ARTICLE

Depression in the School-Aged Child With Type 1 Diabetes: Implications for Pediatric Primary Care Providers

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ABSTRACT

Depression is a common comorbid condition experienced by children with type 1 diabetes that, if undiagnosed, can lead to deterioration in glycemic control and other serious health complications. Although it is documented that children with type 1 diabetes experience high rates of depression, a comprehensive clinical guide does not exist to help direct the pediatric provider on how to best care for these children. The purpose of this article is to synthesize current evidence to aid the pediatric primary care provider in the detection and management of depression in the school-aged child with type 1 diabetes. J Pediatr Health Care. (2017) ■, ■-■.

KEY WORDS

Depression, pediatric primary care providers, pediatrics, school-aged child, type 1 diabetes

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Pediatric providers are aware of the common pathological complications and comorbid conditions associated with type 1 diabetes such as diabetic ketoacidosis, retinopathy, and neuropathy (Chiang, Kirkman, Laffel, & Peters, 2014). However, just as concerning as these physical ailments are the comorbid mental health disorders that many children with type 1 diabetes face including depression, anxiety, and disordered eating (Chiang et al., 2014). The rates of depression among this population are particularly alarming, with higher rates of depression noted in children with type 1 diabetes than among their peers without diabetes (Reynolds & Helgeson, 2011). Estimates vary regarding the exact number of children with type 1 diabetes who experience depressive symptoms; however, a recent systematic review showed a pooled prevalence of

30.04% (Buchberger et al., 2016). Unfortunately, a large number of these children are not properly diagnosed and treated, in part because of a lack of adequate screening (Silverstein et al., 2015). The school-age years, also known as middle childhood, occur between the ages of 5 and 11 years and represent a particularly vulnerable time for children with type 1 diabetes (Kleigman, Stanton, St. Geme, & Schor, 2015). Research and literature have historically focused heavily on the incidence of depression in adolescents with type 1 diabetes. However, recent guidelines and recommendations reflect the necessity of early screening and intervention in the prevention of the long-term complications associated with unrecognized depression in the school-aged child with type 1 diabetes (Chiang et al., 2014; Delamater, de Wit, McDarby, Malik, & Acerini, 2014). Therefore, it is imperative that pediatric primary care providers caring for school-aged children with type 1 diabetes are aware of this common comorbidity. Providers must also be able to identify children who are at an increased risk for depression, implement proper screening techniques, and appropriately manage depression in this population. The purpose of this article is to synthesize current evidence to aid the pediatric primary care provider in the detection and management of depression in the school-aged child with type 1 diabetes.

BACKGROUND

Type 1 Diabetes

Recent statistics estimate that nearly 170,000 American youth are currently living with a diagnosis of type 1 diabetes (Pettitt et al., 2014). Although most often diagnosed in White children, the prevalence of this disease continues to increase across all racial groups (Hamman et al., 2014; Pettitt et al., 2014). Type 1 diabetes affects both pediatric and adult populations alike and can be diagnosed at any age. However, formerly known as *juvenile-onset diabetes,* type 1 diabetes is most often diagnosed in the school-aged child, with a mean age of onset of 8.1 years (Pettitt et al., 2014). This autoimmune disease causes destruction of pancreatic β cells, resulting in the body's inability to produce insulin. Without insulin, the body is unable to transport glucose from the blood stream into the cells where it is necessary for cellular functions. As a result, individuals with type 1 diabetes require careful management of blood glucose levels and frequent administration of insulin via injection or insulin pump (Chiang et al., 2014). Poor control of type 1 diabetes is associated with both physical and psychiatric comorbidities (Chiang et al., 2014).

Developmental Considerations and Challenges

Developmental theorist Erik Erikson describes the central psychosocial conflicts associated with each stage of development (Berk, 2014). He asserts that children 5 to 11 years of age are tasked with accomplishing a sense of industry and are at risk of developing a sense of inferiority if they are unsuccessful (Berk, 2014). The school-aged child may develop self-confidence and a sense of industry through the acquisition of cognitive, athletic, and social skills (Chiang et al., 2014). Although these children should be encouraged to participate in school, athletic, and peer activities, the tasks of routine management and inadequate blood glucose control can adversely affect the child's ability to learn and partake in the normal activities of childhood (Chiang et al., 2014).

Each child is unique, and therefore, the level of involvement in diabetes self-management may vary. Children younger than 11 years old may participate in some diabetes care tasks such as blood glucose testing; however, management is typically parent dominated (Schilling, Knafl, & Grey, 2006). Jean Piaget describes children between the ages of 7 and 11 years as being in the concrete operational phase of cognitive development (Berk, 2014). Although children in this period of development are capable of logical thoughts and problem solving, abstract concepts may remain difficult for the child to comprehend (Berk, 2014). As the child enters the later school-age years, he or she may transition into the formal operational phase of development as he/she becomes more capable of abstract thought (Berk, 2014). These children may begin to understand the short-term and long-term benefits of adequate control and may become more involved in their diabetes management (Chiang et al., 2014). This period of transition often begins around the age of 11 years, and management tasks become more equally shared (Schilling et al., 2006). Tasks that require calculation or medical decision making, such as dosing insulin or calculating carbohydrates, often continue to require parental consultation (Schilling et al., 2006). Therefore, during this stage of development, it is recommended that management practices remain shared between the child and parent and that the parent maintains involvement in management decisions to prevent deterioration in control (Chiang et al., 2014).

Depression

The toll of managing a chronic illness and associated lifestyle changes are thought to be major contributors to the increased incidence of depression in children with type 1 diabetes. However, it has also been suggested that there may be a biological component, with increased metabolic abnormalities and systemic