded relationship between the number of ACEs reported and prescribed psychotropic medications (Anda et al., 2007). Another study of adult women in a health care system found that self-reported history of abuse was associated with higher health care utilization and costs when compared to women without histories of abuse, and that the highest rates were for women with both physical and sexual child abuse histories (Bonomi et al., 2008). While these data do use some administrative data as indicators of clinical services and outcomes, no studies have attempted to derive ACEs scores from available administrative data.

The primary goals of this study are to explore the value of using administrative data sources to create ACEs scores for adolescents and to determine whether the known relationships between ACEs scores and adult outcomes can be observed within a shorter time frame, when study participants are still young and have access to a wide range of services. Specifically, we sought to understand the predictive value of adverse experiences on the development of mental health and substance abuse problems for youth involved with publicly funded social and health services. Given prior work with adult samples, it is expected that there will be a cumulative impact of multiple experiences on youth due to their impact on coping skills.

In addition to understanding the association between number of adverse experiences and behavioral health impact using administrative data, this study aims to identify the relative contribution of specific experiences to decreased behavioral health and functional well-being during childhood. Because use of administrative data provides much larger sample sizes than are usually possible with traditional interview-based approaches, demographic subgroup analyses are possible. This study also considers the relative contributions of each adverse childhood experience, and examines whether relationships are consistent across demographic subgroups.