Evidence-based Suicide Assessment

Guidance for Clinicians and Policy Makers

MILITARY SUICIDE RESEARCH CONSORTIUM

Peter M. Gutierrez, Ph.D.

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Disclaimer

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Disclosures

Dr. Gutierrez holds the copyright on the book in which two of the measures supported by the current findings are published (SHBQ and SBQ-R) and therefore could earn royalties on book purchases.

Poll Question #1

What is your primary role in VA?

Student, trainee, or fellow

Clinician

Researcher

Administrator, manager, or policy-maker

Other

Background/Rationale

- How can I best assess this individual in order to predict if they will experience suicide ideation or attempts in the near future?
- To date, the field has been unable to provide a definitive answer to this question.
- Evidence-based approaches to risk assessment show promise as an important component of overall efforts to reduce suicide rates.

Poll Question #2

How often have you worried a Veteran you are working with might die by suicide?

- Never
- Once or twice per year
- Once or twice per month
- Weekly

Background

- Purpose of the study was testing predictive validity of suicide assessment measures, not screening tools
- Study was initiated before VA's implementation of CSRE

Study Aim

1. **Establish which of the measures best predict future suicidal thoughts and attempts.**

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Design and Methodology

- ## Where was this study conducted?
    - A large U.S. Naval Medical Center in the Southeastern U.S.
    - A large U.S. Army base in the Southern U.S.
- ## Who was eligible?
    - Any U.S. service member either referred to or seeking services from a **military** emergency department, outpatient behavioral health clinic, or inpatient psychiatric unit for concerns related to suicide risk.
        - Most recruited from **inpatient psychiatry**
        - All deemed **at risk** of suicide prior to recruitment
- ## What were the study procedures?
    - Willing participants were administered the baseline assessment then re-contacted in three months for follow-up.

Measures

Baseline assessments:

- Columbia-Suicide Severity Rating Scale (C-SSRS)
- Self-Harm Behavior Questionnaire (SHBQ)
- Suicidal Behaviors Questionnaire-Revised (SBQ-R)
- Beck Scale for Suicide Ideation (BSS)

Follow-up assessments:

- Suicide Attempt Self-Injury Count (SASIC)
- Treatment History Interview – Short Form (THI)
- Adult Suicidal Ideation Questionnaire (ASIQ)

Measures

- The version of the C-SSRS used was the full measure, not screener used in CSRE
- All of the measures in this protocol differ from those in CSRE

Participant’s Experience

- This study was completely **voluntary**.
- Active Duty personnel did not receive compensation for their participation.
- The Site Assessors (SA) that administered the assessments were licensed mental health providers.
- A safety protocol was in place to ensure individuals reporting imminent risk or new SI received care immediately.

Who participated?

- **1,044 U.S. military service members completed baseline measures**
- **758 (72.6%) completed the 3-month follow-up assessment**
- **Demographics:**

  Age, *M*(SD) = 24.95(6.02) years

  75.5% Male

  Race

  - 59.7% White/Caucasian,
  - 21.5% Black/African American
  - 0.8% Native American or Alaska Native
  - 3.9% Asian/Pacific Islander
  - 14.1% other

  17.8% Hispanic or Latino/a

  Years of Military Service, *M*(SD) = 4.42(4.89) years

  25.4% history of combat experience

Who participated?

Service Breakdown	
Army (Active Duty)	36.4%
Army (National Guard)	0.1%
Air Force (Active Duty)	3.0%
Air Force (National Guard)	0.1%
Navy (Active Duty)	54.8%
Navy (Reserves)	0.2%
Marine Corps (Active Duty)	3.9%
Coast Guard (Active Duty)	1.4%
Coast Guard (Reserves)	0.1%

Poll Question #3

What percentage of the time do you expect we could predict who will have thoughts about suicide or will make an attempt?

- Less than 20%
- 20-50%
- 51-75%
- More than 75%

Correctly classifying future suicide thoughts and attempts

- Ideation: Individually, the SBQ-R, BSS, SHBQ total score, C-SSRS Suicidal Ideation Severity, and C-SSRS Suicidal Behaviors subscales all performed better than chance.
- Suicide Attempt: Individually, the SBQ-R, BSS, and SHBQ total score all better than chance.

Results from receiver operating characteristic analyses

	Suicidal Ideation at 3-Months				
	AUC	95% CI	Cutoff	Sensitivity	Specificity
Measure					
BSS Total Score	0.640	0.576, 0.704	5	.63	.61
SBQ-R Total Score	0.642	0.576, 0.708	11	.60	.61
SHBQ Total Score	0.655	0.578, 0.732	24	.63	.61
C-SSRS Suicidal Ideation Severity	0.623	0.556, 0.690	4	.75	.51
C-SSRS Intensity of Ideation	0.610	0.540, 0.680	15	.59	.54
C-SSRS Suicidal Behaviors	0.615	0.538, 0.692	2	.55	.60
	Suicide Attempts at 3-Months				
	AUC	95% CI	Cutoff	Sensitivity	Specificity
BSS Total Score	0.668	0.597, 0.739	7	.65	.65
SBQ-R Total Score	0.657	0.583, 0.730	11	.58	.61
SHBQ Total Score	0.650	0.563, 0.736	23	.62	.59

Predicting future suicide thoughts and attempts

- **Ideation: In models using all scores, only the SHBQ total score was a significant predictor.**
  - B = .042, SE = .018, p = .017, OR = 1.043

- **Suicide Attempt: In models using all scores, the BSS and C-SSRS Suicidal Behaviors subscale were significant predictors.**
  - **BSS** B = .051, SE = .025, p = .037, OR = 1.053
  - **C-SSRS** B = .625, SE = .192, p = .001, OR = 1.869

Predicting future suicide thoughts and attempts (SHBQ subscales)

- **Ideation: In models using all scores, only the SHBQ NSSI subscale was a significant predictor.**
  - $B = .059$, $SE = .029$, $p = .043$, OR = 1.061

- **Suicide Attempt: In models using all scores, the BSS and C-SSRS Suicidal Behaviors subscale were significant predictors.**
  - **BSS** $B = .042$, $SE = .018$, $p = .017$, OR = 1.043
  - **C-SSRS** $B = .799$, $SE = .200$, $p < .001$, OR = 2.222

Predicting future suicide thoughts

Among participants reporting an attempt at baseline, utilizing C-SSRS lethality scores (most recent, most lethal, and first/initial)

- **Ideation: Only BSS significantly predicted**
  - Using C-SSRS Most Recent *B* = .125, *SE* = .061, *p* = .040, OR = 1.133
  - **C-SSRS Most Lethal** *B* = .147, *SE* = .072, *p* = .041, OR = 1.159
  - C-SSRS Initial/First *B* = .144, *SE* = .070, *p* = .039, OR = 1.155

- **Suicide Attempt: None**

Poll Question #4

Based on these results, which measure would you select as the most useful?

- C-SSRS
- SHBQ
- BSS
- SBQ-R

Utility for predicting ideation

- Each measure useful over the three-month follow-up period, although none were exceptionally good predictors
- Clinicians can choose the easiest to administer and score
  - Refer to derived cut-offs of BSS = 5, SBQ-R = 11, SHBQ Total = 24, C-SSRS Suicidal Ideation Severity = 4, C-SSRS Intensity of Ideation = 15, and C-SSRS Suicidal Behaviors = 2 for interpretation guidance

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Utility for predicting suicide attempts

- **C-SSRS not the best option when used alone**
- **Clinicians can select from the other three based on ease of use**
  - Cut-off scores of BSS = 7, SBQ-R = 11, and SHBQ Total = 23 guide interpretation

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Important considerations

- Weighing all the evidence there is no clear "winner"
- Should consider ease of administration, cost of the measure, clear scoring and interpretation guidelines, and other practical factors
- Overall explained variance in both ideation and attempts relatively small

Conclusions

- Evidence not strong enough to tie specific clinical actions (e.g., inpatient hospitalization) to a cut-off score or even range of scores
- These measures may assist clinicians empirically track changes/improvement in at-risk patients over time
    - When scores move below cut-off and stay there risk should be meaningfully lower

Conclusions

It is important to have objective measures to track changes over time. No single measure is sufficient for treatment planning, but should be used as part of a comprehensive approach. None of these measures will help with risk stratification as does the CSRE. And none are VA standard of care.

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FOR PROVIDERS WHO SERVE VETERANS

Why worry alone?

The Suicide Risk Management Consultation Program provides free consultation for any provider, community or VA, who serves Veterans at risk for suicide.

Common consultation topics include:

- Risk Assessment
- Conceptualization of Suicide Risk
- Lethal Means Safety Counseling
- Strategies for How to Engage Veterans at High Risk
- Best Practices for Documentation
- Provider Support after a Suicide Loss (Postvention)

#NeverWorryAlone

To initiate a consult email:

SRMconsult@va.gov

www.mirecc.va.gov/visn19/consult

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Thank you for your attention
Comments/Questions?

peter.gutierrez@va.gov

www.msrc.fsu.edu

Selected References

Beck, A., & Steer, R. (1991). Manual for Beck Scale for Suicidal Ideation. New York: Psychological Corporation.

Carter, G., Milner, A., McGill, K., Pirkis, J., Kapur, N., & Spittal, M. J. (2017). Predicting suicidal behaviours using clinical instruments: Systematic review and meta-analysis of positive predictive values for risk scales. *The British Journal of Psychiatry, 211,* 1-9.

Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., … Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. *Psychological Bulletin, 143(2),* 187.

Gutierrez, P. M., Joiner, T., Hanson, J., Stanley, I. H., Silva, C., & Rogers, M. L. (2019). Psychometric properties of four commonly used suicide risk assessment measures: Applicability to military treatment settings. *Military Behavioral Health, 7(2),* 177-184.

Gutierrez, P. M., Osman, A., Barrios, F. X., & Kopper, B. A. (2001). Development and initial validation of the Self-Harm Behavior Questionnaire. *Journal of Personality Assessment, 77,* 475-490.

Linehan, M. M. (1996). *Treatment History Interview (THI)*. Available Department of Psychology, University of Washington, Seattle, WA.

Linehan, M. M., & Comtois, K. A. *Lifetime parasuicide history*. (1996). Available Department of Psychology, University of Washington, Seattle, WA.

Linehan, M. M., Comtois, K. A., Brown, M. Z., Heard, H. L., & Wagner, A. (2006). Suicide Attempt Self-Injury Interview (SASII): Development, reliability, and validity of a scale to assess suicide attempts and intentional self-injury. *Psychological Assessment, 18,* 303-312.

Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and non-clinical samples. *Assessment, 8,* 443-454.

Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., … Mann, J. J. (2011). The Columbia-Suicide Severity Rating Scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *American Journal of Psychiatry, 168(12),* 1266-1277.