

Validity of the Suicide Assessment Checklist in an Emergency Crisis Center

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Validity of the Suicide Assessment Checklist (SAC; J. R. Rogers, 1990) was investigated in a sample of 1,969 admissions to a psychiatric emergency crisis center. Internal consistency reliability for rated items of the SAC was .87. Supporting construct-related validity, total score differences were found in the expected directions as a function of referral reason. Convergent validity was based on observed correlations between selected SAC items and conceptually similar items on the Beck Depression Inventory (A. T. Beck, 1970). Supporting criterion-related validity, total score differences in the expected directions were found as a function of disposition setting. Recommendations are made for the use of the SAC in the practice of counseling.

The rate of suicide in the United States continues to be a major problem to be addressed within the field of mental health (e.g., United States Public Health Service, 1999) and an issue that significantly affects the general mental health treatment community (Joiner, Walker, Rudd, & Jobes, 1999; Kleespies, 1998), including the practice of counseling (Bonner, 1990; Corazzini, 1997; Jobes, Jacoby, Cimboic, & Hustead, 1997; Kitchener & Anderson, 2000; Westefeld et al., 2000). Despite concerted prevention and intervention efforts over the past 40 years, the U.S. suicide rate has remained relatively stable (Rogers, 2001), with the most current data indicating a national rate of 11.4 per 100,000 or 30,545 individual lives lost to suicide in 1997 (American Association of Suicidology [AAS], 1999). In addition to completed suicides, it is estimated that some 765,000 individuals attempt suicide annually (AAS, 1999) and that 1 out of 59 individuals in the United States is a survivor of a suicide by someone close to them (Westefeld et al., 2000).

Regarding the impact of suicide and suicidal behavior on practicing counselors, Rogers, Gueulette, Abbey-Hines, Carney, and Werth (2001) reported that 71% of their sample

of 241 counselors had worked with persons who attempted suicide, with 28% having had a least one client die by suicide. Bonner (1990) suggested that suicide is "one of the ultimate tragedies faced by the mental health treatment community" (p. 232). Similarly, Joiner et al. (1999) suggested that increasing numbers of suicidal clients are presenting themselves for outpatient care. Finally, potential and actual client suicidal behaviors can significantly affect a counselor's sense of professional efficacy and can have both legal and ethical practice implications (Bongar, 1991; Bonner, 1990). Consequently, Bonner has characterized suicide crises as counselors' "worst fear, often paralyzing the clinician emotionally and interfering with sound clinical judgment and effective crisis resolution" (p. 232).

Despite extensive efforts in this area, research in suicidology has failed to produce an accurate predictive model of suicidal behavior (Kleespies, Deleppo, Gallagher, & Niles, 1999; Maris, Berman, Maltsberger, & Yufit, 1992). In fact, by the early 1990s, the field of suicidology moved from a goal of prediction of suicide toward the more realistic objective of assessing levels of risk that can be used to inform treatment and disposition decisions (Jobes, Eyman, & Yufit, 1995; Maris et al., 1992; Rogers, Alexander, & Subich, 1994). This

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paradigm shift was partly the result of the considerable but disappointing research into the effectiveness of personality measures and suicide prediction scales in predicting completed suicide and other suicidal behaviors (Maris et al., 1992). For example, Eyman and Eyman (1992) concluded their review of the personality assessment literature by stating that there was no consistent empirical support for the utility of personality assessment instruments in the prediction of suicide. Similarly, Rothberg and Geer-Williams (1992) reviewed 19 suicide prediction scales and lamented the lack of documented information regarding their psychometric properties, including predictive utility.

Indeed, Westefeld et al. (2000) did an overview of the literature on the use of personality and suicide specific measures for assessment and suggested that the value of personality and suicide-specific measures lies not in their ability to comprehensively assess suicide risk but rather in their measurement of single risk characteristics in isolation. Accordingly, Westefeld et al. indicated that a thorough assessment requires an investigation of an individual's status across a broad range of suicide risk indicators as opposed to an in-depth assessment of one or a few clues. Jobes et al. (1997) further suggested that there needs to be a balance between comprehensiveness and practicality if an assessment device is to have clinical utility. Thus, although the ideal suicide risk assessment strategy would include assessment across a multitude of empirically and clinically derived risk factors, Jobes et al. (1997) expressed concern that such a protocol would be viewed as "overly time-consuming, cumbersome, and clinically intrusive" (p. 369) to counselors.

Unfortunately, there has been relatively little progress in developing clinically applicable comprehensive suicide assessment measures that include specific attention to the major status, psychological, psychosocial, and clinical risk factors empirically implicated in suicide risk. What is clearly needed in the counseling field then is a psychometrically sound suicide risk assessment measure that provides for a brief, but relatively comprehensive, assessment of suicide risk and that can provide critical input to the clinical decision-making process. The purpose of this study, therefore, was to investigate the validity of the Suicide Assessment Checklist (Rogers, 1990; Rogers & Alexander, 1989) as a practice-oriented model for the comprehensive and systematic assessment and documentation of suicide risk.

DEVELOPMENT OF THE SUICIDE ASSESSMENT CHECKLIST (SAC)

The initial version of the SAC, the Crisis Line Suicide Risk Scale, was developed in 1988 as an emergency suicide risk assessment and documentation instrument (Rogers & Alexander, 1989). According to Rogers et al. (1994), the primary considerations in the development of the checklist were (a) a broad population focus, (b) differential training and experience levels of emergency clinicians, (c) the need for a brief yet relatively comprehensive measure, and (d) the need for psychometric integrity. In addition to the primary considerations, Rogers et al. (1994) identified three

major objectives in the construction of the SAC: (a) provide a semistructured guide for the assessment interview, (b) provide a standardized means of risk assessment that could inform the clinical decision process, and (c) develop a measure that could provide clear documentation of the risk assessment protocol.

The original version of the SAC consisted of 20 items selected from a review of the literature in suicidology. These 20 items, which are completed by the counselor, included 12 demographic and historical factors empirically determined to be related to suicide risk (Rogers et al., 1994). The demographic and historical items were weighted based on an analysis of expert judgments of their relative importance in assessing suicide risk. The remaining 8 items were similarly selected and included psychological, psychosocial, and clinical factors related to increased risk. The SAC was revised in 1990 to include an additional psychological variable for a total of 21 items (Rogers et al., 1994).

In addition to the 21 items, the SAC contains two auxiliary items. The first of these items documents the consideration of engaging the client in a "no suicide" contract, and the second item is an overall rating of suicide risk on a 1 (*low risk*) to 5 (*high risk*) scale. This rating is intended to be made based on the counselor's clinical judgment, informed by the summed scores from the SAC assessment interview, and including any other forms of ancillary data that may be available. Finally, the reverse side of the SAC provides supplemental directions for ratings and definitions of the individual items to facilitate the instrument's use by clinicians whose levels of training and experience may vary. Rogers et al. (1994) reported that SAC scores evidenced adequate test-retest and internal consistency reliability and that there is initial evidence of the scale's criterion-related validity.

To extend the psychometric support for the SAC, this study focused on investigating its reliability and validity in a large clinical sample. Specifically, we focused on investigating the criterion-, construct-, and content-related validity of the SAC in an emergency psychiatric evaluation setting in order to assess the scale's utility as a practice-oriented model for the assessment and documentation of suicide risk.

METHOD

Participants

Participants were 1,969 clients evaluated at a northeastern Ohio psychiatric emergency crisis center over a 1-year period. Evaluations were collected by 18 counselors (9 women, 9 men) who administered assessment evaluations to participants as part of the normal intake procedure of the center. Seventeen (94.4%) of the counselors held a master's degree, and 1 held a doctorate. Five (27.8%) were trained in social work, with the remaining 13 trained in counseling or psychology.

The 1,969 participants represented 62% of the 3,171 individuals who used the center during the data collection period. Counselors reported time constraints related to high client-to-counselor ratios, client uncooperativeness with the

intake process, and acute psychosis as reasons that accounted for the less than 100% participation in the research. Forty-three percent of the participants were women, and the ethnicity of the sample was primarily Caucasian (74.1%) and African American (25.1%), with the remainder (.8%) identified as Asian Americans, Native Americans, or respondents choosing "other." Clients had an average age of 33.5 years ($SD = 10.32$; range = 17 to 80).

Clients were referred to the crisis center primarily for non-suicide-related reasons (51.3%), with 34.9% being referred for suicidal thoughts or feelings and 13.8% being referred for suicide attempts. Approximately 57.5% of those in the sample were later referred home, with 28.1% voluntarily going to an inpatient psychiatric unit, 11.9% involuntarily being admitted to an inpatient psychiatric unit, and 2.4% admitted to an inpatient detoxification unit (due to rounding, percentages do not total to 100%). Police and coroner reports indicated that 2 clients (.1%) in the total sample committed suicide and 10 clients (.5%) attempted suicide subsequent to their evaluation at the center.

A subset of the total sample completed the Beck Depression Inventory (BDI; Beck, 1970) during the initial 3-month period of the research for purposes of examining convergent validity of the SAC. This subset was similar to the overall sample and comprised 341 individuals. Of these individuals, 37.2% were women, and the majority were Caucasian (78.0%) and African American (19.9%), with the remainder (2.1%) identified as Asian Americans, Native Americans, or respondents choosing "other." They had an average age of 31.4 years ($SD = 10.38$; range = 18–71).

Instruments

BDI (Beck, 1970). The BDI is the most commonly used self-report measure of depression, consisting of 21 multiple-choice items. Items represent either a symptom or an attitude related to depression (Beck, 1970). These symptom and attitude items include the following: 1 = mood, 2 = pessimism, 3 = sense of failure, 4 = self-dissatisfaction, 5 = guilt, 6 = punishment, 7 = self-dislike, 8 = self-accusations, 9 = suicidal ideas, 10 = crying, 11 = irritability, 12 = social withdrawal, 13 = indecisiveness, 14 = body image change, 15 = work difficulty, 16 = insomnia, 17 = fatigability, 18 = loss of appetite, 19 = weight loss, 20 = somatic preoccupation, and 21 = loss of libido (Beck & Steer, 1987).

Internal consistency reliability of the BDI has been reported to range from .73 to .95 (Katz, Katz, & Shaw, 1999). Test-retest reliabilities for the BDI suggest that scores are relatively stable for nonclinical populations, ranging from .60 to .90 for periods of 1 to 2 weeks (Beck & Steer, 1987). For psychiatric patients, test-retest reliabilities have reportedly ranged from .48 to .86 over various treatment periods (Katz et al., 1999). Validity of the BDI has been suggested through a variety of content, concurrent, and discriminant approaches (see Katz et al., 1999, for a review). In the current sample, the internal consistency reliability of the BDI was .93 (90% C.I. [confidence interval] = .923 to .957).

SAC (Rogers, 1990). The SAC (Appendix A) is a revised form of the Crisis Line Suicide Risk Scale developed in 1988. It consists of 21 items assessing suicide risk that are completed by a counselor: 12 client status and demographic items and 9 psychological, psychosocial, and clinical items. The 9 psychological, psychosocial, and clinical items are rated on a 1 to 5, scale and the 12 categorical items are scored based on assigned item values derived from prior expert judgment research (Rogers et al., 1994). Item scores are added to create a total score that may range from 11 to 108, with higher scores indicative of higher suicide risk. To facilitate consistent use by all counselors, the reverse side of the SAC contains definitions and explanations of the terms used in the scale (see Appendix B).

Prior research on the SAC has shown it to have adequate reliability (Rogers, 1990; Rogers & Alexander, 1989). Internal consistency reliability coefficients for rated items in past versions of the SAC ranged from $\alpha = .74$, for the first version, to $\alpha = .81$, for more recent versions (Rogers & Subich, 1990; Rogers et al., 1994). Interrater reliability coefficients ranged from .83 to .84 (Rogers, 1990), and test-retest reliability over a 4-week period was .82 (Rogers, 1990) using an analogue case vignette design. For this study, the internal consistency reliability for rated items was .87 (90% C.I. = .86 to .92). Preliminary criterion- and content-related validity evidence have been reported (Rogers et al., 1994). Specifically, the content-related validity of the SAC has been suggested based on the selection of its items from the empirical literature on suicidal behavior. Claims for the criterion-related validity of the measure have been made based on the scale scores' accuracy in differentiating between levels of risk in analogue investigations.

Procedure

Over the entire 1-year period of data collection, the SAC was administered by crisis counselors as part of normal intake procedures. For the first 3 months of the data collection, clients were also administered the BDI prior to intake interviews as part of normal intake procedures. After completion, a photocopy was made of both the SAC and the BDI during the initial 3-months, but for the remainder of the year only the SAC was copied. Clients' names were deleted from the two forms to ensure confidentiality, and the forms were placed in a confidential file. To identify individuals who subsequently attempted or completed suicide, coroner and police reports were matched retrospectively with agency records.

RESULTS

Criterion-Related Validity

To explore the criterion-related validity of the SAC, we originally planned to compare total SAC scores of clients identified as individuals attempting suicide, individuals completing suicide, and individuals neither attempting nor completing suicide. Despite the large overall sample collected, however, the cell sizes for individuals completing suicide ($n = 2$) and individuals attempting ($n = 10$) were quite small and precluded formal statistical analysis. Never-

theless, SAC total scores for the groups were examined for trends. The two individuals who completed suicide were men with SAC total scores of 30 and 68 ($M = 49$). The time between assessment and suicide was 3 weeks, for the former individual, and 1 day, for the latter individual. In the group of individuals attempting suicide, SAC total scores ranged from 28 to 69 ($M = 46.8$, $SD = 10.62$). Of the 6 men and 4 women in this group, 3 were involuntarily hospitalized, 2 voluntarily chose hospitalization, and 5 were discharged to home. The time between individuals' assessment and their suicide attempt ranged from 5 to 22 days. The remainder of the total sample of 1,969 individuals could not be identified as either attempting suicide or completing suicide based on the available follow-up information ($n = 1,957$).

Because suicide completions and suicide attempts could not be used to examine criterion-related validity, total SAC score differences as a function of the restrictiveness of the disposition facility were examined using one-way analysis of variance (ANOVA) procedures. Three categories illustrative of increasing restrictiveness were considered for this analysis: home/outpatient, voluntary inpatient, and involuntary inpatient. Results of the ANOVA were significant at the $p < .0001$ level, $F(2, 1,996) = 178.96$; $\eta^2 = .15$. As expected, post hoc t tests indicated that the involuntary inpatient group had significantly higher SAC total scores ($M = 50.74$, $SD = 8.42$) than did both the voluntary inpatient, $M = 49.38$, $SD = 7.26$; $t(834) = 2.60$, $p < .005$; $d = .20$, and home/outpatient groups, $M = 44.00$, $SD = 6.02$; $t(1365) = 13.91$, $p < .0001$; $d = 1.00$. In addition, the voluntary inpatient group had a significantly higher SAC total score than did the home/outpatient group, $t(1733) = 15.83$, $p < .0001$; $d = .80$.

Construct-Related Validity

Analysis of construct-related validity was conducted by examining the ability of the SAC total score to differentiate between clients based on reason for referral. Referral categories in order of decreasing immediacy of suicide as an issue were as follows: suicide attempts ($n = 272$), suicide feelings/thoughts ($n = 687$), and nonsuicidal referrals ($n = 1,010$). Results of a one-way ANOVA were significant, $F(2, 1966) = 201.36$, $p < .0001$; $\eta^2 = .17$; SAC total scores differentiated between the three referral categories. Consistent with expectations, SAC total mean score was highest for the suicide attempt referral category ($M = 50.10$, $SD = 7.48$), followed by the suicide feelings/thoughts referral category ($M = 49.31$, $SD = 7.72$), with nonsuicidal referrals having the lowest SAC total score ($M = 43.52$, $SD = 5.58$). The difference between the suicide attempt group and the suicide feeling/thoughts group was significant, $t(957) = 1.66$, $p < .05$; $d = .12$, as were the differences between the suicide attempt group and the nonsuicidal group, $t(1280) = 14.38$, $p < .0001$; $d = .98$, and between the suicide feelings/thoughts group and the nonsuicidal group, $t(1695) = 17.71$, $p < .0001$; $d = .88$.

As previously noted, only a portion ($n = 341$) of the overall sample ($N = 1,969$) completed the BDI for the convergent validity analyses. In the convergent validity subsample,

50% of the clients came to the clinic voluntarily; the rest were admitted involuntarily to the clinic. Furthermore, 40.5% of the individuals were referred for suicidal thoughts/feelings, 17.0% referred for suicide attempts, and the remainder (42.5%) were referred for non-suicide-related reasons. After evaluation at the clinic, 62.2% of the persons in the convergent validity subsample were referred home, 25.5% were admitted voluntarily to an inpatient psychiatric unit, 12.0% were admitted involuntarily to a psychiatric unit, and one (.3%) was admitted to an inpatient detoxification unit. The internal consistency reliability for the rated SAC items in this subset of the overall sample was .88 (90% C.I. = .87 to .93).

To assess the convergent validity of the SAC, selected SAC items (i.e., hopelessness, worthlessness, depression, social isolation, intent to die, future time perspective) and the SAC total score were correlated with conceptually similar BDI items, the total BDI score and a composite item made up of the two suicide risk indicators on the BDI (Items 2 & 9). The resulting correlations were tested for statistical significance using a Bonferroni correction to the conventional $p < .05$ level of significance to control the error rate across the use of multiple tests. Table 1 presents the correlation coefficients for the overall subsample and for the voluntary and involuntary participants, respectively. Thirteen correlation coefficients were computed for the overall convergent validity subsample. All but one of these correlations were significant at a corrected p value of .0038 ($p < .05/13$) and in the expected direction. The SAC social isolation item and the BDI social withdrawal item were not related significantly, $r = .08$; $p > .0038$. The remaining 12 correlations ranged from $r = .17$ to $r = .36$.

Separate correlation coefficients then were estimated for the voluntary and involuntary initial admission groups to investigate the effect of client admission status on the validity coefficient; specifically, we wanted to determine whether involuntary admission status would compromise the validity coefficient. For the voluntary admission group, all but two correlation coefficients were significant at $p < .0038$ and in the expected direction. The significant correlations ranged from .24 to .44. Of the two correlations that were not significant, one was again between the SAC social isolation item and BDI social withdrawal item, $r = .05$; $p > .0038$. The other nonsignificant correlation was between the SAC future time perspective and BDI pessimism item, $r = .18$; $p > .0038$.

For the involuntary admission group, all but three correlation coefficients were significant at $p < .0038$ and in the expected direction. The correlation between the SAC social isolation item and BDI social withdrawal item was not significant, $r = .09$; $p > .0038$. The SAC future time perspective and BDI pessimism item correlation was not significant, $r = .17$; $p > .0038$, as was the correlation between the SAC intent to die item and the BDI suicidal ideation composite suicide risk item, $r = .15$; $p > .0038$. Significant correlations ranged from .22 to .35.

Content-Related Validity

Discriminant analyses were conducted to investigate the content-related validity of the SAC. Discriminant analysis

TABLE 1

Beck Depression Inventory (BDI)/Suicide Assessment Checklist (SAC) Convergent Validity Correlations for the Overall Convergent Validity Sample and for the Voluntary Admission Status and the Involuntary Admission Status Subsets of the Overall Convergent Validity Sample

BDI Item	SAC Item	<i>r</i>		
		Overall Sample (<i>N</i> = 341)	Voluntary Admission (<i>n</i> = 171)	Involuntary Admission (<i>n</i> = 170)
Pessimism	Hopelessness	.32*	.34*	.31*
Sense of failure	Worthlessness	.35*	.44*	.26*
Self-dissatisfaction	Worthlessness	.26*	.29*	.26*
Guilt	Worthlessness	.22*	.33*	.22*
Self-dislike	Worthlessness	.33*	.37*	.30*
Self-accusation	Worthlessness	.24*	.24*	.26*
Worthlessness composite	Worthlessness	.36*	.42*	.32*
Social withdrawal	Social isolation	.08	.05	.09
BDI total score	Depression	.29*	.32*	.30*
Suicidal ideation	Intent to die	.24*	.34*	.15
Pessimism	Future time perspective	.17*	.18	.17
Suicide risk (Items 2 + 9)	SAC total	.36*	.40*	.35*
BDI total	SAC total	.33*	.37*	.33*

Note. Significant correlations at the Bonferroni corrected $p < .05$ level (.05/13 = .0038) are indicated by an asterisk.

was chosen because it allows for an interpretation of the contribution of the individual items to the prediction of a criterion. That is, items that significantly contribute to the prediction of the criterion can be interpreted as being content valid, thus supporting the content-related validity of the measure. The analysis investigating the ability of the SAC items to differentiate between the suicide referral groups was significant, Wilks's lambda = .71; $F(42, 3892) = 17.32$, $p < .0001$; $\eta^2 = .215$, with an overall reclassification hit rate of 67%. Inspection of the discriminant statistics for the individual SAC items provided support for the content-related validity of the checklist with 19 of the 21 items significantly contributing to the prediction of membership in the referral groups. Items that were not statistically significant were the age and marital category items.

Similarly, the discriminant analysis investigating the ability of the SAC scores to differentiate between the disposition groups was significant, Wilks's lambda = .56; $F(42, 3892) = 31.06$, $p < .0001$; $\eta^2 = .157$, with an overall reclassification hit rate of 60%. Inspection of the discriminant statistics for the individual SAC items again provided support for the content-related validity of the checklist, with 15 of the 21 items significantly contributing to the prediction of membership in the disposition groups. Items that were not statistically significant in this analysis were psychiatric history, substance abuse, age category, suicide note, dependent children, and marital category.

Exploratory Analyses

To evaluate the relative efficacy of the BDI and the SAC in reflecting suicide risk at intake and making disposition decisions in the emergency setting, the BDI and SAC total scores from the convergent validity sample ($n = 341$) were cast into two hierarchical multiple regression models, one

predicting reason for referral (i.e., suicide thoughts/feelings, suicide attempts, nonsuicide issues) and one predicting disposition (i.e., referred home, voluntary inpatient, involuntary inpatient). In the first regression, reason for referral was the criterion variable, total BDI score was entered at Step 1, and total SAC score was entered at Step 2. The change in R^2 from Step 1 to Step 2 was examined to determine whether the SAC contributed significantly to the prediction of referral status beyond the BDI. It was found that the SAC significantly improved prediction of referral reasons, contributing an additional 10% of the variance, $F_{\text{cha}}(1, 338) = 22.72$; $p < .0001$, beyond the 7% contributed by the BDI in Step 1, $F(1, 339) = 25.26$, $p < .0001$.

Similarly, in the second regression disposition was the criterion variable, total BDI score was entered at Step 1, and total SAC score was entered at Step 2. The change in R^2 from Step 1 to Step 2 was examined to determine whether the SAC contributed significantly to the prediction of disposition status beyond the BDI. It was found that the SAC significantly improved prediction of disposition decisions, contributing an additional 6% of the variance, $F_{\text{cha}}(1, 338) = 44.28$; $p < .0001$, beyond the 1% contributed by the BDI in Step 1, $F(1, 339) = 3.72$, $p = .05$.

Analyses were also conducted to explore possible differences in SAC ratings as a function of counselor and client gender, based on the supposition that gender-based communication patterns may affect SAC ratings. A 2×2 ANOVA was performed, and results showed a significant counselor and client gender difference in suicide risk ratings, $F(1, 1965) = 36.70$, $p \leq .0001$; $\eta^2 = .03$, and $F(1, 1965) = 60.47$, $p \leq .0001$; $\eta^2 = .05$, respectively. The interaction effect of client by counselor gender was nonsignificant, $F(1, 1965) = .02$, $p = .89$. Examination of SAC means and standard deviations for clients indicated that men were rated higher on the SAC ($M = 41.40$, $SD = 12.88$) than were women ($M = 36.58$, $SD =$

11.96). A 2×2 (client gender by suicide vs. non-suicide-referral reason) chi-square analysis was conducted to further examine these gender differences. The analysis showed a significant relationship between client gender and referral reason, $\chi^2(1) = 3.85, p \leq .05$, with men constituting 59% of the suicide referred clients.

Counselor gender also influenced client ratings on the SAC, with male counselors evaluating clients at a higher risk of suicide, $M = 41.81, SD = 14.75; \alpha = .88$, than did female counselors, $M = 37.98, SD = 11.24; \alpha = .87$. Consequently, a discriminant analysis was performed separately for male and female counselors to investigate counselor gender differences in relation to the criterion- and construct-related validity of the SAC. This criterion validity analysis resulted in a significant discrimination function for predicting client disposition. Overall hit rate for female and male counselors was 66% versus 68%, respectively, suggesting little difference in predictive accuracy as a function of counselor gender. Investigation of counselor gender in relation to construct-related validity resulted in a significant discriminant function for male and female counselors' prediction of the reason for client referral. Hit rates for female and male counselors were 63% versus 75%, respectively; this indicates some differences regarding the SAC in predictive accuracy of client referral as a function of counselor gender, with men having greater classification accuracy than women.

Final exploratory analyses examined the influence of counselor degree (e.g., master's degree versus doctorate) and counselor discipline (e.g., social work versus counselor education/psychology) on the SAC total score. Results of one-way ANOVAs indicated nonsignificant main effects both for counselor degree, $F(1, 1967) = .49, p = .48$, and for counselor discipline, $F(1, 1967) = 3.45, p = .06$.

DISCUSSION

The purpose of this study was to investigate the validity of SAC scores in a large clinical sample. Results of the series of psychometric analyses provided support for the criterion-, construct-, and content-related validity of the SAC scores as suicide assessment indicators in this specific emergency crisis center setting.

In terms of criterion-related validity, the use of client disposition classifications as opposed to postevaluation suicidal behavior as the criterion limits the interpretation of the SAC scores in this regard. However, difficulties in using suicide and suicide attempts as criteria are common in the field of suicidology, where assessment and intervention and prevention are so closely connected. The use of client disposition as an intermediate criterion in the current validation analyses is supported by the fact that disposition decisions in emergency crisis centers are strongly influenced by judgments of dangerousness to self (Kleespies, 1998). Thus, although not the ultimate criterion, the use of disposition as an intermediate criterion allows for a tentative evaluation of the criterion-related validity of the SAC scores in this context.

That said, SAC scores were found to differ significantly as a function of the restrictiveness of disposition facility, pro-

viding criterion-related validity support. Specifically, despite the fact that the SAC was not developed to differentiate disposition decisions, clients belonging to the involuntary inpatient group scored significantly higher on the SAC than did those clients belonging to the voluntary inpatient and home/outpatient groups. In addition, those clients in the voluntary inpatient group also scored significantly higher on the SAC than did those clients in the home/outpatient group, again indicating support for the criterion-related validity of the SAC. The associated effect sizes for these differences suggest, however, that the SAC may be less useful in differentiating between involuntary and voluntary hospital dispositions ($d = .20$) than between either of the hospital dispositions and the home/outpatient disposition ($d = 1.0$ and $d = .80$, respectively). It seems important to remember, however, that although better differentiation of voluntary and involuntary disposition status may be a desirable ideal, the more important differentiation in practice is between persons referred home and those referred to the hospital setting.

The results of the construct-related validity analyses provided evidence that SAC total scores significantly differentiate between client referral categories. Specifically, clients in the suicide attempt referral category had significantly higher SAC total scores than did those clients in the suicide feelings/thoughts and non-suicide-referral categories. Likewise, clients in the suicide feelings/thoughts group had significantly higher SAC total scores than did clients in the non-suicide-referral category. The associated effect sizes for these differences suggest, however, that the SAC may be less useful in differentiating between individuals who attempt suicide and individuals who have suicidal thoughts and feelings ($d = .12$) than between either of the suicidal groups and non-suicidal individuals ($d = .98$ and $d = .88$, respectively). Although better differentiation of individuals who attempt suicide is desirable in an instrument such as the SAC, the more important differentiation is between suicidal and non-suicidal persons. Furthermore, the present findings are not surprising because SAC items assess suicide risk and encompass both thoughts and behaviors.

Construct-related validity was also supported by the results of the convergent validity analysis investigating the relationships between the SAC and the BDI items and scales. For the total convergent validity sample, only one correlation was not significant (BDI social withdrawal and SAC social isolation items). Inspection of the voluntary versus involuntary admission groups within the convergent validity sample indicated a significant amount of overlap between the BDI and the SAC items, with only two correlations not reaching significance in the voluntary admission group and three correlations not reaching statistical significance in the involuntary admission group. Furthermore, when the magnitude of correlations is examined, it can be seen that only for the BDI suicidal ideation and the SAC intent to die items was the correlation magnitude different for the voluntary and involuntary client groups. This suggests that, overall, SAC validity is not compromised by client voluntary/involuntary admission status.

The results of the exploratory regression analysis investigating the relative efficacy of the SAC and the BDI in reflecting

suicide risk at intake also provided support for the construct-related validity of the SAC. In this analysis, the SAC total score accounted for 10% of the variance in suicide risk at intake after the BDI accounted for 7%. These results are not surprising given the more comprehensive nature of the SAC as compared with the BDI, but they do provide empirical evidence supporting the value of more comprehensive risk assessment measures over measures of single indicators, such as depression, as suggested by Westefeld et al. (2000). Alternatively, these last findings may reflect that the SAC addresses the construct of suicide risk more specifically than does the BDI. Overall, however, this series of analyses provided considerable support for the construct-related validity of the SAC.

Finally, support for the content-related validity of the SAC was found in the two discriminant analyses, which indicated that 19 of the 21 items significantly contributed to the differentiation of the three referral groups and that 15 items significantly differentiated between the disposition categories. For the referral groups, it is encouraging that it was two demographic variables (as opposed to psychological or clinical variables) that did not distinguish these groups; these variables were included in the SAC based on statistical rather than conceptual grounds and consequently their contribution to the SAC may be less critical. Clearly, future research needs to investigate the clinical utility of the SAC scores in differentiating between suicidal and nonsuicidal groups and the usefulness of the age and marital status items, but overall the present results suggest that the SAC has much promise.

Similarly, in terms of disposition, these results again provide empirical support for including most of the items in the checklist and suggest that the SAC does have value in informing disposition decisions. It is of interest, however, that all six of the items that failed to achieve statistical significance in this analysis were again demographic variables; this raises the interesting question of the comparative value of demographic versus psychological suicide predictors in an emergency crisis center setting. Furthermore, given that two of the items that failed to achieve statistical significance within the referral framework also failed to reach significance in the prediction of disposition (i.e., age and marital status), future research should perhaps focus most specifically on determining the value of retaining these items in the scale. Finally, although persons who completed suicide and those in documented suicide-attempt groups could not be used in the criterion analyses due to small sample sizes, score trends observed within those groups provide additional, albeit tentative, support for the criterion-related validity of SAC scores.

Clearly, however, an important limitation of the present findings regarding the criterion-, construct-, and content-related validity of the SAC is that the counselors in the current study were not blind to the admission referral status of the clients. That is, as a function of the applied setting of the study, counselors knew whether clients were referred to the unit for suicidal as opposed to non-suicide-related concerns. Although it will be important to attempt to address this limitation in future research, it may represent a limitation inherent to large-scale applied research in this area. An additional limitation is the lack of ability to generalize the current results beyond the

present sample. The major confound to generalizability is that, for a variety of reported reasons, 38% ($n = 1,205$) of the clients evaluated by the center over the 1-year period were not evaluated using the SAC. There is no way of knowing if those additional evaluations would have substantively affected the results. In addition, there are no data to suggest that the current sample is representative of emergency crisis centers in general. Thus, the ability to generalize the results beyond the current sample is limited.

Finally, few overall differences were noted in how the SAC was used for different clients and by different counselors. The gender differences in SAC scores for male and female clients might possibly indicate gender bias but more likely reflect real differences in suicide risk between men and women. This is an especially plausible explanation given that the reliability coefficients for the SAC were comparable for the client gender subgroups (i.e., .88 and .87 for men and women, respectively). Suicide rates in the United States have been consistently higher for men than for women, with the ratio of male to female suicides reported as 4.5:1 (Westefeld et al., 2000). The counselor gender differences in ratings also seem relatively minor; hit rates for male and female counselors' predictions of client disposition were comparable (68% versus 66%), although men's SAC ratings more accurately predicted referral reason than did women's ratings (75% versus 63%, respectively).

There may be several reasons that SAC data collected by female counselors indicated clients to be less suicidal than was suggested by their referral category, one of which may be socially defined communication patterns. For example, perhaps clients presenting with suicide issues are more guarded with female counselors during interviews than with male counselors. Although there are no empirical data to support this differential communication hypothesis, the current results would support future investigations in this area. Another reason may be differential processes used by male and female counselors during completion of the SAC. Future qualitative research needs to focus on exploring these hypotheses in addition to investigating other sources of gender differences in rating clients. The effect of gender on rating is an area of research in suicidology that has not been investigated and, therefore, may need to be explored further as a factor complicating the assessment of suicide. Finally, future research should focus on whether the gender differences that exist in SAC ratings are due to gender bias in the instrument.

PRACTICE AND RESEARCH IMPLICATIONS

Considered in its entirety, the present research provides strong support for the criterion-, construct-, and content-related validity of the SAC as a suicide assessment device. Furthermore, although prior research has indicated that the BDI is the most commonly used measure of suicide risk in clinical settings (Jobes et al., 1995), the results of the exploratory regression analyses, indicating that the SAC scores accounted for more of the variance in both reason for referral and disposition than did the BDI, suggest that counselors ought to consider including the SAC when specifically assessing suicide risk. When the present find-

ings are considered in conjunction with those of prior research (e.g., Rogers et al., 1994), they suggest that the SAC scores are reasonably reliable across the populations of clients and counselors that have been studied. Also, the SAC clearly provides a structured interview format and results in the systematic documentation of suicide assessment interviews. With its documented ability to reliably and validly inform suicide risk assessment and subsequent disposition decisions, it seems reasonable to suggest that its use be considered in settings where suicide assessment is conducted.

On the basis of the present research, the SAC seems well suited to meet the need for a thorough assessment protocol including a broad range of risk indicators that can be used to inform clinical judgment as suggested by Westefeld et al. (2000). Systematic use of the SAC in emergency and other counseling practice settings may reduce the anxiety generally felt by mental health practitioners when working with suicidal clients (e.g., Bonner, 1990) and leads to more comprehensive assessments of client risk for suicide. Together, decreased anxiety and the application of a standardized and comprehensive assessment protocol should lead to better intervention and treatment decisions for suicidal clients. Moreover, the use of the SAC in counseling practice may minimize risk of legal liability for the practitioner and can be supported from an ethical practice perspective (e.g., Bongar, 1991).

Future research on the SAC should continue to investigate its psychometric properties in a variety of practice settings (again, including college counseling centers) and to explore the client and counselor gender differences identified in the current research. First, reliability studies are needed to continue the focus on the internal consistency reliability of the SAC and to investigate its interrater reliability in the field. Specifically, SAC forms could be completed for the same client using different members of an interdisciplinary team at the same site and comparing those results over time. Second, longitudinal data collection would allow for further investigation of the criterion-related validity of the SAC. Over time, enough client suicide completions and attempts perhaps could be documented to allow for statistical analyses based on this ultimate criterion. Finally, qualitative research may be one way of investigating the counselor gender differences that emerged in this study. Using protocol analyses to explore the process of collecting SAC data may be one way of examining sources of gender differences found in the SAC and may also provide a better understanding of judgment criteria used by male and female counselors.

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APPENDIX A

Suicide Assessment Checklist-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 (see back page for further item explanation). 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 life style, 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: _____

APPENDIX B

Suicide Assessment Checklist--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 towards 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.

The Suicide Assessment Checklist-R is adapted from an earlier version that appeared in "Development and Psychometric Analysis of the Suicide Assessment Checklist," by J. R. Rogers, R. A. Alexander, and L. M. Subich, 1994, *Journal of Mental Health Counseling*, 16, pp. 365-368. Copyright 1994 by the American Counseling Association. Adapted with permission.

