



Invited Editorial

Childhood adversity and gynecological conditions



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Adverse childhood experiences (ACE) are common, with a recently reported prevalence rate of 9.2 per 1000 children in the US [1]. In addition to the short-term effects on the health of the affected children, ACE have been linked to adverse health outcomes much later in life, including an increased risk of psychiatric disorders, substance abuse, eating disorders, autoimmune conditions, asthma, obesity, diabetes, and cardiovascular disease in adulthood [2,3]. Moreover, multiple studies evaluating the impact of ACE in midlife women have revealed a significant impact on their menopause experience and a higher risk of undergoing gynecological surgeries.

Women with a history of ACE tend to report more severe menopause symptoms across all domains, including somatic, psychological, and urogenital symptoms. In addition, the burden of childhood adversity correlates with the menopause symptom score [3]. When specifically evaluating the effect on vasomotor symptoms (VMS), the most common type of symptom of menopause, there is a definite association with a history of ACE. This has been demonstrated for self-reported VMS in the Study of Women's Health Across the Nation (SWAN) [4] and objectively measured VMS in the MsHeart Study [5]. The mechanisms for the link between ACE and menopause symptoms have not been elucidated, but some potential explanations have been suggested. Childhood adversity may be associated with changes in the sympathetic nervous system, and in the hypothalamic-pituitary-adrenal (HPA) axis. Changes in some of these same pathways have also been implicated in the pathophysiology of VMS. Therefore, childhood adversity-mediated changes in the sympathetic nervous system or the HPA axis may somehow impact VMS severity or perception or both. Long-term changes in the serotonergic pathways resulting from ACE can have a potential impact on women's executive function, which may manifest as cognitive complaints during the menopause transition. ACE may have other unknown consequences on the developing brain that somehow alter the menopause experience.

Childhood abuse and neglect have a strong association with psychiatric disorders, including depression and anxiety. It is therefore not surprising that midlife women with ACE experience more severe

menopause-related psychological symptoms [3]. The greater burden of psychiatric morbidities may alter the overall perception of menopause and lead to an increase in the reporting of menopause symptoms. Additionally, women with greater childhood adversity are more likely to report recent abuse [6], which has independently been linked with worse menopause symptoms [7]. Finally, childhood adversity likely predisposes women to lifestyle-related risk factors that increase their chances of more severe menopause symptoms. As an example, smoking and obesity are both associated with more severe VMS.

Another important area of study in recent years has been the association of ACE with gynecologic surgeries in young women. In the US, more than 400,000 women undergo hysterectomy with or without oophorectomy every year. The overwhelming majority of these surgeries are done for benign indications, many of which can be managed with more conservative approaches. It has been shown that women who request bilateral oophorectomy for benign reasons have a higher number of documented traumatic events in their medical records [8]. In a large case control study conducted in the Olmsted County, women attaining menopause by undergoing bilateral oophorectomy at a young age (less than 46 years) were more likely to have experienced childhood adversity or abuse in adulthood than their age-matched controls. Moreover, greater the number of adverse experiences, the higher was the risk for surgery [9].

Several potential mechanisms have been proposed to explain the link between ACE and the higher risk of gynecological pathology or symptoms that prompt women to seek bilateral oophorectomy. ACE may result in epigenetic modification mediated by stress, altered endocrine pathways and immune dysregulation. Moreover, as described for menopause symptoms, the greater propensity for psychiatric morbidities in women with ACE may alter their perception of gynecological symptoms, including bleeding and pelvic pain, leading them to pursue more aggressive treatment options such as surgery. Women with history of ACE may also have altered pain thresholds that may contribute to a heightened perception of symptoms, again prompting more aggressive

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treatment measures.

Bilateral oophorectomy and hysterectomy at a young age have both been associated with an increased risk for cardiovascular disease, osteoporosis, cognitive decline, and mortality [10]. Therefore, health care professionals are obligated to carefully review the indications for these surgeries and to prevent unnecessary procedures [11]. Whenever possible, more conservative interventions are preferred in younger women to avoid the long-term consequences of premature estrogen deprivation. Inappropriate surgical interventions not only do not fix the underlying problem in such women, they also may unleash a series of adverse medical and psychological consequences related to estrogen deprivation.

The associations between ACE and menopause symptoms and gynecological surgeries highlight the need to screen for ACE among women with severe menopause symptoms and those seeking gynecological surgeries. This is particularly true for women seeking surgery for symptoms that seem out of proportion to the extent of their gynecological pathology, or if the symptoms do not conform to any known gynecological condition. Childhood adversity is highly underreported. Victims often do not bring up these issues with their health care professionals or others, and they are typically unable to link their symptoms to childhood adversity. Many women with ACE have never had this problem addressed. Moreover, health care professionals may not bring up the issue due to a lack of knowledge about the subject and due to the brevity of patient care visits. It is important to educate medical professionals about the association between ACE and menopause symptoms and gynecological surgeries so that women can be screened for ACE in the relevant clinical situations and be offered appropriate counseling, support, and mental health resources. Ultimately, it is the responsibility of the health care professionals to be cognizant of the potential gynecological repercussions of ACE and to address this important issue which often goes undetected and unmanaged.

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