The conversion of a practice-based lifestyle enhancement program into a formalized, testable program: from Texercise *Classic* to Texercise *Select*

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Little is known about the structure, content, and benefits of practice-based or grass roots health programs that have been widely delivered by a variety of community organizations and stakeholders. This perspective will document the natural history of Texercise *Classic*, a state-endorsed but previously untested lifestyle health promotion program. It will: (1) discuss Texercise *Classic's* participant reach and adoption over time; (2) describe the rationale and processes employed to formalize Texercise *Classic* into a more structured program known as Texercise *Select*; (3) outline the essential elements and activities included in Texercise *Select* and contrast them with those included in Texercise *Classic*; and (4) highlight key components for uniform facilitator training. The discussion will reflect upon the evolution of Texercise, compare and contrast the benefits and challenges of each program, and review the "next steps" for Texercise *Select*. In contrasting Texercise *Classic* and *Select*, it is important to understand the benefits and challenges of both programs. Preliminary results indicate that Texercise *Select* is effective, yet its ability to sustain the same reach as Texercise *Classic* remains unknown and an area for future study.

Keywords: translational research, program implementation, program evaluation, older adults, physical activity

INTRODUCTION

With greater recognition of the value of health promotion for adults across the life-course (1), a multitude of programs now exist to improve health and wellness among older adults (2, 3). These programs recognize that older adults are able and willing to engage in health promotion programs and can derive substantial health benefit from those programs (4). There have been two programmatic streams to meet the needs of the rapidly growing population of older adults: (1) practice-based or grass roots programs promoted by community-based organizations; and (2) research-tested programs developed and tested in academic research centers.

Included in the first programmatic stream, health promotion/disease prevention programs have traditionally been delivered by non-academic community-based practitioners with the generic goals of maintaining or improving health (5–8). Because these programs are delivered in real-world settings, they have a greater potential for large population reach and long-term sustainability; however, they are typically unstructured and hence not easily replicable or testable. Further, even when based on "best practices," such programs may have minimal attention to behavioral change theories and little to no formal evaluation to document intervention effectiveness or characterize essential program elements (9–12).

A second programmatic stream involves the recent nationwide movement toward the widespread dissemination of evidence-based programs (EBPs) for older adults that were developed and tested by academics in controlled settings. This movement reflects the assumption that EBPs are preferable because they are "assumedly" more efficient and cost-effective than programs that are not theoretically based and rigorously evaluated (13). With the initiation of the Administration on Aging (AoA) Evidence-based Disease Prevention Initiative (14, 15), substantial knowledge has been gained about the nature and effectiveness of EBPs for older adults, especially those related to fall prevention, chronic disease self-management, and specific lifestyle behaviors such as physical activity or healthy nutrition (16–18).

Less is known, however, about the structure, content, and benefits of grass roots health programs that have been delivered by a variety of community organizations across vast geographic distances (i.e., regional or state-wide health promotion campaigns or community walking programs). Further, little attention has been given to understand how these programs might contribute to practice-based evidence. Given the recent emphasis on administrative policies within the Administration on Community Living (ACL), which give funding preference to EBPs (19), it is especially important to understand how these long-standing, community-based health promotion programs have functioned in the past and how they might be adapted to permit formal evaluation and be eligible for governmental funding streams.

This perspective article presents a case study of Texercise, a community-based health promotion movement established in 1999 to help Texans ages 45 and older live healthier lives. Based on a historical review of existing Texercise materials, supplemented

by information provided by key Texercise staff, this article will examine the processes employed to structure the original Texercise program (referred to as Texercise *Classic*) so that it could be formally evaluated. Specifically, this article will: (1) document the natural history of Texercise *Classic*, including its programmatic reach and adoption across Texas over the past decade and a half; (2) describe the rationale and processes employed to formalize Texercise *Classic* into a more structured program known as Texercise *Select*; (3) outline the essential elements and activities included in Texercise *Classic*; and (4) highlight key components for uniform facilitator training. The discussion will reflect upon the evolution of Texercise, the comparisons across the two program types, and the "Next Steps" for Texercise *Select*.

NATURAL HISTORY

Texercise Classic emerged from a vision by the state public health and aging services leadership to help the growing number of Texans age well. We highlight some salient events in the development and evolution of Texercise. Starting as a state-wide public health campaign in the late 1990s, this grass roots program was officially launched in 2002 as part of the Governor's Challenge Walk for Wellness. Under the Governor's Office, Texercise was envisioned as a state-wide health promotion program to encourage individuals and communities to adopt healthy lifestyle habits such as physical activity and good nutrition. In 2005, strong endorsement was received from the Governor's Office through Executive Order (20), which stated that "The Department of Aging and Disability Services, Department of State Health Services, Governor's Advisory Council on Physical Fitness, and other appropriate state and community organizations shall continue to promote and expand the internationally recognized Texercise program as a means to ensure healthy lifestyles in older Texans." In 2006, under the auspices of the Texas Department of Aging and Disability Services (DADS), Texercise became more formalized with the creation of a 12-week face-to-face fitness program, with the tag line "Fit for the Health of It!", and the identification of community-based volunteers or "program champions" to promote Texercise. In 2009, with input from experts such as Dr. Kenneth Cooper from the internationally known Cooper Clinic (21), the 12-week program and materials were updated to include attention to both physical activity and nutrition. The basis for the nutritional content was the existing information sheets developed by nutrition experts at DADS. We also utilized some standard nutrition items that other EBPs employ as well, such as the USDA my plate, and had all materials reviewed by a nutrition expert at the Texas A&M Health Science Center School of Public Health.

Thanks to the collaboration between DADS and its partners, what has become known as Texercise *Classic* is available free-of-charge and includes resources and incentives such as pedometers, resistance bands, pledge sheets, and 12-week daily fitness and nutrition logs distributed to participants during the program. Using a lay-leader facilitator model, Texercise *Classic* has been delivered through a variety of settings including worksites, senior centers, faith-based organizations, and long-term care facilities.

Texercise *Classic* has reached more than 15,000 Texans starting with 794 participants in 2006 and growing to 3,400 participants

in 2012. Further, since 2003, over 160,000 Texercise handbooks (available at www.texercise.com) about how to initiate an exercise program have been distributed to individuals wanting to exercise on their own (22). Despite its widespread reach across Texas and national recognition (e.g., the International Council on Active Aging Industry Innovator Award; President's Council on Fitness, Sports, and Nutrition Community Leadership Award; and the Texas Cardiovascular Health Promotions Award), Texercise *Classic* had never been formally evaluated.

In 2012, a contract was awarded to the Texas A&M Health Science Center in collaboration with Baylor Scott & White Health to review and evaluate the program. The primary aims of this contract were to formalize the processes and procedures (including materials and facilitator training) and collect more detailed information from participants with the hopes of establishing a rigorous, scientific evidence base for this program. This evaluation has generated a new phase of activity.

FORMALIZATION PROCESSES AND PROCEDURES

PROCESS OVERVIEW

We identified in the beginning stages of the evaluation project that the loosely structured nature of the existing Texercise Classic program would make program evaluation difficult. Initially, Texercise *Classic* was designed as a participant-driven grass roots program in which participants, in collaboration with group leaders, decide upon the nature and amount of group exercises. While this strategy offered substantial choice, the lack of uniformity between workshops offered made it difficult to examine effectiveness and generalize to all Texercise programs. The Texas A&M research team and DADS staff jointly decided to utilize existing program materials and activities to create a more formally designed program. As indicated in Table 1, the resulting "structured" program is known as Texercise Select. Texercise Select is implemented in 12 weeks, which includes 2 weeks for participant recruitment and 10 weeks of 1.5-hour sessions conducted twice a week. Utilizing evidence-based skills and tools, each session incorporates interactive educational discussions, interactive activities related to physical activity and/or nutrition topics, and 30-45 minutes of actual exercise.

ESSENTIAL INTERVENTION ELEMENTS

Pulling from foundational concepts in evidence-based health and wellness programs (23–26), the research team developed the "structured" Texercise Select program, manual, and training that operationalized essential intervention elements and processes. To accomplish this task, the research team reviewed the literature as well as comparable EBPs. This review enabled the team to identify key exercise and behavior change elements that would work best in the Texercise context (e.g., ideal session length, ideal class duration, and types of effective exercises). Drawing on social cognitive learning principles (27), the entire program was designed heavily around the concept of self-efficacy with a goal of having participants take a more active role in their health through health choices and behaviors. The underlying programmatic intent was to increase self-efficacy and behavioral skills so that participants would continue to engage in healthy aging activities after the program ended.

Table 1 | Texercise Select topics, objectives, and resources by week.

Week	Sessions and topics	Objectives	
1 & 2	None: participant recruitment		
3	Session 1: Ready, Set, Get Active: Launching an Active Lifestyle Session 2: Ready, Set, Eat Healthy! Healthy Eating for a Healthy Lifestyle	Describe the 11 principles of physical activity success Identify their personal exercise levels Understand the importance of a warm-up and cool-down Set realistic goals related to physical activity Understand the benefits of healthy eating as well as the nutritional components of a healthy diet Make an achievable and realistic nutrition goal	
		Describe the purpose of a nutrition log	
4	Session 3: Ready, Set, Get Moving! Getting & Staying Physically Active	Recognize the essential components of being and staying physically active Practice endurance, strength, balance, and stretching exercises safely and correctly Create an action plan	
	Session 4: Ready, Set, Eat Healthy! Eating a Balanced and Healthy Diet	Recognize the essential components of a balanced and healthy diet Practice new exercises safely and correctly Select and incorporate five sources of fruits and vegetables into their diets	
5	Session 5: Ready, Set, Hydrate! Hydration for Health	Explain the basis and requirements of proper hydration Practice previous exercises safely and correctly Identify barriers and apply problem-solve skills when action planning	
	Session 6: Ready, Set, Eat Proper Portions! Establishing a Sense of Portion Control	Understand healthy portion sizes for most types of foods Practice new exercises safely and correctly Identify ways to eat sensible portions	
6	Session 7: Ready, Set, Go Endurance! A Focus on Endurance	Identify ways to safely increase endurance Practice exercises safely and correctly Evaluate previous action plan and apply strategies to overcome challenges with personal action plans	
	Session 8: Ready, Set, Decode Food Labels! Understanding Food Labels	Explain the fundamental components of a food label Practice new exercises safely and correctly Evaluate dietary logs and action plans and apply strategies to overcome challenges	
7	Session 9: Ready, Set, Prevent Injury! Injury Prevention for Better Health & Safety	Identify and apply injury prevention methods before, during, and after physical activity Practice safe and correct exercises Evaluate previous action plans and apply strategies to overcome challenges	
	Session 10: Ready, Set, Cook Healthy! Cooking Healthy for Improved Nutrition	Identify and apply healthy cooking modifications to maximize nutritional intake Practice new exercises safely and correctly Recognize challenges and apply strategies to improve dietary behaviors	
8	Session 11: Ready, Set, Get Strength Training	Understand and apply the fundamentals of strength training introduced in class Practice exercises safely and correctly Evaluate previous action plans and challenges Identify and apply strategies to overcome challenges with personal action plans	
	Session 12: Ready, Set, Eat Out Healthy: Eat Healthy When Dining Out	Identify and apply strategies to welcome chainings with personal action plans Identify and apply strategies to make healthy choices when eating outside the home Practice exercises safely and correctly Create a healthy meal or menu	
9	Session 13: Ready, Set, Don't Stress! Stress Management & Mental Health	Recognize and discuss healthy behaviors that reduce stress Practice exercises safely and correctly Evaluate previous actions plans	
	Session 14: Ready, Set, Prevent Chronic Illness! Healthy Preventive Behaviors	Identify and select strategies to overcome challenges with action plans/goals Recognize and discuss healthy behaviors Practice exercises safely and correctly	

(Continued)

Table 1 | Continued

Week	Sessions and topics	Objectives
10	Session 15: Ready, Set, Keep Fitness Fun!	Practice exercises safely and correctly
	Keeping Fitness Fun	Identify ways to make long-term fitness enjoyable
		Identify and select strategies to overcome challenges with action plans/goals
	Session 16: Ready, Set, Eat Healthy! Eating	Identify healthy eating alternatives during the holidays
	Healthy During the Holidays	Practice exercises (safely and correctly)
		Recognize unhealthy eating habits
11	Session 17: Ready, Set, Stay Committed!	Practice exercises safely and effectively
	Staying Committed to Fitness & Review	Apply the two-step approach to creating an action plan
		Identify and apply strategies to overcome challenges
		Identify and apply safe ways to stay physically active (review)
	Session 18: Ready, Set, Stay Nutritious!	Identify and apply ways to stay committed to nutritional goals and healthy eating
	Keeping Nutrition a Lifestyle & Review	Practice new exercises safely and correctly
		Identify and apply skills maintaining a healthy lifestyle
12	Session 19: Ready, Set, GO! Moving	Identify and apply ways to stay physically active and eat nutritiously
	Forward Successfully	Practice exercises safely and correctly
		Identify and apply strategies to overcome barriers of physical activity and healthy eating
	Session 20: Ready, Set, CELEBRATE!	Identify and apply ways to stay committed to physical activity nutritional goals and healthy eating
		Demonstrate exercises safely and correctly

Texercise *Select* sessions were organized around a "Ready, Set, Go, Stay" rubric developed by our our Texas A&M program designers to help participants know what they needed to do to initiate healthier behaviors, engage in those behaviors, and to make them part of their everyday routines. Typically, each session has a physical activity and nutrition educational component, with the exception of the weekly session that focused more generally on managing emotional issues and general lifestyle behaviors. Using handout materials that had already been developed by experts for Texercise *Classic* (22), the course activities were intended to help participants apply strategies for enhancing healthy lifestyle behaviors. For example, group brainstroming was utilized to help participants identify solutions to common barriers. Class instructors also taught participants the essence of action planning – identifying, setting, and implementing realistic goals.

Although the program was structured (e.g., class length, discussion topics, and types of exercise specified), it was designed to be highly participatory and interactive with participants learning to actively engage in behavior change principles such as goal setting, problem solving, tracking behaviors, and providing support to fellow class participants. In addition to a peer-to-peer learning approach, Texercise Select was built around a lay-leader model, which has proven highly successful in the delivery of other EBPs for older adults (17, 28-30). This is consistent with the new exercise guidelines for older adults that stress the importance of risk management in the delivery of physical activity programs (25, 26, 31). Formal training sessions (i.e., a 6-hour group training) were hosted by the research team to provide lay-leaders (known in Texercise Select as facilitators) with information about how to safely introduce exercises. These training sessions were supplemented with course material that included screening questions and safety tips for participants (32).

Given the high probability of behavioral relapse in achieving one's desired lifestyle behavioral goals (24), the curriculum was designed for 10 weeks to increase the likelihood that behaviors would be adopted and become habit through ongoing reinforcement. It included attention to explicit strategies for helping participants stay committed. This involved hands-on practice of different behavioral skills (e.g., goal setting) combined with discussion about ways to overcome barriers and meet physical activity and healthy eating goals. Additionally, participants were encouraged to incorporate more walking into their daily routines and use the Texercise workout DVD at least 1 day each week outside of class (reinforced by program facilitators at the conclusion of each session).

COMPARISON OF TEXERCISE CLASSIC AND SELECT

Table 2 compares the elements of Texercise Classic with those of Texercise Select. When compared to Texercise Classic, Texercise Select has some similarities and many substantial differences. We draw upon Schulz and colleague's (33) taxonomy of interventions to describe some of the most prominent similarities and differences. When Texercise Classic was first designed, less was known about best practices for exercise training for older adults, and the program concepts were more implicitly related to best practices (rather than explicitly related to best practices). In contrast, Texercise Select was designed by individuals with formal training in exercise science and behavioral science as related to older adults. As such, this version of the program has benefited from an emerging science and practice base in both of these disciplines (26). Additionally, when creating Texercise Select, the developers drew upon the RE-AIM and other public health frameworks (34-36), for understanding the importance of key implementation and dissemination elements such as maximizing population reach, adoption, implementation, and sustainability.

Table 2 | Comparison of features in Texercise Classic and Select.

	Texercise Classic	Texercise Select
THEORETICAL UNDERPINNINGS		
Built around best practices for	Not explicit, but implicit through endorsement of	Yes, using ACSM for older adult guidelines
exercise training	Dr. Kenneth Cooper	
Built upon best practices for	Actual theoretical basis not clearly stated	Social cognitive theory (self-efficacy and other behavior
behavioral change		change principles)
		RE-AIM framework
		Diffusion of innovation
PROGRAM STRUCTURE, APPROA	CH, AND POPULATION TARGET	
Total program duration	12 weeks of chosen exercise/activity	12 weeks: 2 weeks of recruitment plus 10 weeks, 2×/week of actual sessions equals 20 sessions total
Number of weeks of active	12 weeks of chosen exercise	10 weeks, 2×/week of actual classes equals 20 sessions
intervention	12 110010 01 01100011 01010100	total
Amount of time per class	Variable	Structured – 90 minutes
Sensitivity to participant	Can be lay lead, leaders can be representative of	Can be lay led, leaders can be representative of the
characteristics	the participants	participants
on an action of the	Participants do not need to be cognitively able to	Participants must be cognitively able to understand the
	understand possible educational components	educational component including action planning
	Spanish materials are available	Not yet translated to Spanish
PROGRAM DESIGN		,
Intervention manual	General guidance with class instructors are only	Structured manual for program facilitators with detailed
	given the Texercise pink packet that includes:	session outlines
	Promotional DVD	
	Texercise handbook	
	Pledge sheets	
	Incentives (pedometers, t-shirts, etc.) and have	
	access to the online resources	
Adaptability	All aspects can be adapted, except involving some	Exercises can be adapted to participant level of PA
	sort of PA	
	Anyone can make an adaptation to the program	Field coordinators/class facilitators cannot make adaptation
	including sites and class leaders	to essential features of the program
	Adaptations can be made at any time	
PROGRAM CONTENT		
Attention to physical activity and	Possibility with the fact sheets	Built into the program
nutrition	Not necessary or monitored to see if the info	First session of the week deals with a physical activity topic
	provided to participants is factual	Second session of the week deals with a nutrition topic
Use of information sheets	Optional	Integrated into class curriculum
Opportunity for engaging in in-class	Yes	Yes
exercises		
Recommended exercises	Variable	Drawn from prescribed list with goal of 30-45 minutes of
		exercise per session that must include flexibility, strength,
		balance, and endurance
Opportunity for interactive class	Due to the variability of the classes this is unknown	Utilizes action planning and brainstorming
discussions on goal setting and	Goal setting and problem solving are not	Physical activity and dietary logs are kept through the first
problem solving	specifically addressed in the classic class	half of the sessions
		Uses incentives for behavior change
		Tracking and monitoring behavior (logs)
		Teaches problems solving
		Provides skill building (i.e., learning exercises)
		Provides social support
TRAINING AND EVALUATION		
Training of instructors	Variable	Structured – 1 day 6 hour training
Pre-post assessment	None	Part of curriculum
	* 1	
Fidelity monitoring	None	On-site class fidelity checklist Post class survey for participants

Although both programs are viewed as 12-week programs (with 10 weeks of active programing), the structure varies across the two programs, which makes the actual program duration and class time likely to vary as well. Texercise *Classic* and *Select* both provide time for participants to engage in group exercises and demonstrate some sensitivity to individual participant's needs, preferences, and level of physical functioning. One primary difference relates to program flexibility in that Texercise Classic operates under general guidance in contrast to Texercise Select that has a detailed implementation manual, which limits any adaptation to essential program characteristics or general program flow. Given the flexibility in structure and lack of detailed facilitator manual, it is assumed that Texercise Classic attends less consistently to both physical activity and nutrition aspects of healthy living. Texercise Classic was also assumed less likely to utilize the information sheets, demonstrate specific exercises, and promote interactive class discussions about goal setting and problem solving. However, the extent to which this is true is unknown because Texercise Classic has never been formally evaluated. Finally, the two programs differ in instructor training, evaluation, and fidelity monitoring with only Texercise Select including a pre- and post-assessments and a fidelity checklist as part of the program. While Texercise Select was evaluated as part of a research study, it should be noted that the capacity for on-site fidelity check monitoring in grand scale dissemination efforts may be limited.

TEXERCISE FACILITATOR TRAINING

When developing Texercise Select, the research team decided to utilize the term "facilitator" for program "lay" or "peer" leaders who are typically community volunteers versus health professionals. This decision was intended to emphasize that facilitators are not experts; rather, their role was to "facilitate" participants' ability to influence their health and functioning by presenting them with the concepts and exercises included within the program. The facilitator training was seen as essential for maintaining treatment fidelity (37, 38). Total facilitator training time consisted of one 6-hour day, with a structured training manual to which facilitators could refer after training. As specified in the training manual (39), the facilitator training was divided into five main topic blocks, each lasting between 30 minutes and 1.5 hours. Topics were delivered by the Texas A&M trainers through an interactive lecture style, including activities that allowed facilitators to apply presented information and elicit group feedback.

The training included a brief program overview of Texercise *Select* and an introduction to the format of each session in the curriculum. The training provided an opportunity for facilitators to observe and practice selected exercises, as well as to observe and demonstrate their ability to engage in group facilitation roles. During the demonstration session, trainers played the roles of the facilitators during a session and facilitators played the role of participants.

To demonstrate competency to lead a Texercise class, facilitators were assigned a Texercise session and tasked with four activities: (1) identifying the session topic; (2) identifying session materials needed; (3) identifying session activities; and (4) choosing one exercise from each exercise category (i.e., one warm-up, one upper body, and one lower body strength activity) and demonstrating it.

Facilitators were then critiqued by trainers and any issues discussed and clarified.

Twenty-nine facilitators were trained during this pilot study. The curriculum was originally developed with two Texas A&M trained facilitators per class in mind. Once the research team began working with organizations to identify implementation sites and facilitators, it became apparent the class would most likely be led by one trained facilitator with assistance from another person who had not gone through the formal A&M training session. Given the pilot nature of this demonstration study, the Texas A&M class trainers were available by telephone and email to provide additional assistance to newly trained facilitators.

SUMMARY OF EVIDENCE-BASED STEPS

We employed several steps in transforming *Texercise Select* into a testable and replicable EBP. These involved: (1) inventorying the current literature to identify foundational concepts in evidence-based health and wellness programs, with special emphasis on strategies for promoting participant's self-efficacy for engaging in physical activity and peer-to-peer learning; (2) evaluating the match between existing programmatic elements and anticipated delivery capacity and structure to ensure program adoptability and maximal population coverage; (3) organizing the sessions around a "ready, set, go, stay" framework for ease of implementation; (4) developing a standardized manual and training protocol; (5) incorporating fidelity checks and quality assurance into the implementation and evaluation processes; and (6) identifying a practical measurement battery to assess pre–post intervention outcomes.

DISCUSSION

As indicated in our brief historical review, the evolution of Texercise mirrors many of the critical steps taken during the development and evaluation of an evidence-based health promotion program. This review also demonstrates the interaction between state-wide policy priorities, community practice, and research. Unlike research-based programs that often struggle for scalability, its state governmental sponsorship made Texercise *Classic* widely available and disseminated through existing community partners and delivery systems even before it was formally evaluated. Further, participation in Texercise *Classic* has grown state-wide for over 15 years, confirming the importance of high level endorsements and community buy-in for achieving long-term program sustainability (40–42). Its relatively low cost and use of volunteer networks have also been probable factors in its successful dissemination (43).

Although there have not been systematic studies, it is likely that Texercise *Classic* gained steam, in part, because it was endorsed by the Governor, codified in executive orders, supported for implementation as part of state services, and stimulated through active encouragement of public–private partnerships. Texercise *Classic* grew from a public health campaign with community-friendly handouts to a face-to-face group program based on best practices and expert opinion. As evolved by science, Texercise *Classic* progressed from an exercise program focused on physical activity to a behaviorally based program including attention to both physical activity and nutrition. Additionally, over time, with the movement toward evidence-based programing with replicable and

demonstrated effects, the program was redesigned as Texercise *Select* to include explicit attention to best practices about exercise training and behavioral change found in other successful lifestyle programs that meet the highest tier criteria Evidence-based Disease Prevention and Health Promotion Program (19).

The development of new programs or the formalization of existing programs can expand the evidence base as it pertains to older adult health and wellness. While community-generated programs such as Texercise Classic may have already demonstrated success based on their reach and adoption, new policies from federal funders in the U.S. aging services sector are restricting reimbursement to reproducible health promotion programs with proven benefits (16, 19). As such, this case study illustrates the processes and procedures involved in the formalization of this community-generated program to advance its sophistication, replicability, and likelihood of evoking health benefits among its participants. To mirror requirements for EBP status, Texercise Select is now characterized by a set of essential features including formal manual and training infrastructure for widespread delivery (44, 45). Thus, the process described in this review represents the first steps toward formalizing Texercise Select, which is undergoing systematic evaluation to examine program effectiveness. Looking forward, the RE-AIM framework (46) will be used as a guide for examining strategies for demonstrating Texercise Select program effectiveness and public health impact, especially around program implementation, scalability, and sustainability issues.

In contrasting Texercise *Classic* and *Select*, it is important to understand the benefits and challenges of both programs. Texercise *Classic* has demonstrated its widespread appeal and sustainability by continual delivery for more than ten years by volunteer facilitators who do so without external financial support. As indicated in interviews with stakeholders (47), it is a program that has name recognition, is easy to implement, and is well-liked by program facilitators and participants alike. However, its greatest strength – flexibility in the content and type of delivery – is also its greatest potential weakness as an EBP. Such flexibility makes it difficult to replicate consistently, know exactly what program components are being implemented, and measure the extent to which participants are benefiting (or in what ways). Specific outcomes are unknown but are likely to be quite variable and affected by individual delivery settings, facilitators, and participant populations.

Conversely, Texercise *Select* provides structured training for facilitators and a scripted curriculum that, if followed, should result in positive health outcomes similar to those of other evidence-based lifestyle programs. Yet, some existing partners who primarily offer exercise programs might not like (or be able to implement) the reconfigured program with fidelity. For example, some park and recreation programs might easily adapt the exercise training part but not be as comfortable with facilitating the behavioral lifestyle educational aspects.

However, in terms of program impact, Texercise *Select* is likely to be more effective than Texercise *Classic* in changing lifestyle behaviors because of its standardized incorporation of evidence-based behavioral change principles. Yet, it is also unknown whether Texercise *Select* will be as appealing to community organizations and able to sustain the same reach and adoption as Texercise *Classic*. This issue illustrates a potential trade-off often seen when

attempting to simultaneously achieve public health reach and effectiveness (48), and remains an area for future study.

The research team was able to redesign Texercise and conduct standardized training within two months. This accelerated timeframe was possible because of the research team's familiarity with EBPs and leader training as well as the insights provided by the original state-based developers of Texercise. Working together, opportunities, challenges, and potential solutions were identified. Texercise has a brand that is already established throughout the state with an existing network of partners. This brand was capitalized upon during the transition from Texercise *Classic* to Texercise *Select*. While a new name was considered for Texercise *Select*, the Texercise name was kept to ensure recognition and consistency. Both programs will continue to be promoted and supported in Texas because DADS sees value in allowing their partners to choose the appropriate program to offer based on their settings and participants.

NEXT STEPS

The purpose of this article was to illustrate the evolution of a grass roots program to become a theoretically derived and researchtested program. The further expansion of Texercise Select is dependent, in part, upon demonstrating positive outcomes comparable to those found in similar EBPs for seniors. An initial pilot test of the feasibility of implementation and outcomes was conducted in 2013. Preliminary results are promising (49, 50), with significant pre-post improvements (P < 0.05) seen in positive health behaviors (i.e., increased aerobic activity, weekly fruit/vegetable consumption, and daily water consumption) with large effect sizes for physical activity and smaller ones for nutrition behaviors. Additionally, enhanced dissemination of Texercise Select requires infrastructure resources such as the widespread availability of standardized training. Toward this end, DADS is updating the training and implementation manual so it will be web-based and easily accessible by community partners and potential facilitators. Although initial outcome results are promising, further study is needed to understand factors associated with the ability of Texercise Select to be widely disseminated and sustained over time. Once the results of initial pilot testing from 2013 are fully published, we recommend a state-wide campaign with DADS's current Texercise partners to help spread the word about the benefits of implementing evidence-based programing for seniors and how Texercise Select might be broadly disseminated through existing community channels.

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REFERENCES

- Ory MG, Smith ML, Resnick B. Changing behavior throughout the life-course: translating the success of aging research. *Transl Behav Med* (2012) 2:1–4. doi:10.1007/s13142-012-0129-4
- 2. Prohaska TR, Anderson LA, Binstock RH. *Public Health for an Aging Society*. Baltimore: JHU Press (2012). 456 p.
- Haber D. Health Promotion and Aging: Practical Applications for Health Professionals. Sixth ed. New York: Springer Publishing Company (2013). 513 p.
- Ory M, Kinney Hoffman M, Hawkins M, Sanner B, Mockenhaupt R. Challenging aging stereotypes: strategies for creating a more active society. *Am J Prev Med* (2003) 25(3):164–71. doi:10.1016/S0749-3797(03)00181-8
- National Prevention Council. National Prevention Strategy. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General (2011).
- National Center for Chronic Disease Prevention and Health Promotion. Helping People to Live Long and Productive Lives and Enjoy a Good Quality of Life. Atlanta, GA: Centers for Disease Control and Prevention (2009).
- Task Force on Community Preventive Services. Recommendations to increase physical activity in communities. Am J Prev Med (2002) 22(4 Suppl):67–72. doi:10.1016/S0749-3797(02)00433-6
- National Center for Injury Prevention and Control. Preventing Falls: How to Develop Community-Based Fall Prevention Programs for Older Adults. Atlanta, GA: Centers for Disease Control and Prevention (2008).
- Bryant LL, Altpeter M, Whitelaw NA. Evaluation of health promotion programs for older adults: an introduction. *J Appl Gerontol* (2006) 25(3):197–213. doi:10.1177/0733464806288562
- Glanz K, Bishop DB. The role of behavioral science theory in development and implementation of public health interventions. *Annu Rev Public Health* (2010) 31:399–418. doi:10.1146/annurev.publhealth.012809.103604
- Harris JR, Cheadle A, Hannon PA, Lichiello P, Forehand M, Mahoney E, et al. A framework for disseminating evidence-based health promotion practices. *Prev Chronic Dis* (2012) 9:E22.
- Merzel C, D'afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. Am J Public Health (2003) 93(4):557–74. doi:10.2105/AJPH.93.4.557
- Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: a fundamental concept for public health practice. *Annu Rev Public Health* (2009) 30:175–201. doi:10.1146/annurev.publhealth.031308.100134
- Administration on Aging. AoA Evidence-Based Prevention Program. Washington, DC: Department of Health and Human Services (2013).
- Administration for Community Living. ARRA Communities Putting Prevention to Work: Chronic Disease Self-Management Program. Atlanta, GA: Department of Health and Human Services (2012).
- National Council on Aging. Where to Find Evidence-Based Programs. Washington, DC (2013). Available from: http://www.ncoa.org/improve-health/center-for-healthy-aging/where-to-find-evidence-based.html
- Ory MG, Smith ML, Wade A, Mounce C, Wilson A, Parrish R. Implementing and disseminating an evidence-based program to Prevent falls in older adults, Texas, 2007-2009. Prev Chronic Dis (2010) 7(6):A130.
- Ory MG, Ahn S, Jiang L, Smith ML, Ritter PL, Whitelaw N, et al. Successes of a national study of the chronic disease self-management program: meeting the triple aim of health care reform. *Med Care* (2013) 51(11):992–8. doi:10.1097/MLR.0b013e3182a95dd1
- Administration on Aging. Disease Prevention and Health Promotion Services (OAA Title IIID). Washington, DC: Department of Health and Human Services (2014).
- Office of the Governor Rick Perry. Executive Order RP42 Relating to the Creation of the Aging TexasWell Advisory Committee and Plan. (2005). Available from: http://governor.state.tx.us/news/executive-order/3687/
- 21. Cooper KH. Texans Urged to Follow Kids' Lead; Shed "Fattest" Label. Texas Department of Aging and Disability Services (2013). Available from: http://www.dads.state.tx.us/texercise/partners/cooper.html
- Texas Department of Aging and Disability Services. Texercise: A How-to Handbook for Lifelong Health and Wellness. (2014). Available from: http://www.dads. state.tx.us/texercise/resources/handbook/english/index.html
- 23. Ory M, Jordan P, Bazzarre T. The behavior change consortium: setting the stage for a new century of health behavior-change research. *Health Educ Res* (2002) 17(5):500–11. doi:10.1093/her/17.5.500

- Ory MG, Smith ML, Mier N, Wernicke MM. The science of sustaining health behavior change: the health maintenance consortium. *Am J Health Behav* (2010) 34(6):647–59. doi:10.5993/AJHB.34.6.2
- Cress M, Buchner D, Prohaska T, Rimmer J, Brown M, Macera C, et al. Best practices for physical activity programs and behavior counseling in older adult populations. Eur Rev Aging Phys Act (2006) 3(1):34–42. doi:10.1007/s11556-006-0003-9
- Chodzko-Zajko W, American College of Sports Medicine. ACSM's Exercise for Older Adults. Philadelphia: Lippincott Williams & Wilkins (2013).
 p.
- 27. Bandura A. *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall (1977). 247 p.
- Bodenheimer T, Chen E, Bennett HD. Confronting the growing burden of chronic disease: can the US health care workforce do the job? *Health Aff* (2009) 28(1):64–74. doi:10.1377/hlthaff.28.1.64
- Brady TJ, Murphy L, O'Colmain BJ, Beauchesne D, Daniels B, Greenberg M, et al. A meta-analysis of health status, health behaviors, and health care utilization outcomes of the chronic disease self-management program. *Prev Chronic Dis* (2013) 10:120112. doi:10.5888/pcd10.120112
- Wilcox S, Dowda M, Griffin SF, Rheaume C, Ory MG, Leviton L, et al. Results of the first year of active for life: translation of 2 evidence-based physical activity programs for older adults into community settings. *Am J Public Health* (2006) 96(7):1201–9. doi:10.2105/AJPH.2005.074690
- Ory M, Resnick B, Jordan PJ, Coday M, Riebe D, Garber CE, et al. Screening, safety, and adverse events in physical activity interventions: collaborative experiences from the behavior change consortium. *Annals Behav Med* (2005) 29(2):20–8. doi:10.1207/s15324796abm2902s_5
- Program on Healthy Aging. EASY Exercise and Screening for You. Texas A&M
 Health Science Center School of Public Health (2008). Available from: http://easyforyou.info/
- Schulz R, Czaja SJ, McKay JR, Ory MG, Belle SH. Intervention taxonomy (ITAX): describing essential features of interventions (HMC). Am J Health Behav (2010) 34(6):811–21. doi:10.5993/AJHB.34.6.15
- Gaglio B, Shoup JA, Glasgow RE. The RE-AIM framework: a systematic review of use over time. Am J Public Health (2013) 103(6):e38–46. doi:10.2105/AJPH. 2013 301299
- Lobb R, Colditz GA. Implementation science and its application to population health. *Annu Rev Public Health* (2013) 34:235–51. doi:10.1146/annurevpublhealth-031912-114444
- Brownson RC, Colditz GA, Proctor EK. Dissemination and Implementation Research in Health: Translating Science to Practice. New York: Oxford University Press (2012). 560 p.
- Bellg AJ, Borrelli B, Resnick B, Hecht J, Minicucci DS, Ory M, et al. Enhancing treatment fidelity in health behavior change studies: best practices and recommendations from the NIH behavior change consortium. *Health Psychol* (2004) 23(5):443–51. doi:10.1037/0278-6133.23.5.443
- Frank JC, Coviak CP, Healy TC, Belza B, Casado BL. Addressing fidelity in evidence-based health promotion programs for older adults. *J Appl Gerontol* (2008) 27(1):4–33. doi:10.1177/1090198114543007
- 39. Texas Department of Aging and Disability Services. *Texercise Training Manual*. Available from: http://www.dads.state.tx.us/texercise/resources/index.html
- Evashwick C, Ory M. Organizational characteristics of successful innovative health care programs sustained over time. Fam Community Health (2003) 26(3):177–93. doi:10.1097/00003727-200307000-00003
- 41. Estabrooks PA, Smith-Ray RL, Dzewaltowski DA, Dowdy D, Lattimore D, Rheaume C, et al. Sustainability of evidence-based community-based physical activity programs for older adults: lessons from active for life. *Transl Behav Med* (2011) 1(2):208–15. doi:10.1007/s13142-011-0039-x
- Scheirer MA, Dearing JW. An agenda for research on the sustainability of public health programs. Am J Public Health (2011) 101(11):2059–67. doi:10.2105/AJPH.2011.300193
- 43. Rogers EM. Diffusion of Innovations, 5th ed. New York: Free Press (2003). 551 p.
- 44. Altpeter M, Bryant L, Schneider E, Whitelaw N. Evidence-based health practice: knowing and using what works for older adults. *Home Health Care Serv Q* (2006) **25**(1–2):1–11. doi:10.1300/J027v25n01_01
- 45. Center for Healthy Aging. *Module 2: What is EBHP?*. Washington, DC: National Council on Aging (2014).

- Human Nutrition Foods and Exercise. Reach Effectiveness Adoption Implementation Maintenance. Blacksburg, VA: Virginia Tech College of Agriculture and Life Sciences (2014).
- 47. Stevens Ab, Thiel S, Thorud JL, Smith ML, Howell D, Cargill J, et al. Increasing the availability of physical activity programs for older adults: lessons learned from Texercise stakeholders. *J Aging Phys Activ* (in press).
- National Collaborating Centre for Methods and Tools. Assessing the Public Health Impact of Health Promotion Initiatives. Hamilton, ON: McMaster University (2010).
- Ory MG, Smith ML, Jiang J, Howell D, Chen S, Pulczinski J, et al. Texercise effectiveness: an examination of physical function and quality of life. *J Aging Phys Activ.* (2015) (in press).
- Smith ML, Ory MG, Jiang L, Howell D, Chen S, Pulczinski J, et al. Texercise select effectiveness: an examination of physical activity and nutrition outcomes. *Transl Behav Med* (2015) (in press).

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