Childhood adversity as the harbinger for future affective disorders and health problems

Trevor Archer, PhD

DESCRIPTION

Among the several factors contributing to depressiveness among children, maternal alcohol use/abuse, prenatal smoking habit and prenatal maternal obesity and other family-based poor health encumbrances remain a consideration although modulated by social and biological associations, childhood adversity and socioeconomic status (1-7). Adverse exposure to psychosocial traumatic events during the early part of the child’s life, which incorporates negative experiences involving child maltreatment, caregiver stress and/or depression, domestic or community violence, with wide-ranging effects on neural, endocrine, immune, and metabolic physiology, bear strong relationships within epidemiological studies with an elevated lifetime risk of adverse health outcomes, such as diabetes, heart disease, cancers, and psychiatric illnesses (8). The dysregulation and disharmony of brain neural networks, neuroendocrine stress regulation disruptions, and chronic inflammation, as well as a number of other pathophysiological factors predispose the developing individuals to innumerable health hazardous disorders and risk factors across the life course. In the context of obesity, prenatal stress, adversity among mothers, was linked to reduced levels of childhood adiposity although their cord blood interleukin-6 methylation was related to an increased level of childhood adiposity among Mexican patients presenting a history of any type of adverse life event description (9). Incremental adverse childhood experiences each reduce the infant’s birth weight by 16.33 g and decline its gestational age by 0.063 with smoking emerging as the strongest mediator of the effect on gestational age thereby causing detrimental influence upon maternal reproductive health and well-being, as manifested by mothers’ delivery of the newborn infants who were of reduced birth weight and shorter gestational age (10). Childhood adversity has been shown to be linked to some 10% elevated risk for developing smoking behavior during adulthood with both childhood adversity and smoking behavior during adulthood related to greater levels of anxiety and depressive symptoms in adulthood (11). Trauma during childhood, nicotine dependence combined with a greater prevalence for previous hospitalizations was observed among inpatients presenting for both cardiovascular diseases and the positive screening for depressive illness (12).

Several aspects of childhood adversity are associated with later-life health problems and neurodevelopmental detriment. For example, demographic features and depression, such as the long-lasting fear of a family member, longlasting financial difficulties within the family, serious conflicts in the family, parental divorce and separation, serious or chronic illnesses in the family and alcohol and/or problems within the family were shown to be harbingers for fibromyalgia, expressed through widespread pain and a variety of somatic symptoms (13). Childhood maltreatment and trauma presents also an increased risk for a prediabetic status which is substantiated by the affected individuals’ glucose intolerance, impaired insulin sensitivity, increased levels of C-reactive protein and tumor necrosis factor-α levels, and beta cell function dysregulation (14). In this regard, it has been shown that omega-3 composition and general trauma during childhood estimates in the experiences of development of eventual offsprings’ psychological disorders. Similarly, parental adverse childhood experiences were important in the experiences of development of eventual offsprings’ psychological problems (23). It has been found also that the inattentional component of attention-deficit/hyperactivity disorder and executive functioning problems were associated with childhood depression according to parental ratings (24). Longitudinal analyses of childhood suicide attempters has proved evidence of three types of patient: (i) those individuals presenting all low depressive/anxious (n=32%), (ii) those presenting all high depressive/anxious (n=16%), and (iii) those presenting high depressive/anxious combined with low aggressive (n=52%) symptom-profiles (25). Individual presenting the highest likelihood of all the symptom-profiles evidenced a greater probability of reporting younger age-levels for suicide attempts accompanied by substance abuse disorders and violent criminal behaviors. A marked positive relationship between a variety of adverse life events during childhood and prenatal depression scores among women presenting perinatal depression combined with excessive adrenocorticotropic hormone reactivity to the cold-pressor test has been indicated (26). Furthermore, those patients presenting a history of any type of adverse life event description displayed a blunted cortisol response to the cold-pressor test and at four

Correspondence: Dr Trevor Archer, PhD, Professor, Department of Psychology, Uppsala University, Sweden. Telephone +46 31 786 4694, email trevor.archer@psy.gu.se

Received: August 30, 2017, Accepted: September 01, 2017, Published: September 03, 2017

This open-access article is distributed under the terms of the Creative Commons Attribution Non-Commercial License (CC BY-NC) (http://creativecommons.org/licenses/by-nc/4.0/), which permits reuse, distribution and reproduction of the article, provided that the original work is properly cited and the reuse is restricted to noncommercial purposes. For commercial reuse, contact reprints@pulsus.com

J Child Psychol Vol 1 No 1 September 2017 3
weeks showed a heightened adrenocorticotrophic hormone stress reactivity to the test. The cold-pressor test presents a cardiovascular performance estimate by immersing the individual’s hand into an ice water container, often for one minute, and measuring changes in blood pressure and heart rate with eventual changes relating to vascular responding and pulse excitability. Additionally, the authors observed a positive and markedly strong correlation between pain tolerance estimates and the cortisol response in the cold-pressor test over the whole sample. It was shown also that among female patients presenting a history of childhood onset depression but no evidence of anxiety disorder (n=37) there was a reduction in electroencephalogram left lateral frontal activity in comparison with a group of psychiatrically-healthy control individuals (27) whereas those women patients presenting a history of childhood-onset depressive disorder with pathological levels of anxious apprehension estimated through concurrent generalized anxiety disorder, control group. The authors have presented three conclusions: (i) prefrontal electroencephalogram activity asymmetry provides a neurophysiological marker for depressive illness, (ii) the co-morbidity inherent to depression and anxiety expressions, and (iii) the failure to observe the prevailing relationship between prefrontal electroencephalogram activity asymmetry and levels of diagnosed depression. The children’s mothers’ history of childhood maltreatment and pregnancy was shown to bear a marked relationship to their offspring’s internalizing and externalizing problems while maternal antenatal depression, postnatal depression and offspring child maltreatment were indicated as mediating significantly this relationship independently (28). In a self-report study of ruminination, sadness and anger, and depressiveness among children (aged 7–14 years), it was found that anger rumination presented a trans-diagnostic factor for the depressive symptoms and aggressiveness of the children whereas sadness moderated the association between anger ruminination and aggression (29).

Perinatal stress-related/inflammatory symptoms are common in women during pregnancy and are risk factors for neurobehavioral disorders, particularly affective and associated co-morbidities and health hazards (30). Exposure to childhood trauma and adverse environments, mediated by dysregulation of hypothalamic-pituitary-adrenal axis function and a plethora of stress hormone and neuro-immune biomarkers, appears to impair a multitude of psychophysiological and health-benefiting process to the eventual detriment of individuals over the lifespan.

REFERENCES


3. Mina TH, Lahti M, Drake AJ, et al. Prenatal exposure to very severe stress hormone and neuro-immune mobilization of biomarkers, appears to impair a multitude of psychophysiological and health-benefiting process to the eventual detriment of individuals over the lifespan.


