Evaluation of Existing Psychometric Data on the Columbia-
Suicide Severity Rating Scale (C-SSRS)

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Statement of the Problem

The C-SSRS is being promoted as the first-line suicide risk assessment tool. What is the evidence in support of its use in a clinical setting, not as a population screening tool?

Summary of the relevant literature

The C-SSRS is based on the Columbia Suicide History form (CSHF; Oquendo, Halberstam, & Mann, 2003), which was developed as a classification matrix for self-directed violence recorded in medication trials. It was originally used as a chart extraction tool. Subsequently, the form was modified to be used as an assessment guide for prospective research. It assesses the severity of an individual's thoughts about suicide (ordinal scale), the intensity of one's thoughts about suicide (ordinal scale), actual self-directed violence engaged in (nominal scale), and the medical lethality of those behaviors (ordinal scale). Administration and scoring instructions are not provided on the instrument and there is no manual, although training on its use is available from the developer. A disclaimer on the instrument states "presence of suicidality depends on clinical judgment."

Support for reliability and validity of the C-SSRS is provided by data from three clinical trials, which were not specifically designed as tests of the psychometric properties of the instrument (Posner et al., 2011). Data were drawn from a multi-site study on treatment for adolescents following a suicide attempt (study 1; Vitiello et al., 2009; Stanley et al., 2009; Brent et al., 2009; n = 124); a multi-site drug trial of escitalopram for treatment of depression in 312 adolescents which excluded those deemed at risk of suicide (study 2; Emslie, Ventura, Korotzer, & Tourkodimitris, 2009); and a third multi-site study which looked at the ability of emergency department providers to correctly classify self-directed violence (study 3; unpublished data) in a sample of 259 adults (i.e., > 18 years old). Different combinations of psychometric properties are reported in the Posner et al. article for each of the subscales of the C-SSRS.

For the *severity of ideation subscale* study 1 provided data on convergent validity with the Scale for Suicide Ideation (SSI; Beck, Brown, & Steer, 1997), Montgomery-Åsberg Depression Rating Scale (MADRS; Fantino & Moore, 2009) item 10, and the Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996) item 9. Study 2 provided data on convergent validity with the Suicidal Ideation Questionnaire-Jr (SIQ-JR; Reynolds, 1988). Study 3 provided data on convergent validity with the SSI current and worst point ratings. Divergent validity data are only available from study 1 which utilized items 4, 5, 7, 11, and 12 from the MADRS and BDI items 15, 16, 18, and 20. Predictive validity data are available from study 1 which used items 4 and 5 from the SSI, the CSHF, and independent ratings from a suicide evaluation board. Study 3 provided data on predictive validity using items 4 and 5 from the SSI. Incremental validity data

are available from study 1 which used the CSHF and suicide evaluation board ratings. Study 2 provided incremental validity data using the SIQ-JR. Sensitivity to change data are only available from study 1 which used the SSI current and worst point ratings, CSHF, and suicide evaluation board ratings. Internal consistency is only available from study 1 which used the CSHF. Sensitivity and specificity data are only available from study 1 which used suicide evaluation board ratings.

For the *intensity of ideation subscale* study 1 provided data on convergent validity using the SSI current and worst point ratings, MADRS item 10, and BDI item 9. Study 2 provided convergent validity data using the SIQ-JR and study 3 used the SSI current and worst point ratings. Divergent validity data are only available from Study 1 which used items 4, 5, 7, 11, and 12 from the MADRS and BDI items 15, 16, 18, and 20. No predictive validity data are available for this subscale. Incremental validity data are available from study 1 which used the SSI current and worst point ratings and study 2 which used the SIQ-JR. Sensitivity to change data are available from all three studies utilizing the C-SSRS. No internal consistency, sensitivity, or specificity data are available.

For the *suicidal behavior subscale* no convergent validity data are available. Divergent validity data are available from study 1 and study 3 which both used the CSHF. No predictive validity data are available. Incremental validity data are provided by studies 1 and 3 using the CSHF. No sensitivity to change data are available. Internal consistency data are available from studies 1 and 3 using the CSHF. No data are available on sensitivity and specificity.

For the *suicidal behavior lethality subscale* only convergent validity data are available. It is provided by data from study 3 using the CSHF.

To summarize, complete psychometric properties are only available for the *severity of ideation subscale* and only based on adolescent treatment samples (i.e., treatment of suicidality or depression). Incremental validity data for the *severity of ideation subscale* is available for adolescents relative to the CSHF, expert evaluations, and SIQ-JR; for the *intensity of ideation subscale* it is available for adolescents relative to the SSI (current and worst point) and the SIQ-JR; for the *suicidal behavior subscale* it is available for adolescents and adults relative to the CSHF; it is not available for the *suicidal behavior lethality subscale*.

Gaps in the literature

Before the C-SSRS can be considered for use in DOD clinical settings, complete psychometric data should be gathered from relevant adult samples. In particular, predictive and incremental validity should be assessed for all subscales of the measure.

Recommendations

The C-SSRS is a promising assessment tool which requires more study before it can be recommended for use outside research settings. To answer the question of what should be considered as the first line clinical risk assessment tool, an independent research group should minimally conduct a prospective study pitting the C-SSRS against other valid and reliable

measures of the spectrum of self-directed violence. The CSHF, from which the C-SSRS was derived, should not be a criterion measure in such a study as was done in the Posner et al. study.

Next steps

Therefore, the co-directors of the Military Suicide Research Consortium intend to design a study evaluating the C-SSRS head-to-head with other existing valid and reliable measures. These measures will be administered to service members receiving care in DOD inpatient psychiatry units, behavioral health clinics, and emergency departments. Participants will be followed for a period of six months in order to detect subsequent self-directed violence. Follow-up data will come from the DODSER and review of clinical records at the treatment facilities in which participants were receiving care when enrolled in the study. Baseline assessment data will be used to predict subsequent behaviors. The purpose of this study will not be to evaluate all possible psychometric properties of the C-SSRS and the other assessment tools utilized, but rather to focus on the most clinically relevant statistics – predictive and incremental validity, sensitivity, and specificity.

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