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Exposure to Medication Overdose as an Adversity in Childhood[1,2]

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ABSTRACT

Purpose: To determine the prevalence of youth exposure to medication or pill overdose by someone close to them, as well as how common this is within the spectrum of major stressful events and child victimization experienced by youth.
Design and Methods: Data were collected as part of the Third National Survey of Children's Exposure to Violence, a nationally representative telephone survey of youth, ages 2–17 years (N = 3738) conducted in 2013. The analytical subset for the current paper is youth ages 10–17 years (n = 1959).
Results: Estimates indicate that approximately 1 in 12 youth (8%), ages 10–17 have been exposed to medication overdose by someone close to them in their lifetimes. Overdose exposure is related to recent trauma symptoms, alcohol and other substance use. However, these relationships appear to be largely driven by the co-existence of major stressful events these youth are experiencing. Alcohol use is the exception; exposure to medication overdose continues to be related to past year personal alcohol use even after adjusting for other lifetime stressful events.
Conclusions: Having a close family member or friend overdose on a medication is a common experience among U.S. youth and related to high rates of co-occurring stressful events.
Practice Implications: Health care providers should be aware that youth exposure to medication overdoses likely indicates exposure to other recognized adversities. Youth with a caregiver who has had an overdose may require an urgent response including referral to crisis intervention through child and family services.

Opioid drug use, overdose and deaths have risen rapidly in the last 15 years, creating a public health epidemic in the United States (Calcaterra, Glanz, & Binswanger, 2013; Centers for Disease Control and Prevention, 2012, 2013; Maxwell, 2011; National Institute on Drug Abuse, 2015; Paulozzi, 2012). Between 1999 and 2014 drug overdose deaths nearly tripled with 61% of the 47,055 drug overdose deaths involving an opioid; 91 Americans die every day from an opioid overdose (Centers for Disease Control and Prevention, 2016). Over two million Americans are estimated to be dependent on opioids, and an additional 95 million used prescription painkillers in the past year (Hughes et al., 2016).

Less is known about the extent to which children are exposed to people close to them who overdose from such drugs in the U.S. Analysis from a national household survey in the United Kingdom (UK) estimates approximately 108,000 children in the UK lived with an adult who had overdosed (Manning, Best, Faulkner, & Titherington, 2009). To our knowledge, similar national statistics are not available in the U.S. Further, in Canada, children who presented at the hospital with an overdose were 2.4 times more likely to have a mother who had been prescribed an opioid (codeine, oxycodone, methadone) when compared to controls (Finkelstein et al., 2017). Ingestion of an opioid by a child has particularly severe consequences with 26.8% of poisonings related to opioids resulting in serious injury (Burghardt et al., 2013).

The broader drug abuse literature suggests the potential impact of exposure to drug overdose on children. Nearly 20% of adults receiving

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treatment for a substance use disorder live with their minor children (Stanger et al., 1999) and women in drug abuse treatment are twice as likely as men to have children in their household (Wechsberg, Craddock, & Hubbard, 1998). Data support that parental substance use is related to increased risk for child maltreatment, (Walsh, MacMillan, & Jamieson, 2003) adolescent alcohol and drug use, (Biederman, Faraone, Monuteaux, & Feighner, 2000) and adverse effects on parenting and the provision of a nurturing environment (Barnard & McKeganey, 2004; Solis, Shadur, Burns, & Hussong, 2012). Research with children of opioid-dependent caregivers suggests elevated rates of psychopathology and significant dysfunction (Wilens, Biederman, Kiely, Bredin, & Spencer, 1995). Other under-studied potential outcomes for such families include related adversities such as parent and child hospitalizations, incarceration, and job loss of family members which have been linked with negative child outcomes (Finkelhor, Shattuck, Turner, & Hamby, 2013).

The epidemic leads us to be concerned about how exposure to overdose may be impacting children. It is important for first responders, healthcare, and child welfare professionals to understand the impact of this growing problem for children who are exposed, but also recognize that it is likely happening in a context with other sources of traumatic stress. Using data from a national sample of youth, ages 10–17 in the United States, we examine the prevalence of youth lifetime exposure to medication or pill overdose by someone close to them, and its association with other major stressful events (e.g., caregivers always arguing, having someone close attempt suicide), child victimization, and recent personal trauma and substance use.

Methods

Participants

The Third National Survey of Children's Exposure to Violence (NatSCEV 3) consists of a national sample of 3738 children and youth ages 2–17 years of age in 2013. Given critical developmental differences and the proxy caregiver informants for the 2–9 age group we focused on the self-report data from youth, ages 10–17 ($n = 1959$), as the analytic sub-sample for the current study. Within our analytic sub-sample, 51% of youth were male; 47% of youth were ages 10–13 and the remaining were ages 14–17. Household income varied with 13% living in households making less than $20,000 per year; 20% making between $20–50,000; 21% making between $50–75,000; 15% making between $75–100,000; and 32% making over $100,000. Slightly more than half (61%) of youth were White, non-Hispanic; 19% were Hispanic or Latino (any race); 14% were Black, non-Hispanic; and 6% were of another non-Hispanic race. Sixty percent of youth lived with both biological parents.

Procedure

A short interview was conducted over the telephone with an adult caregiver to obtain family demographic information. One child was then randomly selected from all eligible children living in a household by selecting the child with the most recent birthday. If the selected child was 10–17 years old, the main telephone interview was conducted with the child. Interviewers obtained verbal consent from the caregiver for the child as well as verbal assent from the child before beginning the interview. A number of steps were taken to make sure that respondents' confidentiality was maintained. Respondents were paid $20 for their participation. The interviews, averaging 55 min in length, and were conducted in either English or Spanish. NatSCEV 3 used a multi-frame design consisting of four overlapping frames: a landline random digit dial (RDD) frame, a cell phone RDD frame, an address-based sample frame, and a list-assisted sample of pre-screened households known to have children. The cooperation and response rates averaged across collection modalities were 60% and 40%, respectively. All procedures were authorized by the Institutional Review Board of the University of New Hampshire. Further details about aspects of the methodology are published elsewhere (Finkelhor, Turner, Shattuck, & Hamby, 2013).

Measures

Exposure to Medication Overdose

Youth were asked "has someone close to you ever overdosed on medication or pills so that he/she got really sick and had to go to the hospital? By overdose, we mean taken more medicine or pills than they should have." The question first asked whether this had ever happened and if yes, then whether it happened in the last year. This item was taken from a scale that measures major stressful events; which included 17 items, 13 of which were taken from a scale developed by Turner and colleagues (Turner & Butler, 2003; Turner, Finkelhor, & Ormrod, 2006) and five of which were constructed for this study. These major stressful events include non-violent traumatic events (e.g., serious illnesses, accidents, and parental imprisonment) and chronic stressors (e.g., substance abuse by family members and homelessness). Scale reliability ($\alpha = 0.62$) for this age group (ages 10–17) is acceptable for such index measures where items represent different experiences that might not be related (Streiner, 2003). For our analyses we created a variable which summed the number of different types of major stressful events youth had experienced in their lifetime. While a simple additive count of adversity types does not take into account potential differences in seriousness among experiences, this practice is widely used in life event measures and social stress research (Farel & Hooper, 1998; Reitman, Currier, & Stickle, 2002; Whiteside-Mansell et al., 2007; Wirrell, Wood, Hamiwka, & Sherman, 2008).

Child Victimization

Since a substantial body of research has documented the particularly damaging effects of exposure to multiple forms of violence and victimization (Ellonen & Salmi, 2011; Finkelhor, Ormrod, & Turner, 2007a; Finkelhor, Ormrod, & Turner, 2009; Ford, Elhai, Connor, & Frueh, 2010), we examine the impact of child victimization experiences separately from other major stressful events as described above. Child victimization was measured using the Juvenile Victimization Questionnaire (JVQ), a 55-item comprehensive inventory of childhood victimization including items measuring conventional crime, child maltreatment, peer and sibling victimization, sexual assault, witnessing and indirect victimization, gun violence, exposure to family violence, school violence and threats, and technology-related victimization. The JVQ is described in detail elsewhere (Finkelhor, Hamby, Ormond, & Turner, 2005). We examine victimization in several ways in the current paper. We sum the total number of types of lifetime victimizations youth experienced ($M = 7.6$, $SE = 0.36$). Youth responses ranged from experiencing 0 to 45 types. Then, children who had been exposed to particularly large numbers of different kinds of victimizations were designated as lifetime poly-victims, comprising the 12% of children who had experienced the highest number of lifetime victimizations (13 or more types). We were also interested in particular types of victimization experiences due to their potential outcomes with drug overdose and thus created some specific variables including: *exposure to family violence* [8 items] (e.g., "At any time did you see a parent get pushed, slapped, hit, punched, or beat up by another parent, or their boyfriend or girlfriend?"), *neglect* [6 items] (e.g., "When someone is neglected, it means that the grown-ups in their life didn't take care of them the way they should. They might not get them enough food, take them to the doctor when they are sick, or make sure they have a safe place to stay. At any time in your life, were you neglected?"), and *child maltreatment* [3 items] (e.g., "Not including spanking on your bottom, at any time in your life did a grown-up in your life hit, beat, kick, or physically hurt you?").

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