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Preliminary communication

Probing for depression and finding diabetes: a mixed-methods analysis of depression interviews with adults treated for type 2 diabetes

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ABSTRACT

Background: Depression has increased prevalence and consistently predicts poor health outcomes among patients with diabetes. The impact of stressors related to diabetes and its treatment on depression assessment is infrequently considered.
Methods: We used mixed methods to evaluate depressive symptoms in adults with type 2 diabetes. We categorized responses related to diabetes and its treatment during interviews ($n=70$) using the Montgomery–Åsberg Depression Rating Scale (MADRS) and administered questionnaires to measure diabetes-related distress and depressive symptoms.
Results: Participants (M age=56, SD=7; 67% female; 64% Black; 21% Latino) had mild depression on average (MADRS M=10, SD=9). Half of those with symptoms spontaneously mentioned diabetes context; 61% said diabetes contributed to their symptoms when questioned directly. Qualitative themes included: overlapping symptoms of diabetes and depression; burden of diabetes treatment; emotional impact of diabetes; and the bidirectional influence of depression and diabetes. Diabetes was mentioned more often at higher levels of depression severity ($r=.38$, $p=.001$). Higher HbA1c was associated with mentioning diabetes as a context for depressive symptoms ($r=.32$, $p=.007$). Insulin-users mentioned diabetes more often than those on oral medications only ($p=.005$).
Limitations: MADRS is not a traditional qualitative interview so themes may not provide an exhaustive view of the role of diabetes context in depression assessment.
Conclusions and clinical implications: The burden of type 2 diabetes and its treatment often provide an explanatory context for depressive symptoms assessed by structured clinical interviews, the gold standard of depression assessment. Diabetes context may influence accuracy of assessment and should inform intervention planning for those needing treatment.

1. Introduction

Individuals with diabetes are more likely to experience depression compared to the general population (Anderson et al., 2001). Depression, in turn, is related to poorer glycemic control (Lustman et al., 2000), increased risk of complications (de Groot et al., 2001); greater mortality risk (e.g. Black et al., 2003; Egede et al., 2005; Katon et al., 2005); and poorer diabetes treatment adherence and self-management (Gonzalez et al., 2008b). These relationships suggest the potential importance of depression screening and assessment in identifying patients at risk for poor treatment outcomes (Holt and Van der Feltz-Cornelis, 2012). However, the methods used to assess depression throughout most of the literature from which the above patterns emerge are limited: they neither adequately capture the construct of major depressive disorder (MDD) nor do they adequately differentiate MDD from subclinical (i.e., not of sufficient severity to warrant a psychiatric diagnosis) levels of emotional distress (Gonzalez et al., 2011). First, the vast majority of studies have relied on self-report screening instruments with high rates of false positives for the identification of MDD cases (Roy et al., 2012).

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This reliance on self-report likely leads to significant heterogeneity and measurement error in the evaluation of depression in patients with diabetes (e.g. Fisher et al., 2007). Second, the psychiatric construct of MDD is insufficient to account for observed relationships between symptoms of emotional distress and diabetes self-management and treatment outcomes. For example, self-reported emotional distress is consistently associated with glycemic control and diabetes self-management but interview-assessed MDD is not (Fisher et al., 2007, 2010). Furthermore, depressive symptom severity scores that fall below the cutoff for MDD (i.e., subclinical emotional distress) are nevertheless associated with worse diabetes treatment adherence, poorer self-management (Gonzalez et al., 2007), and higher risk of complications and mortality (Black et al., 2003).

It has been suggested that the emotional distress frequently reported by diabetes patients can often reflect diabetes-related distress, a non-psychiatric construct representing the experience of significant emotional distress secondary to living with the burden of diabetes and its treatment (Fisher et al., 2012). Questionnaires have been developed to evaluate diabetes-related distress (Polonsky et al., 1995, 2005) and a considerable literature has developed to document consistent associations between increased diabetes-related distress and poor diabetes self-management and treatment outcomes (e.g. Fisher et al., 2007, 2008, 2010). Consistent and sizable positive correlations (r=.48 to .54; Gonzalez et al., 2008a; Fisher et al., 2010) between measures of diabetes distress and symptoms of MDD suggest significant overlap between these constructs.

Considerable evidence supports the role of diabetes as a life stressor that contributes to symptoms of depression. For example, depressive symptoms are more common among diagnosed type 2 diabetes patients versus those with undiagnosed diabetes or impaired fasting blood glucose (Knol et al., 2007); and among treated versus untreated patients (Golden et al., 2008). Furthermore, insulin-treated patients are more likely to report symptoms of MDD than patients on oral medications only (Aikens et al., 2008; Gonzalez et al., 2007). Diabetes-related somatic symptoms (Ludman et al., 2004) and complications (de Groot et al., 2001; Vileikyte et al., 2009) are also associated with increased depressive symptoms, as are comorbid physical illnesses (Egede, 2005).

Attention to contextual factors surrounding depressive symptoms – whether they meet the MDD criteria or not – could provide valuable information to guide effective, tailored treatment planning (Gonzalez et al., 2011). However, current guidelines in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) (American Psychiatric Association, 2000) specify that bereavement is the only life event or stressor clinicians should take into account when making diagnostic evaluations for MDD. In the upcoming fifth edition of the manual, it has been proposed to remove the bereavement exclusion and add a footnote for clinicians regarding how to differentiate bereavement and other "loss reactions" from a Major Depressive Episode (American Psychiatric Association, n.d.). This change may be more in line with the way experienced clinicians consider other life events beyond bereavement as exemptions to the diagnosis. A recent study demonstrated that clinical psychologists commonly take life context into account when diagnosing MDD and other disorders and rate symptoms as less abnormal if they occur in the context of a significant life stressor (Kim et al., 2012). Furthermore, causal attributions for depressive symptoms appear to influence the likelihood of being diagnosed with depression and receiving treatment in primary care practice (van den Boogaard et al., 2011). Thus, contextual explanations and causal models for depression appear to be implicated in evaluation of depressive symptoms, despite being largely ignored by current diagnostic guidelines for MDD.

The effect of patients' experiences with diabetes and its management on depression assessment remains in need of further investigation and could have implications for the conceptualization and measurement of depression in adults treated for type 2 diabetes. More important, the diabetes-related context that some patients provide to explain their depressive symptoms may offer important clues regarding causal mechanisms and could guide the selection of appropriate interventions. Therefore, the goal of the present study was to use a mixed-methods (qualitative and quantitative) approach to identify and describe the diabetes-related context that type 2 diabetes patients spontaneously use to explain their experience of symptoms assessed by semi-structured depression interviews. The study had three aims. First, we used content analysis to categorize responses mentioning experience with diabetes and its treatment as a context for depressive symptoms being evaluated. We rated each interview for frequency of participants endorsing diabetes as an explanatory context for depressive symptoms. Next, we examined quantitative relationships between the tendency to use diabetes as an explanatory context during the depression interview and self-reported diabetes-related distress. Finally, we examined differences by treatment regimen and lifetime MDD diagnosis in diabetes-related distress and use of diabetes as an explanatory context for depressive symptoms.

2. Methods

We recruited adults (over 18 years) with type 2 diabetes through recruitment mailings, direct referrals, clinic screenings and flyers in affiliated primary care clinics and the Montefiore Clinical Diabetes Program in the Bronx, NY. Eligible participants were those who could read and write in English and who were being treated with medication for type 2 diabetes. This report presents data on a subset of the first 70 participants who completed the study including informed consent and all relevant measures. Data collected from baseline visits included HbA1c (A1c), clinical interviews, and self-report measures of diabetes distress and depression.

2.1. Measures

2.1.1. Interviews

Depressive symptoms were measured using the Montgomery–Åsberg Depression Rating Scale (MADRS). The MADRS is a semi-structured clinician-rated interview that assesses the magnitude of nine core depressive symptoms over the past week: reported sadness, inner tension, reduced sleep, reduced appetite, concentration difficulties, lassitude, inability to feel, pessimistic thoughts and suicidal thoughts (Montgomery and Åsberg, 1979). The interviewing clinician rates each symptom's severity from 0 to 6 using additional probing questions and anchor points. The interviewer also rates the participant's apparent sadness as a tenth item. A total score is derived from summing the 10 items, and can range from 0 to 60 (7–19 indicates mild depression; $>$35 signals severe depression) (Snaith et al., 1986). The MADRS contains fewer somatic items than other depression scales (Svanborg and Åsberg, 2001), and thus should be less influenced by diabetes symptoms. MADRS questions do not inquire about the perceived cause(s) of participants' symptoms nor about diabetes specifically. Thus, any diabetes-related content resulted from participants volunteering this information without prompting. Internal reliability of the MADRS in the present sample was excellent (α=.85). We added a final yes/no question at the end of the interview to inquire directly about participants' perceived link between diabetes and depressive symptoms: "Do you believe that diabetes contributes to or causes the symptoms of depression we just spoke about?"