

Cross-Sectional Investigation of the Effects of Psychiatric Service Dogs on War Veterans with PTSD



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PTSD impacts a large number of US military members and veterans



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1 in 5 of OIF/OEF veterans
entering VA healthcare between
2001-2008 diagnosed with PTSD

Evidence-based PTSD treatments vary in efficacy

Nonresponse and Dropout Rates in Outcome Studies on PTSD: Review and Methodological Considerations

Michele A. Schottenbauer, Carol R. Glass, Diane B. Arnkoff, Vanessa Tendick & Sheila Hafter Gray

55 treatment studies

# of Studies	Type of Therapy	Max Dropout Rates
20	Exposure Therapy	50%
8	Cognitive Behavioral Therapy	32%
15	Eye Movement Desensitization and Reprocessing Therapy	36%

Evidence-based PTSD treatments vary in efficacy

Nonresponse and Dropout Rates in Outcome Studies on PTSD: Review and Methodological Considerations

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55 treatment studies

# of Studies	Type of Therapy	Max Dropout Rates	Max Nonresponse Rates Across Outcomes
20	Exposure Therapy	50%	67%
8	Cognitive Behavioral Therapy	32%	71%
15	Eye Movement Desensitization and Reprocessing Therapy	36%	92%



Service Dog Trained Tasks



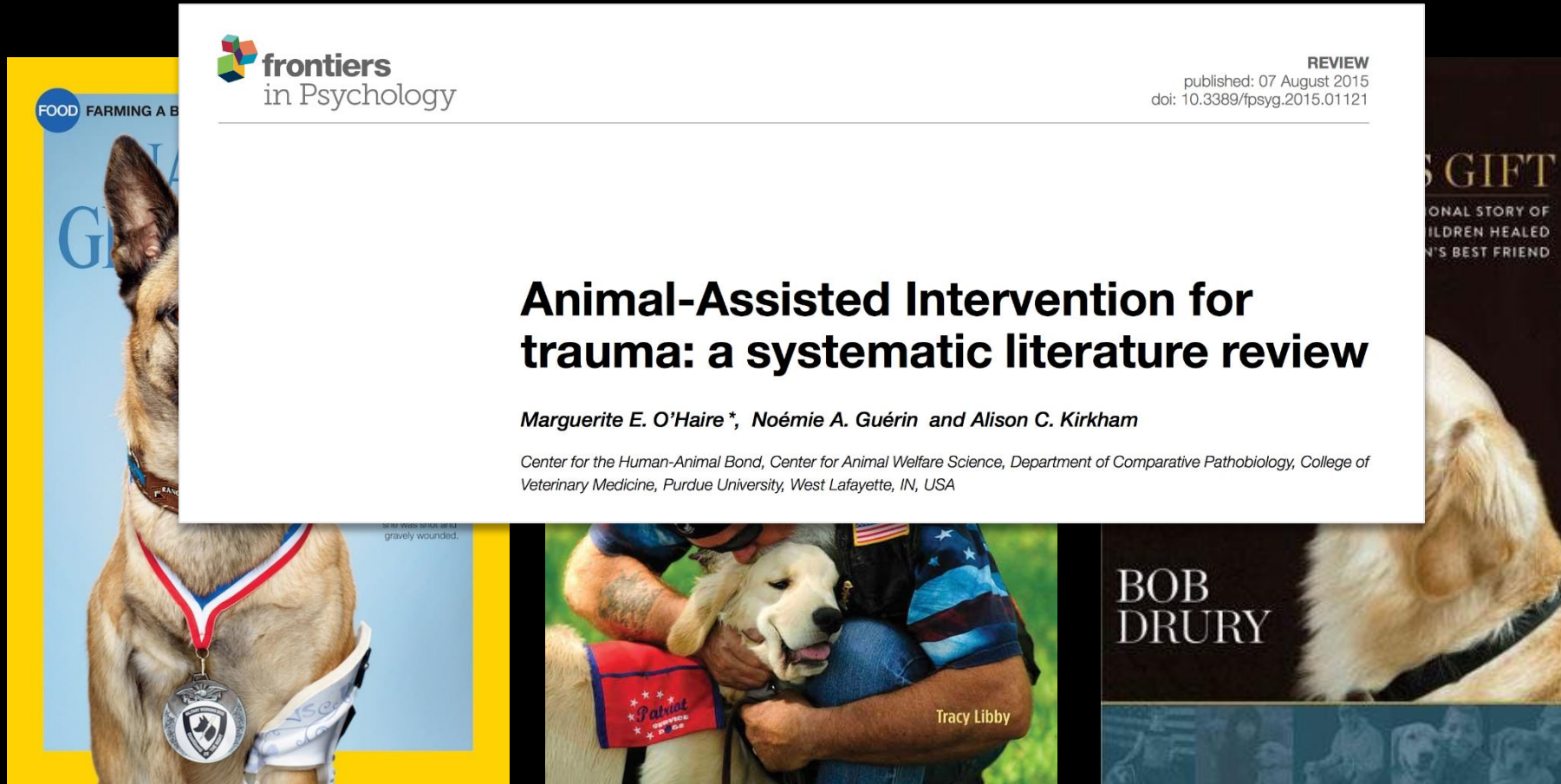
Utilizing their body weight as a **grounding mechanism** to reduce or alleviate anxiety/panic

Tactile interruption (nudging, pawing, licking) during flashbacks, panic episodes, or nightmares



Watching the veteran's back while the veteran is in public to help reduce hypervigilance

Dogs and PTSD



 **frontiers**
in Psychology

REVIEW
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Animal-Assisted Intervention for trauma: a systematic literature review

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Tracy Libby

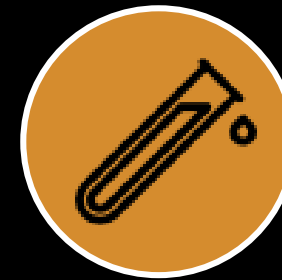
Research Goals

Examine the therapeutic efficacy of service dogs as a complementary treatment option for PTSD in a military population



Subjective Self-Report

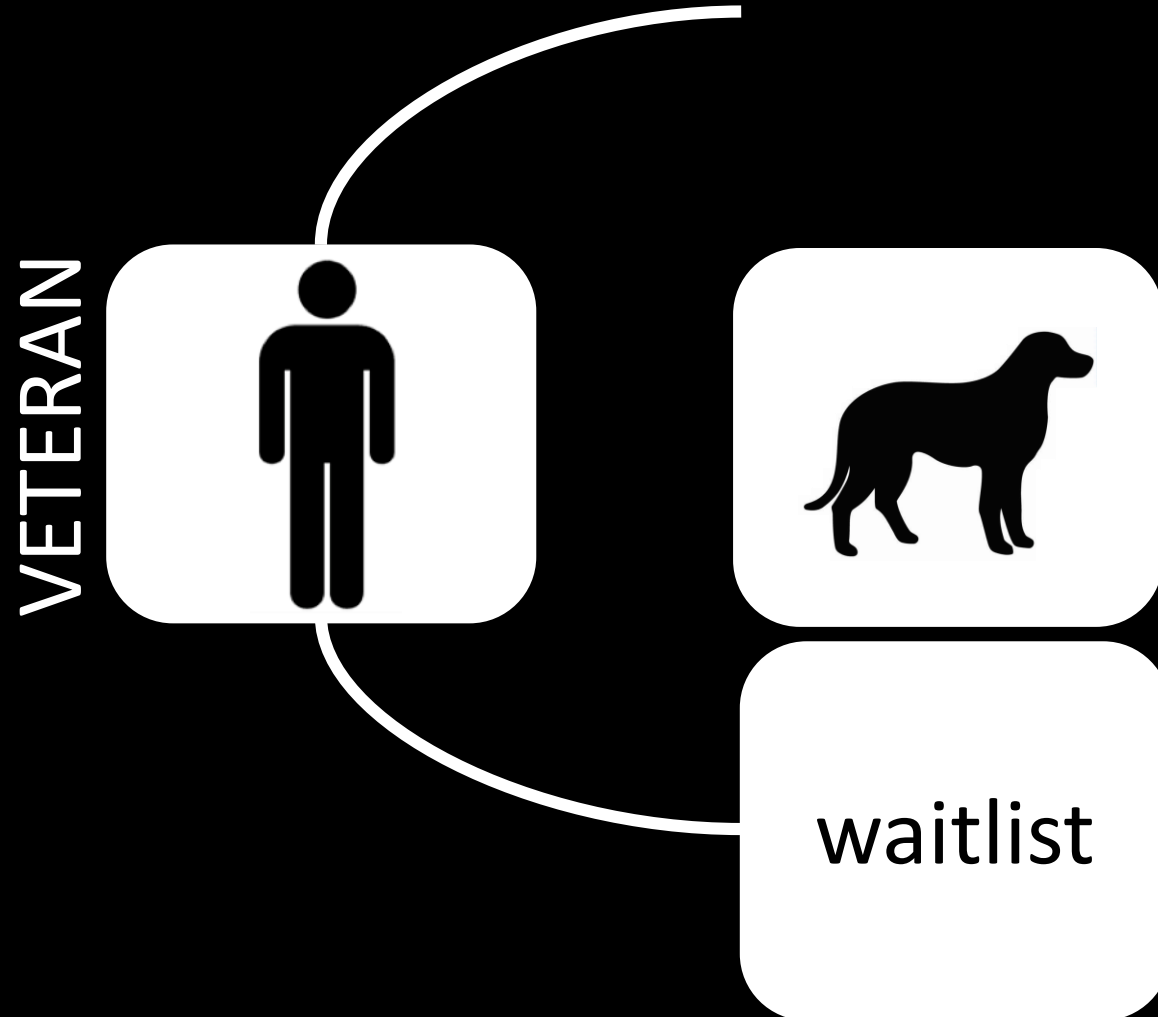
- Longitudinal PTSD severity
- Standardized measures across a range of domains



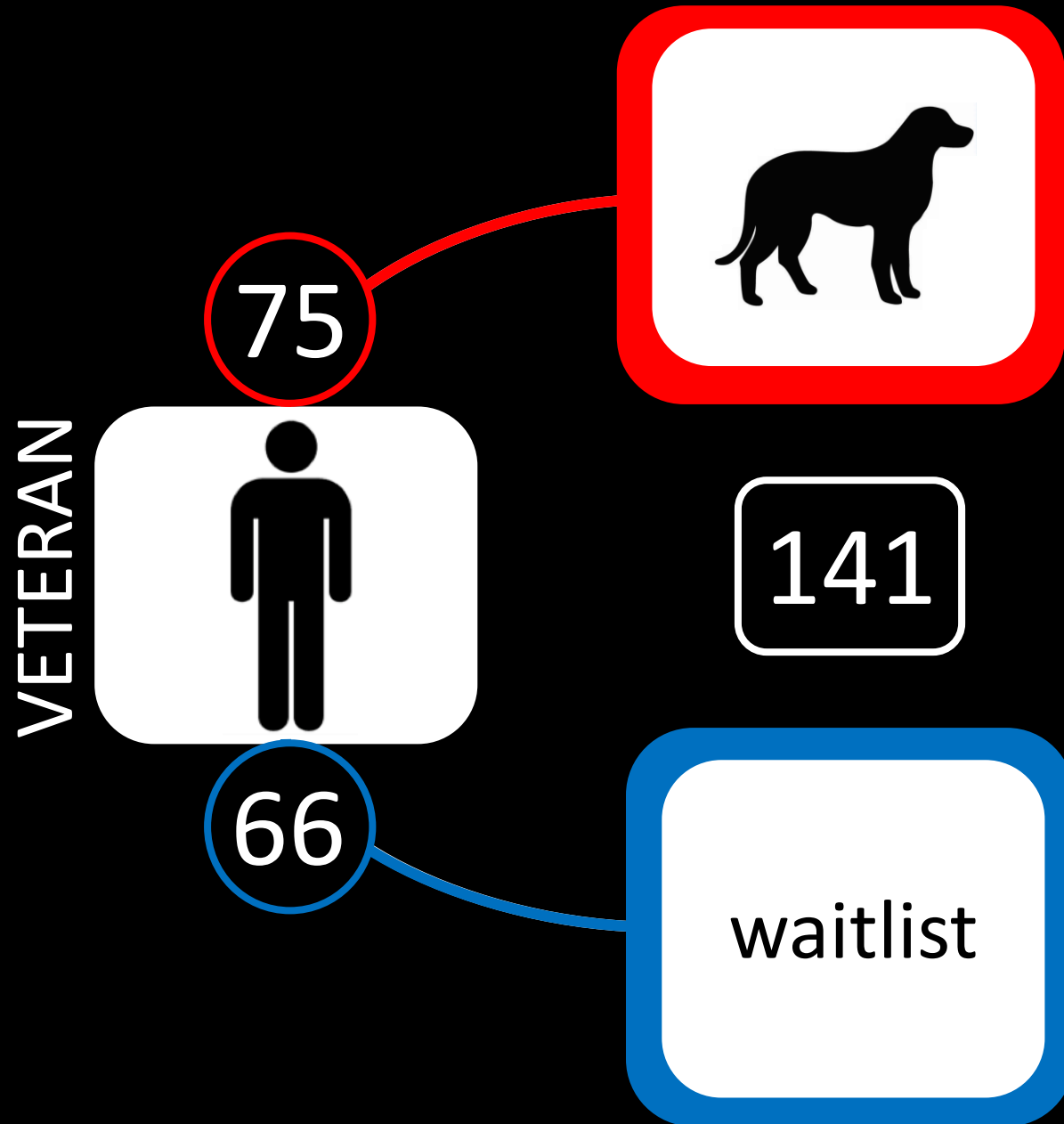
Objective Physiology

- Stress response biomarker (cortisol)
- Saliva samples

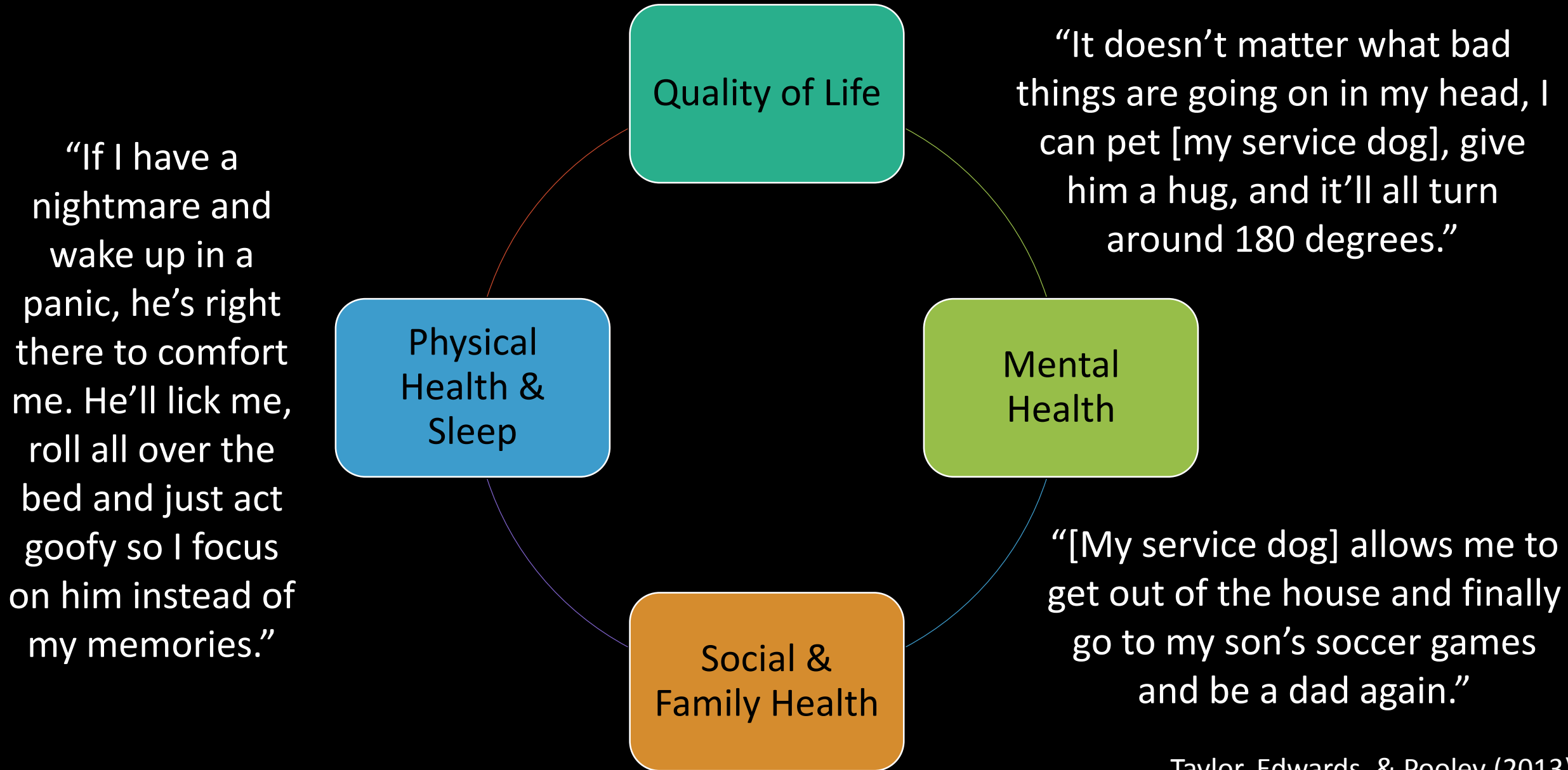
Participants



Participants



Self-Report Domains



Why PROMIS?

- Established psychometrics
- Comparability across studies and PTSD clinical trials
- T-scores, population mean
- Clear, easy wording
- Short!



Standardized Measures

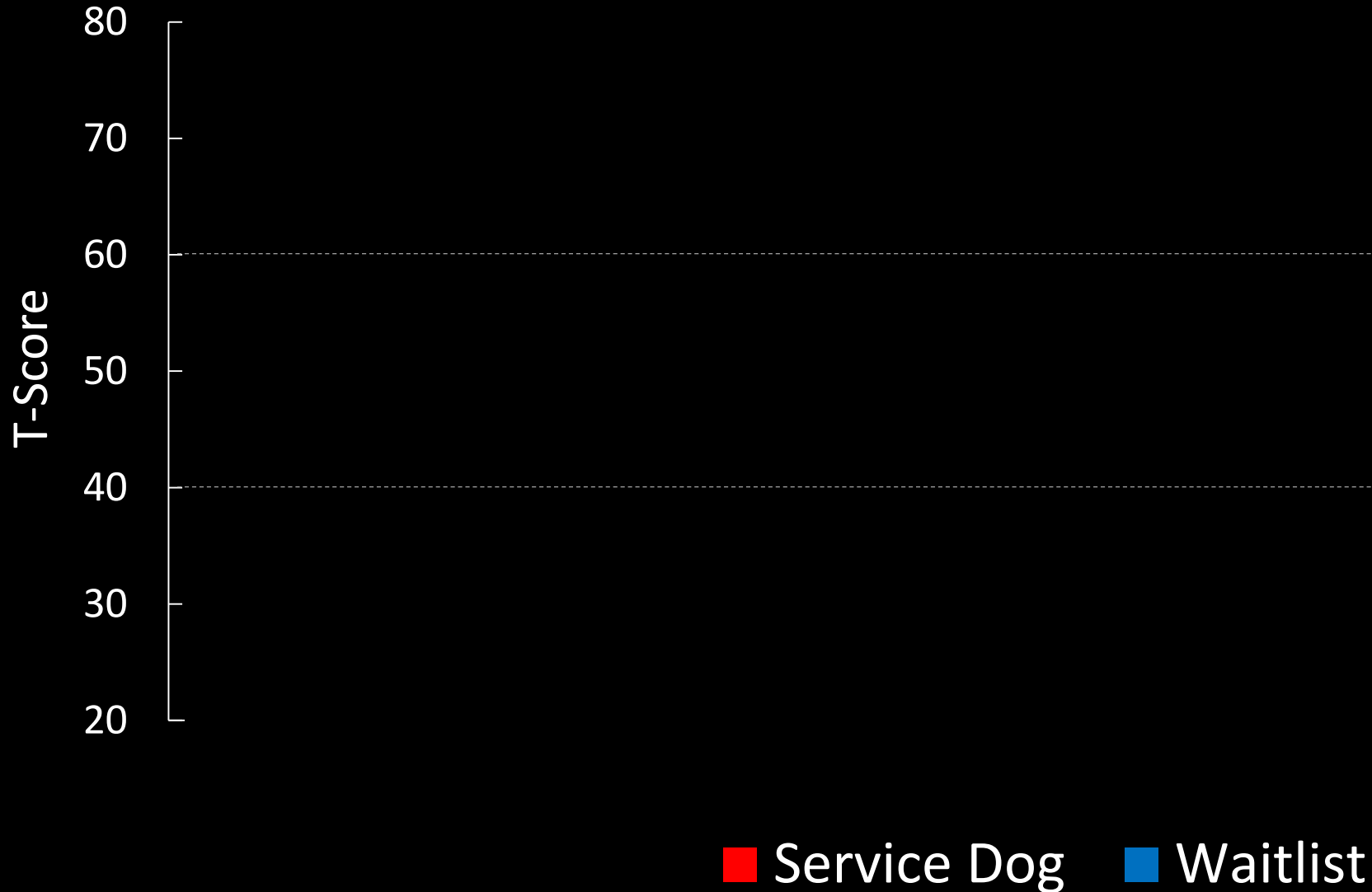
Measure	Category
Satisfaction with Life Scale (SLS) Bradburn Scale of Psychological Wellbeing (BSPW) Connor Davidson Scale of Resilience (CDRS) ● PROMIS Alcohol Use (7A)	Quality of Life
● PROMIS Anxiety (8A) ● PROMIS Depression (8A) ● PROMIS Anger (5A) Patient Health Questionnaire (PHQ-9) Veteran's RAND VR-12– Mental Health	Mental Health
● PROMIS Companionship (6A) ● PROMIS Social Isolation (8A) ● PROMIS Social Participation (8A) Relationship Assessment Scale (RAS) Family Assessment Device (FAD)	Social & Family Health
● PROMIS Sleep Disturbance (8A) Pittsburgh Sleep Quality Index (PSQI) Veteran's RAND VR-12 – Physical Health	Physical Health & Sleep

Results

Quality of Life

Mental
Health

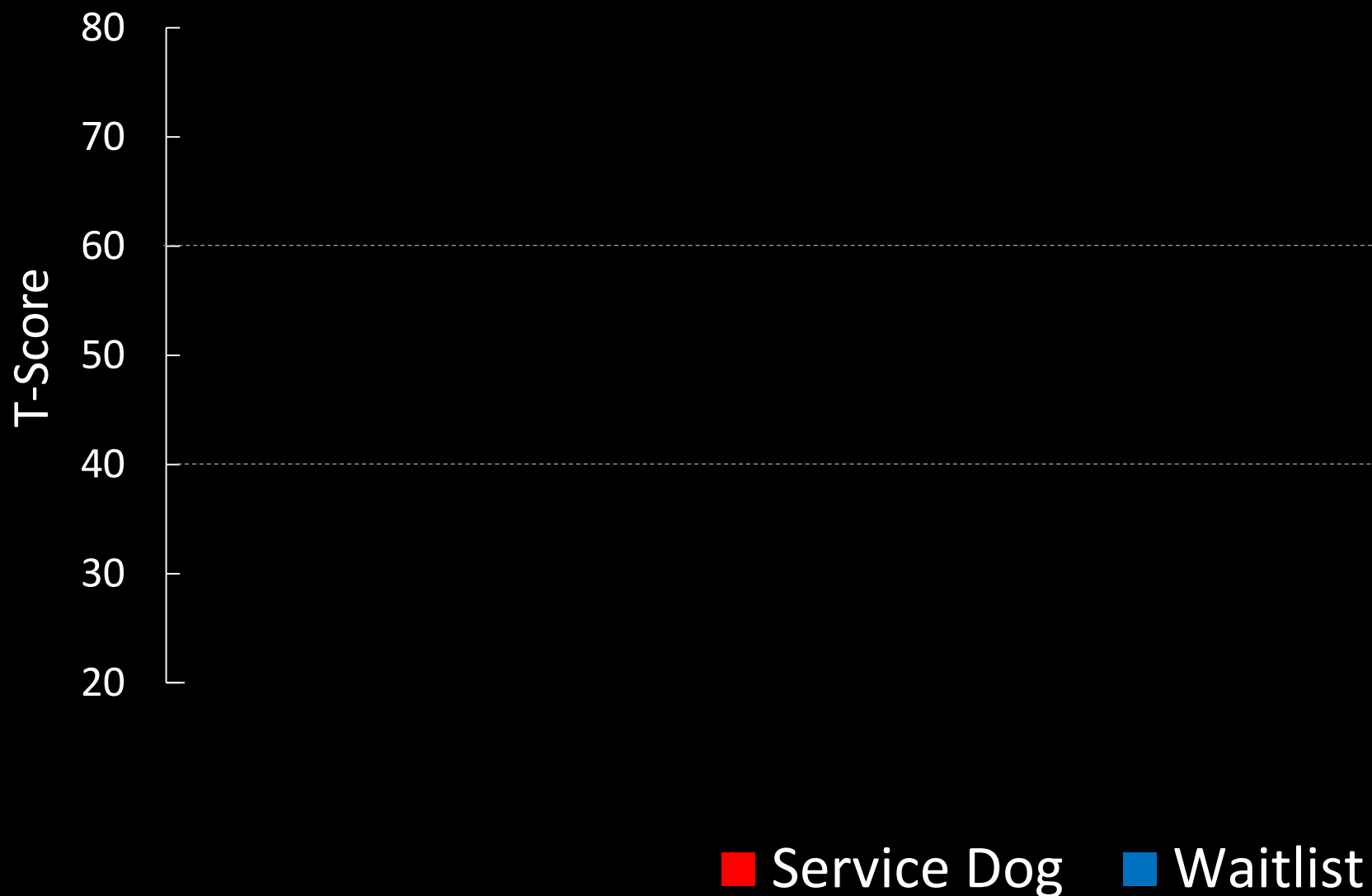
Results- PROMIS Measures



Social &
Family Health

Physical
Health &
Sleep

Results- PROMIS Measures



Results- All Measures

Measure		Category	Cohen's d	
●	Satisfaction with Life Scale (SLS)	Quality of Life	.55	0.2 – 0.5 Small
	Bradburn Scale of Psychological Wellbeing (BSPW)		.81	
	Connor Davidson Scale of Resilience (CDRS)		.54	0.5 – 0.8 Medium
	PROMIS Alcohol (7A)		.23	
●	PROMIS Anxiety (8A)	Mental Health	.79	0.8 – 1.0 Large
	PROMIS Depression (8A)		.91	
	PROMIS Anger (5A)		.50	
	Patient Health Questionnaire (PHQ-9)		.73	
●	Veteran's RAND VR-12– Mental Health	Social & Family Health	.66	
	PROMIS Companionship (6A)		.52	
	PROMIS Social Isolation (8A)		.60	
	PROMIS Social Participation (8A)		.73	
	Relationship Assessment Scale (RAS)		.17	
	Family Assessment Device (FAD)		.22	
●	PROMIS Sleep Disturbance (8A)	Physical Health & Sleep	.42	
	Pittsburgh Sleep Quality Index (PSQI)		.22	
	Veteran's RAND VR-12 – Physical Health		.02	

Results- All Measures

Measure	Category	Cronbach's α
Satisfaction with Life Scale (SLS)	Quality of Life	.85
Bradburn Scale of Psychological Wellbeing (BSPW)		.82
Connor Davidson Scale of Resilience (CDRS)		.92
PROMIS Alcohol (7A)		.94
PROMIS Anxiety (8A)	Mental Health	.93
PROMIS Depression (8A)		.95
PROMIS Anger (5A)		.92
Veteran's RAND VR-12– Mental Health		.86
PROMIS Companionship (6A)	Social & Family Health	.92
PROMIS Social Isolation (8A)		.91
PROMIS Social Participation (8A)		.93
Relationship Assessment Scale (RAS)		.91
Family Assessment Device (FAD)		.94
PROMIS Sleep Disturbance (8A)	Physical Health & Sleep	.89
Pittsburgh Sleep Quality Index (PSQI)		NA
Veteran's RAND VR-12 – Physical Health		.86

> 0.7
Acceptable
Reliability

> 0.8
Good
Reliability

> 0.9
Great
Reliability

Pearson's r correlations among measures

PROMIS Measure	SLS	BSPW(-)	BSPW(+)	CDRS	MCS	PHQ	RAS	FAD	PSQI	PCS	PTSD
PROMIS Alcohol (7A)	-.331**	0.15	-.302**	-.277*	-.269*	.324**	-0.212	0.224	0.203	-0.029	.297**
PROMIS Anxiety (8A)	-.320**	.470**	-.321**	-.500**	-.499**	.654**	-0.162	0.126	.369**	-.220**	.719**
PROMIS Depression (8A)	-.512**	.555**	-.416**	-.576**	-.625**	.760**	-.266**	.205*	.394**	-0.119	.660**
PROMIS Anger (5A)	-.303**	.376**	-.348**	-.392**	-.547**	.481**	-.313**	.248**	.274**	-0.075	.618**
PROMIS Companionship (6A)	.361**	-0.163	.276**	.222*	.249**	-.276**	.472**	-.426**	-.284**	0.085	-.207*
PROMIS Social Isolation (8A)	-.480**	.399**	-.417**	-.478**	-.518**	.563**	-.374**	.296**	.275**	-0.122	.629**
PROMIS Social Participation (8A)	.365**	-.441**	.309**	.427**	.487**	-.604**	.313**	-.264**	-.366**	.330**	-.599**
PROMIS Sleep Disturbance (8A)	-.318**	.335**	-.343**	-.335**	-.437**	.534**	-.244*	.215*	.689**	-0.157	.563**

Discussion

Preliminary evidence to support the therapeutic efficacy of service dogs as a *complementary* treatment option for PTSD

- Largest effect sizes in mental health, quality of life
- Smaller effect sizes for alcohol use, relationships, and sleep
- Use of PROMIS measures was effective in answering our research question
- PROMIS measures were reliable in the population

Future Directions

- NIH funding for a large, longitudinal clinical trial



- Continuing to use PROMIS short forms & other standardized measures
- Physiology:
 - Sleep/wake activity
 - Electrodermal activity
 - Salivary cortisol





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www.HumanAnimalInteraction.org

