Computer-Tailored Smoking Cessation Program Holds Promise

Etter JF, Perneger TV. Effectiveness of a computer-tailored smoking cessation program. A randomized trial. Arch Intern Med 2001;161:2596–601.

Study Overview

Objective. To determine if a computer-tailored smoking cessation program can increase the smoking cessation rate in daily smokers.

Design. Unblinded randomized controlled trial.

Setting and participants. 20,000 residents aged 18 to 60 years in the French-speaking part of Switzerland were recruited by random mailing to participate in this study. Of the 3124 residents who agreed to participate and who completed the baseline survey, 2934 fulfilled the entry criteria of being a daily smoker and were randomized to either the intervention group or the control group. Baseline characteristics, including demographics, smoking cessation stage (precontemplation, contemplation, or preparation), self-efficacy, and level of tobacco dependence and consumption, were similar in the intervention and control groups.

Intervention. Participants in the intervention group received an 8-page computer-generated, personalized counseling letter based on the smoker's answers to the baseline questionnaire. Two 16-page booklets matched to the smoker's current smoking cessation stage also were included. The printed material addressed the smoker's attitudes towards smoking, benefits of quitting, and strategies to avoid a relapse during situations reported to be stressful by the participant. Intervention participants also were invited to answer repeat tailored questionnaires and to receive new personalized letters at 2 months and at 4 months after randomization. The control group did not receive any smoking cessation material, and they were contacted only for the follow-up survey.

Main outcome measure. Self-reported abstinence from tobacco for the previous 4 weeks, assessed with a survey at 7 months after entry into the program.

Main results. The follow-up rate at 7 months in the intervention group was significantly lower at 76% when compared with the control group at 92% ($P < 0.001$). However, even if all participants lost to follow-up in the intervention group were assumed to be smokers at follow-up, the 4-week tobacco abstinence rate was 2.6 times greater in the intervention group when compared with the control group (5.8% versus 2.2%; 95% confidence interval of relative risk, 1.7 to 3.8; $P < 0.001$). The program was statistically effective for smokers in the precontemplation ($P = 0.001$) and contemplation ($P < 0.001$) stages, but not in the preparation stage ($P = 0.84$). It also was statistically effective regardless of perceived difficulty in quitting at baseline.

Conclusion. The computer-tailored smoking cessation program was effective at increasing the smoking cessation rate in the population studied.

Commentary

This well-executed study adds to previous studies on the effectiveness of computer-tailored smoking cessation programs. While earlier studies have offered conflicting results on the effectiveness of this potentially low-cost smoking cessation strategy, Etter et al's study tips the balance in favor of this intervention.

The generalizability of this study, however, needs to be put into perspective. Subjects recruited into the study had to answer more than 50 questions, and those who agreed to participate were likely to be more amenable to smoking cessation interventions than the general population. The follow-up period in this study was short, and it is unclear whether the effect of the intervention would be long lasting.

Other issues should be considered before this strategy can be applied to health care systems outside Switzerland. Cultural and linguistic differences might make this strategy less effective in other countries, so this study should be repeated in other countries. Given the "survey fatigue" experienced by certain participants in the intervention group, it is important to study whether shorter and less frequent surveys would still produce similar effects on smoking cessation rates. Finally, the authors should comment on the differences between their computer-tailored program and those that previously showed no benefit—such insight could

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prove very helpful to those who try to replicate this program in a different setting.

Applications for Clinical Practice

Despite the study's limitations, this strategy for increasing smoking cessation rates holds great promise. Given increased access to the internet, the web-based version of this program could easily be propagated at minimal cost. If the results of this study can be verified in other health care systems and on the internet, its public health impact on preventing smoking-related cancers and cardiovascular disease could be very significant.

–Review by Eric Poon, MD