

Collaborative Care for Patients with Depression Improves Chronic Disease Management

Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med* 2010;363:2611–20.

Study Overview

Objective. To determine whether coordinated care management of multiple chronic conditions improves disease control among patients with depression and poorly controlled diabetes, coronary heart disease (CHD), or both.

Design. Randomized controlled trial.

Setting and participants. The study was conducted in 14 primary care clinics in the Group Health Cooperative, a large health care system in Washington State. Subjects were included if they had diagnoses of diabetes, CHD, or both and screened positive for depression using the Patient Health Questionnaire-9 (PHQ-9). Subjects also were ambulatory, English-speaking, and had plans to be enrolled in a health maintenance organization (HMO) plan for 12 months. Individuals were excluded if they had a terminal illness, severe hearing loss, ongoing psychiatric care, bipolar disorder or schizophrenia, use of an antipsychotic or mood stabilizer medication, planned bariatric surgery, pregnancy or breastfeeding, resided in a long-term care facility, or observed confusion suggesting dementia.

Intervention. The intervention was 12 months in duration and aimed at managing depression and improving glycemic, blood pressure, and lipid control. The intervention combined support for self-care with pharmacotherapy. Patients had structured visits at their primary clinic every 2 to 3 weeks in which nurses monitored their progress. Nurses provided support for medication adherence and self-care using motivational and encouraging coaching techniques.

Nurses also received weekly supervision with a psychiatrist, primary care physician, and psychologist to review cases and progress. The nurse reported recommended medication changes to the patient's primary care physician.

Main outcome measure. A composite measure of depression (based on Symptom Checklist-20 [SCL-20] score), glycated hemoglobin level, systolic blood pressure, and LDL cholesterol level at 12 months using a scaled marginal multivariate model. Other outcomes included quality of life measured on a scale of 0 to 10, satisfaction with care for depression, diabetes, and CHD on a 5-point scale.

Main results. 214 patients, with a mean age of 57 years, were enrolled in the study (106 in the intervention group and 108 in usual care). In the intervention and usual care groups, 72% and 76% had depression for more than 2 years, 89% and 82% had diabetes, and 23% and 30% had CHD. Patients in the intervention group achieved a greater overall 12-month improvement in the main composite outcome ($P < 0.001$). Estimated differences between the intervention and control groups were -0.56% for glycated hemoglobin level (95% CI, -0.85 to -0.27), 9.1 mg/dL for LDL level (95% CI, -17.5 to -0.8), -3.4 mm Hg for systolic blood pressure (95% CI, -6.9 to 0.1), and -0.41 in SCL-20 score (95% CI, -0.56 to -0.26). The intervention group had better satisfaction with their depression care (90% vs 55% reporting very or extremely satisfied) and also with their diabetes and/or CHD care (86% vs 70%). Quality of life score was also higher in the intervention group ($P < 0.001$).

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Conclusion. A collaborative care intervention improved depression, diabetes, and CHD management, and improved satisfaction with care and quality of life over a 12-month period.

Commentary

Chronic disease prevalence has been increasing among the U.S. adult population in recent years [1], and the prevalence of multiple chronic conditions is expected to rise [2]. The care of adults with multiple chronic conditions is challenging and costly [3], and more effective approaches are needed.

In this study, the investigators studied a model of care for patients with depression and comorbid diabetes or CHD involving proactive follow-up by nurses working closely with physicians. The choice of studying patients with depression and coexisting chronic conditions is a reasonable one as depression is prevalent among the chronically ill and is a risk factor for poorer treatment outcomes. The investigators found that a nurse-based care coordination program improved outcomes and satisfaction of care for multiple chronic diseases. This program compares favorably to prior collaborative care programs for patients with depression [4].

Several issues should be noted. The study intervention was an intensive program with frequent visits with the intervention nurse and included proactive support for patients with regard to medication adherence. It is unclear which particular elements of the program contributed to the improved outcomes. Using a more active control group may help elucidate the effect of increased contacts alone. In addition, the study population was middle-aged and most were employed and had attended some college. It is unclear whether the results would be generalizable to other populations and to clinical settings other than a large managed health care system. In addition, disabled patients were excluded.

Despite these potential limitations to generalizability, the study showed that the intervention was successful in improving management of depression and multiple chronic diseases. Whether this model can be successfully disseminated and implemented in other sites may depend on the changing landscape of U.S. primary health care. Currently, many clinics and health care systems across the country are

undergoing transformation and adopting new models of care, such as the patient-centered medical home [5]. How and whether collaborative care for depression and chronic diseases can be adopted or integrated into the new models needs to be investigated. It will be important for health care systems and clinics considering adopting the collaborative care model described in this study to estimate the magnitude of the problem in their setting and consider the business case.

Applications for Clinical Practice

In this study, an intensive nurse-led collaborative care intervention was associated with improved chronic disease outcomes for patients with depression, diabetes, and cardiovascular disease. Further studies are needed to demonstrate whether the results seen here can be replicated in other populations and other settings. For practices based in large health care systems, it may be worthwhile to consider implementing this model if it is found to be cost-effective, but for smaller clinics and individual practices, it may be impractical to do so at the present time.

—Review by William Hung, MD, Mount Sinai School of Medicine, New York, NY

References

1. Thorpe KE, Howard DH. The rise in spending among Medicare beneficiaries: the role of chronic disease prevalence and changes in treatment intensity. *Health Affairs* 2006;25:w378–85.
2. Vogeli C, Shields AE, Lee TA, et al. Multiple chronic conditions: prevalence, health consequences, and implications for quality, care management and costs. *J Gen Intern Med* 2007;22(S3):391–5.
3. Lin EH, Heckbert SR, Rutter CM, et al. Depression and increased mortality in diabetes: unexpected causes of death. *Ann Fam Med* 2009;7:414–21.
4. Gilbody S, Bower P, Fletcher J, et al. Collaborative care for depression: a cumulative meta-analysis and review of longer-term outcomes. *Arch Intern Med* 2006;166:2314–21.
5. Crabtree BF, Nutting PA, Miller WL, et al. Summary of the National Demonstration Project and recommendations for the patient-centered medical home. *Ann Fam Med* 2010;8 Suppl 1: