Evaluation of the Reliability and Validity of Two Clinician-Judgment Suicide Risk Assessment Instruments

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Abstract. *Background:* This study evaluates the psychometric properties and factor structure of two clinician-judgment suicide risk assessment instruments – the Suicide Assessment Checklist developed by Yufit and the other developed by Rogers. *Methods:* As an archival study, 85 client records were obtained through a university psychology clinic. *Results:* Internal consistency was high for only one subscale of the Yufit checklist after deleting items for factor analyses, whereas internal consistency was high for the overall Rogers checklist after deleting items. Interrater reliability was excellent for both instruments. Both checklists correlated with self-reported suicidality on the Personality Assessment Inventory. Preliminary analyses indicated that data from the Yufit checklist are unsuitable for factor analysis, whereas factor analysis of the Rogers checklist identified one depressive factor. *Conclusions:* These findings provided evidence supporting the reliability and validity of the Rogers checklist. The findings also provided a good starting point for future research of the Yufit checklist.

Keywords: suicide, risk, assessment, checklists, clinician judgment

Introduction

The goal of suicide risk assessment is to discriminate among the existing suicidal symptoms (Wingate, Joiner, Walker, Rudd, & Jobes, 2004). Suicide risk assessment is not meant to predict actual acts of suicide, but rather to determine whether a patient is at elevated risk for suicide. Additionally, risk assessment is supposed to serve as a template for clinical management of crisis and treatment targets (Bryan & Rudd, 2006). These instruments can alleviate the personal and professional anxiety of the clinician in the risk assessment process (Glenn & Bongar, 2006). In short, the goal is to have an efficient, clear, and empirically supported method for assessing suicidal risk that provides guidelines to mental health care providers and serves as a benchmark against which the activities of clinicians can be evaluated in legal and other settings (Wingate et al., 2004).

An interaction of numerous risk and protective factors both external and internal to the individual contribute to suicide risk (Moscicki, 2001). Perhaps because of the unusually wide variability in the factors associated with suicide risk, many different instruments have been developed to assess suicide risk. However, there has been concern about the psychometric properties of these suicide assessment instruments as few studies have looked at their true reliability and validity (Rogers & Oney, 2004). The present study examines the psychometric properties of the Suicide Assessment Checklist developed by Yufit (SAC-Y; Yufit, 2003) and the Suicide Assessment Checklist developed by Rogers (SAC-R; Rogers, 1990). Both checklists are abbreviated as SAC and for the purposes of the present study; they will be referred to as SAC-Y and SAC-R, respectively.

Both the SAC-Y and the SAC-R are clinician-judgment suicide risk assessment instruments as the clinician completes them in the context of the intake interview and ongoing treatment. The intake interview and subsequent therapy sessions help identify the established suicide risk and protective factors (Goldstein, Black, Nasrallah, & Winokur, 1991). Although there are a large number of self-report suicide risk assessment instruments, there are relatively few measures based on clinician judgment.

Suicide Assessment Checklist – Yufit (SAC-Y; Yufit, 2003)

The SAC-Y (Appendix 1) was originally developed in 1989 and revised in 2003. It consists of 60 items empirically linked

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to suicide risk, which provide an estimate of the potential for future suicide attempts. The checklist is divided into 8 subscales: Suicide History, Psychiatric History, School/Job, Family, Societal, Personality/Behavior/Cognitive Style, Physical, and Interview Behavior. Responses to each of the 60 items are yes or no/uncertain. Most of the items have been assigned weights of +2 to +6 which are based on how often the item has been cited in published empirical research on suicide risk and the consensus among experienced therapists. Highly intercorrelated weighted items form a cluster, and when the weighted items are present the resulting cluster is given an additional weighted score. There are three such cluster scores, which add 60 points to the total score: Hopelessness/internalized anger/agitated depression, Time perspective, and Family psychopathology. The scores of all the items are added and the total score can range from 0 to 230. There has been no systematic investigation of the reliability and validity of the SAC-Y.

Suicide Assessment Checklist – Rogers (SAC-R; Rogers, 1990)

The initial version of SAC-R, the Crisis Line Suicide Risk Scale (CLSRS), was developed by Rogers and Alexander (1989) to assess and document emergency suicide risk. The development of the CLSRS was guided by the following considerations: (1) the need for a scale with a broad population focus, (2) the differential training and experience levels of emergency clinicians, (3) the need for a brief yet relatively comprehensive measure; and (4) the need for psychometric integrity. Rogers and Alexander (1994) outlined the following as the major objectives in the construction of the CLSRS: (1) to provide a semi-structured guide for the assessment interview, (2) to provide a standardized means of risk assessment that could inform the clinical decision process, and (3) to develop a measure that could provide clear documentation of the risk assessment protocol.

The title of the CLSRS was changed to Suicide Assessment Checklist (SAC) in 1990. The SAC-R is a 21-item clinician-rated checklist (Appendix 2). Part 1 of the SAC-R comprises 12 demographic and historical items, which have been assigned values based on prior research and agreement across expert judges. Part 2 comprises 9 psychological, psychosocial, and clinical items that have an empirically-determined relationship to suicide risk. These items are rated on a 5-point Likert scale. These 21 items yield a total score ranging from a minimum of 11 to a maximum of 108, whereby higher scores represent a higher suicide risk. Additionally, the SAC-R consists of two auxiliary items: "no suicide" contract (yes or no) and overall level of suicide risk. Thorough definitions and explanations of the terms are included to ensure consistent use of the checklist (see Appendix 3).

Rogers and Alexander (1989) examined the performance of the SAC-R in a study of 300 calls made to a suicide prevention organization. This preliminary investigation found adequate internal consistency, with a Cronbach's α of .74 (Cronbach, 1951). The SAC-R has been observed to have high test-retest reliability over a 4-week period (r = .82); high internal consistency (r = .81), with interitem correlations ranging from .18 to .66; and high interrater agreements (r = .84 for expert raters and r = .83 for volunteer raters) (Rogers & Alexander, 1994). Subsequently, Rogers, Lewis, and Subich (2002) examined the criterion, construct, and content validity of the SAC-R in a sample of 1,969 admissions to a psychiatric emergency crisis center. The total SAC-R score discriminated between three groups – involuntary inpatients, voluntary inpatients, and outpatients. The SAC-R total score was also able to discriminate between attempters, ideators, and nonsuicidal patients. The SAC-R has convergent validity with the conceptually similar items of the Beck Depression Inventory (BDI; Beck, 1970). Exploratory regression analyses suggested that the SAC-R accounts for greater variance in suicide risk at intake than does the BDI. Lastly, content-related validity investigation suggested that 19 of the 21 items of the SAC-R significantly contribute to the prediction of reasons of referral (suicide ideation, suicide attempts, or issues unrelated to suicide), and that 15 of the 21 items significantly contribute to the prediction of setting (home, voluntary inpatient, involuntary inpatient) that the individual is referred to. Thus, psychometric data on the SAC-R are promising.

Evidence of the psychometric properties of the SAC-Y and SAC-R would increase confidence in their usefulness in assessing suicide risk and for comparing the effects of various treatments for suicidality. In light of the above discussion, the purpose of this paper was to examine the reliability, validity, and factor structure of the SAC-Y and SAC-R in a clinical sample. Reliability of the measures was analyzed by examining Cronbach's α. Using principal-components analysis, the internal structure of the SAC-Y and SAC-R were analyzed. Validity was analyzed by examining the relationship of the SAC-Y and SAC-R with the Suicide Ideation Scale (SUI) and Suicide Potential Index (SPI) of the Personality Assessment Inventory (PAI).

Method

Participants

Clinical records consisting of an intake interview report, therapy process notes for the first four therapy sessions, and PAI profile were obtained for 85 patients seeking treatment from the Psychology Clinic of the University of Toledo (UT). The total sample consisted of 38 males (44.7%) and 47 females (55.3%) ranging in age from 18 to 64 years (M = 30.76, SD = 11.78). The sample was 77.6% European-American, 11.8% African-American, 4.7% Hispanic, 4.7% Asian, and 1.2% Native-American. Of the sample, 1.2% did not have a high-school education, 75.3% had a high-school education, 18.8%

had a bachelor's degree, 2.4% had a master's degree, and 1.2% had a doctoral degree. High education levels of the current clinical sample are accounted for by the university setting of the clinic. In terms of occupational status, 62.4% were students, 22.4% were employed, 14.1% were unemployed, and 1.2% were retired. Sixty-nine percent of the patients were single, 23.5% were married, 3.5% were divorced, 2.4% were separated, and 1.2% were widowed. The number of treatment sessions that these patients received ranged from 4 to 81 (i.e., minimum of 4; $M = 17.18$, $SD = 17.11$). Eight patients (9.4%) were engaged in a "no-suicide" contract at the time of the intake interview or during the first four therapy sessions. None of the patients attempted or completed suicide during the interval between the intake interview and the fourth therapy session.

Measures

Suicide risk was determined by two independent raters using the two suicide assessment checklists – SAC-Y and SAC-R, described earlier.

Personality Assessment Inventory (PAI; Morey, 1991). The PAI is a 344-item self-report personality assessment inventory that provides information on critical clinical variables. The 22 full scales include: 4 validity, 11 clinical, 5 treatment considerations, and 2 interpersonal scales.

Procedure

The Psychology Clinic is a practicum setting for clinical psychology doctoral students at UT. All patients complete a telephone-screening interview prior to the delivery of therapeutic services. Patients with a primary substance-related problem, legal or court involvement, or psychosis are typically referred elsewhere. Following the telephone screening, all incoming patients complete the PAI (either computerized or paper-pencil) after the intake interview. Patients are assigned to graduate students in training who are supervised by licensed clinical psychologists.

As an archival study, clinical records obtained through the Psychology Clinic were reviewed systematically. Eighty-five patient records that met the inclusion criteria were assigned a suicide risk score using the SAC-Y and SAC-R by two independent raters based on the information contained in the intake interview report and therapy process notes. The inclusion criteria were as follows:

1. Patient was involved in a minimum four therapy sessions at the Psychology Clinic;
2. Patient's record contains the intake interview report, process notes for the first four therapy sessions, and a valid PAI profile;
3. To ensure the validity of the PAI profiles, a cutoff score of 64 *T* was used for the ICN scale, 60 *T* for the INF scale, 57 *T* for the PIM scale and 92 *T* for the NIM scale (Morey, 1991; Morey & Quigley, 2002).

PAI results were blocked out from the reports by a graduate student research assistant to keep the two raters blind to the PAI profiles when assigning a suicide risk score to control the influence of rater biases and expectations and the resulting criterion contamination in the validity analyses. The two raters pilot tested the first 60 clinical records.

Results

SAC-Y

Interrater Reliability

The intraclass correlation for the first 60 patient records of the SAC-Y was .89. This indicates excellent agreement of ratings between the two raters (Cicchetti, 1994).

Internal Consistency

Descriptive statistics were computed for all the items of the SAC-Y to look at the endorsement rates. Since items 27, 36, 37a, 46, 48, 54, 57, and 58 were not endorsed for any of the 85 patients, they were eliminated from further analysis.

Cronbach's α for the overall SAC-Y was .56. Additionally, item-total correlations and Cronbach's α were calculated for each of the SAC-Y subscales. These analyses were completed to increase homogeneity within the subscales for the factor analyses, even though the goal of the present paper was to evaluate rather than change the scales. The subscales were examined because the sample size in the current study was too small to examine all the items in combination. Thus, in the next step, the subscales were examined separately.

Table 1. Original and revised α, means, and standard deviations of the subscales of the SAC-Y

Subscale	Original α (no. of items)	Revised α (no. of items)	Mean	*SD*
Suicide history	.43 (7)	.56 (4)	.24	.46
Psychiatric history	.30 (6)	.39 (5)	1.05	.81
School/job	–.10(6)	.21 (2)	.15	.27
Family	.20 (7)	.55 (5)	.55	.57
Societal	.34 (3)	.34 (2)	.37	.51
Personality/behavior/ cognitive style	.22 (17)	.37 (11)	.92	.50
Physical	.003 (7)	.55 (2)	.09	.27
Interview behavior	.32 (7)	.71 (2)	.03	.22
Total	.56 (60)	.58 (33)	20.88	.99

Note. SAC-Y = Suicide Assessment Checklist developed by Yufit (2003).

Based on the corrected item-total correlation and α value if item is deleted, items were dropped from the subscale analyses if they increased the α value by .05 or more points. Based on these subscale analyses, the new total set consisted of 33 items, 4 for Suicide History, 5 for Psychiatric History, 2 for School/Job, 5 for Family, 2 for Societal, 11 for Personality/Behavior/Cognitive Style, 2 for Physical, and 2 for Interview Behavior. However, the overall α for this total revised scale increased only to .58 from .56. Table 1 shows the α, mean, and standard deviations for each of the original and revised subscales of the SAC-Y.

Factor Analysis

The data from the SAC-Y were analyzed using factor-analytic procedures to test the hypothesis that the subscales of the SAC-Y could be conceptualized as multi-dimensional measures of suicidal risk. Prior to these analyses, the item pool of the SAC-Y was reduced because of the poor ratio of subjects to items (85 to 33) by examining the 8 revised scales of the SAC-Y as "items" in the analysis. These 8 items were subjected to parallel analysis as well as the minimum average partial method (MAP) (Goldberg & Velicer, 2006) to determine the number of factors. Following the recommendations made by O'Connor (2000), when conducting parallel analyses, a series of 100 random data matrices of this size (85 × 8) were generated, and the eigenvalues derived from the actual data were then compared to the eigenvalues derived from the random data.

Kaiser-Meyer-Olkin (KMO) was used to measure the sampling adequacy. The results showed that the KMO value was 0.464, indicating that the data were not well suited for factor analysis. The present analysis yielded four factor(s) with an eigenvalue greater than 1.00, which accounted for 66.46% of the common variance. However, none of the actual data eigenvalues were larger than the corresponding first 95th percentile of the random data eigenvalues. An examination of the scree plot (Figure 1) suggests that all the factors are not very different in size.

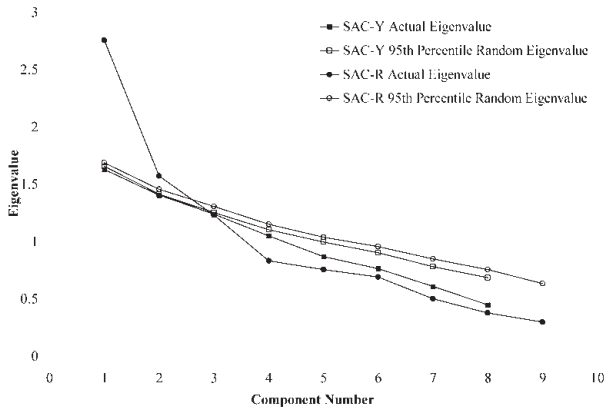

Figure 1. Comparison of actual and random eigenvalues of the SAC-Y and SAC-R.

The average squared correlations obtained from running MAP reached a minimum (.020497) at factor zero thereby suggesting that the data were not suitable for factor analysis. That is, against the expected trend, the partial correlations were increasing after the extraction of the first factor thereby indicating that the items of the SAC-Y are not well correlated. Thus, the 8 subscales of the SAC-Y are not common factors but rather 8 unique variables.

Validity

The validity of the SAC-Y was investigated through Pearson product moment correlations between the subscales of the SAC-Y and the SUI and SPI of the PAI. Correlation coefficients for the SAC-Y are summarized in Table 2. The total SAC-Y score and three subscales – Suicide History, Personality/Behavior/Cognitive style, and Physical – were positively related to the SUI. The total score and two subscales – Psychiatric History and Personality/Behavior/Cognitive – were significantly positively correlated with the SPI. Although the Family, Societal, and Interview Behavior subscales were positively related to the SUI and SPI, these correlations were not statistically significant. Lastly, the School/Job subscale was negatively correlated with both the SUI and SPI.

Table 2. Correlations between the SAC-Y subscales and the SUI and SPI (N = 85)

SAC-Y subscales	SUI	SPI
Suicide history	.29**	.19
Psychiatric history	.20	.35**
School/job	–.02	–.01
Family	.18	.19
Societal	.13	.15
Personality/behavior/cognitive style	.25*	.51**
Physical	.27*	.12
Interview behavior	.20	.17
Total	.43**	.54**

Note. SAC-Y = Suicide Assessment Checklist developed by Yufit (2003); SUI = Suicide Ideation Scale of the Personality Assessment Inventory; SPI = Suicide Potential Index of the Personality Assessment Inventory. *p < .05, two-tailed. **p < .01, two-tailed, ***p < .001, two-tailed.

SAC-R

Interrater Reliability

The intraclass correlation for the 60 patient records of the SAC-R was .87. This indicates excellent agreement of ratings between the two raters (Cicchetti, 1994).

Internal Consistency

Descriptive statistics were computed for all the items of the SAC-R to look at the endorsement rates. None of the patients had a score on the item of suffocation as a method of suicide attempt or the item of suicide note. The items relating to hanging, drowning, and cutting as methods of suicide had zero variance. As a result, these items were eliminated from the analyses.

Cronbach's α for the overall SAC-R was .69, suggesting the expected level of clinical significance (Cicchetti, 1994). The corrected item-total correlations for the individual items ranged from a –.005 to .59. Item-total correlations and Cronbach's α values with item deleted were used to increase homogeneity within the subscales of the SAC-R for factor analyses. Once again, the present analyses examined the subscales rather than the individual items because of the small sample size.

For Part 1, with this preliminary analysis, the α value increased to .60 from .53. For Part 2, the item deletion results did not justify dropping any of the items. Interitem correlations for Part 2 ranged from .02 to .56 (compared to .18 to .66 reported by Rogers & Alexander, 1994). In summary, internal analyses were used to revise the two parts of the SAC-R to increase the homogeneity within the parts. Thus, the new total set consisted of 17 items: 8 for the items related to the patient's situation and 9 rated items. α for this total revised scale increased to .73 from .69, thereby suggesting a slightly higher level of clinical significance (Cicchetti, 1994). Table 3 summarizes the original and revised α, mean, and standard deviations of two revised parts of the SAC-R.

Table 3. Original and revised α, means, and standard deviations of the parts of the SAC-R

Subscale	Original α	Revised α (no. of items)	Mean	*SD*
Part 1	.53 (12)	.60 (8)	.50	.61
Part 2	.69 (9)	.69 (9)	2.45	.60
Total	.69 (21)	.73 (17)	27.96	10.86

Note. SAC-R = Suicide Assessment Checklist developed by Rogers (1990).

Factor Analysis

As mentioned before, Part 2 of the SAC-R was analyzed using factor-analytic procedures to determine if these items formed a unidimensional measure of suicide risk. The 9 items were subjected to parallel analysis as well as MAP (Goldberg & Velicer, 2006) to determine the number of factors. In conducting parallel analyses, a series of 100 random data matrices of this size (85 × 9) were generated, and the actual data eigenvalues were the compared to the random data eigenvalues.

Factors were extracted by principal components analysis, and a direct oblimin rotation was chosen to allow for the anticipated correlations between factors. The results showed that the KMO value was 0.64 and the Bartlett test of sphericity was significant ($p < .0001$), indicating that data were suitable for factor analysis. The first two eigenvalues from the actual data were larger than the corresponding first two 95th percentile random data eigenvalues. When unconstrained, the present analysis yielded three factors with an eigenvalue greater than 1.00, which accounted for 61.70% of the common variance. MAP too identified one factor. The average squared partial correlation reached a minimum (.042293) at factor one suggesting that the number of components to be retained is one.

Table 4. Factor loadings from a three-factor oblimin rotation for the rated items of the SAC-R

Variable	Factor I	Factor II	Factor III
Worthlessness	**.73**	–.21	–.21
Hopelessness	**.80**	.13	.08
Isolation	**.46**	.03	.32
Depression	**.72**	.07	.17
Stress	**.66**	.32	–.35
Impulsivity	.03	**.84**	.04
Hostility	.06	**.85**	.03
Intent	.39	–.21	**.60**
Future time perspective	–.16	.24	**.80**

Note. Loadings in **bold** represent the highest loading of each rated item onto one of the three factors.

Table 4 shows the rotated factor matrix. Closer examination of the factor matrix revealed that the last two factors consisted of only two items each, although the factor loadings of each of these variables are significant. Following the recommendations of Goldberg and Velicer (2006) that a minimum of three variables are needed to define each factor, it was decided to further explore the first factor that consists of six variables with acceptable loadings. An examination of the scree plot (Figure 1) depicts this factor. This factor combines the cognitive (worthlessness and hopelessness), affective (depression), and behavioral (isolation) aspects of depression.

Validity

Table 5 shows the correlation coefficients between the SAC-R parts and the SUI and SPI. The overall SAC-R

Table 5. Correlations between the SAC-R subscales and the SUI and SPI ($N = 85$)

SAC-R subsections	I	SPI
Client-related items	.51**	.39**
Rated items	.44**	.55**
Overall	.58**	.58**

Note. SAC-R = Suicide Assessment Checklist developed by Rogers & Alexander (1990); SUI = Suicide Ideation Scale of the Personality Assessment Inventory; SPI = Suicide Potential Index of the Personality Assessment Inventory. *$p < .05$, two-tailed. **$p < .01$, two-tailed.

score and the parts were significantly positively correlated with both the SUI and SPI. The correlation between the SAC-Y and SAC-R was .66.

Discussion

This paper describes the evaluation of psychometric properties and factor structure of the SAC-Y and SAC-R in a clinical sample.

Interrater reliability was excellent for both the SAC-Y and SAC-R. Furthermore, the interrater reliability coefficient for the SAC-R in this study (r = .87) was similar to previous research finding (r = .81) by Rogers and Alexander (1994).

This paper demonstrated that only the Interview Behavior subscale of the SAC-Y met the traditional criterion of internal consistency (r = .71). However these findings are not unexpected since the SAC-Y is composed of items that reflect relatively independent (or even mutually exclusive) aspects of suicide risk that are themselves poorly correlated with each other. Following the recommendations made by Streiner (2003), the low values of α obtained in the present sample do not necessarily imply that the SAC-Y is unreliable.

The total SAC-R score met the traditional criterion of internal consistency (.73). Cronbach's α for Part 2 of the SAC-R was .69, but well below the .81 reported by Rogers and Alexander (1994) and .87 reported by Rogers et al. (2002). This difference in results could be to due to the differences in the characteristics of the clinical samples and differences in methods employed. The two studies mentioned above were based on data from calls to suicide hotline and emergency crisis centers respectively, whereas the present sample was composed entirely of outpatients to a university psychology clinic. Therefore, the most plausible explanation might be that the present sample had lower levels of suicide risk. This is an important consideration since the internal structure of indexes like the SAC-Y and SAC-R is strongly influenced by the sample being studied (Streiner, 2003).

The factor analytic results suggested that the data from the SAC-Y do not represent a single dimension of suicide risk but rather that the subsections of the SAC-Y represent relatively independent risk factors. Moreover, the present study factor analyzed the rated items of the SAC-R and identified a depressive factor as defined by items covering hopelessness, worthlessness, isolation, stress, and depression.

With regard to construct validity, on the SAC-Y, the SPI was more strongly positively correlated with the overall SAC-Y score than the SUI. This is not a surprising result because both the SPI and SAC-Y assess factors that contribute to suicide risk rather than current suicidal ideation. The lack of correlations between the School/Job, Family, Societal and Interview Behavior subscales with the suicide indices on the PAI most likely represents that these subscales assess the remote risk factors associated with suicidality that are not a part of the SUI and SPI. In short, clinical judgment of suicide risk is different from how the patients understand and/or portray themselves on the dimensions of School/Job, Family, Societal, and Interview Behavior. In terms of the construct validity of the SAC-R, both the sub parts and total SAC-R scorer were significantly positively correlated with both the SUI and SPI. This likely reflects the focus on current suicide risk factors across the SAC-R, SUI, and SPI.

The current study is limited by a number of methodological considerations. First, this study employed archival data, and there was no control with regards to the conditions of original recording of the data. Second, this study employed a relatively small number of patient records. Third, this study validated the SAC-Y and SAC-R against the PAI rather than an actual behavioral criterion like suicide attempt.

Despite these limitations, the findings of the present study provide valuable information about the psychometric properties of the SAC-Y and SAC-R. In summary, the results from this study indicate that the 21-item SAC-R provides a reliable and valid measure of suicide risk. Furthermore, the results from the current study on the internal consistency and interrater reliability of the SAC-R are consistent with those of Rogers and Alexander (1989, 1994). To our knowledge, no studies have examined the psychometric properties of the SAC-Y. Thus, these findings provide a good starting point for future research concerning the psychometric properties of the SAC-Y. Given the psychometric properties of the SAC-R and its brevity, researchers and clinicians are encouraged to use the SAC-R in future research and clinical activities.

References

Beck, A. T. (1970). *Depression: Causes and treatment.* Philadelphia: University of Pennsylvania Press.

Bryan, C. J., & Rudd, M. D. (2006). Advances in the assessment of suicide risk. *Journal of Clinical Psychology, 62,* 185–200.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6,* 284–290.

Cronbach, L. J. (1951). Coefficient α and the internal structure of tests. *Psychometrika, 16,* 297–315.

Glenn, R., & Bongar, B. (2006). Psychological testing in suicide risk assessment. In R. I. Simon & R. E. Hales (Eds.), *Textbook of suicide assessment and management* (pp. 177–196). Washington, DC: American Psychiatric Publishing.

Goldberg, L. R., & Velicer, W. F. (2006). Principles of exploratory factor analysis. In S. Strack (Ed.), *Differentiating normal and abnormal personality: Second edition* (pp. 209–237). New York: Springer.

Goldstein, R. B., Black, D. W., Nasrallah, A., & Winokur, G. (1991). The prediction of suicide. *Archives of General Psychiatry, 48,* 418–422.

Morey, L. C. (1991). *Personality Assessment Inventory – professional manual.* Odessa, FL: Psychological Assessment Resources.

Morey, L. C., & Quigley, B. D. (2002). The use of the Personality Assessment Inventory (PAI) to assess offenders. *International Journal of Offender Therapy and Comparative Criminology, 46,* 333–349.

Moscicki, E. K. (2001). Epidemiology of completed and attempted suicide: Toward a framework for prevention. *Clinical Neuroscience Research, 1,* 310–323.

O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32,* 396–402.

Rogers, J. R. (1990). *Development of a model for crisis line suicide risk assessment: The Crisis Line Suicide Risk Scale.* Unpublished master's thesis, University of Akron, Akron, OH.

Rogers, J. R., & Alexander, R. A. (1989). Crisis line suicide risk scale. In D. Lester (Ed.), *Suicide '89: Proceedings of the 22nd Annual Meeting of the American Association of Suicidology* (pp. 167–169). Denver, CO: American Association of Suicidology.

Rogers, J. R., & Alexander, R. A. (1994). Development and psychometric analysis of the Suicide Assessment Checklist. *Journal of Mental Health Counseling, 16,* 352–368.

Rogers, J. R., & Oney, K. M. (2004). Clinical use of suicide assessment scales: Enhancing reliability and validity through the therapeutic relationship. In R. I. Yufit & D. Lester (Eds.), *Assessment, treatment, and prevention of suicidal behavior* (pp. 7–27). New Jersey: Wiley.

Rogers, J. R., Lewis, M., & Subich, L. (2002). Validity of the Suicide Assessment Checklist in an emergency crisis center. *Journal of Counseling and Development, 80,* 493–502.

Streiner, D. L. (2003). Being inconsistent about consistency: When coefficient α does and doesn't matter. *Journal of Personality Assessment, 80,* 217–222.

Wingate, L. R., Joiner, T. E., Walker, R. L., Rudd, M. D., & Jobes, D. A. (2004). Empirically informed approaches to topics in suicide risk assessment. *Behavioral Sciences and the Law, 22,* 651–665.

Yufit, R. I. (2003). *Suicide Assessment Checklist*. Unpublished manuscript.

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Appendix 1

Suicide Assessment Checklist – Yufit (SAC-Y)

Directions: *Score each item on basis of interview responses or chart data. Verify doubtful data with family members when possible. If no parenthesis after item, score +1 for each "yes," or, use listed weighted score in parenthesis. "No" or "Uncertain" scores = 0. Try to minimize "Uncertain" scores. Sum all scores and categorize as indicated. High total score is a danger sign.*

Suicide history (max section score = 24)	*Yes*	*No*	*Uncertain*
1. Prior suicide attempt (×4); or self-harm attempt (2)			
2. Two or more highly lethal* attempts in past year (×4)			
3. Prior suicide threats or ideation			
4. Suicide attempts in the family (×2)			
5. Completed attempts in family (×4)			
6. Current suicidal preoccupation, threats, attempts (×2), detailed, highly lethal plan [= low risk for rescue, serious medical injury (comatose), irreversibility] (×2); access to weapon, medication (×2); if all three "yes" = 6			
7. Ongoing preoccupation with death			
Psychiatric history (max. score = 20)			
8. Drug, alcohol abuse (×6)			
9. Dx of mental disorder (2); or Dx:schiz. or bipolar (×4)			
10. Poor impulse control; if current (×2)			
11. Explosive rage episodes (circle: recent or past)			
12. Recklessness/accident prone			
13. Panic attacks (single (×3); recurrent (×6))			
School (max. score = 8) or Job (max. score = 8)			
14. Grade failure 14. Demotion			

Suicide history (max section score = 24)	*Yes*	*No*	*Uncertain*
15. Rejection, poor social relations 15. Rejection			
16. Probation or school drop-out (×2) 16. Fired (×2)			
17. Disciplinary crisis (×2) 17. Discp. Crisis			
18. Unwanted change of schools 18. Unwanted change			
19. Anticp of severe punishment 19. Criminal act			
Family (max. score = 28)			
20. Recent major negative change (loss: death, divorce (×4)) serious health problem); (irrevers. loss (×4)); (both = 8)			
21. Lack of emotional support, estranged (×2)			
22. Loss of job (parent, spouse) (×2)			
23. Major depression in parent, spouse, sibling (×2)			
24. Alcoholism, other drug use in family member (×2)			
25. Psychiatric illness in family member (×2)			
25a. If 22 + 24 + 25 = 6, add 6 more			
26. History of physical (2) or sexual abuse (×2); both (×4)			
Societal (max. score = 8)			
27. Contagion suicide in community (×3)			
28. Economic down shift in community; financial loss			
29. Loss of major support system (family; job, career (both ×4))			
Personality/behavior/cognitive style (max. score = 85)			
30. Hopelessness (×6)			
31. Depression (intensely depressed (×2); agitated depression. (×4); (both ×6)			
32. Anger, hostility, aggression (all = ×3); held in-all (×6)			
32a. IF 30 + 31 + 32 = 18, add 10 more			
33. Mistrust (×2); paranoid level (×4)			
34. Disgust or despair (both = ×2)			
35. Withdrawn, isolated (loneliness = ×4)			
36. Low, or no, future time perspective (×6)			
37. High or dominant orientation to the past (×4)			
37a. If 36 + 37 = 10, add 10 more			
38. Perfectionism, rigidity, obsessive/compulsive (any = ×6)			
39. Lack of a sense of belonging (×5)			
40. Indifference, lack of motivation (boredom = ×2)			
41. Worthlessness, no one cares (×2); or Helplessness; (both ×3)			
42. Shame or guilt (both = ×4) (either one = ×2)			
43. High Anxiety (×3) or Disruptive Anxiety (×5)			
44. Inability to have fun, lacks sense of humor			
45. Extreme mood or energy fluctuation (both = ×2)			
46. Giving away valuables			
Physical (max. score = 14)			
47. Male (×2); Caucasian (×2); both yes = ×4			
48. Markedly delayed puberty			
49. Recent injury leads to impairment, deformity (permanent = ×2)			
50. Loss of appetite, disinterest in food			
51. Marked weight loss (more than 10 lbs in past 6 months = ×2)			
52. Sleep disturbed (onset, middle, early awakening) hypersomnia			
53. Ongoing physical pain (×3)			
Interview behavior (max. score = 16)			
54. Pt encapsulated, noncommunicative (×2)			
55. Negative reaction of pt. to interviewer (×2)			
56. Negative reaction of interviewer to pt.			
57. Increasing distance in interaction during interview (×4)			
58. Increasing hostility, noncooperation by pt. (×2)			
59. Pt. highly self-critical, self-pitying (×2)			
60. Discusses death; suicide is only way out (×3)			
Sum			

Chronic Hx of suicide?	Yes	No
No prior attempts?	Yes	No
Suicide risk potential guidelines:	Score range	
Very high risk	150–230 (prob. hospitalize)	
High risk	100–149	
Moderate risk	50–99	
Low risk	Below 49	
Level of ambivalence:	High	Low
Current intention (underline one):		
Seeks attention		
Escape pain		
Punish self/others		
Harm or injure self		
Wants to die		
Acute, immediate risk (espec. 25a + 32a + 37a = yes):	Yes	No
Long term risk:	Yes	No
Confidence Level:	High	Low

Reason if low: Manipulating or high level of denial?

Note. From an unpublished manuscript by R. I. Yufit, 2003. Copyright 2003 by R. I. Yufit. Reprinted with permission. *Highly lethal: low risk for rescue, serious medical injury (comatose), irreversible.

Appendix 2

Suicide Assessment Checklist – Rogers (SAC-R)

This form is intended to be used to guide and document comprehensive suicide risk assessment. It should be used in conjunction with other interview and historical data as an aid in determining appropriate client disposition. It is not intended as a predictive device and should not be used as such. However, the higher the scores the more concern one should have regarding potential suicidal behaviors.

Client's name: _____ Age: _____ Sex: male female

Part 1
Assessing suicidal risk: Circle all of the items relating to the client's situation and sum the corresponding score at the end of Part 1.

Client has definite plan: yes (6)
Previous psychiatric history: yes (4)
Method: firearm (10) car exhaust (7) hanging (9) drowning (6) suffocating (6) jumping (5) drugs/poison (6) cutting (3) other (3): _____
Method on hand: yes (5)
Suicide survivor: yes (6)
Making final plans: yes (6)
Drug and/or alcohol use: yes (5)
Prior attempt(s): yes (5)
Male 15–35 or 65 and older: yes (5)
Suicide note: yes (6)
Dependent children at home: yes (–4)
Marital status: single (3) married (2) divorced (5) separated (5) widowed (5)
Part 1 total**: _____

Part 2
From your interview, rate your impression of the client's status on each of the following items. Ratings should be based on initial perceptions of the client's status rather than on changes resulting from any intervention. Sum the corresponding item ratings at the end of Part 2 (minimum score = 9).

	None				Extreme
Sense of worthlessness:	1	2	3	4	5
Sense of hopelessness:	1	2	3	4	5
Social isolation:	1	2	3	4	5
Depression:	1	2	3	4	5
Impulsivity:	1	2	3	4	5
Hostility:	1	2	3	4	5
Intent to die:	1	2	3	4	5
Environmental stress*:	1	2	3	4	5
Future time perspective:	5	4	3	2	1

*The level of stress precipitated by any actual or anticipated events in the client's life, such as loss of a loved one, change in lifestyle, humiliation, etc.

Part 2 Total**: _____
Part 1 Total**: _____
Total Score**: _____ (Sum of Part 1 + Part 2)
**Total scores are for research purposes and not intended for use as predictors.

Was the client engaged in a "no suicide" contract?
Yes _____ No _____ Not appropriate _____

Considering all of the information available, indicate the client's level of suicide risk on the following scale:
Low risk 1 2 3 4 5 High risk

Disposition or referral: _____

Counselor's signature: _____ Date: _____

Note. From "Development and psychometric analysis of the Suicide Assessment Checklist," by J. R. Rogers and R. A. Alexander, 1994, *Journal of Mental Health Counseling, 16*, 352–368. Copyright 1994 by J. R. Rogers. Reprinted with permission.

Appendix 3

Suicide Assessment Checklist – Rogers (SAC-R) Terminology Sheet

The following are brief definitions or explanations of the terms used in the Suicide Assessment Checklist.

Part 1
- *Client has a definite plan* – Has the client formulated a plan to commit suicide other than a vague "I'm going to kill myself."?
- *Method* – If the client does have a concrete plan, which method has she/he chosen?
- *Method on hand* – Is the method one that is readily available to the client as opposed to one that needs to be obtained?
- *Previous psychiatric history* – Psychiatric history is used here as a broad term to include the range from inpatient psychiatric care to outpatient psychotherapy.
- *Making final plans* – Is the client taking care of "unfinished business" and/or giving away prized possessions?
- *Prior attempts* – Has the client admitted to having previously attempted suicide or described situations that may have been "hidden" attempts?
- *Suicide note* – Has the client written or is he/she planning to write a suicide note placing blame for the action, leaving instructions to survivors, or saying goodbye?

– *Suicide survivor* – Has the client had a close friend or relative who has committed suicide?
– *Drug/alcohol use* – Does the client use alcohol or drugs at any level.
– *Male 15–35 or 65 and older* – Is the client a male in either of these age categories?
– *Dependent children at home* – Does the client have one or more children 18 years or younger living in the household?
– *Marital status* – What is the marital status of the client?

Part 2

Ratings of the following items are to be based upon your impression of the client's status or "feelings." For example, how hopeless does the client "seem" to feel as opposed to how hopeless do you think the client "should" feel given the circumstances. Ratings of these items are to be based upon your initial impressions of the client's status rather than on the client's feelings resulting from successful resolution of the presenting situations.

– *Sense of worthlessness* – To what degree does the client "feel" that she/he has no personal worth or value to him/herself and others?
– *Sense of hopelessness* – To what degree does the client "feel" that there is no hope for improvement in his/her situation in the future?
– *Social isolation* – To what degree does the client "feel" that he/she has no friends and relatives to whom he/she can turn?
– *Depression* – To what degree does the client exhibit signs of depression, i.e., inactivity, lack of interest, disrupted eating and/or sleeping habits, etc.?
– *Impulsivity* – To what degree does the client exhibit impulsive behavior i.e., acting with little rational thought to outcomes?
– *Hostility* – How much anger does the client seem to have toward him or herself, others, or institutions?
– *Intent to die* – To what degree does the client seem determined to carry out his/her plans to their conclusion?
– *Environmental stress* – To what degree does the client "feel" that events in his/her life are "overwhelming," painful, humiliating or are providing insurmountable obstacles?
– *Future time perspective* – To what extent is the client able to focus on the future or positive future events as opposed to focusing on only the present or negative future events? This item is scored in the opposite direction from the previous Part 2 items. That is, the absence of a positive future time perspective is scored 5.

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