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Addressing Fidelity in Evidence-Based Health Promotion Programs for Older Adults

Janet C. Frank
University of California - Los Angeles

Cynthia P. Coviak
Grand Valley State University, coviakc@gvsu.edu

Tara C. Healy
University of Southern Maine

Basia Belza
University of Washington

Banghwa L. Casado
University of Maryland

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Janet C. Frank
University of California–Los Angeles

Cynthia P. Coviak
Grand Valley State University in Grand Rapids, Michigan

Tara C. Healy
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Basia Belza
University of Washington

Banghwa Lee Casado
University of Maryland

This article addresses health behavior change program fidelity using the five components of fidelity from the National Institute of Aging's Behavior Change Consortia: fidelity in design, training, delivery, receipt, and enactment. Fidelity is a key issue in successful translational research projects into community settings. The authors examine four programs sponsored by the Administration on Aging that target health behavior change in physical activity (EnhanceFitness), chronic disease self-management (Partners on the PATH [Personal Action Toward Health]), fear of falling and falls prevention (Matter of Balance), and depression management (Healthy IDEAS). This article (a) describes the tools and strategies used by these projects to track and enhance fidelity to the core elements of the original intervention studies, (b) compares and contrasts each project's mechanisms of fidelity, (c) provides examples of fidelity outcomes, and (d) discusses themes and lessons learned that may be useful to others in developing the "next generation" of program translation.

Keywords: *evidence-based health promotion; translational research; research methods; older adults*

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There are many challenges that aging service providers face in improving the health of older adults. One is to transform health promotion interventions that, through research, demonstrate positive health outcomes into programs that can be accessible to a wider population. This translational research process is complex and the focus of much discussion (Gill, 2005; Glasgow, Lichtenstein, & Marcus, 2003; Green & Glasgow, 2006). In 2003, in an action that would further our understanding of translational research, the Administration on Aging (AoA) in the Department of Health and Human Services sponsored an initiative called Evidence-Based Prevention Programs for the Elderly (EBP). The overarching goal of the EBP initiative, with 14 projects nationwide, was to demonstrate that community aging service providers (CASPs), in partnership with health care and academic and/or research institutions, could provide effective health improvement programs to the diverse older populations they serve. The projects spanned the nation and involved health promotion behaviors such as medication management, physical activity, falls prevention, and chronic disease self-management. Detailed information about these programs is available at the initiative's resource center, the National Council on Aging (NCOA) Center for Healthy Aging Web site (www.healthyagingprograms.org).

To assure that the AoA projects maintained the core elements contributing to the success of the intervention studies they were translating, program partners were asked to include a number of process measures to document the fidelity of their new program. Fidelity, defined as adherence or faithfulness to the procedures that compose an intervention (Santacroce, Maccarelli, & Grey, 2004), is enhanced through the use of "methodological strategies to monitor and enhance the reliability and validity of behavioral interventions" (Bellg et al., 2004, p. 443). All projects made necessary minor changes to accommodate the realities of their community setting, resources, partners, and target populations.

This article (a) describes the tools and strategies used by 4 of the 14 projects to track and enhance fidelity to the core elements of the original intervention studies, (b) compares and contrasts each project's mechanisms of fidelity, (c) provides examples of fidelity outcomes, and (d) discusses themes and lessons learned during this work that may be useful to others. The five-component model developed by the Behavioral Change Consortium (BCC) that includes design, training, delivery, receipt, and enactment is used as the conceptual frame for the four-project comparison (Bellg et al., 2004; Resnick, Bellg et al., 2005).

Background and Significance

Research Perspectives on Fidelity

Accurate valid assessment of the implementation of an evidence-based intervention requires attention to fidelity. When research is inattentive to fidelity, changes in those who participate in an experiment can be attributed to variations in the delivery and receipt of the intervention just as plausibly as they can be credited to the novel remedy the intervention represents (Bellg et al., 2004). Statistically, when intervention fidelity is compromised, the error variance in equations increases, reducing power when testing hypotheses (Cohen, 1988; Kirk, 1995). The researcher is then less likely to find statistical evidence of the study's effectiveness. If an otherwise effective therapy is brought to a real-world setting and crucial core elements of the intervention are omitted, the treatment may be abandoned because it failed to provide results. Termed a *Type III error*, this is the mistake of concluding an intervention is ineffective when it was not implemented in full (Basch, Sliepcevich, Gold, Duncan, & Kolbe, 1985; Glasgow, 2002).

Monitoring Fidelity

Assessing the degree of fidelity for intervention design and implementation is a critical feature in translating research-based studies with positive outcomes into successful programs. Not only do we need to identify the essential and potent design elements from the original interventions, but we also must include process measures to assure that the well-designed program is implemented properly and fully.

Fidelity monitoring is the term used to identify procedures that document key components of program implementation. These strategies are important in the transfer of interventions from experimental to service settings and also in general efforts to implement evidence-based practice (Calsyn, 2000; Santacroce et al., 2004). Fidelity assessment includes appraisal of the intervention itself, by addressing core elements of treatment integrity and treatment differentiation (Calsyn, 2000; Moncher & Prinz, 1991). The characteristics and actions of the interventionist(s) also need to be scrutinized. These include adherence (accuracy in delivering the components of an intervention) and interventionist competence (the ability of the interventionist to engage the participants effectively) (Santacroce et al., 2004).

Formal process measure instruments designed to capture essential fidelity elements during observed treatment sessions include checklists or

rating scales to quantify accuracy in delivery. To standardize intervention delivery, researchers often use manuals, combined with training, supervision, and observation of the delivery of the intervention. Measurements obtained in this manner, as well as other estimates of the intervention "dose" received (e.g., a count of the number of sessions attended), are then available for analyzing fidelity. These measures are essential in documenting the contribution that program implementation and delivery variations bring to observed changes in the participants (Moncher & Prinz, 1991; Santacroce et al., 2004).

Literature on Fidelity Monitoring

Despite the importance of fidelity and consequences encountered when it is breached, techniques used in monitoring fidelity have historically been underreported (Bellg et al., 2004; Borrelli et al., 2005; Calsyn, 2000; Hogue, Liddle, Singer, & Leckrone, 2005; Moncher & Prinz, 1991; Resnick, Inquito et al., 2005; Santacroce et al., 2004). There have been three major reviews of fidelity monitoring in research. The first, by Moncher and Prinz (1991), reviewed the literature from several prominent psychology, psychiatry, and family therapy journals published from 1980 through 1988. They found that less than 55% of the 359 reviewed articles documented the use of fidelity monitoring methods. This may reflect the lack of publication of fidelity monitoring methods because of space limitations instead of a failure to use them in studies.

The second major review, by Dusenbury, Brannigan, Falco, and Hansen (2003), focused on 25 years of educational intervention research and previously published reviews of intervention fidelity. They did an analysis of factors possibly contributing to the degree of fidelity retained in intervention dissemination to practice (i.e., school) settings. They made a number of recommendations: (a) to adopt a universal definition of *fidelity*, (b) to standardize measures and methods for fidelity assessment, (c) to increase research on factors influencing fidelity, and (d) for funding agencies to insist that fidelity be assessed. By following these recommendations, they felt that intervention protocols would be more readily transferred to other settings. In addition, they recommended that investigators specifically identify critical elements of an intervention that cannot be omitted if the treatment is adapted for other circumstances.

The third major review was of health behavior research published from 1990 to 2000. Borrelli et al. (2005) from the National Institute on Aging (NIA)-sponsored BCC reported results similar to those of Moncher and Prinz (1991). Evaluating 342 articles, 54% did not report the use of fidelity monitoring methods.

The BCC also created a model for examining intervention fidelity in a research study (Borrelli et al., 2005; Nigg, Allegrante, & Ory, 2002; Resnick, Bellg et al., 2005). This model, which encompasses study design, the training of interventionists, delivery and receipt of the intervention, and enactment, is used in this article. We chose the BCC treatment fidelity framework because it enables us to systematically describe and compare treatment fidelity strategies employed by the four projects. Because it was developed for evaluating various types of behavioral change studies, it is conceptually relevant in describing our projects. Also, the BCC framework contributes to national efforts to promote health behavior research and to advance the definitions, methodology, and measurement of treatment fidelity for the field of health behavior research (Bellg et al., 2004).

Program Descriptions

The four projects discussed in this article are a voluntary convenience sample of the 14 EBP programs within the AoA initiative. Each of the projects is either a direct or systematic translation of an evidence-based health promotion program. The four behavior change programs target physical activity, disease self-management, falls prevention, and depression management. Short program descriptions are provided here. For details, visit www.healthyagingprograms.org.

EnhanceFitness is an evidence-based group exercise program for older adults at all levels of fitness to help them become more active, energized, and empowered to sustain independent lives. Based on research conducted by investigators from the University of Washington and tested at more than 1,000 sites, EnhanceFitness focuses on cardiovascular endurance training, stretching, flexibility, balance, and strength training exercises. Research showed that during 6 months of participation in the program, the intervention group members improved their physical, emotional, and social health scores, leading to significantly better (10% to 30%) health status. The control group deteriorated in these measures during this time (Wallace et al., 1998).

Partners on the PATH (Personal Action Toward Health; P PATH) Chronic Disease Self-Management Program (CDSMP) was a collaborative effort of the Area Agency on Aging of West Michigan, four CASP agencies, a health maintenance organization, and a local state university. It was based on the highly successful CDSMP of Stanford University, which has documented improvements in self-efficacy and health status (Lorig et al., 1999). Stanford's program, developed throughout three decades, offers a weekly workshop led by trained lay facilitators who help participants learn problem-solving methods to live optimally with a chronic illness. The P PATH program was designed for older

adults who have chronic lung/respiratory disease, cardiovascular disease (including hypertension), arthritis, and diabetes.

A Matter of Balance (MOB) was developed by The Roybal Center for Enhancement of Late-Life Function at Boston University (Tennstedt et al., 1998). The program is designed to reduce fear of falling and increase activity levels among older adults who manifest this concern. MOB acknowledges the risk of falling and emphasizes practical strategies to reduce both the risk and associated fears. Trained facilitators conduct eight 2-hr sessions using a curriculum grounded in self-efficacy and cognitive restructuring theory, designed for groups of 10 to 12 participants. The original research indicated that participants must attend at least five of the eight sessions delivered to achieve benefit from the intervention. Those who attended five or more sessions were found to experience significantly increased falls self-efficacy (i.e., the confidence to carry out everyday activities without falling) and increased perception of their ability to manage falls at 6 weeks, 6 months, and 12 months (Tennstedt et al., 1998).

Healthy IDEAS is a community-based depression program designed to detect and reduce the severity of depressive symptoms in older adults receiving community-based case management (Quijano et al., 2007). Two randomized controlled trials on treatment of depression in older adults constitute the primary evidence base for Healthy IDEAS, the Program to Encourage Active, Rewarding Lives for Seniors (PEARLS; Ciechanowski et al., 2004), and Improving Mood-Promoting Access to Collaborative Treatment (IMPACT; Unützer et al., 2002). Each of these studies has provided evidence for the efficacy of depression intervention in older adults. Project IMPACT demonstrated that screening, education, problem-solving therapy, activation, and pharmacotherapy for depression, delivered by trained professionals, were effective in treating depression in older adults in primary care with comparable efficacy for minority populations (Aréan & Ayalon, 2005). The PEARLS project demonstrated that trained social work case managers could use a similar treatment approach in the home environment and effectively treat older adults with dysthymia and minor depression (Ciechanowski et al., 2004). The Healthy IDEAS intervention consists of four components: (a) screening and assessment, (b) education about depression, (c) referral and linkage to health care and mental health professionals, and (d) behavioral activation therapy (BAT).

Fidelity Methods and Measures

The BCC framework consists of five components, each of which articulates clear goals and strategies to enhance and monitor fidelity. The framework has

been used as a tool to shape treatment fidelity plans in intervention development (Resnick, Bellg et al., 2005) as well as to assess and evaluate treatment fidelity in current research projects (Borrelli et al., 2005).

The adaptations to the original study made by each of the EBP projects for each of the five framework components are discussed below and summarized in Tables 1 through 5. Each of the five tables restates the BCC definition (or its adaptation) and provides a description of what was done in the new programs. The fidelity tools and strategies used and the types of data generated by the fidelity measures are listed. This level of detail is provided to encourage future researchers and program developers to use these tools and strategies to assure fidelity.

Fidelity to Study Design (Table 1)

BCC strategies for study design fidelity include (a) establishing procedures to ensure same treatment dose within conditions and equivalent doses across conditions and (b) creating a plan to deal with possible setbacks in implementation. Treatment fidelity related to study design ensures that a study will adequately test intended effects of the treatment based on its underlying theory and treatment process. A study must be congruent to its theoretical assumptions and ensure that the intervention's design adheres to those assumptions. The projects were based on evidence derived from randomized clinical trials (RCTs). EnhanceFitness maintained all core elements of the tested intervention while nationally disseminating a master trainer model. The other three projects translated successful interventions into programs that better fit the unique needs of older adults residing in a community. Each program was based on a theoretically grounded practice intervention.

In choosing interventions that adhered to their theoretical foundations, the projects ensured that design fidelity would be upheld, as long as the projects translated the clinical trials appropriately. The identification of essential core elements and the clarity of the theoretical grounding for each project guided the development of all adaptations. The projects had access to clearly written guidelines for the tested interventions on which to base their translations. Therefore, for the discussion of design fidelity in this article, we have adapted the BCC definition to our current situation while remaining true to the initial intervention in translating the various aspects of intervention delivery. This adapted definition is reflected in Table 1. An element of design that differed between the initial interventions and these projects was their organization of the "treatment." Because RCTs had already established the efficacy of the interventions and the projects were testing effectiveness, all four projects used a repeated measures design in contrast to an RCT as their study design.

Table 1. Strategies to Maintain Treatment Fidelity to Study Design

Design Fidelity Definition: Processes to ensure that the translated program has maintained the essential elements of the tested intervention and to test the hypothesis that the translation has achieved comparable outcomes to the tested intervention (adapted from BCC definition; Bellg et al., 2004).

Program	*Description*	*Fidelity Tools And Strategies*	*Types of Data Produced*
EnhanceFitness	*Study Design:* Repeated measures at every 4 months after baseline measurement. Results compared to tested intervention. Enhanced with modifications for more frail participants (seated) and for participants with arthritis.	Consultation with designers of original program when changes were considered (e.g., for increased participant safety or modifications for arthritis).	Qualitative data on concurrence that adaptations adhered to essential elements.
Partners on the PATH CDSMP	*Study Design:* Repeated measures at baseline and 6 months; results compared to tested intervention. *Adaptations:* • Community aging service provider organizations recruited participants and facilitators and made referrals to programs. • All participants 60 years of age and older. • Peers led classes, rather than professionals. • Program eligibility: diabetes, cardiovascular disease, arthritis, and lung disease not caused by cancer. • Extended session time for self-report evaluations.	Workshop Session Fidelity Tool	Quantitative data comprise count of workshop guidelines adhered to (maximum of five) each week of program.
A Matter of Balance	*Study Design:* Repeated measures at baseline, 6 weeks, 6 months, and 12 months; results compared to tested intervention.	Consultation with designers of original program.	Qualitative data on concurrence that adaptations adhered to essential elements.

(continued)

Table 1. (continued)

Program	*Description*	*Fidelity Tools And Strategies*	*Types of Data Produced*
	Adaptations: • Volunteer lay leaders (volunteer coaches) facilitated the program, rather than professionals. • Exercises changed with the advice of experts to make them safer for volunteer lay leaders to teach. • A visit by a health care professional was added to help ensure fidelity to the tested intervention.	Consultation with experts in exercise concerning adaptations to the exercise component of program and the addition of a guest health care professional.	Qualitative data from experts on adaptations.
Healthy IDEAS	*Study Design:* Repeated measures at baseline, 3 months, 6 months, and 9 months; results compared to tested intervention. *Adaptations:* • Case managers conducted depression intervention as part of their routine case management duties rather than having a separate "interventionist" who only does depression protocol. • Case managers from different disciplines with varying levels of education were trained to do the intervention; only trained MSWs were used in the model project. • Case managers used a simplified intervention (behavioral activation therapy [BAT]) and problem-solving skills to help clients but did not do problem-solving therapy with clients as in original model.	Consultation with designers of the original programs when changes were considered. Consultation with mental health experts in designing simplified intervention (BAT). Consultation with the community agency providers in designing intervention steps embedded in their regular case management routine.	Qualitative and quantitative data on the protocol of intervention that adhered to the essential elements.

NOTE: BCC = Behavior Change Consortia; CDSMP = Chronic Disease Self-Management Program; MSW = master's in social work; PATH = Personal Action Toward Health.

Fidelity to Provider Training (Table 2)

Treatment fidelity related to provider training involves ensuring that providers are satisfactorily trained to deliver the intervention to participants. The BCC proposes four general areas of strategy to ensure provider training fidelity: (a) standardizing training, (b) ensuring providers' skill acquisition, (c) minimizing "drift" in providers' skills, and (d) accommodating providers' differences. As shown in Table 2, all four projects provided standardized training based on clearly written manuals for interventionists, extensive training, trainer observation sessions, and follow-up booster sessions. Adaptations to the training process and materials are also clearly outlined in Table 2.

Of the four projects, EnhanceFitness is the only one that required instructors to hold certification in fitness from a nationally recognized certifying body, such as the American Council on Exercise. This ensured that instructors had baseline knowledge of exercise science and safety, which they built on with training in the EnhanceFitness protocol.

EnhanceFitness instructors attended a 2-day (12-hr) training that included lectures, discussion, group activities, quizzes, and exercise demonstrations. They received the *EnhanceFitness Instructor Manual*, detailing the class protocol, and performance measures testing protocols. They also received a copy of the *EnhanceFitness Participant Guide*, which illustrates the protocol exercises. Each EnhanceFitness site received a DVD of an hour-long EnhanceFitness class and outcomes testing procedures.

P PATH obtained the appropriate licenses to disseminate the CDSMP from Stanford University's Patient Education Research Center, which certifies master trainers and leaders following standardized training. The same manual and practice sessions used by all programs licensed by Stanford were used in P PATH.

MOB adapted the original intervention to use volunteer coaches instead of health care professionals to facilitate the eight-session group program. Volunteer coaches were trained and then provided with a coach handbook developed for the translation of MOB. Observation by master trainers ensured that the volunteer coaches maintained fidelity to the essential program elements. The investigators of the original intervention study for MOB were consulted on all adaptations made in the coach handbook. Their feedback confirmed that the project team adhered to the essential ingredients of the curriculum in all revisions. Input on the coach training manual from volunteer coaches was also obtained in a focus group, through the booster sessions, and through individual consultation to ensure ease of use and clarity.

The Healthy IDEAS case managers and their supervisors received three half-day training sessions by mental health professionals and a training

(text continues on p. 17)

Table 2. Strategies to Maintain Treatment Fidelity to Provider Training

Training Fidelity Definition: Assessment and ongoing evaluation of those who implement the program to ensure they have been satisfactorily trained to deliver the program as intended to participants (Bellg et al., 2004).

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
EnhanceFitness	*Certification* of trainers required from a national certifying body (YMCA, American Council on Exercise, American Council on Sports Medicine, etc.) *Additional Training:* • Instructor training manual used. • Training sessions included: – 12-hr instructor training (lecture, discussion, demonstration) in a 2-day format. – Annual instructor workshop. • List-serve, coaching by master trainers. • One-on-one technical assistance. • Videotape or DVD showed demonstration of EF and how to complete performance measures. • Trained on-site staff in EF protocols.	Instructor manual Participant manual Master trainer manual Instructor training Annual instructor workshop EF instructor list-serve	Revisions to manual made per feedback from instructors, evaluations conducted by master trainers, and latest research findings about physical activity and older adults. Teach-back: Instructors in training taught EF class segment to other instructors. Satisfaction with instructor training evaluated at the end of each training. Periodic evaluation conducted by external consultants. Postworkshop satisfaction survey used quantitative data, rating levels of: satisfaction, amount of individual attention, challenge, support from instructor, fun, and overall program. Qualitative data with updates on the EF protocol.

Partners on the PATH CDSMP	*Same as Tested Intervention:* • All facilitators trained by Stanford-licensed master trainers using manuals, practice sessions as "participant," and as group leaders. • Several staff achieved master trainer status for Spanish program. *Adaptation:* • Training sessions completed in two 2-day sessions instead of 1 solid week. • Stanford list of reminders of session planning points adapted to create "Fidelity Tracking forms"; facilitators trained in use of forms. • Coach booster sessions provided.	Master trainers survey Facilitator training Training manuals	Qualitative data from new facilitators regarding what went well, what they struggled with, and ideas for improving sessions. Teach-back: Facilitators led a portion of the classes, got feedback from master trainers/others. Effectiveness of training, confidence of facilitators, and need for additional/supplementary training (through process measures, focus groups, open-ended questionnaires). Volunteer facilitator manuals provided to all volunteers.
A Matter of Balance	*Same as Tested Intervention:* • Professional training manual used. • Used videos and clearly described exercises and activities.	Training manuals Consultation with original study investigators on adaptations to training manual.	Volunteer coach manuals adapted for lay leader facilitators. Qualitative data about concurrence on volunteer coach manual adaptation.

(continued)

Table 2. (continued)

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
	Adaptations: • Coach training manual was written based on original manual for professional facilitators. • Increased frequency of coach trainings and booster/support sessions.	Focus group, booster sessions (team meetings), and individual sessions for volunteer coaches.	Volunteer coach input implemented in adaptations to ensure ease of use and clarity.
		Volunteer coach training	Quantitative data about confidence and satisfaction with training.
Healthy IDEAS	*As in Tested Intervention:* • Developed and used training manual. • Group training sessions used lectures, role-plays, demonstrations. • Individual training given to providers (case managers) who entered project after it began.	Training manuals	Qualitative data about the adequacy of training manuals from agency providers.
		Initial group training sessions (individual training for new providers)	Qualitative data about the adequacy of training sessions from agency providers.
	Adaptations: • Used group setting for updates/booster training sessions for all agency case managers. • Individually assigned "coaches" (mental health professionals) provided ongoing training and rating of case manager adherence.	Updates and booster training sessions	Qualitative data about the adequacy of training sessions from agency providers.
		Ongoing coaching	Qualitative data about the case managers' performance of intervention steps and the need for additional coaching.

NOTE: PATH = Personal Action Toward Health; EF = EnhanceFitness; CDSMP = Chronic Disease Self-Management Program.

manual that included detailed "scripts," descriptions, and guidelines for each intervention component. Training also included educational videos, handouts about depression, and case studies, as well as lectures, role-plays, and demonstrations in either group or individual sessions. Training updates and booster training sessions were used with all providers during the implementation of the project to ensure the providers' skills were maintained. In addition, the case managers received ongoing coaching; mental health professionals provided additional training as needed.

Fidelity to Treatment Delivery (Table 3)

According to the BCC, fidelity of treatment delivery is crucial to ensure that the intervention results are truly attributable to the program (internal validity) and that the results are generalizable to other study populations (external validity). Treatment fidelity requires establishing a standardized delivery and protocol and monitoring providers' adherence to the protocol. As shown in Table 3, each project employed multiple strategies to assure fidelity in the delivery of the program.

EnhanceFitness monitored the delivery of the program by using master trainers to observe and evaluate instructors at 2 months and then annually. The first evaluation was at the program site; thereafter, the evaluation was either onsite or via videotape, depending on the proximity of the master trainer. A written evaluation was discussed with and provided to each instructor. Participant satisfaction with delivery was assessed annually through a written program evaluation, asking about satisfaction with the program and instructor.

Although not required by Stanford, intervention delivery was emphasized in P PATH. Checklists adapted from the training materials were used to monitor required workshop sizes, arrangements, and equipment needed and other class-related information. P PATH monitored delivery fidelity with direct observation and feedback by master trainers. Facilitators were observed during their first workshop and again approximately 12 months afterward (typically the third or fourth workshop led by the facilitator). Using a scale of *excellent* to *poor*, master trainers rated the performance of the new facilitators relative to their adherence to the leader manual content and processes, problem solving, and interactions with the participants. P PATH facilitators were consistently rated as excellent or good in their adherence to delivery of the CDSMP.

To help ensure delivery fidelity, MOB used the same materials and activities as those used in the tested intervention. As part of the translation to a volunteer coach model, MOB implemented a mentor system that paired an

(text continues on p. 21)

Table 3. Strategies to Maintain Fidelity to Treatment Delivery

Delivery Fidelity Definition: Program fidelity processes to ensure that the intervention is delivered as intended.

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
Enhance-Fitness	• Ongoing coaching provided by master trainers. • Accessible and safe site characteristics. • Up-to-date records and documentation of EF protocols captured in various media. • Monitored completed outcomes measures forms.	Master trainer observed each instructor teaching an EF class at 2 months and 1 year after the instructor training or more often as needed.	Qualitative data about adherence to EF protocol.
		Participant satisfaction surveys after 1 year.	Quantitative data rating levels of satisfaction, amount of individual attention, challenge, support from instructor, fun, and overall program.
		One-on-one interviews with instructors.	Qualitative data from one-on-interviews that evaluated the experience of being an EF instructor, including what worked and what was challenging (see Cao, 2006).
		Program evaluation by external consultants.	Qualitative data regarding the safety and fidelity of the program.
		Tracking of attendance and dropouts.	Quantitative data reporting who attended class and who did not.
Partners on the PATH CDSMP	*Same as Tested Intervention:* • Intervention delivered during a 6-week period, in sessions lasting 2.5 hr, attended by 8 to 16 participants, led by facilitators trained by a Stanford master trainer.	Master trainer feedback form for new facilitators.	Quantitative data regarding ratings (poor to excellent) of facilitator performance on six aspects of delivery and class leadership. Qualitative comments added to above, and documentation of facilitators judged not to be maintaining fidelity.

	• All facilitators received own manual to follow in class sessions. *Adaptations:* Facilitators recruited from community who were not employees of partner agencies were partnered with facilitators who were agency employees.	Participant session evaluation form. Facilitators completed intervention fidelity tools for class size, room equipment, attendance, participant follow-up after absence.	Quantitative data with ratings (scale of 1 to 10) of four questions about session content and facilitator performance. Qualitative data about likes, dislikes, and suggestions for improvement. Quantitative data regarding count of workshop guidelines adhered to (maximum of five) each week of the program. Qualitative data regarding follow-up actions for fidelity checkpoints not achieved.
A Matter of Balance	*Same as Tested Intervention:* • Used same videos, activities, and core curriculum. • Tracked attendance. *Adaptations:* • Used trained volunteer lay leaders (i.e., volunteer coaches) to facilitate classes.	Mentor system for volunteer coaches. Volunteer coach surveys conducted posttraining and 6 months later to measure confidence in delivering the program as intended. Observation of coach facilitation during one of the eight sessions, using an observation tool.	Qualitative feedback concerning delivery of program as intended, with feedback about strengths and ways to improve. Quantitative measures about volunteer coach confidence in delivering the curriculum and satisfaction with the volunteer experience. Quantitative measures (yes/no) concerning the maintenance of fidelity to the curriculum and skill in program facilitation.

(continued)

Table 3. (continued)

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
		Participant satisfaction surveys at the end of the last class.	Quantitative data regarding satisfaction with program facilitation, usefulness of handbook, perceived immediate benefits (e.g., talking with others about fear of falling), plans to continue exercising. Qualitative data concerning changes made as a result of taking MOB and general comments.
		Focus group conducted to obtain volunteer coach feedback.	Qualitative data concerning importance of fidelity, confidence, rewards, and challenges.
Healthy IDEAS	*Same as Tested Intervention:* • Depression intervention delivered to older adults (IMPACT). *Adaptations:* • Intervention delivered by case manager with no formal mental health training. • Program embedded in routine case management.	Periodical assessment of the tracking tool records by the project director and evaluation team.	Quantitative and qualitative data about delivery of each intervention step, including time interval, frequency/dosage, completion/noncompletion, and reasons for noncompletion for each intervention step.
		Ongoing observation and supervision by the coaches.	Quantitative data regarding progress of intervention delivery and performance of intervention steps by case managers.

NOTE: EF = EnhanceFitness; PATH = Personal Action Toward Health; CDSMP = Chronic Disease Self-Management Program; MOB = A Matter of Balance; IMPACT = Improving Mood-Promoting Access to Collaborative Treatment.

experienced coach with a beginning coach. MOB also used direct observation by master trainers of a randomly selected session and provided volunteer coaches with immediate feedback. An additional means of ensuring fidelity in delivery was the contribution of a guest health care professional (e.g., physical therapist, occupational therapist, or nurse). That individual attended at least one of the eight sessions to provide information and answer questions about reducing the risk of falls. MOB assessed participant satisfaction with the delivery of the program, and coaches were given both qualitative and quantitative feedback about their classes. MOB also conducted a coach focus group to assess views about maintaining fidelity, and volunteer coaches participated in a survey about maintaining fidelity. MOB assessed coach confidence immediately at the end of training and again 6 months later for those who had facilitated MOB at least once.

Because the intervention was delivered at the participants' homes during regular case management visits, direct observation was not always appropriate for Healthy IDEAS. Instead, Healthy IDEAS used ongoing coaching by academic partners with mental health expertise to rate case managers' reported performance of the intervention steps. A tracking tool completed by case managers was also periodically reviewed to ensure intervention steps were delivered as designed.

Fidelity to Receipt of Treatment (Table 4)

The next two components of fidelity shift the focus to study participants, because they must make the intended behavioral changes. Fidelity related to receipt of treatment concerns (a) documenting exposure to the treatment and (b) the ability of study participants to understand and perform treatment-related activities and strategies during treatment delivery. To ensure fidelity to receipt of treatment, the BCC recommends establishing strategies to ensure that study participants are able to comprehend and use cognitive skills and perform behavioral skills as instructed during the treatment. Table 4 describes what was done in the programs to enhance fidelity of receipt, the tools and strategies used, and the types of data generated for each program.

In EnhanceFitness, P PATH, and MOB, participant learning and skill acquisition was observed during the program classes and during discussion sessions. In P PATH, participant confidence in performing the behaviors and success in meeting goals were assessed during classes. In Healthy IDEAS, a screening of cognitive impairment was done using the six-item Mini-Mental State Exam (Callahan, Unverzagt, Hui, Perkins, & Hendrie, 2002) to ensure capacity to adequately use the intervention. Participants

Table 4. Strategies to Maintain Fidelity of Treatment Receipt

Receipt Fidelity Definition: Processes to ensure that program participants have received and understood the program content (i.e., the participant is able to perform behaviors, skills, and cognitive strategies as intended).

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
Enhance-Fitness	• Provided written participant training materials. • Monitored participants' progress. • Surveyed physical activity outside of class. • Completed annual satisfaction survey.	Self-reported measure of health status. Six focus groups held with EF participants who represented diverse ethnic groups. Attendance records	Quantitative data regarding responses to close-ended questions about health status. Qualitative data, including facilitators and barriers to participating in EF (see Chiang, Seman, Belza, & Tsai 2008). Quantitative data assessing "dose" received.
Partners on the PATH CDSMP	*Same as Tested Intervention:* • In class sessions, discussed self-management topics and changes being made in life. • Practiced selected skills in class sessions (realistic goal-setting, relaxation techniques). *Adaptations:* • Added survey administration time period to identify immediate behavioral changes on class completion. • Used results obtained in original research as benchmark for outcomes of the translation project.	Attendance records Self-report of CDSMP outcome measures at end of session. Assessed participant confidence in ability to use class content at time intervals.	Quantitative data assessing "dose" received. Quantitative data regarding self-rated health, pain, fatigue, energy, shortness of breath, physical activities, cognitive symptom management, health distress, intrusiveness of illness, health disability, health care use, health communication, social role limitations. Quantitative data about self-efficacy in six management behaviors.

A Matter of Balance	*Same as Tested Intervention:* • Participants' receipt observed by class facilitators during problem-solving and exercise portions of class. • Volunteer coaches reviewed material as needed. • Dose monitored through taking attendance. Original intervention study was found efficacious for participants who attended at least five of the eight sessions.	Volunteer coach booster sessions, focus group Attendance records Participant manuals and handouts	Qualitative data, with coach descriptions of participants' receipt. Quantitative data on participants' attendance (dose).
Healthy IDEAS	*Same as Tested Intervention:* • Use of Mini-Mental State Examination for screening. *Adaptations:* • Intervention given in a preferred language (English or Spanish). • Provided written materials and tools to record and follow BAT activities. • Self-reported measures used (i.e., knowledge about depression self-management and reported changes in physical and social activity levels, instead of process measures collected by psychiatrists in model project).	Screening for cognitive ability Recording of tracking tool by case managers Written materials about depression and tools to record and follow BAT activities given to all participants Participants' self-assessment about depression self-management and physical and social activities.	Quantitative data from the Mini-Mental State Examination score Qualitative and quantitative data regarding participants' acceptance and receipt of intervention steps Qualitative data about participants' recorded BAT activities Quantitative data from participants' reported depression self-management knowledge and techniques and changes in physical and social activity levels.

NOTE: EF = EnhanceFitness; PATH = Personal Action Toward Health; CDSMP = Chronic Disease Self-Management Program; BAT = behavioral activation therapy.

recorded their BATs regularly and then reviewed them with case managers. In addition to monitoring participants' progress, case managers used the written tools to assess whether clients were able to follow the intervention steps and directions. Clients who were unable to record activities reported their progress verbally, allowing case managers to assess their understanding and progress. Although observations of participant receipt were not formally recorded for MOB, comments from volunteer coaches on follow-up surveys and in booster sessions indicated active observation of receipt. All four projects monitored "dose" by tracking older adults' participation in program activities (e.g., attendance) and those who discontinued (i.e., dropped out) to assess level of receipt.

Fidelity to Treatment Enactment (Table 5)

Like receipt of treatment, the last component of treatment fidelity concerns the participant's ability to use treatment-related cognitive and behavioral strategies. In treatment enactment, however, the focus is not during but after the program, when participants are in appropriate life settings to actually implement the skills and strategies learned during treatment. To enhance the use of learned skills and activities in real-life settings, fidelity strategies address concerns that may interfere with the ability to implement therapeutic activities after the treatment phase and postprogram follow-up.

None of the programs followed participants after conclusion to directly measure fidelity to treatment enactment, which may be a common issue in translational EBP programs. However, because all programs used a repeated measures design, they were able to assess participant outcomes throughout time as an indirect method of monitoring enactment. Table 5 describes the program features that were included, the measures used, and the types of data generated to gauge fidelity to treatment enactment.

In EnhanceFitness, participants provided a self-report of health status and participated in physical performance measurements within their first two classes and at 6 and 12 months. In P PATH, outcome measures from the original program were used. They included self-assessment of fatigue and shortness of breath and self-reports of weekly minutes of aerobic exercise. These data were collected at baseline, immediately on completion of classes, and at 6 months. Results were compared to those of the tested intervention. MOB measured falls efficacy, falls management, and falls control using self-report scales from the tested intervention. Exercise level and social activity, with added measures, were collected using the self-report scales from the tested intervention. All data were collected at baseline, 6 weeks, 6 months, and 12 months postprogram.

Table 5. Strategies to Maintain Fidelity to Treatment Enactment

Enactment Fidelity Definition: Processes to monitor that program participants perform the behaviors, skills, and cognitive strategies presented in the program in relevant real-life settings as intended.

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
Enhance-Fitness	• Self-reported measure of health status. • Organizational accessibility to participants. • Site monitoring.	Health status self-reports. Performance measures at 6 and 12 months.	Quantitative data from close-ended questions about health status. Results of performance measures compared to initial results and results from other sites (see Belza et al., 2006).
Partners on the PATH CDSMP	*Adaptations:* • Compared results with those from original research. • Postprogram classes and activities available to "graduates" who wished to participate. • "Straw polls" about continuation at programs for PATH "graduates."	Self-report of CDSMP outcome measures at 6 months after completion of session. PATH graduate survey (use of learned techniques).	Quantitative data regarding self-rated health, pain, fatigue, energy, shortness of breath, physical activities, cognitive symptom management, health distress, intrusiveness of illness, health disability, health care use, health communication, social role limitations. Quantitative data about types and numbers of techniques still being used more than 6 months after completing classes. Qualitative data regarding how participants felt classes helped.
A Matter of Balance	*Evaluation-Same as Tested Intervention:* Self-report surveys (falls self-efficacy, falls management, falls control) of standardized measures collected at baseline, 6 weeks, 6 months, and 12 months.	Compared data using same measures as original study collected at baseline, 6 weeks, 6 months, and 12 months. Compared outcomes to baseline	Quantitative data concerning falls self-efficacy, falls management, and falls control (from original research).

(continued)

Table 5. (continued)

Program	*Description*	*Fidelity Tools and Strategies*	*Types of Data Produced*
	Adaptation-Evaluation: Compared outcome measures to baseline rather than a control group. Added measure of exercise level and eliminated nonsignificant variables. • No comparison to a control group. • Results compared to those of the original intervention. • Mailed surveys with telephone follow-up to minimize missing data. • Participant newsletter to provide feedback to participants about the research and encourage completion of follow-up data.	levels for all measures, including measures added to current study. Consultation with original researchers regarding changes in instruments.	Qualitative data provided by original researchers concerning measures eliminated or substituted.
Healthy IDEAS	*Adaptations:* • Instead of monthly brief telephone contact by therapists, used periodic follow-ups by phone and in person carried through regular case management routine.	3, 6, and 9-month follow-up assessments by case managers. Postintervention survey and interviews with case managers.	Qualitative and quantitative data about participants' progress. Qualitative data about participants' actual use of depression self-management knowledge and techniques, when appropriate.
	• Depression screening conducted at each follow-up (3, 6, and 9 months), and intervention repeated when assessed necessary.	3, 6, and 9-month follow-up telephone survey of clients/participants by project director.	Qualitative data about participants' actual use of depression self-management knowledge and techniques.

NOTE: EF = EnhanceFitness; PATH = Personal Action Toward Health; CDSMP = Chronic Disease Self-Management Program.

Healthy IDEAS used periodic follow-up with participants in the course of regular case management contact by phone or in person. Self-report measures of depression symptoms, self-efficacy, education, and changes in physical and social activity level were collected at 3, 6, and 9 months. In addition, surveys and interviews were conducted with case managers regarding their assessment of participants' progress.

Discussion

This article provides descriptions and practical examples of how four different behavioral change programs addressed the inherent tensions in translating evidence-based research studies into community-based programs. These tensions surround the issues of maintaining the intervention study's core elements and assuring validity while adapting to a programmatic venue. For the first time, the BCC conceptual framework for fidelity was applied to EBP translational programs. The two-pronged issues of design fidelity in translational research were clarified. First was the charge to program adapters to protect the theoretical underpinnings of the original intervention. Second was the assurance that the adapted program, as designed, would provide the framework for assessing valid program outcomes. To assure design fidelity in EBP translational programs, both components must be monitored.

Across these four programs, common themes emerged as key considerations in translating EBP interventions into community programs. These are presented in Table 6, with action suggestions to researchers and CASPs for each consideration. On the research side, it is important to provide clear information that can guide those who wish to translate the intervention into programs. Consistent with the *NIH Roadmap* (Zerhouni, 2003), purposeful direction is needed to facilitate the move from evidence-based intervention studies to effective programs that can reach and benefit people.

From the program perspective, agencies need to adopt a new vision that translating EBP research into programs is part of what they can and should be doing. CASPs need to engage research partners to assist with design and adaptations and to consult with originators of EBP programs. Providers must incorporate fidelity measures into the program at the outset and weave the needed checks and balances into the fabric of the agency's recordkeeping and structure.

The decision to measure fidelity in EBP programs may—in and of itself—affect the quality of program design and delivery. Just as keeping a food journal during a weight loss program has a consciousness-raising and sensitizing effect, incorporating a fidelity measurement process into EBP programs at an

Table 6. Practical Considerations in Fidelity Monitoring

Considerations	*What Researchers Can Do*	*What CASP Program Developers Can Do*
1. The need to identify and put into operation key immutable factors of the original study.	Clearly report key intervention factors that are attributable to positive outcomes.	Assure that adaptations protect key study factors. As appropriate, use same time periods for measures and same client-level outcomes as in original study.
2. The need to know if planned adaptations are consistent with, or violate, the original study's design.	Obtain input from expert personnel regarding planned program adaptations.	Identify why and how adaptations will be designed. Plan to monitor fidelity and incorporate fidelity measures into the program.
3. The need to solicit input from target audience(s) during planning.	Describe the intervention study audience and study limitations related to dissemination.	Involve potential trainers and the program audience in design and development.
4. The need to simplify data collection for practice settings.	Obtain input from expert personnel regarding planned program adaptations in data collection.	Involve agency leadership and data collection personnel in selecting and adapting data collection instruments.
5. The need to maximize program fidelity through the use of active participatory teaching modalities for both training of teachers and participants.	Identify the skills required in delivering (for trainers) and receiving (by participants) the interventions. Document training material.	Provide opportunities for teach-back and the demonstration of performance measures. Use an interactive program format.
6. The need to plan activities to assist trainers in consistent delivery and to help participants maintain behaviors and activities.	Document the value of booster, follow-up, and feedback sessions in intervention delivery and outcomes.	Include booster, follow-up, and feedback sessions as components of programs.
7. The need to integrate fidelity monitoring into regular agency practice.	Distinguish research processes from program implementation processes.	Link fidelity monitoring processes to existing program tracking methods and show the value of all data collected to the agency.

(continued)

Table 6. (continued)

Considerations	*What Researchers Can Do*	*What CASP Program Developers Can Do*
8. The need to communicate regularly and provide feedback to trainers and participants.	Describe opportunities for feedback to assure adherence to protocols.	Use partnerships to gain needed expertise. Build expertise within agency personnel over time.

NOTE: CASP = community aging service provider.

agency may lead people to pay closer attention to how and what they are doing. Fidelity monitoring can be thought of as a mechanism of continuous quality improvement (CQI) in translating research into community-based programs. In fact, a core concept of CQI is that "unintended variation in processes can lead to unwanted variation in outcomes, and therefore we seek to reduce or eliminate unwanted variation" (Medical University of South Carolina, Family Medicine/Rural Clerkship, n.d., ¶ 2). This may be a very important concept in creating the necessary buy-in for agencies to incorporate data collection and fidelity monitoring processes into the programs they deliver.

In addition, fidelity measurement processes have programmatic value. The interim performance measures of program participants not only provide data on fidelity of receipt but also provide important feedback and motivational boosts. Communicating with participants and providing them with ongoing feedback on "how they're doing" builds encouragement mechanisms into the program delivery process.

Just as the BCC provided the framework for thinking about fidelity in behavioral change programs, the AoA initiative projects have demonstrated how to incorporate fidelity measures, tools, strategies, and outcomes into community-based EBP programs. Conscious decisions were made in these programs that weighed the risk of derailing the core elements of the original study against the practicality and feasibility of community–agency delivered programs. These practical models and adapted training programs, manuals, and instruments form the basis for future program translation efforts.

Limitations

There are several limitations to this article. First, only 4 of the 14 EBP programs sponsored by the AoA EBP initiative are described in this article. How these programs managed fidelity monitoring may not be applicable to the other 10 programs in the initiative or to community-based EBP in

general. Agencies represented by these four programs might be perceived as being on the cutting edge because they successfully competed for AoA grant funds and therefore are atypical. The Center for Healthy Aging at NCOA provided resources and technical assistance that gave these programs additional leverage for success. Second, the fidelity monitoring processes and tools summarized in this article could be further strengthened by process outcome data, but these data are being presented in the primary publications of each program.

Conclusion

It is our hope that this publication of detailed fidelity monitoring processes and practical tools will demystify key issues in translating effective intervention study projects into widely accessible EBP programs for older adults. The four programs discussed focused on distinct health behaviors, used different theoretical models, involved various aging service providers, and served diverse older adult populations. Each program ensured that it developed and provided a program that would offer the benefits of the original intervention to older adult participants. In concert, they adapted training and program materials and inserted fidelity process strategies and measures throughout all phases of program development, delivery, and evaluation.

References

Areán, P. A., & Ayalon, L. (2005). Assessment and treatment of depressed older adults in primary care. *Clinical Psychology: Science and Practice*, *12*(3), 321-335.

Basch, C. E., Sliepcevich, E. M., Gold, R. S., Duncan, D. F., & Kolbe, L. J. (1985). Avoiding Type III errors in health education program evaluations: A case study. *Health Education Quarterly*, *12*(4), 315-331.

Bellg, A. J., Borelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M., et al. (2004). Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH behavior change consortium. *Health Psychology*, *23*, 443-451.

Belza, B., Shumway-Cook, A., Phelan, E., Williams, B., Snyder, S., & LoGerfo, J. (2006). The effects of a community-based exercise program on function and health in older adults: The EnhanceFitness Program. *Journal of Applied Gerontology*, *25*(4), 291-306.

Borrelli, B., Sepinwall, D., Ernst, D., Bellg, A. J., Czajkowski, S., Breger, R., et al. (2005). A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *Journal of Consulting and Clinical Psychology*, *73*(5), 852-860.

Callahan, C. M., Unverzagt, F. W., Hui, S. L., Perkins, A. J., & Hendrie, H. C. (2002). Six-item screener to identify cognitive impairment among potential subjects for clinical research. *Medical Care*, *40*(9), 771-781.

Calsyn, R. (2000). A checklist for critiquing treatment fidelity. *Mental Health Services Research*, *2*(2), 107-113.

Cao, Q. (2006). *Experiences of instructors teaching EnhanceFitness*. Unpublished master's project, University of Washington, Seattle.

Chiang, K., Seman, L., Belza, B., & Tsai, J. (2008). "It's our exercise family": Ethnic older adults' experiences in a group-based exercise program. *Preventing Chronic Disease*, *5*(1). Available at http://www.cdc.gov/pcd/issues/2008/jan/06_0170

Ciechanowski, P., Wagner, E., Schmaling, K., Schwartz, S., Williams, B., Diehr, P., et al. (2004). Community-integrated home-based depression treatment in older adults: A randomized controlled trial. *Journal of American Medical Association*, *291*(13), 1569-1577.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Dusenbury, L., Brannigan, R., Falco, M., & Hansen, W. B. (2003). A review of research on fidelity of implementation: Implications for drug abuse prevention in school settings. *Health Education Research*, *18*(2), 237-256.

Gill, T. M. (2005). Education, prevention, and the translation of research into practice. *Journal of the American Geriatric Society*, *53*, 724-726.

Glasgow, R. E. (2002). Evaluation of theory-based interventions: The RE-AIM model. In K. Glanz, B. K. Rimer, & F. M. Lewis (Eds.), *Health behavior and health education: Theory, research, and practice* (3rd ed., pp. 530-544). San Francisco: Jossey Bass.

Glasgow, R. E., Lichtenstein, E., & Marcus, A. C. (2003). Why don't we see more translation of health promotion research to practice? Rethinking the efficacy-to-effectiveness transition. *American Journal of Public Health*, *93*, 1261-1267.

Green, L. W., & Glasgow, R. E. (2006). Evaluating the relevance, generalization, and applicability of research: Issues in external validation and translation methodology. *Evaluation & the Health Professions*, *29*, 126-153.

Hogue, A., Liddle, H. A., Singer, A., & Leckrone, J. (2005). Intervention fidelity in family-based prevention counseling for adolescent problem behaviors. *Journal of Community Psychology*, *33*(2), 191-211.

Kirk, R. E. (1995). *Experimental design: Procedures for the behavioral sciences* (3rd ed.). Pacific Grove, CA: Brooks/Cole.

Lorig, K. R., Sobel, D. S., Stewart, A. L., Brown, B. W., Bandrura, A., Ritter, P., et al. (1999). Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: A randomized trial. *Medical Care*, *37*(1), 5-14.

Medical University of South Carolina, Family Medicine/Rural Clerkship. (n.d.). *Continuous quality improvement*. Retrieved October 18, 2006, from https://umail.umaryland.edu/exchweb/bin/redir.asp?URL=http://www.musc.edu/fm_ruralclerkship/cqi.htm

Moncher, F. J., & Prinz, R. J. (1991). Treatment fidelity in outcome studies. *Clinical Psychology Review*, *11*, 247-266.

Nigg, C. R., Allegrante, J. P., & Ory, M. (2002). Theory-comparison and multiple-behavior research: Common themes advancing health behavior research. *Health Education Research*, *17*(5), 670-679.

Quijano, L. M., Stanley, M. A., Petersen, N. J., Casado, B. L., Steinberg, E. H., Cully, J. A., et al. (2007). Healthy IDEAS: A depression intervention delivered by community-based case managers serving older adults. *Journal of Applied Gerontology, 26*, 139-156.

Resnick, B., Bellg, A. J., Borrelli, B., DeFrancesco, C., Breger, R., Hecht, J., et al. (2005). Examples of implementation and evaluation of treatment fidelity in the BCC studies: Where we are and where we need to go. *The Society of Behavioral Medicine*, *29*, 46-54.

Resnick, B., Inquito, P., Orwig, D., Yahiro, J. Y., Hawkes, W., Werner, M., et al. (2005). Treatment fidelity in behavior change research: A case example. *Nursing Research*, *54*(2), 139-143.

Santacroce, S. J., Maccarelli, L. M., & Grey, M. (2004). Intervention fidelity. *Nursing Research*, *53*, 63-66.

Tennstedt, S., Howland, J., Lachman, M., Peterson, E., Kasten, L., & Jette, A. (1998). A randomized, controlled trial of a group intervention to reduce fear of falling and associated activity restriction in older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *53*(6), P384-P392.

Unützer, J., Katon, W., Callahan, C. M., Williams, J. W., Jr., Hunkeler, E., Harpole, L., et al. (2002). Collaborative care management of late-life depression in the primary care setting: A randomized controlled trial. *Journal of American Medical Association*, *288*(22), 2836-2845.

Wallace, J. I., Buchner, D. M., Grothaus, L., Leveille, S., Tyll, L., LaCroix, A. Z., et al. (1998). Implementation and effectiveness of a community-based health promotion program for older adults. *Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *53A*(4), M301-M306.

Zerhouni, E. A. (2003). Policy forum: The NIH roadmap. *Science*, *302*, 63-64, 72.

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Janet C. Frank, DrPH, is the Associate Director for Academic Programs of the UCLA Multicampus Program in Geriatric Medicine and Gerontology; is the director of the California Geriatric Education Center, an interdisciplinary statewide training center; serves as the administrator for the UCLA Claude D. Pepper Older American Independence Center; and directs the NIA-funded Coordinating Center for the Resource Centers for Minority Aging Research. Her contributions to a wide range of collaborative projects continue to build on her background in gerontology, public health, and interdisciplinary applied research interests, including chronic illness health behavior, behavior change, health systems delivery, and geriatrics education. She is an adjunct assistant professor in the UCLA School of Public Health and is the principal investigator for "A System's Approach to Improving Aging Education in California" project, funded by the U.S. Department of Education's Funds to Improve Post-Secondary Education program.

Cynthia P. Coviak, PhD, RN, CNE, is an associate professor and director of nursing research and faculty development in the Kirkhof College of Nursing at Grand Valley State University in Grand Rapids, Michigan. Her nursing career has spanned 30 years and includes experience in adult inpatient care, oncology, and child health nursing in clinical settings and the community. She assisted with implementation of the Stanford Chronic Disease Self-Management Program in another community prior to her involvement with the P PATH project discussed in this article.

Tara C. Healy, MSW, PhD, is an associate professor of social work at the University of Southern Maine. Her research interests include translational research, health promotion, and fall prevention for older adults and ethics. She teaches evidence-based practice and is a member of the Maine Falls Coalition.

Basia Belza, PhD, RN, is a professor and The Aljoya Endowed Professor in Aging in the School of Nursing, an investigator with the Health Promotion Research Center, and codirector of the Center for Health Sciences Interprofessional Education and Research at University of Washington. The focus of her scholarship is in the translation and dissemination of evidence-based physical activity programs for older adults. She leads a national team in developing a series of conferences to expand and sustain effective community-based programs for older adults on physical activity, depression, and cognitive health. She is co-author of a Centers for Disease Control–funded and National Council on Aging–sponsored publication on RE-AIM for Program Planning that complements this article (healthyagingprograms.org).

Banghwa Lee Casado, PhD, MSW, is an assistant professor at the University of Maryland School of Social Work. She focuses her research on informal care giving, formal care and services, and implementation of evidence-based interventions for community-dwelling older adults with disabilities and their family caregivers.