

Predictors of Suicide Risk in Iraq and Afghanistan Veterans

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Risk of Suicide Among Veterans

- Prior to 2001 Veteran suicide rates comparable to general population
- 2001-2009 annual risk of death by suicide per 100,000:
 - US overall: 11-12
 - US military Veterans: 39
- Are recent Veterans at greater risk?

- **VA/DoD definitions by period of service:**
 - » World War II: 1941-46
 - » Korea: 1950-55
 - » Post-Korean: 1955-61
 - » Vietnam: 1961-75
 - » Post-Vietnam: 1975-90
 - » Gulf War: 1990-present
 - OEF/OIF/OND: deployed to combat zone
 - OEF/OIF/OND = 000

OOO and Risk of Suicide

- Higher risk vs. previous eras
- Not clearly linked to deployment history
 - Relatively crude analyses to date
- Highest if psychiatric symptoms/diagnoses present
- >50% of OOO Veterans accessing VHA 2002-14 received psychiatric diagnosis
- About 1/3 of OOO Veterans access VHA
 - Lower suicide rates for those who do, especially women

Gradus et al., 2013; Hoffmire et al., 2015; Hyman et al., 2012; Ilgen et al., 2012; Kang et al., 2015; Lemaire & Graham, 2011; VA, 2015

Psychiatric Symptoms

- Most common diagnoses among OoO Veterans:
 - PTSD (21%)
 - Mixed evidence about risk of suicide independent of depression
 - MDD (17%)
 - Heightened risk of suicidal ideation and death by suicide

Guerra & Calhoun, 2011; Ilgen et al., 2012; Lemaire & Graham, 2011; Pietrzak et al., 2010, 2011

Other Risk Factors

- Aggression common among OOO Veterans with PTSD
- Aggression generally associated with suicidality
- Few studies of this link among OOO Veterans
 - One study suggests association with probability of SI

Brezo et al., 20016; Connor et al., 2001; Elbogen et al., 2010; Hellmuth et al., 2012; Jakupcak et al., 2007; O'Donnell et al., 2015

Protective Factors

- Strengths that mitigate against risk
- Social, environmental, individual
- Resilience
 - Inversely associated with risk of SI
 - Little previous work with OOO Veterans, though a recent 2-year study suggests it protects against SI occurrence and chronicity
 - Also protective against PTSD

Green et al., 2010; Nock et al., 2013;
Pietrzak et al., 2011; Shea et al., 2012;
Smith et al., 2016; Youssef et al., 2013;
Wisco et al., 2014

Current Study

- Aim: assess impact of risk (depression, PTSD, aggression) and protective (resilience) factors on suicide risk in VHA-utilizing OOO Veterans
- Hypotheses:
 - Depression → increased risk
 - PTSD → increased risk
 - Aggression → increased risk
 - Resilience → decreased risk

Secondary analysis of eScreening Study data collected 2012-13 at VA San Diego

Sample: Iraq and Afghanistan Veterans enrolling for services at VA San Diego Healthcare System (N = 366) who completed CSRA within 6 months of enrollment

Self-report measures

- **PTSD:** the PTSD Checklist – Civilian Version (PCL-C)
- **Depression:** Patient Health Questionnaire 9 (PHQ-9)
- **Aggression:** Retrospective Overt Aggression Scale (ROAS)
- **Resilience:** Connor-Davidson Resilience Scale 10-item (CD-RISC)
- Demographics and military experiences (e.g., combat experiences)

Blanchard et al., 1996; Campbell-Sills & Stein, 2007; Kroenke et al., 2001; Sorgi et al., 1991

Comprehensive Suicide Risk Assessment (CSRA)

- Brief, standardized, clinician-administered interview
- Risk factors (including previous attempts, family history, SUD, pain, psychosocial distress)
- Protective factors (including social support, treatment access and engagement, rapport with clinician, coping skills)
- Based on interview and other clinical data, clinician rates level of risk on ordinal scale
 - » Nil
 - » Low
 - » Moderate/Ambivalent
 - » High/Imminent

Doran et al., in press

Statistical analysis:

- **Suicide risk:** few rated moderate (3%) or high (.3%); recoded as low or elevated suicide risk
- **Logistic model** of suicide risk including PTSD, depression, aggression, resilience as predictors
- **Demographic and military** variables included as covariates if associated with predictor/outcome variables

Demographic, Clinical, and Military Variables

Variable	Low Risk (n = 270)	Elevated Risk (n = 96)	Total (n = 366)
Age	31.5 (7.8)	30.4 (7.0)	31.2 (7.6)
Male	84%	88%	85%
White	61%	59%	61%
Deployments	1.8 (1.2)	2.0 (1.4)	1.9 (1.3)
Combat exposure	73%	81%	75%
Combat injury	10%	12%	11%
PCL-C	41.7 (16.4)	56.0 (15.5)	45.4 (17.3)
PHQ-9	10.5 (5.7)	16.4 (5.7)	12.0 (6.2)
ROAS	11.7 (17.7)	30.6 (29.5)	16.7 (22.9)
CR-RISC-10	26.9 (7.6)	20.9 (7.9)	25.3 (8.1)

Correlations Among Predictor Variables

	PCL-C	PHQ-9	ROAS	CD-RISC-10
PCL-C	--			
PHQ-9	0.72**	--		
ROAS	0.56**	0.51**	--	
CD-RISC-10	-0.44**	-0.51**	-0.37**	--

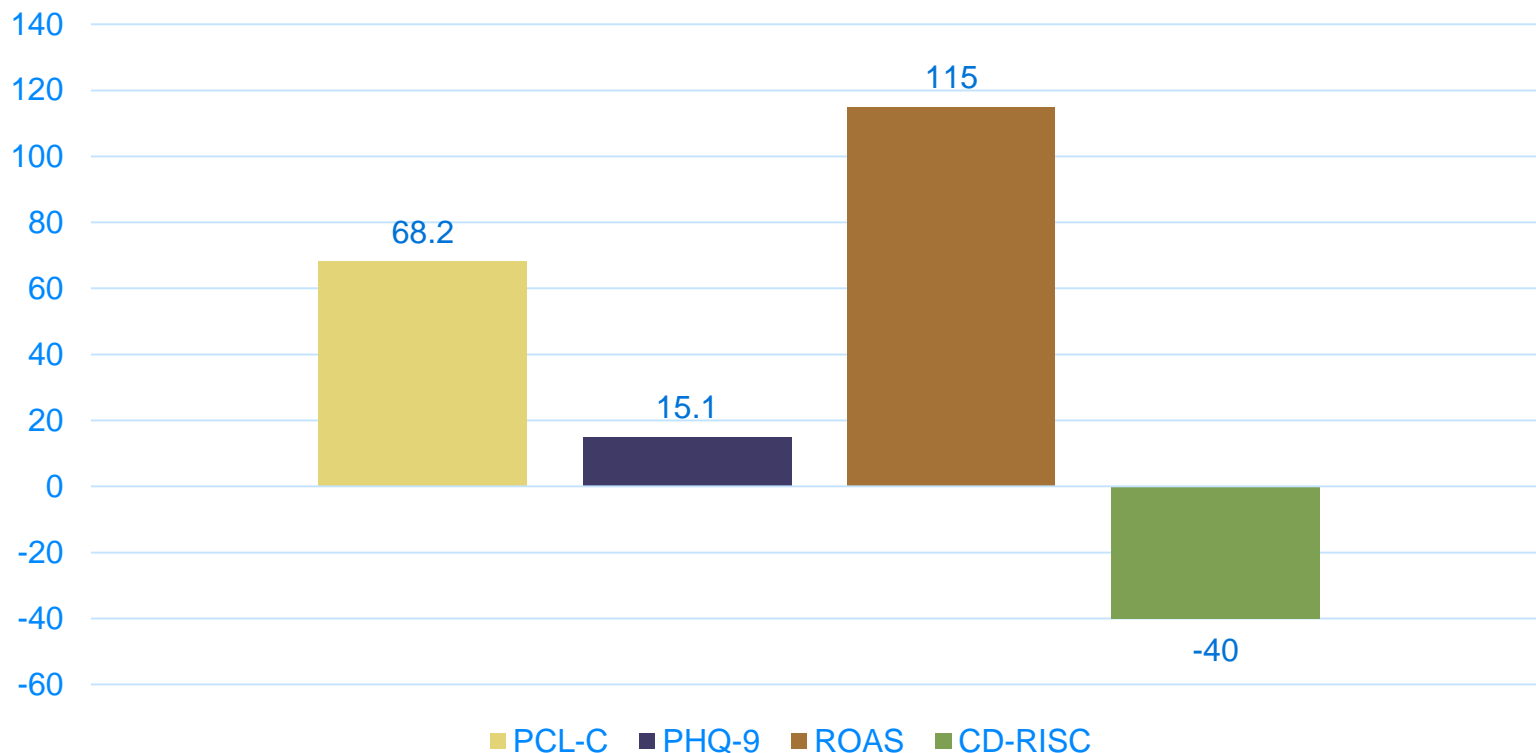
Preliminary analyses

- **Female Veterans reported less depression**
 - » PHQ-9: 10.8 vs. 12.2, $p = .04$
- **Younger Veterans reported more aggression**
 - » $R = .09$, $p = .04$
- **Combat exposure, injury associated with greater depression, PTSD, aggression**
 - » PHQ-9: 11.9 vs. 13.0; PCL-C: 45.7 vs. 50.9; ROAS: 6.1 vs. 7.4, $ps < .05$
- **More deployments associated with report of more PTSD symptoms**
 - » $R = .10$, $p = .03$

Logistic model of suicide risk

Variable		Coeff.	Std. Err.	z	OR
Covariates	Age	-0.06	0.02	-2.92	0.94**
	Sex	-0.11	0.36	-0.27	0.90
	Combat Exposure	-0.04	0.32	-0.13	0.96
	Combat Injury	0.23	0.51	0.55	1.25
	Deployments	0.20	0.14	1.73	1.22
Predictors	PCL-C	0.01	0.01	0.97	1.01
	PHQ-9	0.10	0.03	3.41	1.11**
	ROAS	0.05	0.02	2.33	1.05*
	CD-RISC	-0.05	0.02	-2.62	0.95**

Change in Odds of Elevated Suicide Risk with 1 SD Increase in Predictor



Summary of findings

- Predictors of suicide risk included:
 - Younger age (6% reduction for each additional year)
 - Depression symptoms (68% increase for each SD increase in PHQ)
 - Results similar when item 9 excluded
 - Aggression (115% increase for each SD increase in ROAS)
 - Resilience (40% reduction for each SD increase in CD-RISC)

- Summary:
 - Suicide risk linked to depression, aggression, lower resilience
 - Suicide risk not significantly associated with PTSD symptoms unless depression excluded
 - Suicide risk not linked to deployments, combat exposure or injury
- Implications:
 - Consistent with earlier studies using less comprehensive assessments of suicide risk
 - Suggests brief screening measures (PHQ-9, ROAS) may be useful in identifying high-risk Veterans even without self-reported SI

- Study strengths
 - New 000 Veterans not necessarily seeking MH treatment
 - Comprehensive measure of risk
- Limitations:
 - Small, cross-sectional study
 - Relative rarity of suicidal behavior precluded evaluation of other outcome measures
- Future directions
 - eScreening will improve ability to conduct longitudinal studies of suicide risk

Thank you!

Questions?