

Practice-Based Learning and Systems-Based Practice: Detection and Treatment Monitoring of Generalized Anxiety and Depression in Primary Care

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Abstract

Objectives Quality assurance/quality improvement projects are an important part of professional development in graduate medical education. The purpose of our quality improvement study was to evaluate whether (1) the Generalized Anxiety Disorder (GAD-7) scale questionnaire increases detection of anxiety and (2) the Quick Inventory for Depressive Symptomatology Self Report (QIDS-SR) increases detection of depression in a primary care setting. We also aimed to determine whether monitoring patients with depression or generalized anxiety using the QIDS-SR and GAD-7 scales influences treatment changes in the primary care setting.

Methods Patients seen in a general internal medicine clinic between August 2008 and March 2009 were asked to fill out the QID-SR questionnaire and GAD-7 as part of a resident quality improvement project. We measured the prevalence of anxiety and depression during 6 months prior to the use of the GAD-7 and QIDS-SR instruments during the intervention period. We also compared the

frequency of treatment changes initiated both 12 months prior to and during the intervention period. The aforementioned measures were performed with use of a retrospective chart review.

Results The prevalence of anxiety was 15.2% in the pre-intervention period and 33.3% in the intervention period, and the prevalence of depression was 38.9% in the prescreening period and 54.8% during the screening period (P value for both was <0.001). The change in anxiety therapy was 21.6% in the prescreening period and 62.2% in the screening period ($P = .028$). The change in depression therapy was 23.2% in the pre-intervention period and 52.1% in the intervention period ($P = .025$).

Conclusion Routine screening for depression and anxiety may help clinicians detect previously undiagnosed anxiety and depression and also may facilitate identification of needed treatment changes. Further work is needed to determine whether routine screening improves patient outcomes.

Introduction

Depression, or major depressive disorder (MDD), is currently the fourth ranked medical condition worldwide and is estimated to be the second by the year 2020.¹ Currently, 50% to 60% of all antidepressant prescriptions are written by primary care physicians,² indicating that the majority of patients seek treatment from primary care clinics. Effective treatment of depression is critical, as depression has an adverse impact on morbidity and

mortality of several major medical conditions, including coronary artery disease, diabetes, and cancer,³ often resulting in noncompliance with therapy for these disorders.³ Depressed patients consistently rate their mental health as fair or poor (odds ratio [OR] 3.3–5.2), report high levels of work impairment (OR 3.5–8.5), and report high levels of social role impairment (OR 1.6–2) when compared to controls.⁴ Despite the growing awareness of depression within general medicine, a large number of patients continue to go untreated or are inadequately treated.

Individuals with generalized anxiety disorder (GAD) share similar impairments with those who have MDD, such as patient-perceived mental health and level of work impairment, potentially resulting in higher utilization of health care services than by those with pure MDD.⁴ GAD is often untreated or misdiagnosed, with only an estimated 28% to 35% correctly diagnosed, 45% receiving treatment, and less than 10% receiving adequate treatment.^{5,6} GAD is estimated to have a lifetime and 12-month prevalence of 6.1% and 2.9%, respectively,⁷ and among primary care

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patients, an estimated 5.3% to 8.5% may have GAD. The detection and effective treatment of MDD and GAD in primary care are key components to providing quality health care in the primary care setting.

Identifying patients with depression and anxiety can be challenging in an internal medicine ambulatory clinic due to time constraints and lack of physician and/or patient awareness. Quality improvement (QI) projects are one means to make systems improvements, including improvements that seek to overcome barriers in the care setting. These projects are also important in providing residents with exposure to and hands-on practice in the Accreditation Council for Graduate Medical Education (ACGME) competencies of practice-based learning and improvement (PBLI) and systems-based practice (SBP).

All second- and third-year internal medicine residents at Southern Illinois University (SIU) are required to participate in quality assessment/quality improvement projects, working in small groups to identify areas of their own practice that they would like improve. In addition to learning basics of research design, these projects allow residents to get a better grasp of PBLI and SBP.

Screening and treatment for depression and GAD can be challenging. Symptoms of depression and anxiety often are overshadowed by comorbid medical problems; clinicians may not have the time to address mental illness at every visit, and patients may not call attention to them unless specifically asked. The internal medicine residents in our study identified bridging the gap between MDD and GAD prevalence and detection and treatment as a meaningful PBLI and SBP learning improvement project. The interventions focused on quality, access, and systems problems for patients with depression and GAD in the setting of a busy general medicine clinic.

We used these screening tools: the Generalized Anxiety Disorder (GAD-7) scale and the Quick Inventory of Depressive Symptomatology Self-Report (QIDS-SR). The GAD-7 scale and QIDS-SR are common, validated self-report questionnaires that have been used in other studies of anxiety and depression.^{9–13} The brevity and usability of these scales make them attractive tools for identifying and monitoring MDD and GAD in primary care settings.

The purpose of our quality improvement study was to evaluate whether the GAD-7 and QIDS-SR questionnaires increased detection of anxiety and depression, respectively, in a primary care setting. In addition, the study entailed monitoring patients' response to treatment, using quantitative measures to determine whether monitoring patients with depression or generalized anxiety using the GAD-7 and QIDS-SR questionnaires resulted in treatment changes in the primary care setting.

Methods

This was a retrospective cohort study of general medical patients seen by second- and third-year internal medicine

TABLE 1		DEMOGRAPHIC DATA		
Characteristic	Pre-Intervention	Intervention	P	
Age	57.39 y	57.14 y	.887	
Non-Hispanic White	84.02%	86.90%	.481	
African American	13.52%	9.52%	.278	
Asian American	0.82%	0.60%	1	
Unknown	1.64%	2.98%	.496	

residents at SIU School of Medicine between August 2008 and March 2009. All consenting patients were given the GAD-7 and QIDS-SR forms to complete. Patients who screened positive with a score 10 or higher on the GAD-7 scale or greater than 7 on the QIDS-SR were further questioned regarding symptoms. Diagnoses were based on *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV)⁸ criteria for MDD, dysthymia, depression not otherwise specified, GAD, and anxiety not otherwise specified. Patients were offered treatment for anxiety and/or depression according to current standards of care. Treatment changes, including psychotherapy and psychopharmacology, at subsequent office visits were based on survey results, clinical judgment, and patient preference. At the end of March 2009, the investigators retrospectively reviewed all charts of their patient panels and determined the incidence and prevalence of anxiety and depression in their clinic populations both in the 6-month period prior to administering screening questionnaires and the 6-month period during which questionnaires were administered. This study was approved by the SIU Institutional Review Board.

Age, demographic, and comorbidity data for both study periods were collected. The age data for the patients in the 2 study periods were compared using the Student *t* test. Demographic and comorbidity data were compared in the 2 study periods using the Fisher exact test. Proportions were also compared for prespecified variables regarding the prevalence of depression and anxiety and treatment changes for these diagnoses. The Fisher exact test was also used to compare these variables. *P* values were derived using SAS Statistical Software (Chicago, IL).

Results

Our study sample included 244 subjects in the pre-intervention period and 168 subjects in the intervention period. Differences between the numbers in the 2 groups were largely attributed to variations in our specific clinic schedules as well as the possible influence of seasonal variation. The average age of participating individuals was 57.4 years in the pre-intervention period and 57.1 years in the intervention period (*P* = .89). As noted in TABLES 1

TABLE 2 DATA ON COMORBIDITIES			
Comorbidity	Pre-Intervention	Intervention	P
Myocardial infarction/coronary artery disease	16.8%	17.86%	.792
Chronic obstructive pulmonary disease	14.75%	15.48%	.889
Diabetes	21.31%	25%	.404
Diabetes with end organ damage	9.43%	9.52%	1
Ulcer disease	6.56%	6.55%	1

and 2, there also were no significant differences between the pre-intervention and intervention groups in race and associated comorbidities.

After establishing nonsignificant differences in age, demographic, and comorbidity characteristics between the pre-intervention and intervention groups, retrospective data on our prespecified measures of interest were stratified into the following categories: (1) patients with anxiety, (2) changes in therapy amongst those with anxiety, (3) patients with depression, and (4) change in therapy amongst those with depression.

Ninety-five of 244 patients were diagnosed with depression during the pre-intervention group, with a 38.9% prevalence of depression. During the intervention period, 92 of 168 patients were diagnosed with depression, giving a prevalence of 54.8% ($P < .001$). Of the 95 patients diagnosed with depression during the pre-intervention period, 22 had a change in therapy (23.2%) versus 48 of 92 in the intervention period (52.1%, $P = .025$). In the pre-intervention period, 37 of 244 patients were diagnosed with anxiety, giving a prevalence of 15.2%. During the intervention period, 82 of 244 patients were diagnosed with anxiety, with a prevalence of 33.6% ($P < .001$). Eight of 37 (21.6%) patients in the pre-intervention period had a change in their anxiety therapy versus 51 of 82 (62.2%) in the screening period ($P = .028$).

Discussion

Our results indicate that there is an association between routine screening for anxiety and depression and increased detection as well as treatment changes. Due to the retrospective nature of this study, direct cause and effect cannot be inferred; however, our data suggest a possible causal role. Although the reason for treatment change was not available from our data, it is possible that, in many of these cases, change was initiated because of a lack of response.

Limitations of this study include small sample size and self-selection bias, whereby individuals who agreed to screening may not be representative of the general patient population. The retrospective design of this study is also an important limitation that makes establishing direct cause

and effect relationships impossible. Most notably, both our prescreening and screening period prevalence rates for anxiety and depression are higher than those reported in previous studies.^{3,7} There are several potential reasons for this. First, we did not use semistructured interviews and did not limit our inclusion criteria to only those meeting DSM-IV criteria for MDD and GAD. In this manner, our diagnostic criteria more closely resembled real world practice. The prevalence of depression and anxiety during the screening period was still quite high. Possible reasons for this may include a Hawthorne effect, whereby individuals improve an aspect of their behavior that is being experimentally studied in response to the fact that they are being studied, rather than in response to any particular experimental manipulation, as well as a possible seasonal bias (most data were collected in winter months). Additionally, we acknowledge the possible influence of national social stressors, such as the US housing market subprime financial crisis, which occurred during our study period. The findings may limit the generalizability of our prevalence and treatment data. Even in light of this limitation, the practical importance of our finding is that a significant number of patients suffering from anxiety and/or depression may not bring these symptoms to the physician's attention unless directly asked.

Routine screening for anxiety and depression in primary care clinics may aid in detecting undiagnosed mental illness. Detection of undiagnosed illness can facilitate more effective treatment and monitoring. Furthermore, such screening may be helpful in identifying inadequate therapy. This study demonstrates that routine screening of patients in residency training programs is feasible and that resident QI projects have an important role in resident education by transforming the abstract concepts of PBLI and SPB into something concrete that residents can understand in their day-to-day clinical practice. Additionally, QI projects allow residents to learn basic principles of study design. This has direct implications in learning to provide quality patient care. The residents participating in our study were greatly surprised at the number of patients under their care who were suffering from psychiatric symptoms, which have a negative impact on quality of life and need to be addressed. Understanding how our personal practice patterns impact

our patients and medical decision making is an important part of professional development. QI projects are an important component in achieving the ACGME competencies and facilitating the professional development of physicians in training.

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