



Early-Life Trauma and Diabetes Management: An Under-Recognized Phenomenon in Transition-Aged Youth

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Robert is an 18-year-old young man with type 1 diabetes who was noted to have a pattern of increasing A1C at his most recent diabetes clinic visits. The certified diabetes educator reviewed his logs and recognized that he did not calibrate his continuous glucose monitoring system regularly. He denied having any management-related concerns, but when he met with the pediatric endocrinologist, he admitted to avoiding carbohydrate calculations and “winging it” for insulin dosing, which he attributed to “not wanting to deal with his diabetes right now.”

As part of the clinic’s multidisciplinary evaluation, he met with a social worker. During this assessment, Robert disclosed that he was struggling with anxiety and intrusive thoughts resulting from witnessing domestic violence between his parents when he was 10 years old. He reported that these thoughts and increased anxiety were newly triggered by recent attempts by his estranged father to contact him.

After meeting with the social worker and the clinic’s psychiatrist, he agreed to a referral for trauma therapy to discuss how his heightened hypervigilance and intrusive symptoms may be affecting his diabetes management and to strategize about how to address these symptoms to improve his overall health.

Many adolescents and transition-aged young adults with type 1 diabetes do not meet glycemic control treatment targets (1). Depression, anxiety, disordered eating, and inadequate family support

around diabetes are recognized as factors that may interfere with self-care, and current guidelines recommend universal screening for each of these concerns (2). Although there is evidence that traumatic experiences in early life can increase high-risk health behaviors (e.g., difficulties in taking medications consistently), screening for exposure to emotional trauma is not yet a standard of care for youth with type 1 diabetes (3).

Yet, there is evidence to suggest that potentially traumatic experiences play a role in type 1 diabetes onset and management. Youth with new-onset type 1 diabetes often report substantial levels of stress preceding their diagnosis (4). The Adverse Childhood Experiences (ACEs) study examined exposure to 10 categories of potential emotionally traumatic events: emotional neglect, physical neglect, emotional abuse, physical abuse, sexual abuse, parental mental illness, parental substance use, parental separation, familial violence, and parental incarceration. In the ACEs sample, which included >17,000 participants in a large health system, adults who experienced four or more adverse childhood experiences before the age of 18 years (12.5% of the total sample) were at higher risk for developing diabetes (5).

Among adolescents and young adults who have an established diagnosis of type 1 diabetes, results from several studies suggest that stressful life events negatively affect metabolic control (6–8). Childhood

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traumatic stress has been linked to later increased risk of cardiovascular disease among adults with type 1 diabetes (9). Given the evidence to date linking early-life trauma exposure and type 1 diabetes control and complications, screening for trauma and providing trauma-informed medical care may be a way to help mitigate the potential consequences of trauma in transition-aged youth.

As a first step, health care professionals in pediatric endocrinology and diabetes clinics may consider screening for trauma exposure and symptoms in youth. A recent pilot study at our institution offered voluntary psychiatric screening in an outpatient diabetes clinic. The screening included the Child and Adolescent Trauma Screen (10) and the Life Events Checklist (11). Of the 31 pediatric patients who participated in the screening, 20 (64.5%) endorsed at least one potentially traumatic event, and five (16.1%) reported four or more potentially traumatic events (12). Although the pilot study's primary objective was to determine the feasibility of screening, the number of patients exposed to multiple categories of adverse childhood experiences and other potentially traumatic events (such as hospitalization) before the age of 18 years was staggering and suggests that further research is needed.

Given the likelihood that many patients have been exposed to potentially traumatic events and the challenges of caring for chronically ill youth, clinics may also want to consider seeking training for health care professionals and clinic staff in trauma-informed medical care to help them maximize their patients' and their own health and well-being. In trauma-informed approaches, health care providers take care to realize the impact of emotional trauma; recognize how trauma affects children, families, and staff; and integrate trauma knowledge into medical practice to minimize re-traumatization (13). Many trauma-informed actions may be integrated into stan-

dard care and have the potential to increase quality of care and overall patient outcomes without adding substantial time to medical encounters. Additionally, integrated mental health care—the presence of trained psychologists, psychiatrists, and other mental health professionals embedded within pediatric subspecialty care—can ease the referral process, decrease the stigma of seeking care, and improve resource utilization (14). Early engagement in psychological support programs may decrease diabetes-related distress (15).

Although implementing trauma-informed medical care can provide a platform for identifying and treating trauma within diabetes clinics, more research is needed to better understand the pathways by which trauma exposure and symptoms may affect glycemic control, including how they affect family systems, patients' ability to care for themselves, and risk perception. Quality improvement research in which trauma screenings are built into standard care, referrals for evidence-based mental health care are tracked, and chart reviews are conducted may also be an avenue through which to determine how to optimize medical care (targeting both physical and mental health) for this population. By improving our understanding of the role of emotional trauma in the short- and long-term health of youth with diabetes, we can develop more precise targets for evidence-based and trauma-informed interventions to improve glycemic control and quality of life.

The support of Robert's medical team regarding his experience of witnessing intimate partner violence between his parents helped him to open up to clinic staff about his tendency to avoid all potential stressors, including diabetes self-management tasks. With family support, in addition to medications and psychotherapy to decrease hyperarousal and intrusive thoughts, his glycemic control steadily improved. Thus, the clinic's implementation of a trauma-informed

approach to medical care helped to better support Robert's overall health and well-being.

Duality of Interest

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Author Contributions

A.L.M. and M.L.M. both researched data, wrote the manuscript, contributed to discussion, and reviewed/edited the manuscript. A.L.M. is the guarantor of this work and, as such, had full access to the included information and takes responsibility for the contents of the manuscript.

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