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# Personality characteristics of adult survivors of preterm birth and childhood sexual abuse



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#### ABSTRACT

Background: Early life experiences may alter personality outcomes across the lifespan. Extremely low birth weight (ELBW) survivors appear to have a particular personality 'type' marked by increased levels of cautiousness and social conformity. It is, however, unclear if the experience of child sexual abuse (CSA) can alter this outcome

Methods: We utilized data from a prospective, longitudinal, birth cohort of ELBW survivors to examine the personality characteristics in the third and fourth decades of life of those exposed to CSA versus those who were not. Results: At age 22–26 years, ELBW survivors who had experienced CSA were less likely to display social conformity (p < 0.01) and were less cautious (p < 0.01) than ELBW survivors who had not. At age 30–35, ELBW survivors who had experienced CSA were less likely to socially conform (p = 0.03), were less cautious (p = 0.03), and displayed higher levels of neuroticism (p < 0.01).

Conclusions: ELBW survivors who have experienced CSA appear less likely to socially conform, are less cautious, and may experience higher levels of neuroticism in their 20s and 30s than those who were not exposed. These findings support the possibility that significant childhood experiences may lead to stable alterations in personality through the fourth decade of life.

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#### 1. Introduction

Whether personality traits are stable or malleable across the lifespan is a longstanding debate in personality research. McCrae and Costa (1999) reported that the five personality traits put forth in their Five Factor Theory of Personality were relatively stable across the lifespan, a finding that has since been generally accepted by the field. They contended that personality development is largely a result of biological maturation, rather than life experience (McCrae & Costa, 1999). However, some studies have challenged this assertion of stability using data that suggest that personality may in fact change across the lifespan, with these changes often being related to social environment and experience (e.g., Caspi, Roberts, & Shiner, 2005; Mroczek & Spiro, 2003; Scollon & Diener, 2006; Srivastava, John, Gosling, & Potter, 2003). Similarly, McGue, Bacon, and Lykken (1993) suggested that the stable core of personality is strongly related to genetic factors, while personality change is associated with environmental exposures.

The experience of significant perinatal adversity has been also found to be associated with specific, stable personality traits that persist through to adulthood. For example, adults born at very low birth weight (VLBW; <1500 g) have been found to manifest unique personality outcomes marked by less extraversion and more neuroticism (Allin et al., 2006; Hack et al., 2002). Similarly, data suggest that extremely low birth weight (ELBW; <1000 g) survivors may be more shy and behaviorally inhibited, socially conforming, cautious, and risk averse in adulthood than their normal birth weight peers (Schmidt, Miskovic, Boyle, & Saigal, 2008; Waxman, Van Lieshout, Saigal, Boyle, & Schmidt, 2013).

Evidence has begun to accumulate that suggests that the experience of significant life events can influence otherwise stable personality characteristics in adulthood. Partner relationship experiences, for example, have been linked to individual personality differences (Robins, Caspi, & Moffitt, 2002). Extremely adverse events, such as the loss of a family member can also shape personality in adulthood, leading to increased neuroticism and decreases in agreeableness (Lockenhoff, Terracciano, Patriciu, Eaton, & Costa, 2009). Similarly, the experience of childhood trauma has been found to be associated with certain personality traits seen in adulthood. For example, survivors of childhood abuse and neglect have been found to have higher levels of neuroticism, psychoticism, and openness to experience, as well as lower self-directedness and cooperativeness (Allen & Lauterbach, 2007; Li et al., 2014; Rademaker, Vermetten, Geuze, Muilwijk, & Kleber, 2008; Rosenman & Rodgers, 2006).

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By virtue of their seemingly stable and unique personality profile, ELBW survivors who have also experienced child sexual abuse (CSA) provide a useful model for exploring the potential influence of life experience (and childhood trauma in particular) on personality seen in adulthood. If their typical adult personality characteristics vary with the prior experience of CSA, it would add further evidence to support the idea that personality may be malleable and that early experiences could shape personality development and its related outcomes in adulthood. This is highlighted by the finding that survivors of CSA have been found to manifest personality characteristics that differ significantly from those seen in ELBW individuals. Indeed, CSA survivors have shown higher levels of impulsivity, risk-taking, and neuroticism as well as low social conformity (Li et al., 2014; Stokes, McCord, & Aydlett, 2013; Sujan et al., 2014), which is in contradistinction to the more socially conforming, cautious and introverted personality characteristics of preterm born individuals (e.g., Mathewson et al., 2017; Schmidt et al., 2008; Waxman et al., 2013).

Here, we examined the personality characteristics of ELBW survivors in adulthood who also experienced CSA in order to assess the possible influence of postnatal environmental experiences on adult personality outcomes. Specifically, if personality characteristics typically associated with CSA are present in adult ELBW survivors, it would suggest not only the strong influence of CSA on personality, but support that personality is malleable in terms of its adult manifestations. We predicted that ELBW survivors who were also exposed to CSA would manifest lower levels of social conformity and cautiousness in their 20s and 30s than ELBW individuals free of CSA. We controlled for possible covariates, including sex and parental depression, as they are thought to confound associations between CSA and personality outcomes later in life (Carver, Johnson, Forster, & Joormann 2014; Rosenman & Rodgers, 2006).

#### 2. Method

#### 2.1. Participants and procedures

Study participants consisted of a group of 179 ELBW survivors born between 1977 and 1982 in southwestern Ontario. These individuals were followed longitudinally from birth and assessed at age 8, 12–16, 22–26, and 30–35 years. The present study utilized data collected at the 22–26 and 30–35 year old follow-ups. At age 22–26 years, participants reported on the experience of childhood sexual abuse. At both ages 22–26 and 30–35, participants reported on their personality characteristics

At 22–26 years of age, data on personality were only collected on a subset of individuals eligible for an assessment of the electroencephalographic (EEG) correlates of emotional processing. As a result, individuals with characteristics known to adversely affect the reliability of our EEG measures (e.g., significant neurosensory impairments such as blindness, deafness, or cerebral palsy, and those who were left-handed) were excluded. However, these exclusion criteria were not applied at the 30–35 age group. The EEG measures collected are not reported in this paper.

#### 2.2. Predictor: childhood sexual abuse

At age 22–26 years, participants retrospectively reported on whether they had experienced sexual abuse before the age of 16 using the abbreviated version (Tanaka et al., 2012) of the Childhood Experiences of Violence Questionnaire (CEVQ; Walsh, MacMillan, Trocmé, Jamieson, & Boyle, 2008). Participants indicated whether "before age 16 when you were growing up, did anyone ever do any of the following things when you did not want them to: touch the private parts of your body or make you touch their private parts, threaten or try to have sex with you, or sexually force themselves on you?" Any frequency above "never" (1 = never, 5 = >10 times), was used to define experience of sexual abuse, (experienced sexual abuse = 1, did not experience sexual

abuse = 0). The CEVQ- Short Form has been shown to have strong test-retest reliability (k = 0.91), construct validity (Tanaka et al., 2012), and criterion validity (k = 0.69) with the Childhood Trauma Questionnaire (Bernstein et al., 2003).

#### 2.3. Outcome: personality characteristics

At age 22–26 and 30–35 years, participants completed the Short-Version Eysenck Personality Questionnaire (EPQ-R; Eysenck, Eysenck, & Barrett, 1985). The EPQ-R is a 48-item questionnaire that assesses personality dimensions, including neuroticism, extraversion, and psychoticism, with each item answered with either "yes" or "no". It also contains a "lie scale" designed to measure social desirability, conformity, and risk aversion. A high score on the lie scale reflects a higher likelihood of lying to look socially desirable, and therefore higher levels of social conformity. The EPQ-R has been found to be both reliable and valid (Eysenck et al., 1985) and the four subscales have been found to have acceptable to very good Cronbach alpha coefficients (neuroticism = 0.87, extraversion = 0.88; psychoticism = 0.51; lie = 0.69).

A composite measure was also created from the EPQ-R to reflect the construct of cautiousness. This measure comprised the EPQ-R psychoticism (reverse scored) and the EPQ-R lie scale. Z-scores of these two scales are computed and added together, and this aggregate score was z-scored. Lower scores reflect lower levels of cautiousness and higher levels of risk-taking and nonconformity. This composite measure was a theoretically and empirically derived measure that has been used in previous work (Santesso, Segalowitz, & Schmidt, 2005; Schmidt et al., 2008; Waxman et al., 2013). Importantly, the mean level of cautiousness did not change across the two adult age groups when a repeated measures ANOVA was conducted.

#### 2.4. Birth variables

Participant sex, gestational age, and birth weight were collected from participants' medical charts.

#### 2.5. Parental depression

Major depressive disorder experienced by either of the participants' parents was reported by participants using the Family History Screen (FHS; Weissman et al., 2000), a structured interview administered by assessors naïve to participant birth weight status. The FHS has been found to have moderate to good 15-month test-retest reliability, sensitivity, specificity, and positive and negative predictive value for depression (Weissman et al., 2000).

#### 2.6. Data analysis

Participants who completed the EPQ-R at either the 22–26 or the 30–35 follow-up were included in the study. As a result, 63 ELBW survivors provided predictor, covariate, and outcome data at age 22–26 years, and 92 ELBW survivors participated at 30–35 years. Two statistical models were created at each time point. First, unadjusted linear regression models examined associations between CSA and each dimension of the EPQ-R (neuroticism, extraversion, psychoticism, lie scale, and cautiousness). Second, multivariate linear regression was used to examine these associations adjusted for covariates (e.g., sex and parental depression). A *p*-value of 0.05 was set as the statistical level of significance. All analyses were performed using IBM SPSS Statistics 24 (IBM SPSS Statistics, IBM Corporation).

#### 2.7. Participant attrition

Due to the length of follow-up of this longitudinal sample, attrition could have affected the validity of our analyses. Therefore, chi-square and *t*-tests were performed to investigate predictors of participant

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