



Research article

Adult mental health outcomes of child sexual abuse survivors born at extremely low birth weight[☆]



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ABSTRACT

The high prevalence of child sexual abuse (CSA) is concerning, particularly as survivors are at increased risk for multiple adverse outcomes, including poor mental health across the lifespan. Children born at an extremely low birth weight (ELBW; <1000 g) and who experience CSA may be a group that is especially vulnerable to psychopathology later in life. However, no research has considered the mental health risks associated with being born at ELBW and experiencing CSA. In this study, we investigated the mental health of 179 ELBW survivors and 145 matched normal birth weight (NBW; >2500 g) participants at ages 22–26 and 29–36. At age 22–26, CSA was associated with increased odds of clinically significant internalizing (OR = 7.32, 95% CI: 2.31–23.23) and externalizing (OR = 4.65, 95% CI: 1.11–19.51) problems among ELBW participants exposed to CSA compared to those who did not, though confidence intervals were wide. At age 29–36, CSA was linked to increased odds of any current (OR = 3.43, 95% CI: 1.08–10.87) and lifetime (OR = 7.09, 95% CI: 2.00–25.03) non-substance use psychiatric disorders, however, this did not hold after adjustment for covariates. Statistically significant differences in mental health outcomes were not observed in NBW participants exposed to CSA compared to NBW participants who were not exposed. Survivors of significant perinatal adversity who are also exposed to CSA may be at higher risk for psychopathology through the fourth decade of life.

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1. Introduction

Worldwide prevalence estimates of child sexual abuse (CSA) range from 8 to 31% for girls and 3 to 17% for boys (Barth, Bermetz, Heim, Trelle, & Tonia, 2013). This high prevalence is alarming since exposure to CSA has been linked to a wide range of adverse mental and physical health outcomes later in life. Survivors of CSA have been found to experience long-term difficulties with interpersonal relationships including higher rates of divorce (Isely, Isely, Freiburger, & McMackin, 2008;

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Nelson et al., 2002; Roberts, O'Connor, Dunn, & Golding, 2004), and are at increased risk for poorer educational attainment, unemployment, and reduced earning potential in adulthood (Currie & Widom, 2010). Survivors of CSA are also more likely to engage in high-risk behaviors, such as smoking and alcohol misuse, report poorer physical health, and utilize health services at higher rates (Anda et al., 1999; Felitti et al., 1998; Kendler et al., 2000; Kristman-Valente, Brown, & Herrenkohl, 2013; Leserman et al., 1997; Noll, 2008).

In addition to these detrimental outcomes, CSA is one of the most significant risk factors for psychiatric problems in adulthood, particularly depressive and anxiety disorders (Chen et al., 2010; Chou, 2012; Maniglio, 2009; Safren, Gershuny, Marzol, Otto, & Pollack, 2002). A recent meta-analysis of 19 studies revealed that individuals exposed to CSA are more than twice as likely to develop major depression in adulthood than non-exposed controls (Lindert et al., 2014). Moreover, CSA survivors are nearly two and a half times more likely to manifest clinically significant anxiety disorders (Cutajar et al., 2010; Lindert et al., 2014). The risk of post-traumatic stress disorder (PTSD) is also particularly high, with rates 4–8 times higher than that of the general population (Cutajar et al., 2010; Molnar, Berkman, & Buka, 2001).

Past studies have found that individuals born with a low birth weight (LBW; <2500 g) report higher rates of sexual abuse during childhood than their normal birth weight (NBW; >2500 g) peers (Murphy, Jenkins, Newcombe, & Sibert, 1981; Spencer, Wallace, Sundrum, Bacchus, & Logan, 2006). It is possible that the same parental characteristics that are related to the prenatal adversity experienced by those born with an extremely low birth weight (ELBW; <1000 g) may also be related to CSA (e.g., stress in the family, lower socioeconomic status). Adults born at ELBW have been found to be up to three times more likely to develop psychiatric problems (specifically internalizing disorders) in adulthood than NBW controls (Boyle et al., 2011; Lund, Vik, Skranes, Brubakk, & Indredavik, 2011; Van Lieshout, Boyle, Saigal, Morrison, & Schmidt, 2015; Westrupp, Northam, Doyle, Callanan, & Anderson, 2011). In addition, ELBW adults have also been found to have lower levels of alcohol or substance use disorders (Darlow, Horwood, Pere-Bracken, & Woodward, 2013; Van Lieshout et al., 2015). Therefore, it is important to study ELBW CSA survivors as they may experience an accumulation of risk for psychiatric problems because of their exposure to both prenatal and postnatal adversity. Indeed, work by Nomura and Chemtob (2007) suggests that LBW survivors who experienced child physical abuse were at greater risk for psychiatric problems in adolescence and adulthood than LBW survivors who were not exposed.

The cumulative risk model posits that early exposure to multiple risk factors is more detrimental than the impact of a single exposure (Evans, Li, & Whipple, 2013). For example, adversity experienced prenatally poses a significant risk due to its critical developmental timing (Miskovic & Schmidt, 2012). Likewise, CSA is among the risk factors that most strongly predict poor developmental outcomes across the lifespan (Trickett, Noll, & Putnam, 2011). As such, the early adverse influence of preterm birth on developmental processes may in turn lead to poorer outcomes when CSA is also experienced.

Both prenatal and postnatal adversity have been found to negatively influence the stress response of the hypothalamic–pituitary–adrenal (HPA) axis as well (Heim & Nemeroff, 2001; Heim et al., 2000; Trickett et al., 2011). Due to the significant risks associated with these prenatal and postnatal events, survivors may experience atypical development of the HPA stress response when these factors are experienced cumulatively. ELBW individuals are also more likely to manifest neuroanatomical and neurochemical alterations that lead to poorer psychological coping skills, potentially leaving them less able to cope with the experience of CSA (Reijneveld et al., 2006). It is possible that these cumulative adverse experiences may lead to significant changes in the HPA axis stress response, which may make experiencing multiple adversities in childhood a precursor to mental illness in adulthood. As such, ELBW CSA survivors are an important cohort to study in order to hopefully better understand the possible unique effects of multiple adversities.

In the present study, we examined the impact of exposure to CSA on psychiatric outcomes in a group of ELBW survivors and NBW participants through the fourth decade of life. In particular, we examined the impact of CSA on psychiatric problems at age 22–26 and 29–36 separately in ELBW survivors and NBW participants who did and did not experience CSA. We predicted that those born at ELBW and exposed to CSA would be at particularly high risk for psychological problems in their 20s and 30s compared to ELBW survivors who did not experience CSA. In addition, we expected that those born NBW and exposed to CSA would be at higher risk for psychological problems in adulthood compared to NBW survivors who did not. We performed these analyses separately for the ELBW survivors and NBW participants in order to examine the patterns within each group and to conserve statistical power. We also controlled for possible covariates including sex, childhood physical abuse, and the presence of possible parental depression, as they have been hypothesized to confound associations between early sexual abuse exposure and mental health outcomes later in life (Chen et al., 2010; Kendler & Aggen, 2014; McEwen, 2003).

2. Method

2.1. Participants and procedures

Participants included a group of 179 ELBW survivors born between 1977 and 1982 who were followed longitudinally from birth, as well as 145 NBW participants who were recruited at age 8 and matched to the ELBW sample on age, sex, and familial socio-economic status (SES). Both samples were followed longitudinally from their respective recruitment ages. The samples were primarily Caucasian. For a detailed description of the recruitment of both samples, please refer to Saigal, Rosenbaum, Stoskopf, and Sinclair (1984) and Saigal, Szatmari, Rosenbaum, Campbell, and King (1991). Both ELBW and NBW groups were assessed at age 8, 14, 22–26, and 29–36 years. All participants were born in southwestern Ontario, Canada. Of

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