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Who's distressed? A comparison of diabetes-related distress by type of diabetes and medication

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ABSTRACT

Objective: We hypothesized that diabetes-related distress would vary by type of diabetes and medication regimen [Type 1 diabetes (T1DM), Type 2 diabetes with insulin use (T2DM-i), Type 2 diabetes without insulin use (T2DM)]. Thus, the aim of this study was to identify groups with elevated diabetes-related distress.
Methods: We administered the 17-item Diabetes-related Distress Scale (DDS-17) to 585 patients. We collected demographics, medications, and lab results from patient records.
Results: Patients were categorized by type of diabetes and medication: T1DM (n = 149); T2DM-i (n = 333); and T2DM (n = 103). ANOVA revealed significant differences in sample characteristics. ANCOVA were conducted on all four DDS-17 domains [Emotional Burden (EB); Physician-related Distress (PD); Regimen-related Distress (RD); and Interpersonal Distress (ID)]; covariates included in the models were sex, age, duration of diabetes, BMI, and HbA1c. EB was significantly lower in T1DM than T2DM-i, $p < 0.05$. In addition, RD was significantly lower in T1DM than either T2DM-i, $p < 0.05$ and T2DM, $p < 0.05$.
Conclusions: EB and RD are higher for those with type 2 diabetes. Thus, interventions to reduce EB and RD need to be considered for patients with type 2 diabetes.
Implications: DDS-17 is useful in identifying diabetes-related distress in patients with diabetes. Efforts need to be made to reduce EB and RD.

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Managing diabetes is not easy. Polonsky and associates describe diabetes as a "complex, demanding, and often confusing set of self-care directives" in which "patients may become frustrated, angry, overwhelmed, and/or discouraged" (p. 626) [1]. Accordingly, the American Diabetes Association (ADA) position statement recommends psychosocial assessment as an integrated part of routine care for people with diabetes (Young-Hyman, 2016) [2].

The concept of diabetes-related distress, which encompasses patients' concerns about self-care, support, emotional burden, and quality of healthcare, is a common challenge for people with diabetes [1,3]. While depression is prevalent in people with diabetes, diabetes-related distress has been found to be even more common, with a prevalence of 18–35% [4,5]. Diabetes-related distress is noted to be a separate clinical entity, whereby about 70% of patients with identified diabetes-related distress were not clinically depressed [4,6]. Diabetes-related distress can be assessed using the 17-item Diabetes-related Distress Scale (DDS-17), which measures diabetes-related distress in four distinct domains: 1) emotional burden (EB); 2) physician-related distress (PD); 3) regimen-related distress (RD); and 4) interpersonal distress (ID) [1–3]. These domains are further described in Table 1.

Elevated diabetes-related distress is related to poorer self-management, worse medication adherence, and lower quality of life [7,8]. Moreover, greater HbA1c values correlate with higher diabetes-related distress [5,8]; conversely, lower diabetes-related distress levels are associated with patient self-efficacy and physician support [9]. In addition, higher DDS-17 scores were associated with women, younger patients, and those with higher BMI [9]. For patients with T1DM, diabetes-related distress has been experienced somewhat differently than for patients with T2DM

Abbreviations: ADA, American Diabetes Association; ANOVA, analysis of variance; DoD, Department of Defense; DCOE, Diabetes Center of Excellence; DDS-17, Diabetes-related Distress Scale; EB, emotional burden; ID, interpersonal distress; PD, physician-related distress; RD, regimen-related distress; T1DM, type 1 diabetes; T2DM-i, type 2 diabetes with insulin use; T2DM, type 2 diabetes without insulin use.

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Table 1
The 17-item Diabetes-related Distress Scale (DDS-17).

Emotional Burden (EB)
1. Feeling that diabetes is taking up too much of my mental and physical energy every day.
2. Feeling angry, scared, and/or depressed when I think about living with diabetes.
3. Feeling that diabetes controls my life.
4. Feeling that I will end up with serious long-term complications, no matter what I do.
5. Feeling overwhelmed by the demands of living with diabetes.
Physician-related Distress (PD)
1. Feeling that my doctor doesn't know enough about diabetes and diabetes care.
2. Feeling that my doctor doesn't give me clear enough directions on how to manage my diabetes.
3. Feeling that my doctor doesn't take my concerns seriously enough.
4. Feeling that I don't have a doctor who I can see regularly enough about my diabetes.
Regimen-related Distress (RD)
1. Feeling that I am not testing my blood sugars frequently enough.
2. Feeling that I am often failing with my diabetes.
3. Not feeling confident in my day-to-day ability to manage diabetes.
4. Feeling that I am not sticking closely enough to a good meal plan.
5. Not feeling motivated to keep up my diabetes self-management.
Interpersonal Distress (ID)
1. Feeling that friends or family are not supportive enough of self-care efforts (e.g. planning activities that conflict with my schedule, encouraging me to eat the "wrong" foods).
2. Feeling that friends or family don't appreciate how difficult living with diabetes can be.
3. Feeling that friends or family don't give me the emotional support that I would like.

Responses are on a 6 point continuum from 1 = Not a problem; 2 = A slight problem; 3 = A moderate problem; 4 = Somewhat serious problem; 5 = A serious problem; 6 = A very serious problem.

[10]. EB originates predominantly from a sense of powerlessness, reflecting ongoing frustrations with managing glucose when much of the variation is outside of their control [10]. RD also comes from concerns about not monitoring blood glucose enough, fears that eating constraints are controlling their life, and a more pronounced fear of hypoglycemia [10]. To a lesser extent, patients with T1DM have interpersonal and physician-related distress.

Despite knowing the relationship of diabetes-related distress to diabetes-related health outcomes, the relationship to type of diabetes and medication regimen has not been evaluated.

This study sought to explore these factors as they relate to high diabetes-related distress measured by DDS-17 in a diabetes clinic setting. We hypothesized that DDS-17 would significantly vary by type of diabetes and medication regimen [Type 1 diabetes (T1DM), Type 2 diabetes with insulin use (T2DM-i), Type 2 diabetes without insulin use (T2DM)]. The goal of our study was to identify groups with elevated diabetes-related distress, which would enable a targeted intervention to decrease diabetes-related distress in the specific domain.

1. Research design and methods

Wilford Hall Ambulatory Surgical Center Institutional Review Board approval was obtained for this retrospective data analysis. Data were collected at the Diabetes Center of Excellence (DCOE) through chart reviews of clinical visits from June 2015 through August 2016. The DCOE is an Air Force diabetes specialty clinic treating challenging cases of diabetes including patients with type 1 diabetes (T1DM) and patients with complex diabetes. Our patient population consists of all branches of active duty military, retired, and family members. The DCOE began administering the 17-item Diabetes-related Distress Scale (DDS-17) in June 2015 as standard

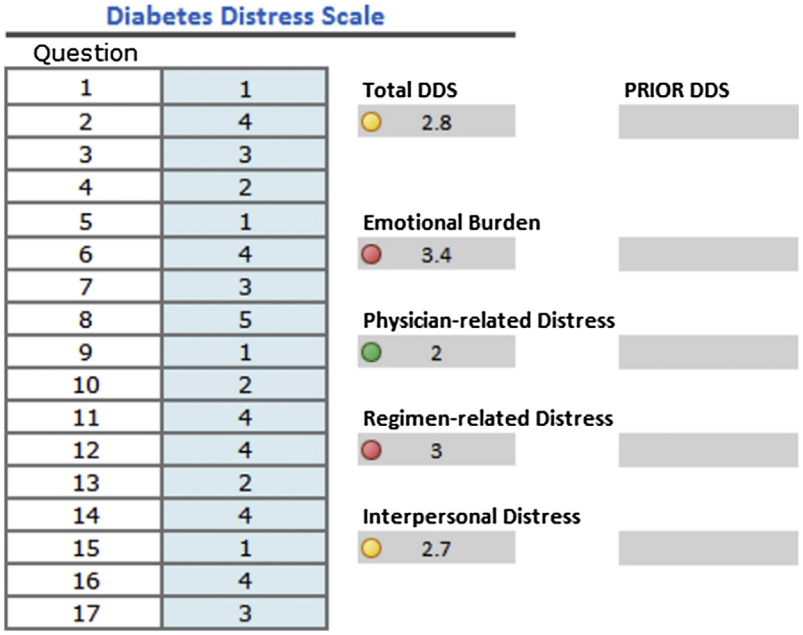

Fig. 1. "DDS-17 Dashboard in the NoteWriter".

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