

Evidence Base for Collaborative Care

Concurrent Physical and Psychiatric Conditions

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1. Panagioti M, Bower P, Kontopantelis E, et al. Association between chronic physical conditions and the effectiveness of collaborative care for depression: an individual participant data meta-analysis. JAMA Psychiatry. 2016;73:978-989.

Summary: The authors reviewed 31 clinical trials and found that number of and type of chronic physical conditions did not influence treatment effect of collaborative care, showing evidence that collaborative care is effective for people with depression and chronic physical health conditions.

Scientific Abstract:

Importance: Collaborative care is an intensive care model involving several health care professionals working together, typically a physician, a case manager, and a mental health professional. Meta-analyses of aggregate data have shown that collaborative care is particularly effective in people with depression and comorbid chronic physical conditions. However, only participant-level analyses can rigorously test whether the treatment effect is influenced by participant characteristics, such as chronic physical conditions.

Objective: To assess whether the effectiveness of collaborative care for depression is moderated by the presence, type, and number of chronic physical conditions.

Data sources: Data were obtained from MEDLINE, EMBASE, PubMed, PsycINFO, CINAHL Complete, and Cochrane Central Register of Controlled Trials, and references from relevant systematic reviews. The search and collection of eligible studies was ongoing until May 22, 2015.

Study selection: This was an update to a previous meta-analysis. Two independent reviewers were involved in the study selection process. Randomized clinical trials that compared the effectiveness of collaborative care with usual

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are in adults with depression and reported measured changes in depression severity symptoms at 4 to 6 months after randomization were included in the analysis. Key search terms included depression, dysthymia, anxiety, panic, phobia, obsession, compulsion, posttraumatic, care management, case management, collaborative care, enhanced care, and managed care.

Data extraction and synthesis: Individual participant data on baseline demographics and chronic physical conditions as well as baseline and follow-up depression severity symptoms were requested from authors of the eligible studies. One-step meta-analysis of individual participant data using appropriate mixed-effects models was performed.

Main outcomes and measures: Continuous outcomes of depression severity symptoms measured using self-reported or observer-rated measures.

Results: Data sets from 31 randomized clinical trials including 36 independent comparisons (N = 10 962 participants) were analyzed. Individual participant data analyses found no significant interaction effects, indicating that the presence (interaction coefficient, 0.02 [95% CI, -0.10 to 0.13]), numbers (interaction coefficient, 0.01 [95% CI, -0.01 to 0.02]), and types of chronic physical conditions do not influence the treatment effect.

Conclusions and relevance: There is evidence that collaborative care is effective for people with depression alone and also for people with depression and chronic physical conditions. Existing guidance that recommends limiting collaborative care to people with depression and physical comorbidities is not supported by this individual participant data meta-analysis.

2. Katon W, Lin EHB, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med.* 2010;27:2611-2620.

Summary: The authors report primary results of a randomized trial comparing multi-condition Collaborative Care to usual care for patients with depression and diabetes and/or cardiovascular disease. Treatment with Collaborative Care was associated with significantly greater improvements in depression, and diabetes and cardiovascular disease measures, along with better quality of life and satisfaction with care.

Scientific Abstract:

Background: Patients with depression and poorly controlled diabetes, coronary heart disease, or both have an increased risk of adverse outcomes and high health care costs. We conducted a study to determine whether coordinated care management of multiple conditions improves disease control in these patients.

Methods: We conducted a single-blind, randomized, controlled trial in 14 primary care clinics in an integrated health care system in Washington State, involving 214 participants with poorly controlled diabetes, coronary heart disease, or both and coexisting depression. Patients were randomly assigned to the usual-care group or to the intervention group, in which a medically supervised nurse, working with each patient's primary care physician, provided guideline-based, collaborative care management, with the goal of controlling risk factors associated with multiple diseases. The primary outcome was based on simultaneous modeling of glycosylated hemoglobin, low-density lipoprotein (LDL) cholesterol, and systolic blood-pressure levels and Symptom Checklist-20 (SCL-20) depression outcomes at 12 months; this modeling allowed estimation of a single overall treatment effect.

Results: As compared with controls, patients in the intervention group had greater overall 12-month improvement across glycosylated hemoglobin levels (difference, 0.58%), LDL cholesterol levels (difference, 6.9 mg per deciliter [0.2 mmol per liter]), systolic blood pressure (difference, 5.1 mm Hg), and SCL-20 depression scores (difference, 0.40 points) ($P < 0.001$). Patients in the intervention group also were more likely to have one or more adjustments of insulin ($P = 0.006$), antihypertensive medications ($P < 0.001$), and antidepressant medications ($P < 0.001$), and they had

better quality of life ($P<0.001$) and greater satisfaction with care for diabetes, coronary heart disease, or both ($P<0.001$) and with care for depression ($P<0.001$).

Conclusions: As compared with usual care, an intervention involving nurses who provided guideline-based, patient-centered management of depression and chronic disease significantly improved control of medical disease and depression.

3. Sharpe M, Walker J, Hansen CH, et al. Integrated collaborative care for comorbid major depression in patients with cancer (SMaRT Oncology-2): a multicentre randomised controlled effectiveness trial. Lancet. 2014;384:1099-1108.

Summary: Results of a clinical trial of patients with concurrent depression and cancer showed that treatment with Collaborative Care was associated with significantly better depression outcomes, and that over 60% of people improved in the Collaborative Care arm, compared to 17% in usual care. Patients in Collaborative Care also reported less fatigue, pain, anxiety, and better quality of life.

Scientific Abstract:

Background: Medical conditions are often complicated by major depression, with consequent additional impairment of quality of life. We aimed to compare the effectiveness of an integrated treatment programme for major depression in patients with cancer (depression care for people with cancer) with usual care.

Methods: SMaRT Oncology-2 is a parallel-group, multicentre, randomised controlled effectiveness trial. We enrolled outpatients with major depression from three cancer centres and their associated clinics in Scotland, UK. Participants were randomly assigned in a 1:1 ratio to the depression care for people with cancer intervention or usual care, with stratification (by trial centre) and minimisation (by age, primary cancer, and sex) with allocation concealment. Depression care for people with cancer is a manualised, multicomponent collaborative care treatment that is delivered systematically by a team of cancer nurses and psychiatrists in collaboration with primary care physicians. Usual care is provided by primary care physicians. Outcome data were collected up until 48 weeks. The primary outcome was treatment response ($\geq 50\%$ reduction in Symptom Checklist Depression Scale [SCL-20] score, range 0-4) at 24 weeks. Trial statisticians and data collection staff were masked to treatment allocation, but participants could not be masked to the allocations. Analyses were by intention to treat. This trial is registered with Current Controlled Trials, number ISRCTN40568538.

Findings: 500 participants were enrolled between May 12, 2008, and May 13, 2011; 253 were randomly allocated to depression care for people with cancer and 247 to usual care. 143 (62%) of 231 participants in the depression care for people with cancer group and 40 (17%) of 231 in the usual care group responded to treatment: absolute difference 45% (95% CI 37-53), adjusted odds ratio 8.5 (95% CI 5.5-13.4), $p<0.0001$. Compared with patients in the usual care group, participants allocated to the depression care for people with cancer programme also had less depression, anxiety, pain, and fatigue; and better functioning, health, quality of life, and perceived quality of depression care at all timepoints (all $p<0.05$). During the study, 34 cancer-related deaths occurred (19 in the depression care for people with cancer group, 15 in the usual care group), one patient in the depression care for people with cancer group was admitted to a psychiatric ward, and one patient in this group attempted suicide. None of these events were judged to be related to the trial treatments or procedures.

Interpretation: Our findings suggest that depression care for people with cancer is an effective treatment for major depression in patients with cancer. It offers a model for the treatment of depression comorbid with other medical conditions.

4. Ma J, Goldman Rosas L, Lv N, et al. Effect of integrated behavioral weight loss treatment and problem-solving therapy on body mass index and depressive symptoms among patients with obesity and depression: the RAINBOW randomized clinical trial. *JAMA*. 2019;321:869-879.

Summary: The authors combined evidenced based programs of depression treatment and weight-loss treatment and delivered the intervention with Collaborative Care in primary care for adult patients with depression and obesity. Findings included significant reduction in Body Mass Index (BMI) and depression symptoms in those receiving Collaborative Care, compared to no change in either BMI or depression symptoms over 12 months for those receiving usual care.

Scientific Abstract:

Importance: Coexisting obesity and depression exacerbate morbidity and disability, but effective treatments remain elusive.

Objective: To test the hypothesis that an integrated collaborative care intervention would significantly improve both obesity and depression at 12 months compared with usual care.

Design, setting, and participants: The Research Aimed at Improving Both Mood and Weight (RAINBOW) randomized clinical trial enrolled 409 adults with body mass indices (BMIs) of 30 or greater (≥ 27 for Asian adults) and 9-item Patient Health Questionnaire (PHQ-9) scores of 10 or greater. Primary care patients at a health system in Northern California were recruited from September 30, 2014, to January 12, 2017; the date of final 12-month follow-up was January 17, 2018.

Interventions: All participants randomly assigned to the intervention ($n = 204$) or the usual care control group ($n = 205$) received medical care from their personal physicians as usual, received information on routine services for obesity and depression at their clinic, and received wireless physical activity trackers. Intervention participants also received a 12-month intervention that integrated a Diabetes Prevention Program-based behavioral weight loss treatment with problem-solving therapy for depression and, if indicated, antidepressant medications.

Main outcomes and measures: The co-primary outcome measures were BMI and 20-item Depression Symptom Checklist (SCL-20) scores (range, 0 [best] to 4 [worst]) at 12 months.

Results: Among 409 participants randomized (mean age of 51.0 years [SD, 12.1 years]; 70% were women; mean BMI of 36.7 [SD, 6.4]; mean PHQ-9 score of 13.8 [SD, 3.1]; and mean SCL-20 score of 1.5 [SD, 0.5]), 344 (84.1%) completed 12-month follow-up. At 12 months, mean BMI declined from 36.7 (SD, 6.9) to 35.9 (SD, 7.1) among intervention participants compared with a change in mean BMI from 36.6 (SD, 5.8) to 36.6 (SD, 6.0) among usual care participants (between-group mean difference, -0.7 [95% CI, -1.1 to -0.2]; $P = .01$). Mean SCL-20 score declined from 1.5 (SD, 0.5) to 1.1 (SD, 1.0) at 12 months among intervention participants compared with a change in mean SCL-20 score from 1.5 (SD, 0.6) to 1.4 (SD, 1.3) among usual care participants (between-group mean difference, -0.2 [95% CI, -0.4 to 0]; $P = .01$). There were 47 adverse events or serious adverse events that involved musculoskeletal injuries (27 in the intervention group and 20 in the usual care group).

Conclusions and relevance: Among adults with obesity and depression, a collaborative care intervention integrating behavioral weight loss treatment, problem-solving therapy, and as-needed antidepressant medications significantly improved weight loss and depressive symptoms at 12 months compared with usual care; however, the effect sizes were modest and of uncertain clinical importance.

5. Pyne JM, Fortney JC, Curran GM, et al. Effectiveness of collaborative care for depression in human immunodeficiency virus (HIV) clinics. *Arch Intern Med*. 2011;171:23-31.

Summary: In 3 VA clinics, 249 patients enrolled and were randomized to collaborative care or usual care for depression. The RN depression care manager and supervising psychiatrist were off-site from the participating clinics but were co-located at a VA Medical Center. Treatment with Collaborative Care doubled the proportion of patients with depression response and remission at 6 months.

Scientific Abstract:

Background: Depression is common among persons with the human immunodeficiency virus (HIV) and is associated with unfavorable outcomes.

Methods: A single-blind randomized controlled effectiveness trial at 3 Veterans Affairs HIV clinics (HIV Translating Initiatives for Depression Into Effective Solutions [HITIDES]). The HITIDES intervention consisted of an off-site HIV depression care team (a registered nurse depression care manager, pharmacist, and psychiatrist) that delivered up to 12 months of collaborative care backed by a Web-based decision support system. Participants who completed the baseline telephone interview were 249 HIV-infected patients with depression, of whom 123 were randomized to the intervention and 126 to usual care. Participant interview data were collected at baseline and at the 6- and 12-month follow-up visits. The primary outcome was depression severity measured using the 20-item Hopkins Symptom Checklist (SCL-20) and reported as treatment response ($\geq 50\%$ decrease in SCL-20 item score), remission (mean SCL-20 item score, < 0.5), and depression-free days. Secondary outcomes were health-related quality of life, health status, HIV symptom severity, and antidepressant or HIV medication regimen adherence.

Results: Intervention participants were more likely to report treatment response (33.3% vs 17.5%) (odds ratio, 2.50; 95% confidence interval [CI], 1.37-4.56) and remission (22.0% vs 11.9%) (2.25; 1.11-4.54) at 6 months but not 12 months. Intervention participants reported more depression-free days during the 12 months ($\beta = 19.3$; 95% CI, 10.9-27.6; $P < .001$). Significant intervention effects were observed for lowering HIV symptom severity at 6 months ($\beta = -2.6$; 95% CI, -3.5 to -1.8; $P < .001$) and 12 months ($\beta = -0.82$; -1.6 to -0.07; $P = .03$). Intervention effects were not significant for other secondary outcomes.

Conclusion: The HITIDES intervention improved depression and HIV symptom outcomes and may serve as a model for collaborative care interventions in HIV and other specialty physical health care settings where patients find their "medical home."

