

Eating disorders in young women with type 1 diabetes mellitus

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Abstract

Research findings from the past decade regarding the association of type 1 diabetes mellitus and eating disorders are critically reviewed in this paper. Although there has been much debate regarding the specificity of this association, a recent large multisite case-controlled study demonstrated that the prevalence rates of both full syndrome and subthreshold eating disorders among adolescent and young adult women with diabetes are twice as high as in their nondiabetic peers. Further, a 4-year follow-up study showed that disordered eating behavior in young women with diabetes often persists and is associated with a threefold increase in the risk of diabetic retinopathy. These eating disturbances tend to be associated with impaired family functioning and with poor diabetes management. Health care professionals should maintain a high index of

suspicion for the presence of an eating disturbance among young women with diabetes, particularly among those with persistently poor metabolic control and/or weight and shape concerns. Screening for such disturbances should begin during the prepubertal period among girls with diabetes. A brief psychoeducational intervention leads to a reduction in disturbed eating attitudes and behavior but is not sufficient to improve metabolic control. More intensive treatment approaches, which should include a family-based component, may be needed to improve metabolic control. The evaluation of these and other treatment approaches is indicated in view of the serious short- and long-term health risks associated with eating disorders in young women with diabetes. © 2002 Elsevier Science Inc. All rights reserved.

Keywords: Eating disorders; Type 1 diabetes mellitus; Young women; Impaired metabolic control; Diabetes-related complications; Prevention/intervention

Introduction

Type 1 diabetes mellitus is one of the most common chronic conditions of childhood and adolescence [1], affecting 0.3–0.6% of individuals by the age of 20 [2]. Although the majority of children with this condition lead healthy and active lives, short-term complications such as diabetic ketoacidosis and long-term microvascular complications affecting the eyes, kidneys, and peripheral nerves may result when optimal metabolic control is not maintained over a period of years [3,4]. Achieving such control requires adherence to a treatment regimen that includes multiple daily blood sugar measurements and insulin injections or use of an insulin pump, careful planning of

the content and timing of food intake, and frequent medical follow-up.

Disordered eating behavior is common in young women living in westernized countries, where thinness is valued and dietary restraint is pursued [5]. Prevalence studies in North America indicate that full syndrome bulimia nervosa may be found in 1–3% of adolescent and young adult women, and subthreshold disorders are even more common [6–8]. The rates of these disorders are lower but rising in less-westernized countries such as Asia and Africa [9–11] as Western attitudes towards weight and shape become more pervasive [9,12,13]. Within North America, prevalence rates are increasing among certain minority groups, such as Black women [14,15] who, while typically heavier than their White peers in the United States [16], are only now coming to have comparable levels of body dissatisfaction and eating and weight psychopathology [12,17]. In that regard, a recent study found that ethnic differences in eating disorder symptoms disappeared when body mass index (BMI) was controlled for in this study [18]. At present, there are no data

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regarding the effect of culture and race on eating disorders among women with diabetes. We are currently evaluating these factors in a large Canadian sample of adolescent girls with and without diabetes, and in an international, cross-cultural comparison study.

We have postulated that the risk of eating disturbances is higher in young women with type 1 diabetes, due to multiple, interacting factors related to diabetes and its treatment [19,20] (see Fig. 1). Diabetes management imposes some degree of perceived dietary restraint, particularly for patients who eat according to a predetermined 'meal plan,' rather than in response to internal cues for hunger and satiety. Such neglect of internal cues may contribute to dietary dysregulation in susceptible individuals [21]. In addition, a higher BMI has been observed in some studies of adolescent girls with diabetes [22–24], and in individuals following an intensive diabetes management plan [25–27]. This increased BMI may heighten body dissatisfaction, triggering a cycle of dieting and subsequent binge eating and purging, particularly in young women for whom body weight and shape are central to self-image. Unfortunately, diabetes provides a convenient, but dangerous, means of purging to prevent weight gain, through the deliberate omission of insulin.

We will review here empirical findings that have emerged over the past decade regarding the association of eating disorders and diabetes (studies were identified by searching MedLine and PsychInfo databases between 1992 and September 2001), and consider the theoretical and clinical implications of these findings. Until recently, it has been unclear whether there is a specific association of eating disorders with diabetes. Some studies have suggested an increased incidence of eating disorders in young women with diabetes [23,28–38], whereas others did not find such an increase [39–49]. However, conclusions from these studies are limited by the small sample sizes of females in the age of highest risk for eating disturbances (i.e., older adolescence and young adulthood), the absence of control groups, low statistical power, and/or by the lack of structured diagnostic interviews for the assessment of eating disorders. Studies with

larger sample sizes were needed to determine whether diabetes and its treatment regimen might trigger the expression of eating disorders in susceptible individuals. Further research was also needed regarding the impact of comorbid eating disorders on metabolic control and diabetes-related complications and the effectiveness of therapeutic intervention.

Eating disorders in diabetes

A variety of chronic medical illnesses may bring some additional risk of disordered eating [50]. However, this effect appears to be greatest in medical illnesses, such as type 1 diabetes and phenylketonuria, in which treatment imposes dietary restraint [19,51].

We recently conducted a large, multisite case-controlled study of 356 girls aged 12–19 years with type 1 diabetes and 1098 case-matched controls [24]. Our study used a two-stage design with both self-report questionnaires and structured diagnostic interviews. We found that eating disorders that met DSM-IV diagnostic criteria, mostly bulimia nervosa and eating disorders not otherwise specified [7], are more than twice as common in girls with diabetes compared to their nondiabetic peers (10% vs. 4%). Subthreshold eating disorders were also almost twice as common in girls with diabetes compared to controls (14% vs. 8%). Structured diagnostic interviews were necessary in a study of this kind because of the high sensitivity and low specificity of the screening measures. The eating disorders identified were associated with body dissatisfaction, dietary restriction, insulin omission, and other forms of purging to prevent weight gain. Those with full syndrome eating disorders had significantly higher mean hemoglobin A1c (HbA1c) levels, which reflect metabolic control, compared to girls without eating disorders (9.4% vs. 8.6%). Consistent with some but not all previous studies [23,52], the mean BMI for subjects with diabetes was significantly higher than that of nondiabetic controls (22.7 vs. 20.6 kg/m²) [24]. Although causation cannot be established in such a cross-sectional study, higher BMI is an established risk factor for body dissatisfaction, dieting, and associated eating disturbances in young women in Western cultures [5].

Our research [24] and that of others [38,53] indicate that eating disorders associated with bingeing and purging, such as bulimia nervosa and binge-eating disorder, are the most common types of eating disorders among girls with diabetes, as they are in girls in the general population [6–8]. Restricting eating disorders are much less common conditions. In fact, in our study of 356 adolescent girls with diabetes [24], no cases of anorexia nervosa were found, although 5 cases (1%) of bulimia nervosa and 31 cases (9%) of eating disorder not otherwise specified were identified. A specific association has not been demonstrated between anorexia nervosa and type 1 diabetes, although this comorbidity may be associated with hypoglycemia, growth retardation, delayed

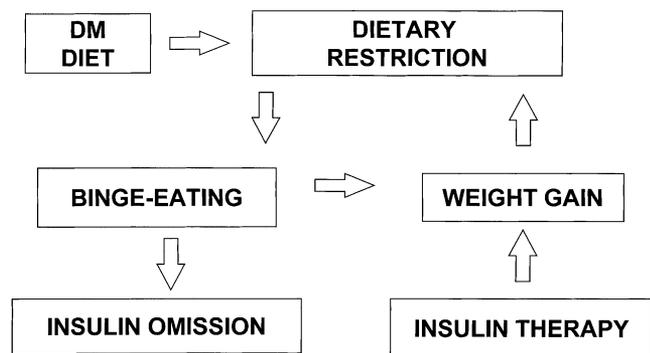


Fig. 1. Potentiation of eating disorders by type 1 diabetes.

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