

Automated Telephone Calls Improve Outcomes in Patients with Diabetes

Piette JD, Weinberger M, McPhee SJ. The effect of automated calls with telephone nurse follow-up on patient-centered outcomes of diabetes care. A randomized, controlled trial. Med Care 2000;38:218-230.

Study Overview

Objective. To evaluate the impact of an automated telephone disease management (ATDM) call system on outcomes among low-income patients with diabetes mellitus.

Design. Randomized controlled trial.

Setting and participants. 248 primarily English- and Spanish-speaking adults with diabetes enrolled at the time of visits to a county health care system.

Intervention. Intervention patients received usual care plus biweekly ATDM calls with telephone follow-up by a diabetes nurse educator. During the ATDM calls, patients were able to report information about their health and self-care and to access self-care education. The nurse used patients' ATDM reports to allocate her time according to the patients' needs.

Main outcome measures. Patient-centered outcomes such as mental health, self-efficacy, satisfaction with care, and health-related quality of life (HRQL) were measured at 12 months via telephone interview.

Main results. At follow-up, intervention patients reported fewer symptoms of depression ($P = 0.023$), greater self-efficacy to conduct self-care activities ($P = 0.006$), and fewer days in bed because of illness ($P = 0.026$) compared with patients receiving usual care. Among English-speaking patients, those receiving the intervention reported greater satisfaction with their health care overall and the technical quality of the services they received, their choice of providers and continuity of care, their communication with providers, and the quality of their health outcomes (all $P < 0.042$). Intervention and usual care patients had roughly equivalent scores for established measures of anxiety, diabetes-specific HRQL, and general HRQL.

Conclusion

The ATDM call intervention improved several patient-centered outcomes but had no effect on overall anxiety or HRQL.

Commentary

Previous research has demonstrated that using a personalized and targeted approach to health education and patient empowerment is effective in influencing health behaviors [1]. This approach centers on tailoring the intervention to the patient's awareness, readiness, and motivation to make a behavioral or lifestyle change. Personalized education messages using a variety of media have been studied, with tailored print communications most consistently demonstrating improvements in outcomes [2]. The current study demonstrates an effective method of delivering diabetes self-care education that can be used by medical practices lacking in resources. Patients in this study were able to report specific barriers to self-care, such as difficulty checking blood glucose levels, and a nurse educator was able to intervene and follow-up with a personalized call in situations requiring specific education and advice. Significantly, one diabetes nurse educator successfully managed 280 patients over a 12-month period.

Although the current study addresses only patient-centered outcomes, the authors point out that the results contained in an earlier report of the same trial [3] included better glycemic control, improved self-care activities, and fewer diabetic symptoms for patients receiving the automated telephone interventions with personalized follow-up.

Applications for Clinical Practice

As budgets tighten and time constraints increase in primary care practices, telephone-based patient education will play an increasingly important role in managing chronic diseases. Diabetes is a particularly difficult disease to manage. Interactive automated telephone programs supplemented by nurse educator staff may be an effective and efficient method for providing follow-up and diabetes management between patients' scheduled visits.

References

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2. Skinner CS, Campbell MK, Rimer BK, Curry S, Prochaska JO. How effective is tailored print communication? *Ann Behav Med* 1999;21:290-8

3. Piette JD, Weinberger M, McPhee SJ, et al. Do automated calls with nurse follow-up improve self-care and glycemic control among vulnerable patients with diabetes? A randomized controlled trial. *Am J Med* 2000;108:20-27.

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