

Lifetime Trauma Exposure and PTSD Symptoms in Relation to Health-Related Behaviors and Physiological Measures Among Malaysian Adolescents

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Lifetime trauma exposure may result in serious consequences for mental health. It can lead to posttraumatic stress disorder diagnosis, and when traumatic experience occurs among adolescents, the consequences may affect their mental and physical health later in their adulthood. This is a cross-sectional research design aiming to determine the relationship between lifetime trauma experience with health-related behaviors and physiological measures among Malaysian adolescents. A total of 606 adolescents with mean age of 16.9 years ($SD = 1.28$) responded to the survey questionnaires. Their height, weight, blood pressure, and heart rate were measured. Adolescents with traumatic experiences were significantly more likely to engage in unhealthy behaviors such as drinking alcohol and smoking. Their physiological readings (i.e., heart rate) were significantly higher than those without traumatic experience. The significant relationship between trauma exposure, unhealthy behavior, and physical health are discussed in this article.

Keywords: trauma, physiological measures, adolescents

Childhood traumatic experiences may potentially lead to long-term psychological problems (Hughes et al., 2017; Scott et al., 2013). These traumatic experiences contribute to poorer life-course health outcomes (Bellis et al., 2014; May-Ling et al., 2015). This may be due to the enduring changes in human nervous and endocrine systems and imbalanced allostatic systems, which can lead to progressive physiological damage (Danese & Mcewen, 2012; Tulloch et al., 2014). Individuals who experience traumatic events are prone to adopting unhealthy behaviors and are more susceptible to noncommunicable diseases. Unfortunately, studies on the increased risk for poor physical health outcomes due to trauma exposure, and the development and manifestation of PTSD

have only been investigated and reported in the last few decades (Coughlin, 2011).

The relationship between trauma exposure and/or posttraumatic stress disorder (PTSD) and poor physical outcomes such as cardiovascular disease can be explained by sympathetic overactivation theory (Danese & Mcewen, 2012). Overactivation of sympathetic responses results in an elevated heart rate, which in turn is significantly associated with overweight and obesity (Danese & Mcewen, 2012; Gandubert et al., 2016). Overweight and obesity serve as mediators to increase sodium retention in blood vessels and subsequently increase blood pressure which have an adverse effect on physical health (da Silva et al., 2009).

A large longitudinal study of 38,352 participants found that PTSD was significantly associated with weight gain and the development of obesity (LeardMann et al., 2015). Overweight individuals were significantly associated with elevated C-reactive protein, an inflammation factor for cardiovascular disease (Spitzer et al., 2010). Individuals with PTSD have been found to have a twofold higher risk for elevated C-reactive protein than those without PTSD (Spitzer et al., 2010). Children who reported having four or more adverse childhood experiences were significantly more likely to be obese or overweight (Pretty et al., 2013). Thus, exposure to trauma during childhood has adverse physical health consequences as early as adolescence, aged eleven to fourteen.

Abnormal regulation of neurobiological systems in adaptation to traumatic distress may directly affect sleep patterns, metabolism and health-related behaviors (Sherin & Nemeroff, 2011). Exposure to trauma and/or having PTSD symptoms lead to dysfunction of serotonin and cortisol and subsequently abnormally regulates emotion, cognition, and motor functioning (de Bellis & Zisk, 2014; Lovallo, 2013). These dysfunctions of biochemical reactions subsequently

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