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Patient-Provider Communication in Patients with Diabetes and Depressive Symptoms

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Summary

The association between depressive symptoms and patient-provider communication was examined in adult primary care patients with diabetes. Most communication was not patient-centered, but did not differ by level of patient's depressive symptoms.

Introduction

Among patients with diabetes, the odds of depression is twice that of the general population [1]. Patients with co-morbid diabetes and depression have decreased self-care adherence, poorer overall functioning and increased health-care costs [2]. Effective patient-provider communication improves patient related outcomes for both acute and chronic diseases [3]. In patients with diabetes, more patient-centered communication enhances perceived health status, functional status, and glycated hemoglobin (A1C) [4,5]. However, little is known about the impact of depressive symptoms on patient-provider communication among patients with diabetes. Patients with complex disease and depression may ask fewer questions and have less psychosocial dialogue with providers. We evaluated the association between depressive symptoms and patient-centered communication in adult primary care patients with diabetes. We hypothesized that patients with more depressive symptoms would have less patient-centered communication.

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Conflict of Interest

The authors declare that they have no conflict of interest.

Methods

1.1 Participants

Established patients with diabetes presenting to an academic primary care clinic for routine follow-up were recruited in a cross-sectional study. Eligible patients were at least 18 years old, patients in the clinic for at least 6 months, diagnosed with diabetes or on medications for hyperglycemia, and scheduled for a chronic care visit. Exclusion criteria included no primary care visit in the previous 3 years, visual acuity 20/50 or worse, non-English speaking, dementia or psychotic disorder.

1.2 Procedures

The Institutional Review Board approved all study procedures. Written informed consent was obtained from patients and physicians. To reduce Hawthorne effect, physician consent was obtained at the start of the study. Encounters were audio-recorded by placing digital recorders inconspicuously in exam rooms.

1.3 Measures

1.3.1 Depressive symptoms—Subjects were administered the Center for Epidemiologic Studies Depression (CES-D) Scale. Scores range from 0–60, with scores of 22 or higher indicative of possible major depression [6]. The scale has a sensitivity of 79% and specificity of 89% for major depression in patients with diabetes [7]. Patients were not routinely evaluated for depression outside of the study protocol.

1.3.2 Patient-Provider Communication—Audio-recordings were coded using the Roter Interaction Analysis System (RIAS) [8]. Each visit generated a Patient-Centered Communication Score equal to the ratio of patient-centered communication divided by physician-centered communication. Ratios of 0–1 indicate more physician-centered communication while ratios > 1 indicate more patient-centered. Examples of patient-centered communication (numerator) are: partnership-building; psychosocial information and counseling; social talk; patient questions and physician open-ended questions. Physician-centered communication (denominator) focuses on the biomedical agenda. RIAS was coded by two experienced, independent coders blinded to study design and CES-D scores; coding reliability is 0.85 based on Pearson coefficient [8]. Visit duration, speech speed (talk time/visit duration), and physician verbal dominance (physician talk/ patient talk) were also recorded.

1.3.3 Demographics and A1C—Demographics were self-reported. Literacy and numeracy were assessed using the Rapid Estimate of Adult Literacy in Medicine (REALM) and Diabetes Numeracy Test DNT-15) [9,10]. Patients completed the Perceived Diabetes Self-Management Scale (PDSMS) to assess diabetes-specific self-efficacy [11]. A1C within 6 months of the visit was abstracted from records.

1.4 Statistical analyses

Patient demographics were stratified by CES-D scores. In univariate analysis, we compared differences in patient and patient-provider communication characteristics by CES-D score using Wilcoxon rank-sum or chi-squared tests. We conducted a multivariate linear regression analysis to determine if CES-D score was associated with level of patient-centered communication while adjusting for potential confounders: age, gender, race and insulin use. Regression accounting for clustering by provider was completed. Results were analyzed using Stata v11.0.

Results

Ninety-five patients with diabetes with a median (IQR) age of 58 years (50–64) were enrolled; 51% were female, 50% were white, 96% had type 2 diabetes with median (IQR) A1C 7.6% (6.6, 8.4). By CES-D score, 19 (20%) patients had possible major depression. Patients with possible major depression were more likely to be female, non-white, and unmarried. Patients with possible major depression were more likely to have lower diabetes-specific numeracy, lower self-efficacy scores and higher A1C (Table 1).

The median (IQR) patient-centered communication score was 0.59 (.46, .77) with no significant difference between those with and without possible major depression (Table 1). There was no significant difference between level of depressive symptoms and visit duration, speech speed or physician verbal dominance. Most visits (79%) were conducted by resident physicians; the remainder by attendings. 15 patients were excluded from RIAS coding due to technical problems with the audio-recording or a third-party contributing significantly to communication. Of a subset of providers (N=34), 56% were aware of being recorded during the study visit.

Discussion

In this study of primary care patients with diabetes, rates of depressive symptoms were comparable to those previously described, with 20% of patients meeting criteria for major depression [1]. Our study confirmed prior findings that patients with depressive symptoms have lower self-efficacy and poorer glycemic control [12,13]. However, depressive symptoms were not associated with a difference in patient-centered communication or other communication characteristics.

The patient-centered communication scores found in this study differed markedly compared to prior work. Previous studies focused on evaluating patient-provider communication in primary care found scores of 1.02–2.8, indicative of patient-centered encounters (Table 2). Our patient-centered communication score was less than 1 for most encounters. As both prior studies and our own included trainees, this is an unlikely explanation. We hypothesize that this biomedical focus was driven by our population's multimorbidity. Previous work has shown that patients with diabetes frequently have multiple chronic conditions and that having multiple chronic conditions leads to lower communication ratings [18, 19]. Several prior studies were conducted during well exams, while our study centered on visits scheduled for diabetes care. Another consideration is that the care setting, such as primary care, sub-specialty or in-patient, may alter and influence communication content and style. Additional research is needed to examine this consideration.

As patient-centered communication has been tied to improved outcomes, early interventions to improve patient-provider interactions could advance care. Enhanced communication training during training may represent a target for these interventions.

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Table 1

Characteristics of Subjects by Depressive Symptom Severity

Variable	All N=95 %/no. or Mean(SD)	No-mod depression N=76	Possible Major Depression N=19	P value *
Female	50.5(48)	44.7(34)	73.7(14)	0.024
Age, y	56(10)	57(11)	53(7)	0.152
White	49.5(47)	55.2(42)	26.3(5)	0.024
Married	41.5(39)	47.4(36)	16.7(3)	0.012
Income >30K	48.4(46)	52.6(40)	31.6(6)	0.101
BMI	34.0(8.6)	33.5(8.8)	36.2(7.5)	0.225
Smoker	15.8(15)	14.5(11)	21.0(4)	0.482
Type 2 diabetes	95.7(89)	79.8(71)	94.7(18)	0.817
HbA1c,%	7.8(2.0)	7.4(1.4)	9.3(3.0)	0.0001
Taking insulin	44.2(42)	42.1(32)	52.6(10)	0.409
REALM <9 th grade	19(18)	16(12)	32(6)	0.116
DNT-15 score	0.57(0.30)	0.62(0.29)	0.38(0.30)	0.002
PDSMS total score	29(6)	30(6)	26(6)	0.004

Primary and Secondary Outcomes by Depressive Symptom Severity				
Median, IQR or %	N=80	N=64	N=16	P value *
Patient-centered interviewing score	.593(.463, .770)	.585(.458, .795)	.635(.500, .770)	0.736
Visit length (min)	23.1(18.0, 30.2)	23.8(17.8, 30.6)	22.2(19.7, 23.3)	0.373
Speech speed	24.2(19.9, 28.1)	25.0(19.5, 28.3)	22.9(22.0, 27.1)	0.449

*
p-value by 2-sample t-test or chi-squared

Table 2

Patient-Centered Communication Scores in Comparison

Lead author, Journal, Year	Study population	Patient-centered Communication Score or Equivalent
Johnson, Kevin B. Pediatrics, 2008. 14	Pediatric primary care	2.1–2.8
Cooper, Lisa A. Annals of Internal Medicine, 2003. 15	Internal medicine primary care visits, 16 urban practices	Unadjusted 1.30–1.34 Adjusted 1.40–1.29
Johnson, Rachel L. American Journal of Public Health, 2004. 16	Internal medicine primary care visits, 16 urban practices	Unadjusted 1.02–1.31 Adjusted 1.58–1.91
Bensing, Jozien M. Journal of General Internal Medicine, 2003. 17	Patients with hypertension in the US and Netherlands, primary care	% Biomedically intensive visits US 48% Dutch 18% % Socioemotional intensive visits US 10% Dutch 50%