

Does Chronic Disease Self-Management Work?

Chodosh J, Morton SC, Mojica W, et al. Meta-analysis: chronic disease self-management programs for older adults. *Ann Intern Med* 2005;143:427–38.

Study Overview

Objective. To assess the effectiveness and key components of self-management programs for diabetes, hypertension, and osteoarthritis.

Design. Meta-analysis of randomized trials.

Setting and participants. Two physician reviewers identified trials that compared outcomes of self-management interventions with a control or with usual care for the 3 conditions of interest. Data from 53 of an available 780 studies (26 diabetes, 14 osteoarthritis, and 13 hypertension studies) were abstracted for meta-analysis.

Main outcome measures. Fasting blood glucose, HbA_{1c}, and weight control for diabetes; BP control for hypertension; and pain and function for osteoarthritis.

Main results. Self-management interventions for controlling HbA_{1c} and fasting blood glucose led to significant pooled effect size for both measures (–0.36 [95% confidence interval (CI), –0.52 to –0.21] and –0.28 [95% CI, –0.47 to –0.08], respectively), which equates to decreases of 0.81% in HbA_{1c} and 17 mg/dL in blood glucose. Self-management interventions for BP control led to significant pooled effect size for systolic BP (–0.39 [95% CI, –0.51 to –0.28]) and diastolic BP (–0.51 [95% CI, –0.73 to –0.30]), which corresponds to decreases of 5 mm Hg and 4.3 mm Hg. Pooled effect sizes for osteoarthritis self-management interventions were statistically significant but clinically trivial for the physiologic outcomes of pain and function outcomes. Pooled effect size was not significant for weight control in diabetes.

Conclusion. Self-management programs for diabetes and hypertension may improve some outcomes. Existing data does not offer insight as to which component in a self-management intervention is most effective.

Commentary

Approximately 79% of adults aged 70 years or older have at least 1 of the 7 most common chronic diseases that place substantial burdens on health, economic status, and quality of life (ie, osteoarthritis, hypertension, diabetes, heart disease,

respiratory diseases, stroke, and cancer) [1]. To help control and prevent chronic diseases, emphasis has been given to incorporating self-management programs into patient care [2,3]. However, there is no agreement as to what constitutes a self-management program or which elements are effective. Chodosh et al sought to determine if chronic disease self-management programs result in improved disease-related outcomes, and if so, what specific components are responsible for this effect.

Of 780 articles identified, Chodosh et al selected 53 studies that fulfilled strict criteria and abstracted statistics to produce pooled effect sizes. The results demonstrated that while self-management programs have statistically and clinically significant effects on certain outcome measures, notably BP and HbA_{1c}, these effects were not universally clinically significant in osteoarthritis or for every outcome measure. Furthermore, in studies of diabetes and hypertension self-management programs, the authors found evidence of possible publication bias. Lastly, the elements postulated by the authors in their conceptual model as essential for self-management program efficacy did not prove to be consistent across studies or disease conditions.

Applications for Clinical Practice

Patient self-management programs seem to improve select outcomes in diabetes and hypertension. However, it is unclear which program elements contribute to better outcomes, and evidence upon which to base the design of interventions is thin. More research to delineate component efficacy or to determine if these programs increase medication adherence is warranted.

–Review by Mark S. Hornig, MD

References

- Centers for Disease Control and Prevention. Unrealized prevention opportunities: Reducing the health and economic burden of chronic disease. Atlanta: Centers for Disease Control and Prevention; 1997.
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. *JAMA* 2002;288:1775–9.
- Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness: the chronic care model, Part 2. *JAMA* 2002;288:1909–14.