CLINIC

MAYO Patient Health Questionnaire-9 Modified (PHQ-9M) Item 9 and Children's Depression Rating Scale-Revised (CDRS-R) Item 13 correlate with Columbia-Suicide Severity Rating Scale (C-SSRS) for Suicide Risk

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Background

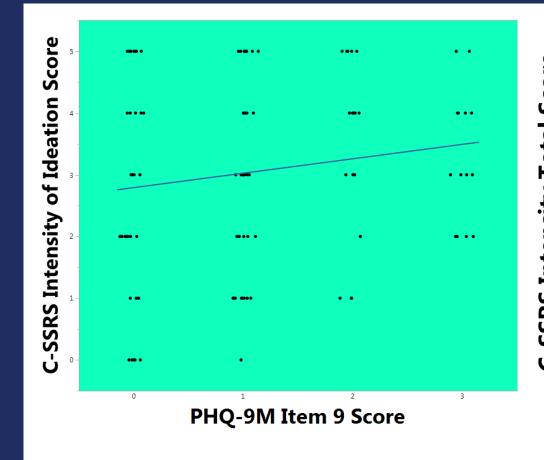
- Suicide is a significant public health problem around the world. It is the third leading cause of death among children and adolescents in the United States, including those aged 10 to 19 years. Suicidality is on a continuum that includes thoughts revolving around death (passive and active suicidal ideation), suicide attempts, and fatal completion of suicide.
- Psychiatric illness, including depression, has strong associations with suicide. The 9-Item Patient Health Questionnaire Modified (PHQ-9M) is a tool used to assist the clinician in screening for depression, quantifying depression symptoms, and monitoring severity in primary care and psychiatric clinical practice. Item 9 of the PHQ-9M has been used as a brief screening measure for suicide risk. It specifically asks, over the last 2 weeks, "How often have you had thoughts that you would be better off dead, or of hurting yourself in some way?"
- Children's Depression Rating Scale-Revised (CDRS-R) has become the most commonly used rating scale for assessing severity of depression and change in depressive symptoms for clinical trials in children and adolescents with depression. The CDRS-R, which was based on the adult Hamilton Depression Rating Scale, is a 17-item scale with items rated on an ordinal scale of 1 to 5 or 1 to 7 by a clinician via interviews with the child and parent. Item 13 of the CDRS-R specifically investigates suicidality with a rating of 1 being "understands the word suicide, but does not apply the term to himself/herself" and a rating of 7 being "has made a suicide attempt within the last month or is actively suicidal."
- The Columbia-Suicide Severity Rating Scale (C-SSRS) is a valid and reliable questionnaire used to distinguish the domains of suicidal ideation and suicidal behavior. Four subscales are measured: suicidal ideation, intensity of ideation, suicidal behavior, and lethality. For this study, we used C-SSRS intensity of ideation scores, total intensity scores, and composite scores.
- Ideal screening measures should be short, easily comprehended by patients, cost effective, and simple to score with high validity and reliability. Despite the wide use of the PHQ-9M in clinical settings, there is minimal evidence regarding its validity as a screening tool for suicidal risk. Therefore, the aim of this study is to compare scores from suicidality measures of PHQ-9M (Item 9) and CDRS-R (Item 13) with C-SSRS intensity scores.

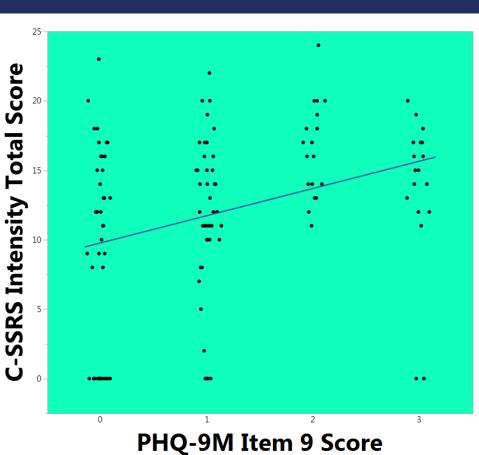
Methods

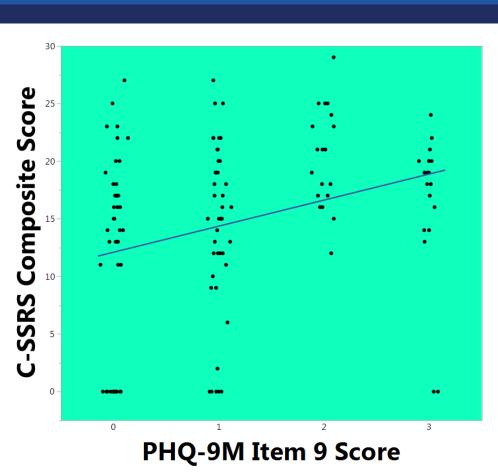
Subjects: Participants were 165 adolescent patients aged 13 to 18 years with a current major depressive episode of unipolar/bipolar depression based on a clinical interview and semi-structured interview with the Kiddie Schedule for Affective Disorders and Schizophrenia—Present and Lifetime Version (KSADS-PL) rating scale. Study subjects were recruited from Olmsted and Mower (through Mayo Health Systems) County, MN, and surrounding areas. Existing infrastructure in the Mayo Clinic Depression Center, Child and Adolescent Mood Disorders Clinic, and Austin Mayo Healthy Systems Child and Adolescent Psychiatry (Dr. Orth) facilitated the recruitment.

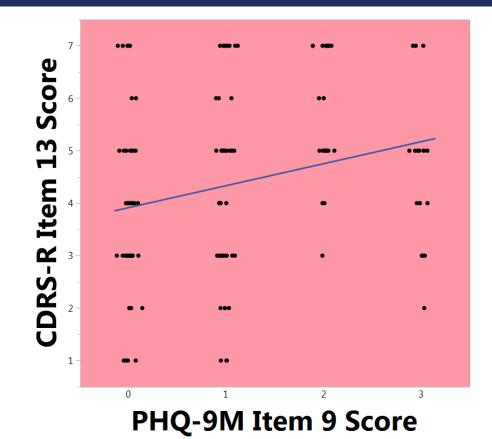
Procedure: The scores from PHQ-9M Item 9 and CDRS-R Item 13 were compared with C-SSRS intensity of ideation, total intensity, and composite scores using Pearson correlation. Additionally, scores from Item 9 of PHQ-9M and Item 13 of CDRS-R were also compared using the Pearson correlation.

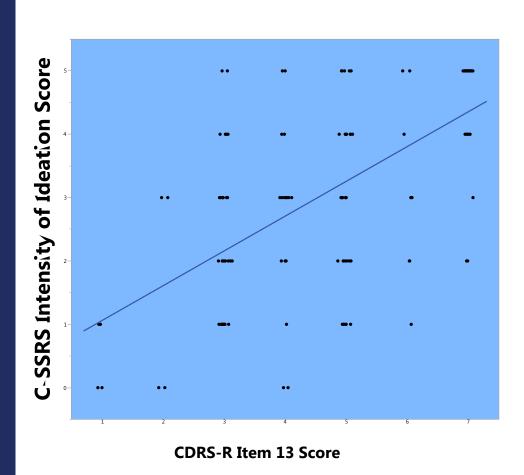


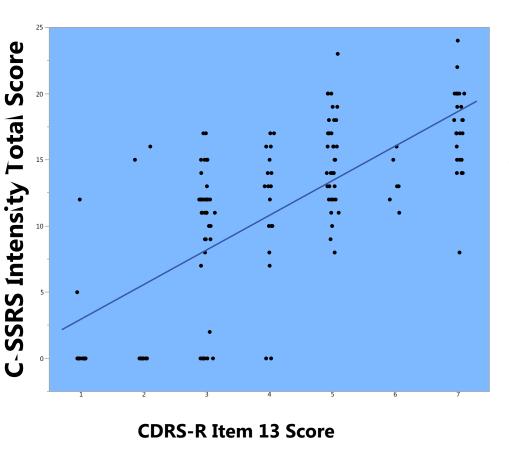












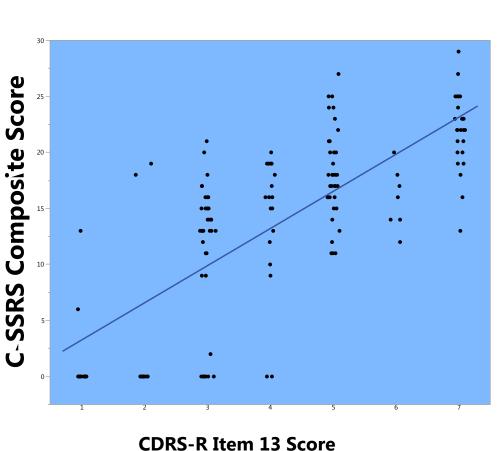


Figure 1. PHQ-9M Item 9 and C-SSRS Correlation		
C-SSRS correlation and	Pearson correlation	P-value
PHQ-9M Item 9		
C-SSRS Intensity of Ideation	0.155	0.045
C-SSRS Intensity Total	0.314	<0.001
C-SSRS Composite	0.299	<0.001

Figure 2. CDRS-R Item 13 and C-SSRS Correlation			
C-SSRS correlation and	Pearson correlation	P-value	
CDRS-R Item 13			
C-SSRS Intensity of Ideation	0.600	<0.001	
C-SSRS Intensity Total	0.730	<0.001	
C-SSRS Composite	0.756	<0.001	
o corto composito	0.100	0.001	
Figure 3. PHQ-9M Item 9 and CDRS-R Item 13 Correlation			

PHQ-9M and CDRS-R 13	Pearson correlation	P-value
Correlation	0.247	0.00

Conclusions

- The PHQ-9M Item 9 and CDRS-R Item 13 scores both showed statistically significant positive correlation with C-SSRS intensity of ideation, total intensity, and composite scores. However, CDRS-R Item 13 showed a stronger correlation compared to PHQ-9M Item 9.
- The PHQ-9M Item 9 and CDRS-R Item 13 scores showed statistically significant positive correlation with each other but to a lesser extent.
- Thus, suicidality measures of CDRS-R and PHQ-9M can potentially contribute to assessing suicidal risk and be helpful as an outcome measure to monitor treatment response in various clinical settings.
- Further studies comparing sensitivity and specificity of suicidality items of PHQ-9M and CDRS-R are required for effective implementation in clinical practice

References

- 1. Kennebeck, S., & Bonin, L. (2018, October). Suicidal behavior in children and adolescents: Epidemiology and risk factors. UpToDate.
- 2. Mayes, T. L., Bernstein, I. H., Haley, C. L., Kennard, B. D., & Emslie, G. J. (2010). Psychometric Properties of the Children's Depression Rating Scale-Revised in Adolescents. Journal of Child and Adolescent Psychopharmacology, , 513-516.
- 3. Na, P. J., Yaramala, Y. S., Kim, J. A., Kim, H., Goes, F. S., Zandi, P. P., et al. (2018). The PHQ-9 Item 9 based screening for suicide risk: a validation study of the Patient Health Questionnaire (PHQ)-9 Item 9 with the Columbia Suicide Severity Rating Scale (C-SSRS). Journal of Affective Disorders, 34-
- 4. Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., et al. (2011). The Columbia-Suicide Severity Rating Scale: Initial Validity and Internal Consistency Findings From Three Multistate Studies with Adolescents and Adults. *Am J Psychiatry*, 1266-1277.
- 5. Poznanski EO, Mokros HB. Children's Depression Rating Scale, Revised (CDRS-R) Manual. Los Angeles, CA: Western Psychological Services; 1995.
- 6. Spitzer RL, Williams JBW, Kroenke K. (1999). Patient health questionnaire: PHQ modified and printed by J. Johnson (2002)