

Effectiveness of a Reminder Prompt to Screen for Diabetes in Individuals With Depression

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ABSTRACT

Significant correlation exists between depression and diabetes. The effectiveness of a reminder prompt was examined to screen individuals with depression for diabetes. Eight behavioral health providers at 5 clinics treated 152 patients with depressive symptoms randomized to either a prompt or nonprompt condition. It was hypothesized that the prompt condition would engage higher rates of individuals in diabetes screening. The reminder prompt increased assessments of body mass index and diabetes risk factors ($\chi^2 = 16.9$, $P < .001$) and ordering of hemoglobin A1C tests (95% confidence interval, 2.57–15.64, $P < .001$). Results suggested the benefit of a structural intervention for behavioral health providers to screen for diabetes.

Keywords: chronic illness, depression, diabetes, evidence-based practice, prevention, service delivery research

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Depression and diabetes are 2 of the most common problems seen by medical providers.¹ Patients with major depressive disorder (MDD) have higher rates of diabetes,² and patients with diabetes are twice as likely to have MDD compared with the general population.³ Depressed mood is associated with an increased risk of diabetes.^{4,5} Patients with diabetes and comorbid depression exhibit a greater symptom burden, impaired performance of daily functions, and poorer self-care, all of which contribute to poor disease management and more diabetic complications.^{5,6} The mortality risk is 2.3 times higher for patients who have diabetes with depression than for patients who have diabetes without depression.⁷ The literature focuses on the coexistence of MDD and diabetes; there is a lack of literature about the association between diabetes and depressive disorders that may impact the clinical care of diabetes treatment. Behavioral health providers (BHPs) may screen for diabetes in patients who are prescribed antipsychotic medications following the American Diabetes

Association (ADA) consensus statement guidelines for metabolic screening with second-generation antipsychotic medication.⁸ BHPs do not routinely screen for ADA type 2 diabetes risk factors. Therefore, patients with depression are often not screened or diagnosed for type 2 diabetes.

In light of understanding both the link between depression and diabetes and the need for improved screening in this population, we examined the effectiveness of a reminder prompt to screen for diabetes in patients with depression in 5 community mental health clinics. The goal of the reminder prompt was to examine for specific diabetes risk factors independent of the specific medications prescribed. The clinic sites did not have an electronic medical record and had paper charts. The reminder prompt was an option and possibly analogous to the clinical decision supports (CDSs) used in the electronic health records (EHRs) to alert, remind, and direct BHPs of clinical guidelines to screen for diabetes in patients with depression.⁹ We hypothesized that the prompt in our study would increase rates of body mass index (BMI)

Table 1. Demographic Description of Study Sample (N = 152)

Demographics	n (%)
Sex	
Male	51 (33.6)
Female	101 (66.4)
Age	
18-24	11 (7.2)
25-34	37 (24.3)
35-44	29 (19.1)
45-54	54 (35.5)
≥ 55	21 (13.8)
Race	
Asian	5 (3.3)
Black/African American	31 (20.4)
White	114 (75.0)
Other/unknown	2 (1.4)
Hispanic (regardless of race)	
Yes	61 (40.1)
No/unknown	91 (59.9)
Marital status	
Divorced/separated	35 (23.1)
Married/domestic partner	25 (26.5)
Single/never married	90 (59.2)
Education	
Less than high school	62 (40.7)
High school graduate	42 (34.3)
Some college and higher	26 (17.1)
Unreported	22 (14.5)
Employed	
Yes	23 (15.1)
No	129 (84.9)
Income	
< \$20,000	134 (88.2)
\$20,000-\$30,000	11 (7.2)
> \$30,000	5 (3.3)
Dependents	
1-2	97 (63.8)
3-4	40 (26.3)
≥ 5	15 (9.9)

screening and diabetes risk factor assessments and A1C test orders.

METHODS

Eight BHPs, including 4 psychiatrists and 4 psychiatric nurse practitioners (NPs), the entire behavioral health department providers, were randomized into either a prompt or nonprompt group. Two psychiatrists and 2 psychiatric NPs were in each group. Both psychiatric NPs in the prompt group were employed part-time, and 1 of the psychiatrists in each of the groups was part-time. BHPs provided services at 1 or more of the 5 behavioral health clinics within Cornell Scott Hillhealth Center (CS-HHC). CS-HHC is a federally qualified health center for patients whose income is at least 50% below poverty level. The health clinics generally had similar physical layouts with access to medical services. All of the clinics provided similar psychiatric services to a low socioeconomic population of adults 18 years or older. In 2010, CS-HHC's behavioral health department treated 4,803 patients, of which 1,637 were diagnosed with depression.

A final sample size of 128, with 64 subjects in each group, provided 80% power to determine a 25% difference between the groups. A convenience sample of 152 subjects with 76 subjects in each group was obtained to account for attrition before ceasing enrollment. All of the 152 patients seen by the 8 BHPs were receiving some form of mental health treatment at 1 of the clinic sites. Basic demographic data are presented in Table 1. All patients had a nonpsychotic diagnosis with depressive symptoms, as determined by a BHP's evaluation with no equivalence of diagnoses. All of the patients also had Medicaid insurance to obtain a hemoglobin A1C test. Patients with either an extant diagnosis of psychosis or diabetes, or who were pregnant or lactating females, were excluded from the study. Only about 3% of the 8 BHPs before this study screened for diabetes in these patients.

Prompt Intervention Description

A main feature of the study was the use of a reminder prompt for BHPs to screen for diabetes in patients with depression. The BHPs

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