

FALLS PREVENTION ON THE GROUND:

GROWING AND SUSTAINING TEXERCISE

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RURAL PUBLIC HEALTH
TEXAS A&M HEALTH SCIENCE CENTER



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LEARNING OBJECTIVES

- Understand the basic components of an evidence-based physical activity program that addresses fall risks.
- Create an evidence-based program from a practice-based activity
- Evaluate the outcomes applying the RE-AIM framework with attention to difficulties of evaluating programs in real world settings
- Apply lessons learned regarding expanding reach, ensuring program adoptability and implementation; and promoting long-term sustainability.

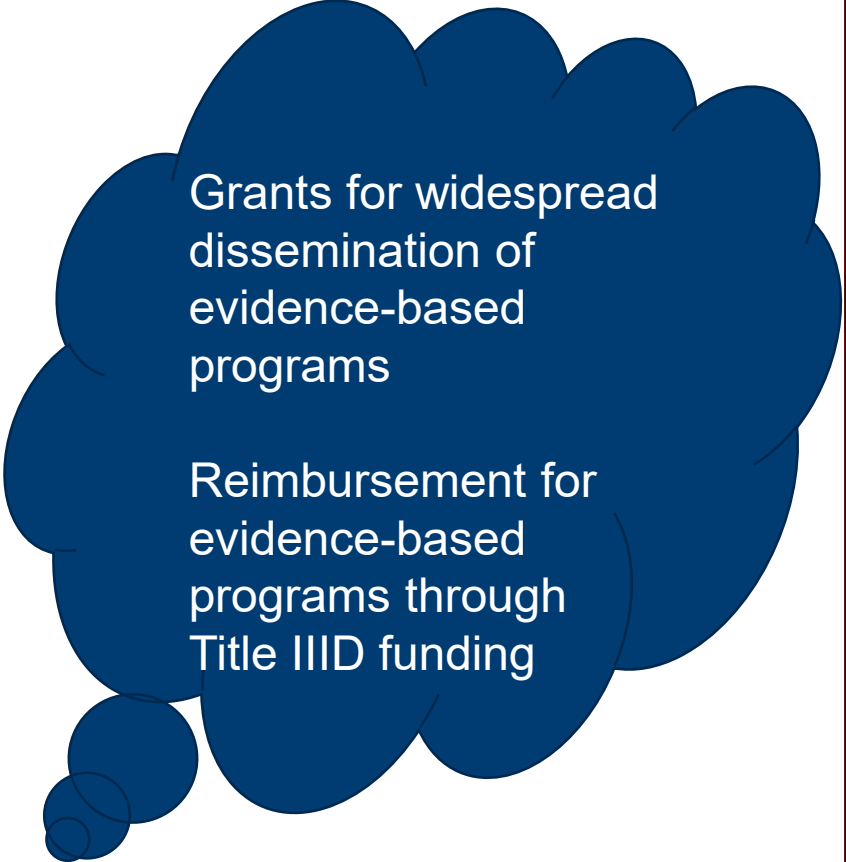
Discuss relevance to other fall prevention interventions



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THE AGING SERVICES CONTEXT: TOWARD EVIDENCE-BASED PROGRAMMING

- Fall Prevention was an early area for attention
- Earliest translational research programs:
 - A Matter of Balance, EnhanceFitness
- Successful programs are multifaceted
 - combine behavioral, environmental and physical activity components
- From development and testing of programs to dissemination and sustainability of evidence-based programs



Grants for widespread dissemination of evidence-based programs

Reimbursement for evidence-based programs through Title IIID funding



ACL CRITERIA FOR EBP STATUS

- States that receive Older Americans Act funds under Title III are required to spend those funds on evidence-based programs to improve health and well-being, and reduce disease and injury.
- Since 2003, the aging services network has been steadily moving towards wider implementation of disease prevention and health promotion programs that are based on scientific evidence and demonstrated to improve the health of older adults.
- The FY 2012 Congressional appropriations law included, for the first time, an evidence-based requirement related to Title III-D funds.
- In response to the new requirement, ACL developed an evidence-based definition to assist states in developing their own Title III-D guidance.



EVIDENCE-BASED PROGRAM (EBPs) DEFINITION

What are EBPs?

EBPs are highly researched community based workshops

EBP research is shown to produce a positive result

They are peer-reviewed by experts in the field

The effects are significant and sustainable for the patient



ACL EVIDENCE-BASED PROGRAM DEFINITION

Demonstrated through evaluation to be effective for improving the health and well-being or reducing disease, disability and/or injury among older adults

Proven effective with older adult population, using Experimental or Quasi-Experimental Design*

Research results published in a peer-review journal

Fully translated in one or more community site(s)

Includes developed dissemination products that are available to the public



EARLY WORK ON SCALABILITY AND SUSTAINABILITY*

Factors important for sustainability of award winning aging programs

- ✓ Exhibit strong leadership
- ✓ Involve communities and key stakeholders
- ✓ Build on a supporting organizational infrastructure
- ✓ Engage in active marketing
- ✓ Gather outcome data
- ✓ Achieve financial self-sufficiency
- ✓ Maintain a shared organizational vision
- ✓ Recognize behavioral change principles



MOTIVATING QUESTIONS

- What would it take to convert a popular practice-based lifestyle program to a standardized evidence-based program?
- What would be the advantages and disadvantages in terms of reach, effectiveness, adoption, implementation, and sustainability?
- What adaptations would be needed to ensure continued dissemination and sustainability, especially given current social disruptions?

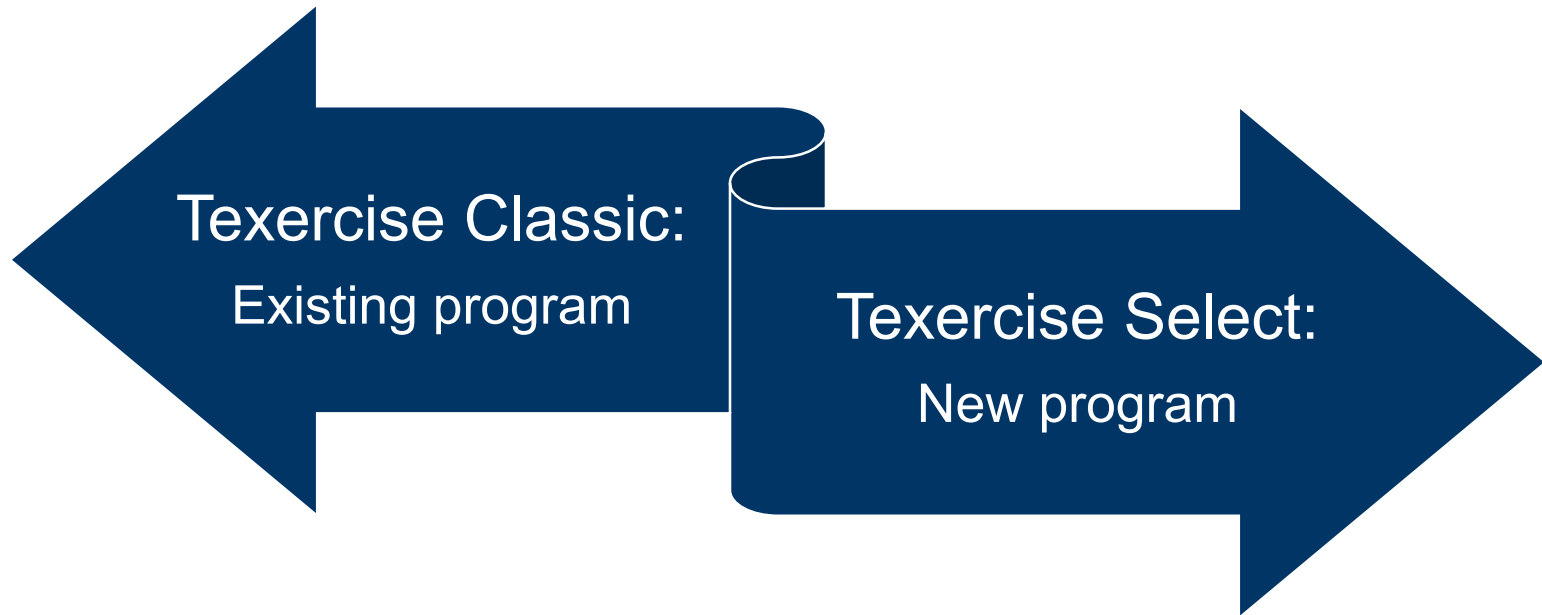


TEXERCISE AS CASE EXAMPLE



- A statewide health promotions initiative
- Aims to educate and involve individuals and communities in physical activities and proper nutrition
- Operated by Texas Health and Human Services
- Contact Information
 - HHS Aging Services Coordination Unit
 - Phone: 1-800-889-8595
 - Email: Texercise@hhs.texas.gov

TEXERCISE: CLASSIC AND SELECT



TEXERCISE SELECT: FORMATION

1998-1999

The Texas State Unit on Aging develops the concept of Texercise to support Aging Texas Well

2002-2003

Texas Governor Rick Perry hosts the Texercise Governor's Challenge Walk for Wellness in Austin, TX;
Creation of a larger Texercise handbook

2005-2006

Texercise website expanded; Fact sheets and DVD created;
first formal 12-week programs held

2008

Texercise content expanded to include nutritional information

2010-2011

Discussion begins on formal evaluation of the Texercise program



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TEXERCISE SELECT: FORMATION

2010-2011

The Texas State Unit on Aging seeking evidence-based status for existing program

2012

TAMU HSC awarded RFI to evaluate Texercise program

Creation of Texercise Select structured program incorporating behavioral change principles

2012-2013

Implementation of Texercise Select and pre-post evaluation

2015-2017

Quasi-experimental evaluation



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TEXERCISE CLASSIC: PROGRAM COMPONENTS



Participant Engagement

- Group engagement in any chosen physical activity

Class Leader

- Can be led by a untrained volunteer

Program Length

- 12 Week Program
- Engagement in chosen physical activity at least once a week

Potential Benefits of Participation

- Increase in physical activity
- Increase in physical activity and nutrition awareness
- Social support groups



TEXERCISE *SELECT*: PROGRAM COMPONENTS



Participant Engagement

- Physical activity 30-45 min
- Education focusing on physical activity and nutrition topics

Trained Facilitators

- Classes led by at least one trained facilitator

Program Length

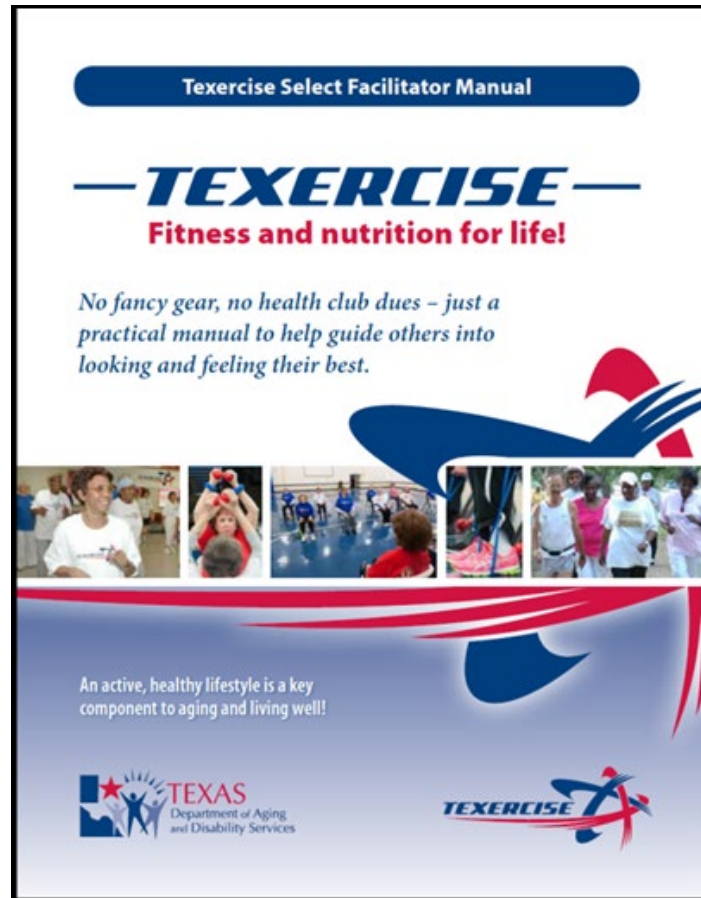
- 12 Week Program-10 weeks of classes
- 2 x/week for 90 min each

Potential Benefits of Participation

- Increased self-efficacy
- Enhanced social supports
- Improved physical activity and nutrition behaviors
- Improved mobility/fall prevention



TEXERCISE *SELECT*: PROGRAM COMPONENT EXAMPLES



Program Self-Management Skills:

- Goal Setting
- Logging
- Action Planning
- Problem Solving
- Physical Activity and Nutrition Education
- Texercises with Warm-up



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TEXERCISE *CLASSIC* & *SELECT*: PROGRAM MODIFICATIONS

Texercise *Classic*

Duration:
12 weeks

Class Leaders:
Varied, no training

Class format:
Unstructured PA & education

Texercise *Select*

Duration:
10 weeks
(2 weeks recruitment)

Class Leaders:
Trained

Class format:
Structured PA and nutrition
education



TEXERCISE *SELECT*: PROGRAM PRODUCTS

Structured Program Implementation Manual

Facilitator Training Protocol

Review of Texercise History and Reach

Report on Stakeholders Perceptions

Publishable Manuscripts on Outcomes



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Texercise: Enhancements

Resources that meet the interest and needs of older Texans and local service providers.

- Handbook (over 200,000 distributed)
- Website
- Fact sheets
- Program kits
- Media kits
- Incentives – pedometer, t-shirts
- Awareness – media partners



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COST EFFECTIVENESS STUDY

- Program costs were based on actual direct costs of program implementation and included costs of recruitment and outreach, personnel costs and participant incentives
- Program effectiveness was measured using quality-adjusted life year (QALY) gained, as well as health outcomes, such as healthy days, weekly physical activity and Timed Up-and-Go (TUG) test scores.
- Preference-based EuroQol (EQ-5D) scores were estimated from the number of healthy days reported by participants and converted into QALYs
- There was a significant increase in the number of healthy days ($p < 0.05$) over the 12-week program.
- Cost-effectiveness ratios ranged from \$1374 to \$1452 per QALY gained. The reported cost-effective ratios are well within the common cost-effectiveness threshold of \$50,000 for a gained QALY
- Results indicate that the Texercise Select program is a cost-effective strategy for increasing physical activity and improving healthy dietary practices among older adults as compared to similar health promotion interventions.



FIRST STUDY PROGRAM EVALUATION

14 Texercise Select Workshops delivered in various community settings

- Senior centers, multi-purpose facilities, faith-based organizations, & senior housing facility

Population

- 220 in outcome analyses

Measurement

- Pre and post surveys
- Timed Up-and-Go (TUG) tests
- Qualitative stakeholder interviews

Significant Intervention Improvements

- Self-reported health behaviors, physical activity & dietary behaviors
- Self-reported health-related quality of life
- Mobility (objective walking speed)



SECOND STUDY PROGRAM EVALUATION

Quasi-experimental design

- Intervention
- Comparison group

Geographic area

- Denton County
- Brazos Valley
- Houston region

Population

- >400 participants enrolled
- ~300 in primary outcome analyses

Data collection methods

- Participant pre-post surveys
- Timed-Up-and-Go (TUG) test
- Accelerometers for sub-group (accelerometer data)

3-time data collection:

- Baseline
- 3-month from baseline measurement
- 6-month from baseline measurement



STUDY CHARACTERISTICS

First Study

- **220 older adults**
 - Average ~75 years old
 - 85% Female
 - 82% White
 - Average ~ 2.4 chronic conditions per person

Second Study*

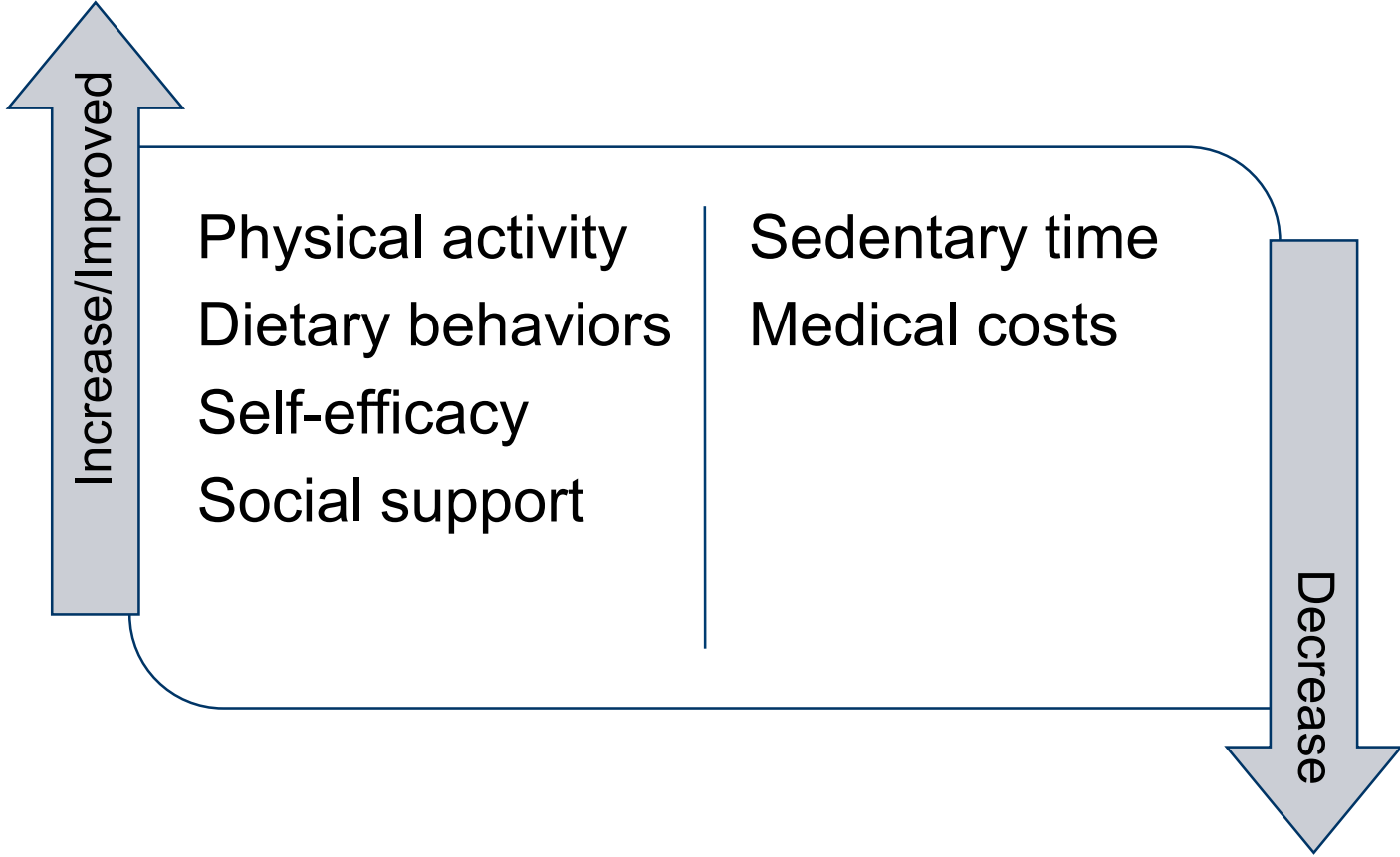
- **126 in intervention group**
 - Average ~ 75 years old
 - 81% Female
 - 66% White
 - 99% 2 or more chronic conditions
- **173 in non-intervention group**
 - Average age ~74
 - 79% Female
 - 36% White
 - 67% 2 or more chronic conditions

*For those with baseline and three month follow-up.
Analytical techniques used to account for differences between intervention and comparison groups.



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SIGNIFICANT RESULTS IN SECOND STUDY



RESULTS FROM TEXERCISE SELECT STUDIES

- 1 Standardized implementation & training materials developed
- 2 Recognized by ACL as evidence-based in 2015
- 3 Still being studied in South Texas to examine impacts in LatinX populations
- 4 Fully implementable in Texas
- 5 Highlighted in Texas A&M Redefining American Health Care Award



PEER REVIEWED, PUBLISHED

Smith, M. L., Lee, S., Towne, S. D. Jr., Han, G., Quinn, C., Peña-Purcell, N., & Ory, M. G. (2020) Impact of a behavioral intervention on diet, eating patterns, self-efficacy, and social support: A quasi-experimental study. *Journal of Nutrition Education and Behavior*, 52(2): 180-186. doi: 10.1016/j.jneb.2019.06.008.

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Towne, S. D., Jr., Li, Y., Lee, S., Smith, M. L., Han, G., Quinn, C., Du, Y., Benden, M., & Ory, M. G. (2018). Physical activity and associated medical cost savings among at-risk older adults participating a community-based health and wellness program. *PLOS One*, doi: 10.1371/journal.pone.0198239

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Ory, M. G., Smith, M. L., Howell, D., Zollinger, A., Quinn, C., Swierc, S. M., & Stevens, A. B. (2015). The conversion of a practice-based lifestyle enhancement program into a formalized, testable program: From Texercise Select to Texercise Select. *Frontiers in Public Health – Public Health Education and Promotion*, 2, 291. doi:10.3389/fpubh.2014.00291.



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CHALLENGES IN TRANSLATIONAL RESEARCH

- Implementing randomized or comparison research designs in real world delivery settings
- Hard to recruit targeted population
 - e.g., those insufficiently active at baseline and those who had already completed Texercise Classic
- Research integrity requires separate research administrative staff but not necessarily resourced as in NIH grant
- Competing demands from other EBPs in aging services sector
- Participants in ongoing service programs require extra incentives to engage in research aspects
- Self-reported PA notoriously unreliable
- Non-equivalent group
 - multivariate analyses with covariates; propensity matching for equivalence
- Trouble before COVID-19
 - Hurricane Harvey!



CURRENT REACH FIGURES

■ Texercise Classic

- Since launch (2007):
 - Implementations: >590
 - Participants: >24,000
 - Coordinators: 607 since 2012
- 2019:
 - Implementations: 50
 - Participants: >1172
 - Coordinators: 50
- 2020:
 - Implementations: 12 (3 virtual)
 - Participants: 473 (273 virtual)
 - Coordinators: 50

■ Texercise Select

- Since launch (2018)
 - Implementations: >175
 - Participants: >2600
 - Facilitators: ~150 certified
- 2019:
 - Implementations: 73
 - Participants: 1,392
 - Facilitators: 107 certified
- 2020
 - Implementations: 18 (10 virtual)
 - Participants: 385 (99virtual)
 - Facilitators: 121certified



PARTNERS FURTHERING DISSEMINATION AND SUSTAINABILITY

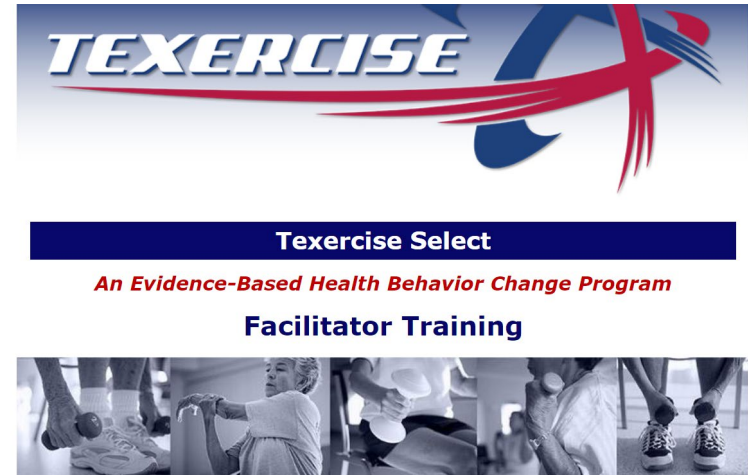
- 70+ partnerships
 - host sites, media partners, resource partners, and funding partners)
- Type of organizations:
 - public, private, academic, faith-based, non-profit, etc.
- Counties:
 - Texercise serves all counties in Texas and collaborates with organizations across Texas to improve the quality of life of older Texans.
- Monthly partner emails



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TEXERCISE SELECT: IMPLEMENTATION AND FIDELITY

- Standardized Implementation Manual
- Online facilitator training and certification
- Developing CEs to recertify every 2 years
- Emails and other forms of communication specific to program coordinators/facilitators and hosting Texercise programs
- Many facilitators have worked with other EBPs



Texas Health and Human Services



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TEXERCISE: ADAPTATIONS

- From Classic to Select (2018)
- Virtual implementation: April 2020
- Work with partners to embed Texercise materials in ongoing programmatic activities
- Walking Trail Toolkit
- New programming with SNAP-ED funding
- Required program participant pre and post assessments



BACK TO THE FUTURE: COMMUNITY-DRIVEN WITH STATE SUPPORT

Get Texercise



Being physically active can be as easy as ordering a **free** Texercise handbook. Regular exercise can help you start improving your health in as little as 3 weeks.

Get Healthy

Lead Texercise



Do you want to start a fitness program in your community?
Host a Texercise program!

Texercise provides technical and motivational help during your program, including incentives for participants.

Get Started

Partner with Texercise



Partners are a vital component to the Texercise program.

By providing promotional incentives for participants and promoting the program, they create ongoing awareness about the benefits of fitness and nutrition.

Become a Partner

TEXERCISE SELECT MEETS MANY OF THE SUSTAINABILITY CRITERIA

- Has strong institutional leadership
- Involves communities and key stakeholders
- Builds on a supporting organizational infrastructure
- Engages in active marketing
- Gathers outcome data
- Achieves financial self-sufficiency
- Maintains a shared organizational vision
- Adheres to behavioral change principles



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TEXERCISE SELECT: AVAILABLE FUNDING SOURCE

- How area agencies on aging can use Title III-D funds with Texercise Select



ACTIVITIES AND EXPENDITURES

- Directly related to EBI programs
 - Procurement of training services or mandatory materials needed to implement the program.
 - Training of AAA staff or volunteers to effectively implement evidence-based programs (in addition to free on-line training).
 - Publicity related to events to promote specific EBI groups/sessions/classes.
 - AAA staff time, travel, and materials needed to conduct the program.



MAIN CONSIDERATIONS

- Title III-D Funds
 - May only be expended under EBI for activities and expenditures directly related to **approved EBI programs**.
 - EBI programs provided by AAAs must be included in their Area Plan through the initial approval or amendment process.
 - Caregivers under the age of 60 may not receive EBI services using Title III-D funds.



GROWTH AND SUSTAINABILITY SUCCESS: AGENCY PERSPECTIVES

- Embedded in state agency and part of Aging Well Texas Initiative with one permanent staff and others depending on external resources
- Other program champions within department of Health and Human Services Commission who recognize benefit of Texercise
- Mutually beneficial partnerships to improve the health and quality of life of older Texans
- In-kind donations from funding partners to keep program resources free to both host sites and participants
- Ability of AAAs to tap Title 111 funds
- SNAP-Ed funding to work on four special projects that will expand and enhance Texercise offerings
- Continual attention to research on the latest data, trends, best practices in health and aging for incorporation into Texercise.



WHAT STATE UNIT ON AGING SAYS

Texercise asks and listens to the needs,
wants, desires of the audience

Program changes are also based on
evolving research

In for the long haul



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TEXANS CHOOSING TEXERCISE SELECT AS THEIR FALL PREVENTION PROGRAM

- Meets ACL standards for EBP for falls prevention
- Implementable with turn-key materials
- Resources in multiple languages
- Bundle with other EBP's
- Recruit for other EBP's
- Designed for diverse populations
- Low cost/high gain



FUTURE DIRECTION OF TEXERCISE

- Staying state-wide versus going national in recognition that success will depend on state infrastructure
- Serving as a model for other states and provide TA
- Complementary to other evidence-based programs/ bundling (AMOB, CDSMP, DSMP, SNAP-ED, etc.)
- Continued adaptations to keep being relevant



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