

# Utility of the EASY Tool for Evidence-Based Intervention Enrollment: Assessment of Program Completion and Outcomes Among Older Adults in Texas

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# INTRODUCTION

- Regular physical activity benefits individuals of all ages
  - Reductions in cardiovascular disease, stroke hypertension, diabetes, osteoporosis, mental health, and risk for falls
- Although physical activity is encouraged for older adults, professional guidelines recommend those age 40+ be seen by a healthcare provider before starting a physical activity program
- Required screening are often unnecessary burdens
  - High associated costs
  - May deter program enrollment



# INTRODUCTION

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- Screening purposes:
  - Safety of participants
  - Protect providers from legal implications
- Require extensive staff training, physician visits, documenting screening results, and participants to sign waivers
- Exercise stress testing:
  - ‘Gold standard’ in clinical settings, but neither practical nor possible for programs conducted in a large community setting
- Physical Activity Readiness Questionnaire (PAR-Q):
  - Identify those considered as ‘high risk’ and recommend them for further evaluation by healthcare providers



# EXERCISE AND SCREENING FOR YOU

- Exercise and Screening for You (EASY) Tool
- Match participants with appropriate
  - Physical activity programs and activities
  - Physical activity intensity
- Intended to optimize function and overall health status
- Shift from a 'potential risk' paradigm to a 'emphasize benefits' paradigm for those with pre-existing health conditions
- EASY Tool is convenient, administered with little effort, and of little/no cost to the participant or intervention
  - Used in conjunction with professionally developed tips and recommendations for safe physical activity



# STUDY PURPOSES

The purposes of this study are to examine:

- Characteristics of older adults entering an evidence-based physical activity program
- Associations between EASY Tool responses and program completion
- Influences of EASY scores and items as favorable predictors for intervention outcomes

A Matter of Balance/Volunteer Lay Leader Model will be used as the programmatic example to examine these translational research questions.

# AMOB / VLL

## A Matter of Balance / Volunteer Lay Leader Program (AMOB/VLL)

- Evidence-based activity program targeting community-dwelling older adults
- Intended to reduce the fear of falling and increase physical activity levels
- Incorporates the cognitive-behavioral theories

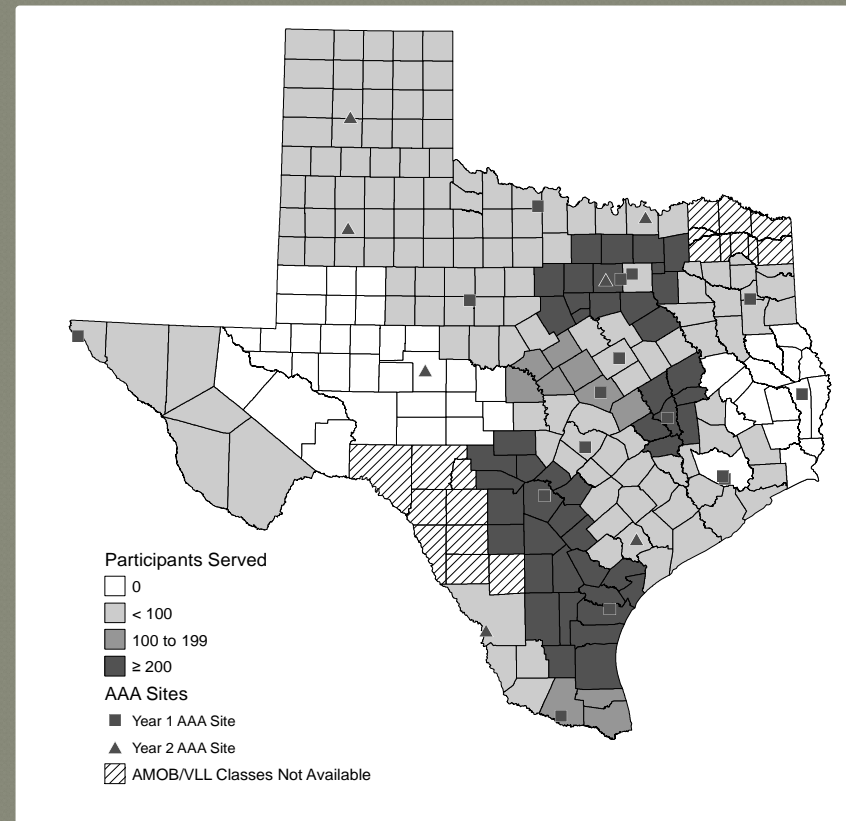
### The Intervention

- 8 classes, each lasting 2 hours, presented over a 4- to 8-week period
- Trained volunteer lay leaders act as facilitators
  - Early sessions: Diminishing the fear of falling and promoting positive mindsets
  - Later sessions: Promoting change to physical environments, reducing fall-related risk factors, learning exercises to increase strength and balance

# AMOB / VLL In Texas

## AMOB / VLL In Texas

- Implemented in various states nationwide
- Implemented in 26 of the 28 Texas Area Agencies on Aging (AAA) regions
- Potential to reach older adults in 236 of the 254 Texas counties
- Program capacity through partnerships with residential facilities, healthcare institutions, public health departments, faith-based organizations, business sectors, and local government





# MEASURES

- Self-Report Questionnaire
  - Baseline and post-intervention
  - 28 items multi-part (8 pages)
- Personal Characteristics
  - Age, sex, education, race/ethnicity, chronic conditions, living situation
- Variables Hypothesized to Change with Intervention
  - Days of physical health not good (previous 30 days)
  - Days kept from usual activity (previous 30 days)
- EASY Tool (scores ranging from 0 to 6)
  - Pains, tightness or pressure in chest
  - Experience dizziness or lightheadedness
  - Told have high blood pressure
  - Have pain, stiffness, or swelling
  - Have fallen or feel unsteady or use cane/walker
  - Other health reason concerning about a physical activity program

# METHODS

- Data were collected from 2,235 participants enrolled in AMOB/VLL between September 2007 and September 2009
  - Study approved by Institutional Review Board
  - Informed consent was obtained
  - No incentives were provided to participants
  
- Data Analyses
  - SPSS 17.0 was used for all data analyses
  - Frequencies with Pearson's chi-square tests
  - Spearman correlation analyses
  - Binary Logistic Regression
    - Using change scores as dependent variables
    - EASY Tool scale values and individual EASY Tool items were assessed

# PARTICIPANT CHARACTERISTICS

Personal Characteristics and Study Variables by Session Attendance					
	1 to 4 Sessions	5 to 7 Sessions	8 Sessions	X <sup>2</sup>	P
<b>Age</b>				17.031	0.009
50 to 59 Years	11 (26.2%)	23 (54.8%)	8 (19.0%)		
60 to 74 Years	91 (14.4%)	316 (49.8%)	227 (35.8%)		
75 to 84 Years	133 (16.6%)	407 (50.9%)	259 (32.4%)		
85+ Years	74 (22.0%)	145 (43.2%)	117 (34.8%)		
<b>Sex</b>				3.766	0.152
Male	61 (17.3%)	157 (44.6%)	134 (38.1%)		
Female	253 (17.5%)	718 (49.7%)	475 (32.8%)		
<b>Education</b>				2.899	0.575
Less than High School	56 (19.5%)	138 (48.1%)	93 (32.4%)		
Graduated High School	69 (15.3%)	224 (49.6%)	159 (35.2%)		
More than High School	207 (18.3%)	551 (48.7%)	374 (33.0%)		
<b>Race/Ethnicity</b>				7.297	0.026
Non-White	67 (14.3%)	223 (47.8%)	177 (37.9%)		
Non-Hispanic White	252 (18.7%)	676 (49.6%)	436 (32.0%)		
<b>Living Situation</b>				7.509	0.023
Live Alone	196 (19.6%)	467 (46.7%)	336 (33.6%)		
Live With Others	127 (15.1%)	434 (51.5%)	282 (33.5%)		
<b>Chronic Conditions</b>				1.315	0.859
1 Chronic Condition	149 (18.0%)	408 (49.3%)	270 (32.6%)		
2 Chronic Conditions	103 (18.1%)	270 (47.5%)	195 (34.3%)		
3+ Chronic Conditions	78 (16.4%)	240 (50.3%)	159 (33.3%)		
<b>Days Limited From Usual Activity</b>				0.618	0.734
No Improvement	27 (2.6%)	551 (54.1%)	441 (42.3%)		
Improvement	7 (2.8%)	144 (56.7%)	103 (40.6%)		
<b>Days Physical Health Not Good</b>				0.428	0.808
No Improvement	24 (2.8%)	471 (54.3%)	373 (43.0%)		
Improvement	8 (2.1%)	206 (54.9%)	161 (42.9%)		

Average age 76.6 years ( $\pm 8.56$ )

76.0% female

30.3% non-White

56.3% more than HS education

52.7% resided alone

25.5% had 3 or more chronic conditions

# EASY TOOL SCALE & ITEMS

**EASY Tool Scale and Items by Session Attendance**

	1 to 4 Sessions	5 to 7 Sessions	8 Sessions	X <sup>2</sup>	P
<b>EASY Tool Scale</b>				14.841	0.250
Scale Value 0	23 (13.1%)	87 (49.4%)	66 (37.5%)		
Scale Value 1	73 (17.5%)	197 (47.2%)	147 (35.3%)		
Scale Value 2	84 (18.1%)	228 (49.0%)	153 (32.9%)		
Scale Value 3	76 (17.4%)	233 (53.2%)	129 (29.5%)		
Scale Value 4	50 (18.9%)	118 (44.5%)	97 (36.6%)		
Scale Value 5	27 (22.5%)	57 (47.5%)	36 (30.0%)		
Scale Value 6	4 (13.8%)	19 (65.5%)	6 (20.7%)		
<b>EASY Tool Items</b>					
Pain/Tightness in Chest				1.338	0.512
No	263 (17.1%)	759 (49.5%)	512 (33.4%)		
Yes	74 (19.7%)	180 (47.9%)	122 (32.4%)		
Dizziness/Lightheaded				2.441	0.295
No	212 (17.1%)	603 (48.6%)	427 (34.4%)		
Yes	125 (18.7%)	336 (50.3%)	207 (31.0%)		
High Blood Pressure				1.655	0.437
No	114 (19.3%)	284 (48.1%)	192 (32.5%)		
Yes	223 (16.9%)	655 (49.6%)	442 (33.5%)		
Pain/Stiffness/Swelling				4.324	0.115
No	166 (16.1%)	512 (49.5%)	356 (34.4%)		
Yes	171 (19.5%)	427 (45.5%)	278 (31.7%)		
Fallen/Feel Unsteady/Use Cane or Walker				2.129	0.345
No	152 (16.3%)	463 (49.8%)	315 (33.9%)		
Yes	185 (18.9%)	476 (48.6%)	319 (32.6%)		
Other Reason of Concern for a PA Program				4.688	0.096
No	287 (17.6%)	790 (48.3%)	558 (34.1%)		
Yes	50 (18.2%)	149 (54.2%)	76 (27.6%)		

Average EASY  
Tool scale value  
2.3 (± 1.43)

20.0% Chest

34.2% Dizziness

69.5% High BP

45.3% Pain

49.8% Fallen

15.4% Other



# RESULTS

## Improvements in Days Limited from Usual Activity

Logistic Regression: Days Limited from Usual Activity - EASY Scale Values and Items									
	Model 1			Model 2			Model 3		
	B	S.E.	OR [95% CI]	B	S.E.	OR [95% CI]	B	S.E.	OR [95% CI]
60 to 74 Years	0.08	0.58	1.085 [0.349, 3.374]	0.15	0.58	1.163 [0.370, 3.654]	0.18	0.59	1.202 [0.381, 3.795]
75 to 84 Years	-0.31	0.58	0.731 [0.234, 2.288]	-0.21	0.59	0.810 [0.257, 2.557]	-0.16	0.59	0.850 [0.267, 2.706]
85+ Years	-0.41	0.61	0.661 [0.201, 2.176]	-0.31	0.61	0.732 [0.220, 2.435]	-0.33	0.62	0.716 [0.214, 2.396]
Sex	-0.18	0.20	0.835 [0.562, 1.239]	-0.25	0.21	0.781 [0.522, 1.168]	-0.29	0.21	0.751 [0.500, 1.128]
Graduated High School	0.12	0.27	1.128 [0.666, 1.911]	0.21	0.28	1.236 [0.718, 2.128]	0.22	0.28	1.245 [0.718, 2.160]
More than High School	-0.03	0.25	0.973 [0.595, 1.591]	0.04	0.26	1.039 [0.626, 1.724]	0.00	0.26	0.998 [0.595, 1.672]
Race/Ethnicity	-0.26	0.19	0.769 [0.528, 1.119]	-0.34	0.20	0.711 [0.482, 1.047]	-0.46	0.20	0.635 [0.427, 0.943]*
Living Situation	-0.08	0.17	0.922 [0.668, 1.273]	0.01	0.17	1.01 [0.726, 1.404]	-0.04	0.17	0.960 [0.689, 1.337]
2 Chronic Conditions	0.41	0.19	1.507 [1.036, 2.191]*	0.21	0.20	1.230 [0.833, 1.817]	0.36	0.21	1.426 [0.950, 2.139]
3+ Chronic Conditions	0.66	0.19	1.935 [1.330, 2.815]**	0.18	0.22	1.196 [0.783, 1.826]	0.33	0.23	1.396 [0.893, 2.182]
EASY Tool: Scale Value 1				0.02	0.42	1.023 [0.450, 2.322]			
EASY Tool: Scale Value 2				0.80	0.39	2.228 [1.030, 4.820]*			
EASY Tool: Scale Value 3				0.89	0.40	2.423 [1.109, 5.296]*			
EASY Tool: Scale Value 4				1.12	0.42	3.066 [1.346, 6.984]**			
EASY Tool: Scale Value 5				1.39	0.46	3.997 [1.627, 9.819]**			
EASY Tool: Scale Value 6				2.17	0.66	8.735 [2.378, 32.093]**			
EASY Item: Chest							0.20	0.20	1.226 [0.832, 1.808]
EASY Item: Dizziness							0.00	0.17	1.001 [0.715, 1.401]
EASY Item: High BP							-0.28	0.20	0.759 [0.510, 1.128]
EASY Item: Pain/Stiffness							0.64	0.18	1.893 [1.339, 2.677]**
EASY Item: Fallen							0.62	0.18	1.854 [1.311, 2.622]**
EASY Item: Other Reason							0.29	0.22	1.332 [0.870, 2.038]
	Nagelkerke R <sup>2</sup> = 0.036			Nagelkerke R <sup>2</sup> = 0.077			Nagelkerke R <sup>2</sup> = 0.097		

\*p<0.05, \*\*p<0.01

# RESULTS

## Improvements in Unhealthy Physical Days

**Logistic Regression: Days Physical Health Not Good - EASY Scale Values and Items**

	Model 1			Model 2			Model 3		
	B	S.E.	OR [95% CI]	B	S.E.	OR [95% CI]	B	S.E.	OR [95% CI]
60 to 74 Years	0.04	0.54	1.039 [0.361, 2.991]	0.11	0.54	1.115 [0.385, 3.231]	0.21	0.55	1.239 [0.424, 3.622]
75 to 84 Years	0.06	0.54	1.064 [0.369, 3.064]	0.15	0.54	1.158 [0.400, 3.353]	0.31	0.55	1.357 [0.463, 3.978]
85+ Years	0.07	0.56	1.076 [0.361, 3.201]	0.17	0.56	1.182 [0.394, 3.543]	0.29	0.57	1.342 [0.442, 4.072]
Sex	0.03	0.18	1.032 [0.728, 1.461]	-0.04	0.18	0.963 [0.675, 1.374]	-0.07	0.18	0.936 [0.655, 1.338]
Graduated High School	0.05	0.23	1.052 [0.666, 1.661]	0.10	0.24	1.104 [0.689, 1.767]	0.11	0.24	1.116 [0.694, 1.793]
More than High School	-0.17	0.22	0.840 [0.550, 1.284]	-0.15	0.22	0.858 [0.554, 1.327]	-0.16	0.23	0.856 [0.550, 1.332]
Race/Ethnicity	-0.19	0.17	0.830 [0.590, 1.167]	-0.24	0.18	0.789 [0.555, 1.121]	-0.28	0.18	0.754 [0.527, 1.079]
Living Situation	0.00	0.14	1.002 [0.757, 1.327]	0.06	0.15	1.063 [0.797, 1.418]	0.06	0.15	1.064 [0.797, 1.423]
2 Chronic Conditions	0.42	0.17	1.527 [1.104, 2.112]*	0.23	0.17	1.253 [0.892, 1.759]	0.36	0.18	1.433 [1.007, 2.041]*
3+ Chronic Conditions	0.81	0.17	2.253 [1.626, 3.121]**	0.36	0.19	1.434 [0.995, 2.068]	0.51	0.20	1.657 [1.127, 2.436]*
EASY Tool: Scale Value 1				0.13	0.33	1.134 [0.591, 2.177]			
EASY Tool: Scale Value 2				0.56	0.32	1.753 [0.933, 3.297]			
EASY Tool: Scale Value 3				0.67	0.33	1.948 [1.023, 3.710]*			
EASY Tool: Scale Value 4				1.24	0.35	3.448 [1.752, 6.787]**			
EASY Tool: Scale Value 5				1.49	0.40	4.454 [2.052, 9.668]**			
EASY Tool: Scale Value 6				1.65	0.68	5.202 [1.378, 19.644]*			
EASY Item: Chest							0.42	0.18	1.527 [1.083, 2.153]*
EASY Item: Dizziness							0.31	0.15	1.364 [1.021, 1.823]*
EASY Item: High BP							-0.20	0.18	0.823 [0.581, 1.166]
EASY Item: Pain/Stiffness							0.48	0.15	1.620 [1.203, 2.181]**
EASY Item: Fallen							0.34	0.15	1.408 [1.048, 1.892]*
EASY Item: Other Reason							0.22	0.20	1.249 [0.837, 1.861]
	Nagelkerke R <sup>2</sup> = 0.041			Nagelkerke R <sup>2</sup> = 0.087			Nagelkerke R <sup>2</sup> = 0.098		

\*p<0.05, \*\*p<0.01

# CONCLUSIONS

## Findings from this study:

- Contribute to the understanding of translational research and the operation of evidence-based programs in real-world settings
- Evidence-based programs for falls prevention are reaching more frail populations (in some cases, more than other exercise programs for seniors)
- Attendance was not influenced by EASY Tool scale values or items
- Those with more pre-existing conditions saw even greater health improvements following the intervention
  - High attendance and intervention effects seen among those potentially 'screened out' in other physical activity programs (frail participants with more pre-existing conditions)

# IMPLICATIONS & FUTURE RESEARCH

## Implications for Research and Practice:

- EASY Tool used mainly for older adults, but has implications for other disabled populations
- EASY Tool has implications to promote physical activity in other campaigns like the “Exercise is Medicine Campaign” of the AMA and ACSM
- Work with physicians to determine if intervention results change pre-screening prescription behaviors
- EASY Tool online is a source for researchers and practitioners to share and report use and successes

**<http://www.easyforyou.info>**