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Managing depression as a chronic disease: a randomised trial of ongoing treatment in primary care

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Abstract

Objectives To evaluate the long term effect of ongoing intervention to improve treatment of depression in primary care.

Design Randomised controlled trial.

Setting Twelve primary care practices across the United States.

Participants 211 adults beginning a new treatment episode for major depression; 94% of patients assigned to ongoing intervention participated.

Intervention Practices assigned to ongoing intervention encouraged participating patients to engage in active treatment, using practice nurses to provide care management over 24 months.

Main outcome measures Patients' report of remission and functioning.

Results Ongoing intervention significantly improved both symptoms and functioning at 24 months, increasing remission by 33 percentage points (95% confidence interval 7% to 46%), improving emotional functioning by 24 points (11 to 38) and physical functioning by 17 points (6 to 28). By 24 months, 74% of patients in enhanced care reported remission, with emotional functioning exceeding 90% of population norms and physical functioning approaching 75% of population norms.

Conclusions Ongoing intervention increased remission rates and improved indicators of emotional and physical functioning. Studies are needed to compare the cost effectiveness of ongoing depression management with other chronic disease treatment routinely undertaken by primary care.

Introduction

Depression is increasingly viewed as a chronic illness,^{1 2} as depressed individuals experience high rates of symptom recurrence³⁻⁶ and sustained functional impairment.⁷ In recognition of the chronicity of the condition, most trials of depression treatment incorporate principles of chronic disease management into the interventions tested⁸⁻¹⁰ but test interventions for only six months or less. Brief depression interventions have little sustained impact, leading investigators to quip that "no intervention has much impact longer than two months after it ends." This lack of sustained effect is not surprising given that many primary care patients

whose depression recurs after brief intervention ends fail to get high quality care.¹¹

To evaluate whether applying principles of chronic disease management in the long term can achieve sizeable and sustained improvements in symptoms and functioning, we tested an intervention to improve depression treatment on an ongoing basis.

Methods

Assignment

We conducted the study in 12 community primary care practices across the United States, none of which employed onsite mental health professionals to treat depression.¹² We randomised the 12 practices to enhanced or usual care.

Patient eligibility criteria

Patients presenting for routine visits at the selected practices between April 1996 and September 1997 completed a two stage screening questionnaire, which identified patients reporting five or more of the nine criteria for major depression listed in the *Diagnostic and Statistical Manual of Mental Disorders*, third edition revised (DSM-III-R) in the past two weeks. We excluded patients who met criteria for bereavement, mania, alcohol dependence, pregnancy or the postpartum period, or life threatening physical illness; and patients who were cognitively impaired. We also excluded patients identified at baseline with treatment resistant depression.

Intervention protocols

Enhanced care

Before patient enrolment, we provided brief training¹² to the participating doctors, nurses, and office staff in the practices randomised to enhanced care. The goal of the training was to encourage the practice staff to provide patients presenting with major depression with two years of high quality treatment in accordance with guidelines from the Agency for Health Care Policy and Research.^{13 14} This ongoing intervention consisted of initial intervention (baseline to six months) and continuing intervention (seven to 24 months).

The objective of initial intervention was to increase the proportion of patients who received pharmacotherapy or psychotherapy for major depression. When the doctors concurred with a screening derived

diagnosis of depression, they asked the patients to make a return visit the next week. Immediately before this return visit, an office nurse trained to provide care management reassessed the patient's depressive symptoms, provided education about treatment options, asked the patient to complete "homework" assignments to increase his or her readiness to engage in active treatment, and arranged subsequent follow up contacts.

The objective of continuing intervention was to sustain or increase improvement. Designed to be started at six months, when initial intervention ended, continuing intervention actually began an average of nine months after the index visit, when funding for its implementation became available. In telephone calls averaging 12 minutes in length nurse care managers monitored depression symptoms, encouraged patients whose symptoms were resolving to adhere to treatment recommendations, and suggested to patients whose symptoms had not resolved that they raise this problem with their primary care doctor at their next visit. Patients reporting three or more of the nine criteria for depression were called again the next month, whereas patients reporting fewer than three depression criteria were called again in three months. Primary care doctors reviewed monthly summaries of patient symptoms and current treatment prepared by nurse care managers, along with reminders to adjust treatment for symptomatic patients according to guidelines reviewed by psychiatrist.

Usual care

Depressed patients in usual care practices received no regular contacts from nurse care managers during the initial or continuing phase of the intervention. Doctors in these practices were not systematically informed when patients screened positive for depression.

Participant flow and follow up

As described earlier, 16% (1722/11 006) of patients failed to complete the two stage screening to determine initial eligibility, and 27% (174/653) of the patients meeting initial eligibility criteria failed to complete the baseline interview to determine eligibility for this analysis.¹² Follow up interviews conducted at six, 12, 18, and 24 months between October 1996 and September 1999 achieved response rates of 90%, 82%, 73%, and 67% respectively.

Data collection and masking

Data were collected by telephone using structured instruments administered by an independent member of the research team blinded to patients' intervention status, except for three patients, for whom primary care practices had to be contacted to request updated contact information.

Treatment—We evaluated how the intervention affected treatment with antidepressants or counselling.

Outcomes—We measured probable remission from patients' reported scores for depressive symptoms on the modified Center for Epidemiological Studies—depression (CES-D) scale.¹⁵ We measured role functioning with two 100 point subscales of SF-36¹⁶ that examine perceived limitations in usual daily activities in the previous month because of physical or emotional problems (higher scores indicating better outcomes).

Data analysis

We conducted intention to treat analyses for all patients using weighted time-trend (growth curve) models in which repeated measures were nested within patients, patients were nested within doctors, and doctors were nested within practices.¹⁷ We evaluated the effects of intervention on treatment, starting with the six month follow up because no patient had depression treatment at baseline by design (see bmj.com).

Results

Patients

At baseline, the 211 subjects participating in the study had a mean age of 43 years (SD 15), 84% were women, 16% were of an ethnic minority, 47% were currently married, 79% had been educated at least to high school level, 62% were employed full or part time, 83% had health insurance, and had a mean of 2.1 physical comorbidities. They reported an average of 6.4 of the DSM-III-R criteria for depression in the previous two weeks, 10% met criteria for dysthymia in the previous year, and 73% reported a previous episode of depression. The 96 patients in usual care practices were similar to the 115 patients in the enhanced care practices in all sociodemographic and clinical variables except that they were older (47 years *v* 40 years, $P=0.002$) and had more physical comorbidities (2.5 *v* 1.7, $P=0.001$).

Intervention effects on treatment

Antidepressant use—Enhanced care significantly increased patients' use of antidepressants over the two years of the study (intervention: $P<0.0001$) (fig 1).

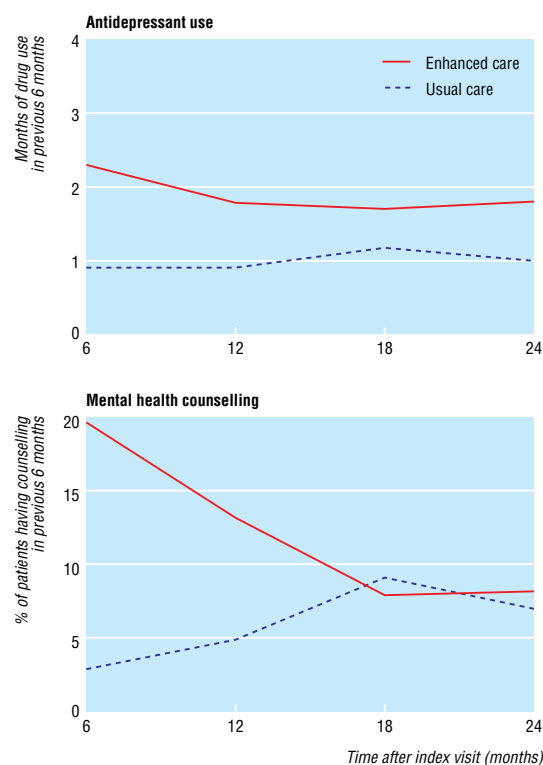


Fig 1 Effect of ongoing intervention in primary care on treatment of patients with depression

Estimated conservatively, enhanced care patients reported taking antidepressants for 6.5 months during the 24 months, whereas usual care patients reported 3.4 months of drug use.

Counselling from a mental health professional—Enhanced care also significantly increased patients' use of counselling (intervention: $P < 0.0001$, and intervention*time: $P = 0.01$), though the increase occurred only at six months (21% v 4%, $P < 0.0001$) and 12 months (8% v 3%, $P = 0.01$) (fig 1).

The examination of intervention effect within blocks (see bmj.com) indicated that enhanced care patients reported more use of antidepressants over time than patients in usual care practices in five out of six blocks, and more counselling over time in four of six blocks.

Intervention effects on outcomes

Enhanced care significantly increased remission (intervention*time: $P = 0.02$), emotional role functioning (intervention*time: $P = 0.002$), and physical role

What is already known on this topic

Most trials of depression treatment incorporate principles of chronic disease management into the interventions tested in recognition of the chronicity of the condition

Research shows that brief implementation of these interventions has little or no impact on depressive symptoms and functioning a year after the intervention ends

What this study adds

Ongoing efforts to improve depression management yield ongoing benefits for patients starting a new treatment episode for depression

These results encourage health services to make a small but continuing investment in their depressed populations to reduce the substantial disability they bear, matching the duration of the intervention to the chronicity of the condition

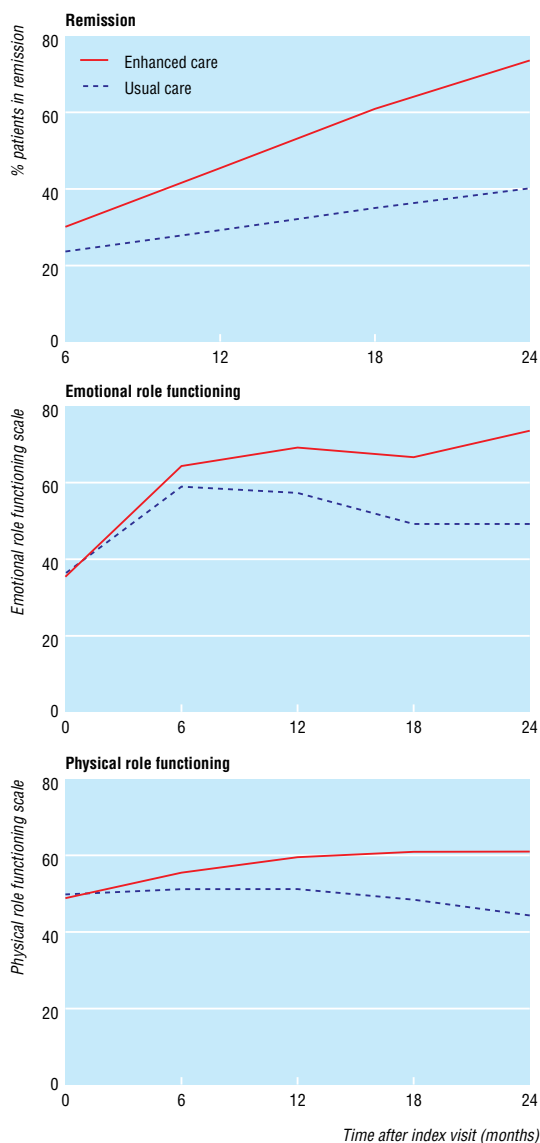


Fig 2 Effect of ongoing intervention in primary care on outcomes among patients with depression

functioning (intervention*time: $P = 0.005$) over two years (fig 2). At 24 months, enhanced care had increased remission by 33 percentage points (95% confidence interval 7% to 46%) compared with usual care (74% remission v 41%), improved emotional role functioning by 24 points (11 to 38) compared with usual care (73 points v 49), and improved physical role functioning by 17 points (6 to 28) compared with usual care (61 points v 44). The 24 point improvement in emotional functioning represents a 67% improvement over baseline functioning that is attributable to the intervention. The 17 point improvement in physical functioning represents a 35% improvement over baseline attributable to the intervention. No adverse events attributable to the intervention were reported by patients in enhanced care practices.

The examination of intervention effect within blocks (see bmj.com) indicated that patients in enhanced care practices reported better outcomes over time than patients in usual care practices in five out of six blocks.

Discussion

After brief training, primary care practices encouraged patients starting a new treatment episode for major depression to participate in active treatment and monitored their response over 24 months. The ongoing intervention increased the average duration of antidepressant use to well within the recommendations for depressed patients not requiring maintenance therapy¹⁴ and increased rates of mental health counselling during the first year. In terms of outcomes, the intervention improved both symptoms and role functioning so that, by 24 months, 74% of patients in enhanced care practices met criteria for remission, with emotional role functioning exceeding 90% of population norms and physical role functioning approaching 75% of population norms.¹⁶

We suspect that we achieved these effects because the intervention led to more patients taking antidepressants over longer periods, more patients

learning skills in counselling to prevent relapse,^{18 19 20} and more patients talking with their primary care doctors about treatment adjustment.

When interpreted in the context of previous studies,^{18 21-25} our findings provide empirical support for the view that ongoing initiatives of modest but continuing cost are needed to achieve and sustain substantial improvements in the health of patients with depression. While brief interventions play an important role early in the dissemination of new models of care, their benefits are not sustained. Given the sizeable and sustained benefits of the intervention we tested, cost effectiveness analyses are needed to compare the value of the intervention with the value of interventions for other chronic diseases that primary care practices routinely provide. If these cost effectiveness analyses support the widespread adoption of quality improvement initiatives for depression treatment, health services should be encouraged to make small but continuing investment in their depressed populations to reduce the substantial disability they bear,²⁴ matching the duration of the intervention to the chronicity of the condition.

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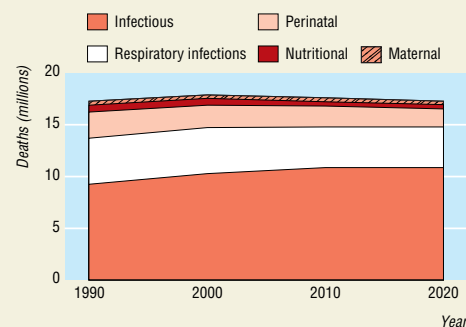
Competing interests: KR has been reimbursed by Forest Laboratories, manufacturer of Celexa, for attending a symposium.

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The burden of disease Deaths worldwide 1990-2020: pessimistic projection



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These projections from the Global Burden of Disease Project contest the view that infectious diseases are making a comeback worldwide. This figure shows deaths projected to 2020. It's the worst case scenario: the data were estimated using the most pessimistic assumptions about income growth and advances in health technology. Despite this, mortality from infectious diseases, maternal and perinatal conditions, and malnutrition are expected to fall slightly. The project's researchers associate this trend with the falling prevalence of these conditions, which began 40 years ago, and attribute it mainly to increased income, education, antimicrobials, and vaccines.