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Evaluation of a Behavior Support Intervention for Patients With Poorly Controlled Diabetes

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Background: Disease management programs that include ongoing telephone support for patients with diabetes have shown promise, but published studies have enrolled few socially and economically disadvantaged patients.

Methods: We conducted a randomized controlled trial with 201 patients with poorly controlled type 2 diabetes mellitus (72% African American or Latino; 74% with incomes of $\leq$ \$15 000). Participants were randomized to an intervention package consisting of a 24-minute video behavior support intervention with a workbook and 5 sessions of telephone coaching by a trained diabetes nurse or a 20-page brochure developed by the National Diabetes Education Program. Study measures were completed at baseline, 1 month, and 6 months. Participants' review of the intervention materials was assessed at 1 month. The primary trial end point was hemoglobin A_{1c} value. Secondary end points included lipid levels, blood pressure, diabetes knowledge, and self-care behaviors. Data were analyzed with repeated measures analysis of variance.

Results: Most participants in both groups (94%) reviewed the intervention provided, and 73% of partici-

pants assigned to the experimental group completed 5 sessions of telephone coaching. There was a significant overall reduction in mean (SD) hemoglobin A_{1c} value from baseline (9.6% [2.0%]) to 6 months (9.1% [1.9%]) ($P < .001$), but differences between groups were nonsignificant. Differences on other clinical measures (lipid levels and blood pressure) and measures of diabetes knowledge and self-care behaviors were also nonsignificant.

Conclusions: There was no significant effect of the experimental intervention compared with the control condition. The dose of intervention provided was less than in previously published studies. More intensive interventions may be necessary for the most disadvantaged patients.

Trial Registration: clinicaltrials.gov Identifier: NCT00668590

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SELF-MANAGEMENT TRAINING of patients with diabetes improves health outcomes but is challenging for health care providers to implement.¹ Persistent structural barriers, including lack of time and inadequate reimbursement,

regimens encompassing pharmacotherapy, changes in diet, and physical activity. For patients to be able to implement these regimens, knowledge, motivation, training, and ongoing support are required as they attempt to change long-entrenched behaviors. In an attempt to overcome the structural barriers to effective self-management training in the US health care system, health plans have increasingly put in place disease management programs that include ongoing telephone support for patients, both automated

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See also pages 1990, 1999, and 2001

continue to stand in the way and are not likely to abate in the future.²⁻⁴ These issues are all the more urgent as the prevalence of diabetes continues to grow, having long surpassed epidemic proportions.^{5,6} The economic costs of diabetes to society are enormous, and the personal costs to affected patients in the form of long-term complications can be severe, especially among patients from socially disadvantaged backgrounds.⁷

Treatment of diabetes involves adopting and maintaining complex treatment

See Invited Commentary at end of article

and live, often staffed by nurses or certified diabetes educators.⁸ A growing literature shows that these programs can lead to modest but significant increases in self-management behavior and improved intermediate outcomes such as lowered glycated hemoglobin A_{1c} (HbA_{1c}) values.^{2,9-12}

Published studies to date have enrolled few patients from the most socially and economically disadvantaged backgrounds, where disparities in treatment and outcomes are worst.^{2,9-11,13,14} Furthermore, studies have generally not specifically targeted patients who had poor metabolic control, as defined by baseline HbA_{1c} values greater than 8.0%.^{2,9-11} We report the results from a 2-group randomized controlled trial, which enrolled predominantly poor, uninsured, ethnically diverse patients with poorly controlled diabetes. Participants randomized to the experimental group received an intervention package consisting of a 24-minute video behavior support intervention with a workbook as well as 5 sessions of telephone coaching by a trained diabetes nurse.¹⁵ Participants randomized to the control condition received a brochure on diabetes self-care developed by the National Institutes of Health National Diabetes Education Program. Our primary end point was HbA_{1c} value at 6-month follow-up. Secondary end points included additional clinical and behavioral measures. We expected that the experimental group would be more likely to review the educational materials provided because a DVD might be perceived as more engaging than a printed brochure, thereby resulting in higher diabetes knowledge, and that the additional telephone support provided would be more likely to facilitate behavior change compared with the control condition. As a result, we hypothesized that participants assigned to the experimental condition would report more engagement in self-care behaviors and would have lower HbA_{1c}, lipid, and blood pressure levels after completing the intervention at 6 months.

METHODS

STUDY PARTICIPANTS AND PROCEDURE

Patients with type 2 diabetes mellitus were recruited from 3 academic primary care practices (2 internal and 1 family medicine; n=22) and 1 community-based safety net clinic that provides care for the poor and uninsured (n=179) in the Los Angeles, California, area between August 2008 and November 2009 (total, N=201). On days when research staff was present in the clinics, all consecutive patients with type 2 diabetes were screened for eligibility at the time of a scheduled appointment. Participants were recruited by trained research assistants who explained the purpose of the study and obtained informed consent from participants. The study was reviewed and approved by the University of California, Los Angeles, institutional review board. Eligibility requirements for the study included the following: (1) at least 40 years old; (2) history of diabetes for at least 1 year; (3) attending the clinic for a routine follow-up visit and completing at least 2 visits in the last 12 months; (4) HbA_{1c} value of 8.0% or greater; (5) owns a DVD player and television at home; (6) primary language of English or Spanish; (7) no severe visual impairments; and (8) not currently enrolled in a diabetes support or education program or participated in similar program in the last 6 months. Requirement 3 was intended to screen out individuals who had not established regular care at the participating clinical sites and thus might be more likely to be lost to follow-up. The trial was originally designed for English-speaking patients only. Inclusion criteria were expanded to include Spanish-speaking patients when translated intervention materials became available at the end of 2008.

Participants were randomized into equally sized control and experimental conditions, using a predetermined randomization sequence concealed in sealed envelopes. Randomization occurred after participants completed their medical consultations to mask health care providers to participants' assignment.

INTERVENTION

Participants assigned to the control condition (n=101) received a 20-page brochure entitled "4 Steps to Control Your Diabetes for Life," developed by the National Diabetes Education Program of the National Institutes of Health (see http://www.ndep.nih.gov/media/4_steps.pdf), but no other additional study intervention. Participants assigned to the experimental condition (n=100) received a 24-minute-long DVD program with accompanying booklet entitled *Living with Diabetes: Making Lifestyle Changes to Last a Lifetime*, developed by the Foundation for Informed Medical Decision Making (see http://informedmedicaldecisions.org/development_of_da.html). In addition to the DVD program, participants assigned to the experimental condition were also eligible to receive up to 5 sessions of telephone coaching with a bilingual nurse educator trained in patient-centered approaches to diabetes management and motivational enhancement. The first session was up to 60 minutes in length; the second and third sessions were each up to 30 minutes in length; and the fourth and fifth sessions were each up to 15 minutes in length. The total amount of telephone coaching time experimental participants could receive was 2.5 hours. The time interval between telephone coaching sessions was left to the nurse educator and individual participant to determine. The purpose of the coaching intervention was to collaborate with participants in identifying desired and attainable behavioral goals that could have a positive impact on their diabetes management. Once identified, the coach collaborated with participants to develop a specific behavioral plan, which was then monitored and adjusted as participants attempted to implement their behavioral goals. Participants assigned to either group received a call 1 week after enrollment in the study to remind them to review the intervention materials provided (brochure or DVD). The telephone coaching sessions were generally scheduled beginning 2 weeks following study enrollment; however, a substantial proportion of participants took longer to schedule the initial session owing to difficulties reaching them by telephone (mean [SD] days from randomization to first session, 35.9 [32.0]).

MEASUREMENT

All participants completed standardized biometric and survey measures with trained staff at baseline and at the 1- and 6-month follow-ups. The baseline and 6-month assessments were conducted in person, whereas the 1-month follow-up measure was completed by telephone. Whenever possible, 6-month follow-up assessments coincided with standard follow-up consultations with a health care provider.

The primary trial outcome was HbA_{1c} value, measured at baseline and 6 months with high-performance liquid chromatography. Blood samples were drawn by licensed phlebotomists. Preplanned secondary end points included low-density lipoprotein cholesterol (LDL-C) level and blood pressure, which were also measured at baseline and 6 months. Height and weight measurements were collected at the same time as the blood draws to calculate participants' body mass index. Prescribed medications were abstracted from medical charts at baseline and 6 months.

Participants' review of the intervention materials provided was assessed at the 1-month follow-up. Additional secondary

end points were diabetes knowledge and self-care behaviors, which were assessed at each time point with standardized self-report measures. Knowledge was assessed with the 23-item Diabetes Knowledge Test, developed by the University of Michigan Diabetes Research and Training Center.¹⁶ Self-care was assessed with the 25-item Summary of Diabetes Self-Care Activities measure (SDSCA), which assesses dietary behaviors, exercise, blood glucose testing, foot care, and tobacco smoking and has been evaluated in numerous studies.¹⁷ Demographic and medical history data were collected at baseline.

STATISTICAL ANALYSIS

Data were analyzed with SPSS version 19.0 (SPSS Inc, Chicago, Illinois). Prior to analysis variable distributions were examined to ensure that assumptions of normality were met. A few variables with skewed distributions were transformed to meet the assumption of normality. Because results did not differ, we report untransformed data for ease of interpretation. Comparisons of categorical baseline characteristics were analyzed using the Pearson χ^2 test. Continuous baseline variables were compared with independent samples *t* tests. Covariates were included in models if the correlation between baseline characteristic and outcome was 0.30 or greater.¹⁸ Based on prior data collected from a similar sample of patient participants, it was determined that a sample of 200 participants (100 per group) would provide a power of 80% to detect clinically meaningful differences on self-reported measures (mean differences of 0.5 days for behavioral measures) between the 2 groups and differences as small as 0.7% in HbA_{1c} value. We conducted an intention-to-treat (ITT) analysis, in which baseline values were carried forward for participants with missing data at the 6-month time point. For variables that were assessed on 3 occasions, the most recent value was carried forward to impute missing data. We also conducted our ITT analyses with multiply imputed data sets; however, findings were substantively identical and are therefore not reported. Study outcomes were assessed by comparing the experimental and control groups using repeated measures analysis of variance, with a focus on the group-by-time interactions. To assess the impact of the ITT on study results, we also analyzed the data with complete cases only and no imputed data. Because the results were substantively identical, we focus our report on the ITT results.

RESULTS

The **Figure** shows the flowchart of participant recruitment, allocation to conditions, and completion of follow-up measures. Most of the individuals who were screened for participation but not enrolled in the study had HbA_{1c} values below the cutoff of 8.0% (*n* = 1499). An additional 537 patients were excluded because of language, prior to the availability of the Spanish language intervention materials. **Table 1** gives the baseline characteristics of randomized participants by group. The majority of patients were obese. Randomization succeeded in allocating similar proportions of Spanish-speaking participants to both groups. There was no significant relationship of participants' language with primary or secondary outcomes. Overall, the 2 groups were similar, with age being the only variable that differed significantly between groups (*P* = .05). However, none of the baseline characteristics were significantly associated with study outcomes, thus no covariates were included in the models. Ninety-one percent of participants completed the

Figure. Patient recruitment and randomization flowchart. HbA_{1c} indicates hemoglobin A_{1c}.

1-month telephone survey. While 90.5% of participants completed the clinical measures at both points in time, only 84.1% completed the 6-month survey because a minority of participants refused to complete it.

USE OF INTERVENTION

Ninety-eight percent of participants were reached by telephone 1 week after study enrollment, at which time they were reminded to review the intervention provided. At the 1-month follow-up assessment most participants indicated that they had reviewed the assigned DVD program or brochure (94.3% and 93.5% in the experimental and control groups, respectively). Participants in both groups who reviewed the respective interventions perceived the materials positively. The majority (88.5% and 89.8% in the experimental and control groups, respectively) rated the clarity of the information presented in the brochure or DVD as good, very good, or excellent at the 1-month follow-up, and most felt somewhat or very positive about others using the brochure or DVD to learn about managing diabetes (93.2% and 89.9% in the experimental and control groups, respectively).

Among participants assigned to the experimental group, 73.0% completed 5 sessions of telephone coaching, while 15.0% did not complete any telephone coaching sessions. The mean (SD) number of sessions completed was 4.0 (1.9).

CLINICAL OUTCOME MEASURES

Table 2 gives the 6-month comparisons of clinical measures by study group. Although there was an overall decline in HbA_{1c} values from baseline to 6 months across

Table 1. Participant Baseline Characteristics by Group

Characteristic	Control Group (n=101)	Experimental Group (n=100)	P Value
Age, mean (SD), y	54.3 (8.9)	56.7 (8.3)	.05
Male sex, %	57.0	46.0	.12
Marital status: married or living as married, %	51.0	38.4	.07
Ethnicity, %			
African American	16.0	16.2	.75
Latino	55.0	56.6	
White	18.0	21.2	
Asian	5.0	2.0	
Other	6.0	4.0	
Primary language: English, %	50.5	54.0	.62
Education, %			
≤ High school	61.0	53.0	.18
Some college	21.0	33.0	
≥ College graduate	18.0	14.0	
Income, %			
≤ \$15 000	69.0	78.8	.66
\$15 001-\$25 000	15.0	10.1	
> \$25 000	16.0	11.1	
Health insurance: uninsured, %	68.7	66.7	.88
Glycated hemoglobin A _{1c} , mean (SD), %	9.8 (2.1)	9.4 (1.9)	.44
LDL-C, mean (SD), mg/dL	99.0 (34.9)	102.5 (39.3)	.51
Systolic BP, mean (SD), mm/Hg	127.7 (17.2)	127.6 (17.3)	.96
Diastolic BP, mean (SD), mm/Hg	74.0 (10.4)	73.2 (11.6)	.60
BMI, mean (SD)	32.8 (7.4)	33.3 (8.0)	.59
No. of prescription medications, mean (SD)	6.5 (2.8)	6.9 (2.3)	.32
Years with diabetes, mean (SD)	9.5 (8.2)	10.4 (7.9)	.48
Charlson comorbidity index, mean (SD)	0.66 (1.2)	0.81 (1.3)	.40

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); BP, blood pressure; LDL-C, low-density lipoprotein cholesterol.

Table 2. Clinical Outcome Measures by Group at 6-Month Follow-up

Variable	Intention to Treat, Mean (SE) [95% CI]		P Value ^a
	Control Group (n=101)	Experimental Group (n=100)	
Glycated hemoglobin A _{1c} , %	9.2 (0.19) [8.8-9.6]	8.9 (0.19) [8.6-9.3]	.49
LDL-C, mg/dL	97.3 (4.0) [89.5-105.2]	106.0 (4.0) [98.1-114.0]	.29
Systolic BP, mm/Hg	128.2 (1.9) [124.5-131.9]	129.1 (1.9) [125.4-132.8]	.68
Diastolic BP, mm/Hg	73.6 (1.0) [71.6-75.6]	74.3 (1.0) [72.3-76.3]	.32
BMI	32.9 (0.76) [31.4-34.4]	33.4 (0.76) [31.9-34.9]	.60

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); BP, blood pressure; LDL-C, low-density lipoprotein cholesterol.

SI conversion factor: To convert cholesterol to millimoles per liter, multiply by 0.0259.

^aTest of interaction of group by time

both groups ($P < .001$), there was no significant interaction effect of group by time ($P = .49$). There were also no significant interaction effects of group by time, nor main effects of time for LDL-C (interaction, $P = .29$; main effect, $P = .71$), blood pressure (interaction systolic, $P = .68$; main effect systolic, $P = .40$; interaction diastolic, $P = .32$; main effect diastolic, $P = .61$), and BMI (interaction, $P = .60$; main effect, $P = .43$).

DIABETES KNOWLEDGE AND BEHAVIORAL OUTCOME MEASURES

As given in **Table 3**, participants in both groups showed significant increases in diabetes knowledge from baseline to the 6-month follow-up ($P < .001$). However, there was no significant interaction effect of treatment group by time ($P = .78$).

Table 3. Diabetes Knowledge and Behavioral Outcomes by Group Over Time

Variable	Intention to Treat, Mean (SE) [95% CI]		P Value ^a
	Control Group (n=100)	Experimental Group (n=100)	
Diabetes knowledge, % correct			
Baseline	58 (2) [54-62]	57 (2) [53-61]	.78
1 mo	65 (2) [62-69]	66 (2) [62-70]	
6 mo	67 (2) [64-71]	68 (2) [64-71]	
General diet, d/wk ^b			
Baseline	3.81 (0.22) [3.37-4.25]	3.70 (0.22) [3.26-4.14]	.96
1 mo	4.65 (0.18) [4.30-5.00]	4.61 (0.18) [4.26-4.96]	
6 mo	4.62 (0.16) [4.31-4.93]	4.59 (0.16) [4.28-4.90]	
Specific diet, d/wk ^c			
Baseline	3.95 (0.15) [3.65-4.25]	4.35 (0.15) [4.05-4.65]	.27
1 mo	4.38 (0.16) [4.08-4.70]	4.40 (0.16) [4.10-4.71]	
6 mo	4.28 (0.15) [3.98-4.57]	4.37 (0.15) [4.07-4.66]	
Exercise, d/wk ^d			
Baseline	2.86 (0.23) [2.42-3.31]	3.00 (0.22) [2.56-3.44]	.04
1 mo	3.68 (0.24) [3.21-4.14]	4.04 (0.23) [3.58-4.50]	
6 mo	3.55 (0.22) [3.11-3.98]	3.20 (0.22) [2.77-3.63]	
Blood glucose testing, d/wk ^e			
Baseline	3.81 (0.28) [3.26-4.36]	3.67 (0.28) [3.11-4.36]	.81
1 mo	4.15 (0.27) [3.61-4.69]	4.09 (0.28) [3.54-4.63]	
6 mo	4.32 (0.26) [3.82-4.83]	4.05 (0.26) [3.54-4.56]	
Foot care, d/wk ^f			
Baseline	3.72 (0.25) [3.22-4.22]	3.98 (0.26) [3.47-4.48]	.82
1 mo	4.39 (0.23) [3.94-4.83]	4.54 (0.23) [4.09-4.99]	
6 mo	4.68 (0.23) [4.24-5.13]	4.73 (0.23) [4.28-5.18]	
Took most prescription medications, d/wk ^g			
Baseline	6.16 (0.18) [5.80-6.53]	6.14 (0.18) [5.78-6.51]	.41
1 mo	6.56 (0.14) [6.29-6.82]	6.60 (0.14) [6.33-6.86]	
6 mo	6.62 (0.14) [6.34-6.89]	6.36 (0.14) [6.09-6.64]	
Took all prescription medications, d/wk ^h			
Baseline	6.29 (0.19) [5.92-6.66]	5.93 (0.19) [5.56-6.30]	.75
1 mo	6.77 (0.12) [6.54-7.00]	6.47 (0.12) [6.24-6.70]	
6 mo	6.70 (0.13) [6.44-6.96]	6.26 (0.13) [5.99-6.52]	

^aTest of interaction of group by time.

^bQuestions asked: "On how many of the last seven days have you followed a healthy diet for diabetes?" and "...have you followed an eating plan for diabetes?"

^cQuestions asked: "On how many of the last seven days did you eat five or more servings of fruits and vegetables?" and "...did you eat high-fat foods such as red meat or full-fat dairy products?"

^dQuestion asked: "On how many of the last seven days did you participate in at least 30 minutes of physical activity?"

^eQuestion asked: "On how many of the last seven days did you test your blood sugar?"

^fQuestion asked: "On how many of the last seven days did you check your feet? (for example, for sores, cuts, or dryness)."

^gQuestion asked: "On how many of the last seven days have you taken most of the medications prescribed by your doctor?"

^hQuestion asked: "On how many of the last seven days have you taken all of the medications prescribed by your doctor?"

There were significant increases over the 3 measurement time points in several self-care behaviors across the 2 groups but group-by-time interactions were nonsignificant for general diet ($P < .001$; interaction, $P = .96$), blood glucose testing ($P = .03$; interaction, $P = .81$), foot care ($P < .001$; interaction, $P = .82$), taking most prescribed medications ($P = .01$; interaction, $P = .41$), and taking all prescribed medications ($P < .001$; interaction, $P = .75$). However, there was a significant interaction effect of group by time for exercise ($P = .04$), but the 2 group contrasts at each time point were nonsignificant (baseline, $P = .69$; 1 month, $P = .33$; 6 months, $P = .26$).

COMMENT

The present study is one of the first we know of that enrolled predominantly poor (>70% had annual incomes ≤\$15 000), uninsured ethnic minority patients with

poorly controlled diabetes to evaluate the impact of a behavior support intervention in combination with telephone coaching. Although we observed a significant overall decline in HbA_{1c} value at the 6-month follow-up from a mean of 9.6% to 9.1%, we found no significant effect of the experimental intervention package compared with the control condition for diabetes knowledge, self-care behaviors, or clinical outcome measures. Nevertheless, it is important to note that across both study groups most behavioral measures improved over time. It remains unclear what accounts for the improvements observed over time in both groups, but it may have resulted from all participants being told that their diabetes control was in need of improvement.

We screened a total of 2438 patients to enroll 201 participants into the trial. The majority of ineligible patients had HbA_{1c} values below our inclusion criterion of 8.0%. On the one hand, this suggests that systemwide

efforts to improve the quality of care of patients with diabetes have been successful. But, for those patients who are unable to maintain adequate glycemic control despite these measures, the intervention tested in this trial appeared to be insufficient to make a statistically significant difference compared with the control condition, despite anecdotal reports from participants that the intervention was valuable to them and provided support they had not previously received as part of their diabetes care. The lack of success of the experimental intervention is contrary to previous telephone intervention studies with different patient populations, which showed significant increases in self-care and in some cases significant improvements in glycemic control.^{2,9-12}

Aside from targeting a severely disadvantaged patient population, the circumstances under which this trial was conducted were unique. Enrollment began just as it was becoming clear that the global economy was entering a severe recession. Over the course of conducting the study we heard many anecdotal reports from participants about how they were affected by the economic downturn. Reports of job loss were common, leading many participants to have to struggle for basic survival. Making wise nutritious choices became impossible when the first priority was making sure that one could maintain shelter and have any food to eat at all. The wide availability of less-expensive, calorie-dense, and nutrient-poor food in low-income communities is well documented.¹⁹ Similarly, we heard many stories of patients who had run out of diabetes medications before they could return to the clinic to see a health care provider and receive free medication refills.

Another feature of our intervention that may explain the lack of effect is the dose that was provided as part of our trial. Participants received a 24-minute video behavior support intervention and up to 5 sessions of telephone coaching. Although almost three-quarters of those assigned to the experimental group received the full dose of the intervention, this still only amounted to a maximum of 150 minutes of telephone coaching. Prior studies of telephone coaching tested significantly higher doses of intervention, both in terms of frequency of contact as well as total minutes of telephone coaching. Trials that found significant increases in self-care behaviors tested as many as 18 sessions of telephone coaching lasting up to 420 minutes in total,^{2,10,11} while those that found significant improvements in glycemic control tested as many as 15 outbound calls.^{9,12} Whether a greater dose of telephone coaching alone would have a significant impact on the severely disadvantaged patient population that participated in our trial remains an empirical question, but our results at least suggest that 5 sessions lasting 150 minutes is not sufficient for the most vulnerable and disadvantaged patients with diabetes.

Our trial has some important limitations. First, although we did not inform participants' health care providers which study group their patients were assigned to, we cannot be sure that participants did not communicate this information, thereby unblinding the study. Second, research staff conducting the study assessments were not blinded to participants' assignments. However, our primary outcome was a biological measure that argu-

ably is not sensitive to unblinding. We experienced somewhat differential attrition with almost 3 times (n=14) as many participants assigned to the control condition not completing 6-month follow-up assessments. However, our results were substantively identical in the ITT and complete case analyses.

The participants in this trial had considerable deficits in their understanding of diabetes and what successful management of the condition requires. The combination of this with the severe economic disadvantage and stress experienced by this population could not be overcome by the limited intervention tested in this trial. The need for effective interventions that can reduce the negative health effects and suffering these patients are vulnerable to thus remains urgent. More intensive and therefore more expensive interventions may be a worthwhile investment to lower the high costs associated with poorly managed diabetes in the long term; however, larger structural interventions also may be necessary to overcome the many challenges faced by these severely disadvantaged patients.

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Author Contributions: *Study concept and design:* Frosch and Mangione. *Acquisition of data:* Frosch, Uy, Ochoa, and Mangione. *Analysis and interpretation of data:* Frosch and Uy. *Drafting of the manuscript:* Frosch. *Critical revision of the manuscript for important intellectual content:* Frosch, Uy, Ochoa, and Mangione. *Statistical analysis:* Frosch. *Obtained funding:* Frosch. *Administrative, technical, and material support:* Frosch, Uy, Ochoa, and Mangione. *Study supervision:* Frosch.

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INVITED COMMENTARY

ONLINE FIRST

What Is Health Coaching Anyway?

Standards Needed to Enable Rigorous Research

LESSONS ON TELEPHONIC SELF-MANAGEMENT INTERVENTIONS

Behavioral change interventions delivered through the telephone have accumulated solid evidence supporting their efficacy for multiple behaviors, including physical activity and dietary change.¹ It is commendable that Frosch et al² undertook this approach in a sample of patients with limited external resources. Their most significant finding is that a telephonic “coaching” intervention was feasible and well-received by even the most socially and economically disadvantaged. While the “dose” and possibly content of the intervention studied was not adequate to elicit a differential change compared with controls, there are several important lessons embedded in the study’s findings. Specifically, 98% of participants were reached by phone within 1 week of enrollment; 94% reviewed the provided DVD; 85% of those randomized to telephonic coaching participated; and 73% of those completed all 5 sessions. These statistics indicate a desire for diabetes self-management education and a willingness to engage in such interventions. Importantly, these results directly challenge the perception that individuals of lower socioeconomic status may be less motivated to learn self-care strategies.^{3,4}

Beyond dose and content, lack of benefit may lie in the training, experience, and competency of the inter-

vention providers. Intervention specifics and provider training and experience are absolutely critical to the design and interpretation of this and related behavioral intervention studies. While Frosch et al state that the telephonic coaching was provided by a nurse educator who was “trained in patient-centered approaches” and “motivational enhancement,”^{2(p2)} it is unclear what this means.

LACK OF STANDARDS AND EVIDENCE BASE FOR HEALTH AND WELLNESS COACHES

Currently, there is no consensus on the definition of *health coaching*, what it entails; what the training, credentialing, and licensure standards should be; and what evaluations should be established to insure some level of competency among those trained as health coaches. In the absence of such standards, comparing one health coaching study to another is of limited value.

This lack of clarity represents a growing conundrum in the medical literature regarding health coaching. While interventions are increasingly described as health coaching, the actual practices and required training for such coaching vary widely. A continuum of practices has emerged with an enormous range in quality of care, theoretical frameworks (if any), and supporting evidence. At the minimalist end of