

are "carved out" to an external staff person substantially improves implementation and allows more effective use of clinicians in a supporting role, such as reinforcing the intervention with patients.

One potential limitation of the health educator model is that clinic staff won't accept an outsider. Contrary to this admonition, the current project demonstrated that the health educator becomes incorporated as part of the staff in a very short period of time, and other research indicates that the model works well in a variety of health care settings.² Another potential limitation is the sustainability of the model. One solution for sustaining this model in FQHCs is to use students in health-related professional programs (eg, public health, social work, nursing, medicine). These students could be a consistent source of low-cost health educator staff at FQHCs during their practicum or independent study experience, and the program could be replicated in most large cities. This approach, however, will require the development of standardized practicum curricula within different professional schools to train students in the techniques and practice of SBI.

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Key words: Mass screening; Federally Qualified Health Centers; Medicaid; alcohol drinking; tobacco; smoking; medically uninsured; low-income population; counseling; primary health care; medically underserved area

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Collaborative Goal Setting to Improve Lifestyle Behaviors: Lessons Learned From NOPCRN

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PURPOSE

We examined the effectiveness of a multicomponent lifestyle activity intervention for overweight or obese patients with impaired fasting glucose (prediabetes). The physician-directed counseling intervention included collaborative goal setting with patients to achieve specific changes in physical

activity and nutrition behaviors. Nurse surveillance was used to provide reinforcement and to monitor progress.

METHODS

We randomized 88 adult patients with prediabetes and a body mass index of 25 kg/m² or greater to either an immediate- or a delayed-intervention group. Individual-

ized goals for weight reduction, physical activity, and nutrition intake were negotiated between the physician and the participant. Participants used pedometers to monitor their physical activity and were scheduled for brief follow-up visits in the practice (ie, nurse surveillance). We included 4 primary care practices in the Northwest Ohio Primary Care Research Network (NOPCRN) and 2 physicians from each practice.

We used a combination of methods to identify eligible participants. In a previous diabetes screening study, we identified a large number of patients with prediabetes. These patients' physicians sent them a letter with an invitation to participate in this study. In a less effective, alternative approach, physicians and office staff identified eligible patients during routine visits or from laboratory records.

The physician-directed counseling intervention was based on the program of the National Institutes of Health and the North American Association for the Study of Obesity.¹ With the assistance of a handheld computer, physicians use the interactive guideline tool developed by the National Heart, Lung, and Blood Institute Obesity Education Initiative (<http://hin.nhlbi.nih.gov/obgdpalm.htm>) to establish individualized therapy targets for weight reduction, physical activity, and nutrition. It was up to the physician and patient to negotiate reasonable goals to reach those targets.

We scheduled a 3-hour group training session for the physician participants. Physicians were introduced to the aforementioned program and given copies of the material for review. They were also given a Palm 125 handheld computer (palmOne Inc, Milpitas, Calif) and instructed on the use of the Obesity Education Initiative tool. The interactive tool prompts the physician to enter the patient's weight, height, sex, waist circumference, and individual risk factors. It instantly calculates body mass index and presents a standardized set of weight loss targets and treatment options based on individual patient parameters.

In the next step, one of the investigators (KP) demonstrated collaborative goal-setting strategies with a standardized patient volunteer. Emphasis was placed on setting simple and measurable goals with the patient. For example, if a patient's baseline activity level was 2,500 steps per day, then working on a 10% increase in steps per day each week over the 12-week period might be an achievable goal. If the patient skipped breakfast most days per week, snacked frequently at work, and consumed most of his or her daily calories during the evening meal, then 3 reasonable and achievable goals might be not skipping breakfast, avoiding snacks in the workplace, and decreasing portion sizes at the evening meal.

Once randomized, participants were scheduled to meet with the physician for a 30-minute counseling visit.

Individualized goals for weight reduction, physical activity, and nutrition intake were negotiated between the physician and the participant. Participants used a pedometer to self-monitor daily physical activity. The pedometer provided real-time feedback that informed participants about daily progress in achieving physical activity goals.

For 12 weeks, the Research Nurse Coordinator (RNC) monitored participants' progress toward achieving goals. This surveillance included brief scheduled office visits with the RNC every 2 weeks to measure weight and blood pressure, and to assess compliance with using the pedometer. The RNC also gave feedback to the patient via telephone. If a participant was having difficulty achieving activity or nutrition goals, the RNC worked with the participant in identifying barriers and potential strategies for overcoming them. The RNC generated brief progress reports that were sent to the physician via e-mail.

LESSONS LEARNED

We quickly learned that 1 group training session was inadequate preparation for the physicians. We scheduled follow-up one-on-one sessions with each physician to review the protocol and to practice establishing physical activity and nutrition goals. Physicians reported having difficulty changing from their usual practice in counseling patients to the counseling intervention designed for the study. Incorporating collaborative goal setting with participants into their counseling practice was particularly challenging. Specifically, setting simple, measurable goals for changing activity and nutrition behaviors with participants required practice.

Initially, physical activity goals were often too ambitious for most participants to achieve, and some of the nutrition goals were too vague. For example, the recommended activity goal of 10,000 steps per day most days of the week¹ was far beyond the ability of most study participants. Recommending a limit on the number of calories consumed per day was also too global and failed to focus on specific eating behaviors. We recommended that physicians explore barriers that interfere with participants being more active or adopting healthier eating habits, and begin to negotiate goals around those barriers. Next, we recommended that the initial physical activity goals established with participants be limited to a 10% increase in steps per week over the 12-week period. Finally, we recommended that no more than 3 nutrition goals be established at the initial visit. Each of these goals could be reset upward or downward depending on the patient's progress, which was being monitored by the RNC.

Although surveillance of physicians was not explicitly planned in the study protocol, the RNC did observe and monitor physicians as they attempted to

carry out the counseling intervention. In fact, some of the physicians asked her for assistance initially, and with practice they seemed more comfortable with the intervention.

Approximately 1 month after data collection began, we scheduled another group session with participating physicians to review progress and to identify any additional problems they might be experiencing.

We do not have any specific evidence to support the sustainability of the intervention other than the RNC's observations and discussions with participating physicians and their anecdotal reports. Several physicians have independently reported that they have since incorporated collaborative goal setting into their usual practice when counseling patients on weight loss.

The collaborative goal-setting intervention combined with nurse follow-up is a potentially powerful strategy for improving health behaviors; however, our study was not designed to specifically address this question. We were interested in knowing if this combination was feasible in practice to improve lifestyle behaviors and specific health outcomes.

CONCLUSIONS

To facilitate the integration of the intervention into practice, we used specific strategies: (1) electronic tools that guided physicians in setting targets for weight loss, physical activity, and nutrition intake, (2) physician training in brief behavior counseling using collaborative goal setting, and (3) nurse surveillance to provide reinforcement and monitor patients' progress.

Limited time, skills, and resources combined with inadequate reimbursement impede physicians' ability to provide healthy lifestyle counseling.^{2,3} Goal setting has been shown to be an effective strategy for modifying dietary behavior⁴ and improving adherence to exercise,⁵ particularly when the patient and health care professional establish the goals together.

Before this study, collaborative goal setting with patients to improve physical activity and nutrition behaviors had not been a routine part of the primary care physicians' counseling practice. We underestimated the training and practice time required for physicians to use collaborative goal setting effectively with the participants. Once this intervention was learned, physicians were quick to adopt it into their usual practice.

Successful implementation of a collaborative goal-

setting intervention for promoting lifestyle behavior change in practice requires an initial investment in time and training in these methods. Setting simple, measurable goals for changing physical activity and nutrition behaviors with participants requires practice. Finally, engaging nurses or other office staff in the practice may be "key to leveraging the effect"² of the physician counseling intervention.

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Key words: Primary care; practice-based research; health behavior; prediabetes; obesity; diabetes mellitus; prediabetic state; computers, handheld; physical activity; weight loss; diet

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