



# U.S. ARMY COMBAT CAPABILITIES DEVELOPMENT COMMAND – ARMY RESEARCH LABORATORY

## **Resilience and Mindfulness in Active Duty and Veteran U.S. Military Service Members**



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# INTRODUCTION



- **Trauma of War**
- **Trait Resilience**
  - Recover & Thrive
  - Education
  - Fewer Symptoms





# INTRODUCTION

## Characteristics of Resilience

- Accepting Reality/Facing Facts
- Hardiness
- Meaning Making
- Self Care
- Individual variability may emerge AFTER traumatic event



## Negative Correlations with Resilience

- Somatization
- Dysfunctional Coping Strategies (disengagement and self-blame)
- Chronic Health Complaints
- Use of Alcohol
- Suicidal Thoughts
- Symptoms of Post-traumatic Stress Disorder (PTSD)







# INTRODUCTION

## Positive Correlations with Resilience

- Age
- Self-Ratings of Health
- Time-on-Active Duty
- Trait **Mindfulness**
- Sense of Purpose in Life
- Coping Strategies (acceptance & positive reframing)
- Help-Seeking Behaviors
- Perceived Personal Control

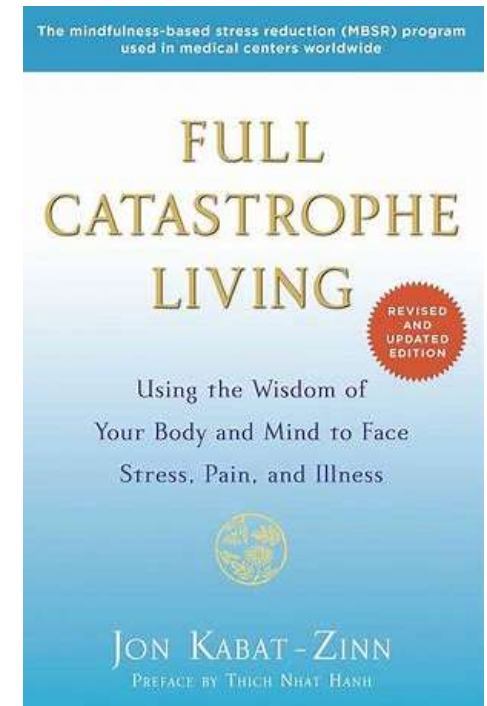
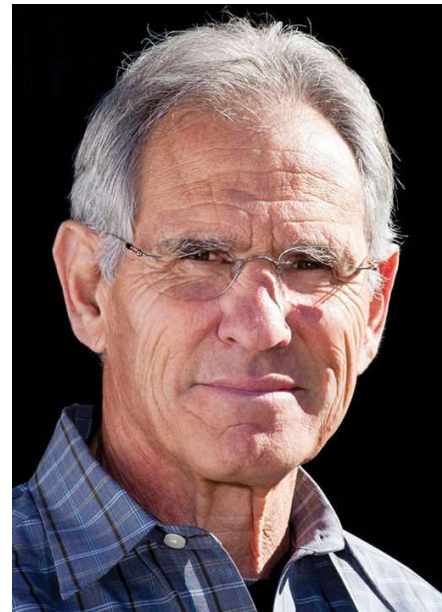




# INTRODUCTION MINDFULNESS



- Paying attention, on purpose, in a particular way, in the present moment, non-judgmentally
- Unfolding of experience moment-by-moment
- Origins
  - Understanding Suffering
  - Buddhism
  - All Religions
  - Five Facets





# INTRODUCTION

## FIVE FACETS OF MINDFULNESS

(Baer & Colleagues, 2004 & 2006)

Facet	Description
<b>Observe</b>	Attending to both internal (thoughts, feelings, and emotions) and external events (sights, sounds, and smells)
<b>Describe</b>	Using verbal expressions to identify observations in a noncritical manner
<b>Acting with Awareness</b>	Focusing attention on one activity rather than mindlessly engaging in multiple activities
<b>Non-Judgement of Experience</b>	Experiencing event and situations without critical appraisal
<b>Non-Reactivity to Experience</b>	Experiencing emotions and thoughts without becoming overwhelmed or automatically reacting



# PURPOSE



- **To investigate the relationship between Resilience and Mindfulness in active duty (AD) and veteran military service members**
- **Hypotheses:**
  - There will be positive correlations between Resilience and Mindfulness, and between Resilience and Facets of Mindfulness
  - Aspects of mindfulness, specifically observing and non-reactivity to inner experience will significantly predict participants total scores on a measure of Resilience







# METHOD



- **Participants:** 80 AD and 156 Veteran US Military service members
- **Measures**
  - Demographic Survey
  - Resilience Scale (RS-14)
  - Mindful Attention Awareness Scale (MAAS)
  - Five Facet Mindfulness Questionnaire (FFMQ)
- **Pre-Intervention Data**
- **Data Analysis**
  - Descriptive
  - Mann-Whitney U (non-parametric)
  - Analysis of Variance (parametric) group differences in RS-14, MAAS
  - Multivariate Analysis of Variance (parametric) group differences in FFMQ
  - Pearson-Product Moment Correlations
  - Forward Entry Regression







# RESULTS





# RESULTS



- **Active Duty:**

- Younger
- Less education
- Greater number of active duty had deployed in harms way



- **No differences in gender, race, marital status, or time-on-active duty**

- **Primarily:**

- Male (57.1% vs 42.9%)
- Caucasian (50.6%), Black (26.3%), or Hispanic (19.2%)
- Some college (32.7%), college (25.6%), or graduate degree (28.8%)
- Married (56.4%), divorced (21.2%), or single (16.7%)



# AD & Veteran Differences in Resilience & Mindfulness Scores

	AD		Veterans			
Measure	M	SD	M	SD	F	P
RS-14	79.87	14.03	73.67	17.19	7.76	<b>0.01</b>
MAAS	3.82	1.00	3.72	1.03	0.31	0.58
FFMQ						
FFMQ-Observe	24.81	7.14	24.97	6.16	0.03	0.85
FFMQ-Describe	27.40	7.75	25.48	7.53	3.30	0.07
FFMQ-Act w/ Awareness	25.62	7.71	25.04	7.36	0.31	0.58
FFMQ-Non-Judgement	27.55	7.46	25.93	7.30	2.53	0.11
FFMQ-Non-Reactivity	20.99	5.57	20.07	5.35	1.48	0.23



# Correlations between Resilience & Mindfulness Measures

Measure	Score on the RS-14	
	AD	Veterans
MAAS	0.48**	0.41**
FFMQ-O	0.28*	0.32**
FFMQ-D	0.38**	0.53**
FFMQ-A	0.39**	0.46**
FFMQ-NJ	0.28*	0.42**
FFMQ-NR	0.58**	0.67**







## Prediction of Resilience for Active Duty



	Unstandardized coefficients		Standardized coefficients		
Measure	B	Std. Error	Beta	t	p
Constant**	37.31	7.19		5.19	0.01
MAAS**	6.09	1.80	0.43	3.38	<b>0.01</b>
FFMQ-O	-0.27	0.23	-0.14	-1.17	0.25
FFMQ-D	0.19	0.20	0.11	0.10	0.33
FFMQ-A	-0.48	0.29	-0.26	-1.68	0.10
FMMQ-NJ	0.13	0.22	0.07	0.60	0.55
FFMQ-NR**	1.41	0.35	0.56	4.03	<b>0.01</b>

- 45% of the variance explained by mindfulness measures,  $R^2 = 0.45$ ,  $F(6, 77) = 9.65$ ,  $p < 0.0001$
- 41.5% of the variance explained by MAAS & FFMQ-NR,  $R^2 = 0.415$ ,  $F(2, 77) = 26.62$ ,  $p < 0.01$ .





# Prediction of Resilience for Veterans



	Unstandardized coefficients		Standardized coefficients		
Measure	B	Std. error	Beta	t	p
Constant	15.41	6.62		2.33	0.02
Age	0.05	0.09	0.03	0.47	0.64
Education	1.17	1.08	0.07	1.09	0.28
Time-in-service	0.13	0.13	0.07	1.02	0.31
MAAS	-0.26	1.70	-0.02	-0.15	0.88
FFMQ-O	0.07	0.19	0.02	0.34	0.73
FFMQ-D*	0.37	0.18	0.16	2.10	<b>0.04</b>
FFMQ-A	0.32	0.24	0.14	1.30	0.19
FFMQ-NJ	0.10	0.17	0.04	0.60	0.55
FFMQ-NR**	1.49	0.24	0.47	6.34	<b>0.01</b>

- 53% of the variance explained by demographics, total score on the MASS, and scores on the FFMQ-D and NR subscales,  $R^2 = 0.53$ ,  $F(9, 153) = 18.15$ ,  $p = 0.01$
- 50.0% of the variance explained by FFMQ-Describe & Non-reactivity,  $R^2 = 0.50$ ,  $F(2, 155) = 76.43$ ,  $p < .01$



# DISCUSSION



## Higher trait resilience for AD than for Veterans

- Presence of security and comradery among AD military service members may bolster personal resilience
- Increased military attention to personal resilience, wellness, & prevention
- Time on AD was significantly positively associated with scores on measures of mindfulness, while age was not significantly correlated with scores on measures of trait mindfulness when controlling for time on AD
- Although age, education, and time-on-active duty were significantly associated with veteran's scores on the RS-14, they were not found to significantly predict scores on the RS-14.





# DISCUSSION



## Supported Hypotheses:

- There will be a positive correlation between Resilience and Mindfulness.
- All measures of mindfulness (MAAS and all 5 Facets of Mindfulness were correlated with Resilience Scores)

## Partially Supported Hypotheses:

- Aspects of mindfulness, specifically observing and non-reactivity to inner experience, will significantly predict participants total scores on a measure of Resilience.

➤ MAAS

➤ Non-Reactivity

Active Duty



➤ Describe

➤ Non-Reactivity

Veterans







# DISCUSSION

## Non-reactivity

the ability to be aware of internal experiences (including emotions) without automatically reacting to them

### Mindful Non-Reactivity associated with:

- Lower symptoms of PTSD
- Less tendency to ruminate
- Greater ability to manage negative emotions





# DISCUSSION



- **Resilience – Mindfulness**

- **Mindfulness Intervention**

- In-person 8 wk MBSR = decreases in:

- PTSD symptoms
- Inattention
- Stress
- Anxiety
- Daytime Sleepiness
- Pain



- In-person or Virtual World 8 wk Mindfulness Training = increases in:
  - Self-Compassion (self-kindness, perception of common humanity, mindfulness)
  - Focused attention
  - Use of Emotional Support



## FINDINGS SUGGEST



- **1) Teaching mindfulness meditation, may benefit active duty and veteran populations by increasing their ability to 'bounce back' from significant exposure to high stress situations**
- **2) Individual differences occur in mindfulness and resilience**
- **3) The characteristics of resilience may differ according to career and life stages**
- **4) Improving individual resilience may strengthen the resilience of individuals and of a community to deal with tragedy and disasters, helping them to recover more quickly**
  - Teaching mindfulness meditation to first responders and others involved in disaster management may assist in increasing their trait resilience and improving performance during response to environmental and man-induced tragedy
  - Teaching mindfulness meditation to individuals suffering from the residual 'fall-out' of tragedy, even post-exposure, may assist in their recovery



# Questions?

Optimize  
Performance

Valerie Rice:  
210-221-2007

Thanks to US Military & Veterans