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Detection and Classification of Suicidal Behavior and Nonsuicidal Self-Injury Behavior in Emergency Departments

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ABSTRACT

Objective: The degree of concordance between clinical and standardized assessments in the detection and classification of suicidal behavior and nonsuicidal self-injury behavior in psychiatric emergency department settings was examined.

Method: Two hundred fifty-four patients at 3 psychiatric emergency departments between 2007 and 2011 were evaluated by research staff using standardized assessments of suicidal behavior and nonsuicidal self-injury behavior. Of 254 patients, 128 (50%) made a recent suicide attempt, 30 (12%) engaged in recent nonsuicidal self-injury behavior, 20 (8%) made a recent suicide attempt interrupted by self or others, and 76 (30%) had other psychiatric symptoms in the absence of recent suicidal or nonsuicidal self-injury behavior. The classifications derived from the standardized assessments using the Centers for Disease Control and Prevention (CDC) nomenclature were compared to clinical assessments independently extracted from emergency department medical records.

Results: Agreement between clinical and standardized assessments was substantial for both suicide attempts ($\kappa=0.76, P<.001$) and nonsuicidal self-injury behavior ($\kappa=0.72, P<.001$). Importantly, 18% of patients determined to have made a suicide attempt in the past week by standardized assessment were not identified as such by clinical assessment. In addition, as measured by the Columbia Suicide Severity Rating Scale, the potential lethality of attempts for patients classified as making a recent suicide attempt by both clinician and standardized assessments was significantly greater ($t_{120}=2.1, P=.04$) than that for patients who were classified as having made an attempt by the standardized but not clinical assessment.

Conclusions: The use of standardized assessment measures may improve sensitivity and accuracy of identifying suicidal behavior and nonsuicidal self-injury behavior in psychiatric emergency departments.

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Inconsistent identification and documentation of suicidal behavior within the health care system have significant consequences for suicide prevention. Specifically, patients with suicidal behavior who are evaluated in health care settings may be missed,¹ or other patients may be falsely identified. Such difficulties may lead to inaccurate risk assessment, treatment planning, and disposition. Given this public health concern, a major goal of the *National Strategy for Suicide Prevention*^{2,3} from the US Department of Health and Human Services is to improve and expand surveillance systems of suicidal behavior so that patients at risk for suicide may be correctly identified and receive appropriate treatment. Although previous efforts have made significant gains in more clearly identifying and defining suicidal behavior (eg, Silverman⁴ and O'Carroll et al⁵), consensus on terms and definitions has remained limited among researchers and clinicians. More recently, the Centers for Disease Control and Prevention (CDC)'s National Center for Injury Prevention and Control (NCIPC) published nomenclature of self-directed violence definitions that has become more widely adopted.⁶

The Columbia-Suicide Severity Rating Scale⁷ (C-SSRS) was also developed to address inconsistencies in nomenclature and their impact on accurate identification by providing definitions of suicidal behavior and nonsuicidal self-injury behavior that closely corresponds to the CDC's nomenclature. The C-SSRS's validity and internal consistency were analyzed in 3 multisite studies: a National Institute of Mental Health–funded treatment study of adolescent suicide attempters (N = 124); an industry-sponsored medication efficacy trial with depressed adolescents (N = 312); and an American Foundation for Suicide Prevention–funded study of adults presenting to an emergency room for psychiatric purposes (N = 237).⁷ The C-SSRS demonstrated good convergent and divergent validity with other multi-informant behavior scales.⁷ In addition, the C-SSRS has also been found to have high sensitivity and specificity of suicidal behavior classifications.⁷

Although these findings supported the use of the C-SSRS with patients evaluated in emergency department settings, there is sparse literature comparing standardized rating scales for suicidal behavior as conducted by trained assessors against clinicians' assessments as noted in medical records from emergency department or other acute settings. The few studies that have compared standardized ratings and clinical assessments of suicidal ideation and behavior have reported modest agreement, at best. First, Malone and colleagues⁸ compared a systematic research schedule and routine clinical assessments of 50 inpatients who met criteria for major depressive disorder and made at least 1 previous suicide attempt. Importantly, clinicians failed to document past suicidal acts for 24% of patients upon admission and 28% at discharge. Similarly, clinicians' discharge summaries

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- The use of a standardized assessment for suicidal behavior can lead to improved detection of suicide attempts and nonsuicidal self-injury in emergency departments.
- Improved detection and classification of self-directed violence can alert clinicians to the need for appropriate interventions to prevent suicide and related behaviors.

did not document the presence of recent suicidal ideation or planning behavior in 38% of the patients. In a follow-up study with a larger sample, Bongiovanni-Garcia and colleagues⁹ compared routine clinical assessments and interview-based research assessments of suicidal ideation and attempts in a sample of inpatients experiencing a major depressive episode in the context of major depressive or bipolar disorder. Of the patients identified by the standardized assessment as having made previous suicide attempts, 18.8% were not identified by clinical assessments as noted in the medical record. Finally, in a third study investigating the agreement between clinical and standardized assessments, Healy and colleagues¹⁰ examined the utility of the Beck Scale for Suicide Ideation (BSI)¹¹ as a screening tool to improve the detection of ideation in a psychiatric emergency department. They found that, of the patients who endorsed some degree of suicidal ideation on the BSI, 59% were also identified by clinicians as experiencing suicidal ideation and 34% were rated by clinicians as not experiencing suicidal ideation. The remaining 7% of patients who endorsed suicidal ideation on the BSI had no mention of suicidal ideation as documented by the clinician. Although this study focused mainly on assessment of suicidal ideation rather than suicidal behavior, it is one of the few studies to examine the concordance between standardized and clinical assessments in the emergency department. These findings are consistent with a larger body of literature citing poor to modest agreement between clinical and standardized assessments of psychiatric diagnoses (eg, Spengler et al¹²).

In addition, differences have been noted in the literature with regard to the incidence of overt or spontaneously reported suicidal ideation or behavior and the incidence of suicidal ideation and behavior when measured by standardized assessments. Rates of overt or spontaneously reported suicidal ideation and attempts account for only 0.6% of emergency department visits.¹³⁻¹⁵ However, when emergency department patients who do not overtly or spontaneously report suicidal ideation or behavior are specifically asked about suicidal ideation, the rates of suicidal ideation have been found to be much higher, ranging from 3.0% to 11.6%.^{1,16-19}

Although previous studies have made important initial steps in determining the concordance between clinical and standardized assessments of suicidal ideation and behavior, several limitations preclude the generalization of their findings. First, 2 of the aforementioned studies^{8,9} were limited to inpatients who met diagnostic criteria for a depressive disorder. Although a majority of individuals who attempt suicide experience depression, a sizable

minority of suicide attempters do not meet criteria for a depressive disorder.²⁰ Thus, it is important to determine whether these results extend to a broader range of suicide attempters. Second, only 1 of the 3 studies¹⁰ was conducted in the emergency department. Third, Healy and colleagues¹⁰ focused on suicidal ideation and did not report the agreement between clinical and standardized assessments of suicidal behavior. Furthermore, none of these studies examined the agreement between clinical and standardized assessments for nonsuicidal self-injury behavior or suicide attempts interrupted by self or others. Accurate detection and classification of these behaviors are critical given that attempts interrupted by self or others and nonsuicidal self-injury have been found to predict subsequent suicidal behavior and attempts.^{21,22}

Given this gap in the literature, the primary aim of the present study was to determine the degree of agreement between unstandardized clinical assessments as noted in the medical record and validated standardized assessments in the detection and classification of suicide attempts, other types of suicidal behavior, and nonsuicidal self-injury behavior in psychiatric emergency department settings.

METHOD

Participants and Procedure

The study sample consisted of 254 patients recruited from psychiatric emergency departments affiliated with Columbia University, New York, NY (Columbia; n = 86), the University of Pennsylvania, Philadelphia, PA (Penn; n = 86), and the University of Rochester, Rochester, NY (Rochester; n = 82). Study inclusion criteria consisted of (1) presentation to the emergency department for psychiatric evaluation; (2) ability to understand and provide written consent; (3) 18 years of age or older; and (4) English fluency. The mean age of the sample was 36.1 years (SD = 12.5), and 146 patients (57%) were female. The study was approved and monitored by the institutional review boards at Columbia, Penn, and Rochester, and all participants provided written informed consent after the procedures were fully explained. Assessments were conducted between June 2007 and December 2011.

Patients who met the study criteria and were present at the emergency department during normal business hours were invited to participate in the study. Assessments were conducted by master's- or doctoral-level research staff who administered a battery of validated assessments, including the C-SSRS and the Columbia Suicide History Form, described below. Based on these 2 measures and the CDC nomenclature for self-directed violence,⁶ patients were classified as having (1) made a suicide attempt in the past week; (2) made a suicide attempt that was interrupted by self or others in the past week; (3) engaged in nonsuicidal self-injury in the past week; or (4) presented with other psychiatric symptoms in the absence of suicidal behavior or nonsuicidal behavior in the past week. A *suicide attempt* was defined as a nonfatal, self-directed potentially injurious behavior with any intent to die as a result of the behavior;

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a suicide attempt may or may not result in injury. A *suicide attempt interrupted by others*, also called an *interrupted attempt*, was defined as an act in which one takes steps to injure oneself but is stopped by another person prior to a nonfatal injury (eg, a woman has pills in hand ready to be ingested when a loved one finds her and confiscates the pills). A *suicide attempt interrupted by self*, also called an *aborted attempt*, was defined as an act in which one takes steps toward making a suicide attempt, but stops oneself before actually engaging in a nonfatal injury (eg, a man leans over a bridge about to jump, but changes his mind and returns to his car). Attempts interrupted by self and others were combined into one category given the lower frequencies of these behaviors. *Nonsuicidal self-injury behavior*, also called *nonsuicidal self-directed violence behavior*, was defined as an act that is self-directed and deliberately results in self-injury with no evidence of suicidal intent (eg, superficial cutting without the intent to die). Three of the authors (G.K.B., G.W.C., and B.S.) held weekly consensus meetings to determine the appropriate classification for each patient based on the data obtained via the C-SSRS and the Columbia Suicide History Form.

In addition, patients' admission notes written in the context of routine clinical care were examined for all references to suicidal or nonsuicidal self-injury behaviors. Patients whose admissions notes contained language indicative of a recent suicide attempt were considered to be classified as "suicide attempters" by the clinical assessment, whereas those whose records contained language indicative of nonsuicidal self-injury were considered to be classified as "nonsuicidal self-injurers" by the clinical assessment. Patients whose charts indicated self-directed violence other than suicide attempts or nonsuicidal self-injury were classified as engaging in "other suicidal behavior." If language indicating any self-directed violence (ie, suicidal or nonsuicidal self-injury behavior) was not present in the chart, patients were considered to be classified as controls. Interrater reliability for a random subset (20%) of charts was almost perfect (absolute agreement intraclass correlation coefficient [ICC] = 0.93). Of note, clinicians were blind to the results of the standardized assessment.

Measures

Columbia-Suicide Severity Rating Scale.⁷ The C-SSRS, a semistructured clinician-administered interview, was used to assess the presence and severity of suicidal behavior and ideation. The measure assesses 4 constructs: (1) severity of ideation, (2) intensity of ideation, (3) suicidal behavior, and (4) lethality. The suicidal behavior subscale assesses the number of suicide attempts, attempts interrupted by self and others, and nonsuicidal self-injury behavior during the past week as well as over the course of one's life. The C-SSRS lethality subscale rates the first, most recent, and most lethal attempts on 6-point ordinal scales ranging from 0 = "no physical damage or very minor physical damage" to 5 = "death." For cases in which no physical damage or very minor physical damage was incurred, the potential lethality

of the behavior was rated on a 6-point scale ranging from 0 = "method unlikely to cause physical damage" to 5 = "death/method would certainly lead to death, despite any medical intervention." Results describing the validity of the C-SSRS including data collected from the current study sample were previously described.⁷ The C-SSRS takes approximately 2 to 15 minutes to administer.

Columbia Suicide History Form. The Columbia Suicide History Form,²³ a semistructured comprehensive interview-based assessment, distinguishes between actual attempts, ambiguous attempts, and attempts interrupted by self and others.²³ Beginning with the first attempt, patients describe each attempt and the events leading up to the attempt, as well as the means and lethality of the suicidal behavior. The Columbia Suicide History Form has demonstrated excellent interrater reliability for suicide attempts (ICC = 0.97).²³ A modified version of the Beck Lethality Scale²⁴ is included in this instrument.

The Columbia Suicide History Form was included as a validation measure for determining the detection and classification of suicidal behavior given that the C-SSRS was not validated at the time of data collection. However, as noted above, the C-SSRS has since been validated, and the C-SSRS was selected as the primary outcome measure.

Analytic Plan

Based on the standardized assessment, patients were divided into 1 of 4 groups: suicide attempters, nonsuicidal self-injurers, attempters interrupted by self or others, and psychiatric controls. Preliminary analyses examining group differences on clinical and demographic variables were calculated using analyses of covariance (ANCOVA) controlling for site differences and Sidak post hoc comparisons for continuous values, and χ^2 with adjusted standardized residuals for categorical variables. Agreement between standardized and clinical classifications was calculated using an unweighted Cohen κ coefficient based on a 4×4 matrix comparing the standardized and clinical classifications of suicide attempts, nonsuicidal self-injury, other suicidal behaviors, and no self-directed violence. In order to determine the agreement between the clinical and standardized assessments on the classification of suicide attempts, specifically, 2 dichotomous variables were created to assess the presence or absence of a suicide attempt as determined by the standardized and clinical assessments. A 2×2 matrix was then used to calculate unweighted kappa values for suicide attempts. This process was repeated with nonsuicidal self-injury in place of suicide attempts. Landis and Koch's benchmarks were used as anchors.²⁵ In addition, on the basis of *t* tests, individuals who were classified by both the standardized and the clinical assessment as having made a suicide attempt were compared to (1) those who were classified as attempters by only the standardized assessment and not the clinical assessment and (2) those who were classified as attempters by only the clinical assessment and not the standardized assessment. Parallel analyses were

RESULTS

On the basis of a standardized assessment battery, we identified 128 patients (50%) who made a recent suicide attempt, 30 (12%) who engaged in recent nonsuicidal self-injury behavior, 20 (8%) who made a recent attempt interrupted by self or others, and 76 (30%) who had other psychiatric symptoms but did not engage in any recent suicidal or nonsuicidal self-injury behavior. Patients who made an attempt interrupted by self or others were more likely to be male than those in the other classification groups ($\chi^2_3 = 9.26$, $P = .03$, adjusted Pearson residuals [ASRESID] interrupted attempts = 2.6). However, there were no other significant group differences for any other demographic characteristic displayed in Table 1 (all P values $> .14$). There were also no site differences with regard to lifetime self-directed violence (all P values $> .41$), except for the total number of lifetime suicide attempts ($F_{2,251} = 10.37$, $P < .001$). Specifically, Sidak post hoc comparisons revealed that patients from Penn reported a greater number of lifetime suicide attempts than patients from Columbia ($P = .01$) and Rochester ($P < .001$).

Sidak post hoc comparisons revealed that patients classified by the standardized assessment as having made a recent suicide attempt reported a greater number of lifetime suicide attempts than those who did not engage in recent self-directed violence (ie, psychiatric control group; $F_{3,248} = 5.67$, $P = .001$). Individuals who made recent attempts interrupted by self or others reported a greater number of lifetime attempts interrupted by self than all other groups ($F_{3,248} = 5.47$, $P = .001$). Patients who engaged in recent nonsuicidal self-injury behavior were significantly more likely to report a history of nonsuicidal self-injury behavior than all other patients ($\chi^2_3 = 36.81$, $P < .001$, ASRESID nonsuicidal self-injury = 6). There were no group differences with regard to lifetime attempts interrupted by self and lethality of most recent and most severe attempts (all P values $> .34$). Given the aforementioned site differences, site was entered as a covariate in these analyses.

Overall, agreement between clinical and standardized assessments was substantial ($\kappa = 0.66$, $P < .001$). Agreement with respect to suicide attempts, specifically, was also substantial ($\kappa = 0.76$, $P < .001$). However, as displayed in Table 2, 18% of patients ($n = 23$) were classified as making a recent suicide attempt by standardized assessment but were not identified as making a suicide attempt as determined by clinical assessment. Of these 23 patients, 4 (17%) were identified by the clinical assessment as having engaged in nonsuicidal self-injury, whereas 8 (35%) were identified as having engaged in suicidal behaviors other than attempts or nonsuicidal self-injury. The clinical records of the remaining 11 patients (48%) classified by the standardized assessment as having made a recent suicide attempt did not identify any suicidal or nonsuicidal self-injury behaviors.

There were also 7 patients who were identified as having made a recent suicide attempt by the clinical assessment, but were not classified as such by the standardized assessment. Of these 7, 2 were classified as engaging in nonsuicidal self-injury behavior, 4 as making attempts interrupted by others or self, and 1 as having no recent self-directed violence as determined by the standardized assessment.

Individuals who were classified as making suicide attempts by both standardized and clinical assessments were compared to those who were classified as making suicide attempts by only the standardized assessment and not the clinical assessment. Interestingly, the lethality of the most recent attempt, measured by the C-SSRS, was the only clinical variable that differentiated between these 2 groups ($t_{120} = 2.1$, $P = .04$). Specifically, individuals who were classified as making a recent suicide attempt by both the clinical and standardized assessments reported a significantly higher mean rating on lethality (mean = 1.67, $SD = 0.85$) than those for whom only the standardized assessment detected attempts (mean = 1.23, $SD = 1.1$). In contrast, no differences were found between patients who were classified by both assessments as having made a recent suicide attempt and those who were classified by the clinical assessment as having made a suicide attempt but otherwise by the standardized assessment (all P values $> .1$).

The agreement for classification of nonsuicidal self-injury behavior between clinical and standardized assessments was substantial ($\kappa = 0.72$, $P < .001$; see Table 3). Of the 30 patients classified by the standardized assessment as engaging in recent nonsuicidal self-injury behavior, 8 (27%) were not identified by the clinical assessment. Of these 8, 2 were identified as making a recent suicide attempt, 3 had no self-directed violence as indicated by the clinical assessment, and 3 were classified as having engaged in self-directed violence other than suicide attempts or nonsuicidal self-injury. Seven patients who were identified as engaging in nonsuicidal self-injury behavior by clinical assessment were classified otherwise by standardized assessment. Specifically, 4 patients were classified by the standardized assessment as making a suicide attempt, and 3 were identified as not engaging in any self-directed violence.

Individuals who were classified as engaging in nonsuicidal self-injury behavior by both standardized and clinical assessments were compared to those who were classified as engaging in nonsuicidal self-injury behavior by only the standardized assessment and not the clinical assessment. The results indicated that there were no significant differences between these 2 groups with regard to lifetime suicidal behavior and lifetime nonsuicidal self-injury behavior as well as the lethality of the most recent attempt (P values $> .11$).

Similarly, no differences were found between patients who were identified as having engaged in nonsuicidal self-injury behavior by both the standardized and clinical assessments as compared to those who were classified as having engaged in nonsuicidal self-injury behavior by the clinical assessment but not the standardized assessment (P values $> .07$).

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Table 1. Demographics of 254 Psychiatric Emergency Department Patients Evaluated for Suicidal and Nonsuicidal Self-Injury Behavior

Characteristic	Suicide Attempts (n=128)	NSSI Behavior (n=30)	Attempts Interrupted by Self or Others (n=20)	No Suicidal Behavior and No NSSI Behavior (n=76)	Total Sample (N=254)
Age, mean (SD), y	34.7 (12.2)	38.1 (11.6)	39.4 (13.4)	38.9 (12.1)	36.1 (12.5)
Sex, female, n (%)	82 (64)	18 (60)	6 (30)	40 (53)	146 (57)
Ethnicity, Hispanic, n (%)	24 (19)	6 (20)	5 (25)	19 (25)	54 (21)
Race, n (%)					
White	62 (48)	20 (67)	11 (55)	37 (49)	130 (51)
African American	38 (30)	2 (7)	3 (15)	18 (24)	61 (24)
Hispanic/Latino	22 (17)	6 (20)	4 (20)	15 (20)	47 (19)
Other	4 (3)	2 (7)	1 (5)	4 (5)	11 (4)
Did not respond	2 (2)	0 (0)	1 (5)	2 (3)	5 (2)
Education, n (%)					
Less than high school	38 (30)	4 (13)	4 (20)	14 (18)	60 (24)
High school or further	90 (70)	26 (87)	16 (80)	62 (82)	194 (76)
Employment, n (%)					
Employed	32 (25)	9 (30)	2 (10)	17 (22)	60 (24)
Other	94 (73)	21 (70)	18 (90)	57 (75)	190 (75)
Did not respond	2 (2)	0 (0)	0 (0)	2 (3)	4 (2)
Marital status, n (%)					
Married	37 (29)	7 (23)	5 (25)	14 (18)	63 (25)
Not married	91 (71)	23 (77)	15 (75)	62 (82)	191 (75)

Abbreviation: NSSI = nonsuicidal self-injury.

Table 2. Agreement on Classification of Suicide Attempts in the Past Week^a

Clinical Assessment	Standardized Assessment		
	Suicide Attempt	No Attempt	Total
Suicide attempt	105 (82% agreement)	7 (6% disagreement)	112
No attempt	23 (18% disagreement)	119 (94% agreement)	142
Total	128	126	254

^aAgreement fell in the substantial range ($\kappa=0.76$, $P<.001$).

Table 3. Agreement on Classification of Nonsuicidal Self-Injury Behavior in the Past Week^a

Clinical Assessment	Standardized Assessment		
	NSSI Behavior	No NSSI Behavior	Total
NSSI behavior	22 (73% agreement)	7 (3% disagreement)	29
No NSSI behavior	8 (27% disagreement)	217 (97% agreement)	225
Total	30	224	254

^aAgreement fell in the substantial range ($\kappa=0.72$, $P<.001$).

Abbreviation: NSSI = nonsuicidal self-injury.

DISCUSSION

Agreement between the standardized assessments and clinician documentation of recent (past week) suicide attempts in a sample of patients evaluated in psychiatric emergency department settings was substantial. Although this agreement was generally higher than reported in previous studies, it is important to note that 18% of the patients who were classified as making a recent attempt by standardized assessments were not identified as such by the clinical assessments as reported in the medical records. These results are consistent with those of a previous study illustrating that clinicians failed to document the occurrence of suicidal behavior in 24% of depressed patients who were admitted to an inpatient psychiatric unit.¹⁰ These findings can be interpreted in the context of a larger body of literature identifying modest agreement between clinical and standardized assessments

of psychiatric diagnoses. Taken together, these results contribute to the mounting body of evidence suggesting that the use of standardized rating scales may help to improve the identification of additional patients with recent suicide attempts, such as the 18% in the current study, who may have otherwise been missed. Further research documenting the improvement in identifying suicidal behaviors associated with the introduction of using standardized assessments in the emergency department is warranted.

Patients in the present study who attempted suicide and who were misclassified by the clinical assessments had significantly lower lethality ratings than patients classified as making a recent suicide attempt by both the standardized and clinical assessments. This finding suggests that emergency department mental health clinicians are more likely to detect suicide attempts when the lethality of the self-injury behavior is more severe, but may miss more subtle cases.

Agreement between the standardized assessments and clinician documentation of nonsuicidal self-injury behavior for emergency department patients was substantial but not excellent. To our knowledge, this study was the first to examine the agreement between the clinical and standardized assessments of recent nonsuicidal self-injury behavior. Given these findings, the results of the present study indicate that the use of standardized assessment of suicidal behavior and nonsuicidal self-injury behavior in emergency department settings may improve the detection and classification of these behaviors over routine, nonstandardized clinical assessments.

There are several limitations of the present study that should be noted. First, although the study included 3 large, urban psychiatric emergency departments,

the findings may not generalize to other emergency department settings in suburban or rural settings, especially those emergency departments with limited availability of psychiatric services. It is possible that general medical emergency departments may be even more likely to miss recent suicidal and nonsuicidal self-injury behaviors. Second, patients may have reported information regarding the occurrence of suicidal behavior to researchers that was different than the information reported to clinicians given the potential for different expectations regarding any actions taken by the assessor. For example, patient bias may have been more likely when reporting suicidal behavior to emergency department clinicians than to researchers given that the clinicians were tasked with the decision to admit or discharge patients from the hospital. However, patient bias is less likely because the patients were informed that research assessors would share information divulged in the standardized assessment with clinical staff if it was related to the patient's safety. Third, as clinicians' classifications were abstracted from emergency department charts, the limitations of chart abstractions must be noted. Specifically, the information documented in a chart may not be a perfect representation of the actual clinical activity. Thus, it is possible that clinicians may have detected suicidal behavior but failed to document it in the chart. Finally, although clinical charts were not reviewed routinely when determining classifications based on the standardized assessment, unfortunately, we did not systematically document cases in which standardized assessors were inadvertently unblinded.

It is also important to note that the implementation of standardized risk assessments requires additional time and effort on the part of the clinician and patient. However, the C-SSRS screening items for suicidal ideation and suicidal behavior take only a few minutes to administer and are also available using a self-report format. The full 19-item C-SSRS scale takes approximately 15 minutes. Training in the administration and use of the C-SSRS is also readily available (www.cssrs.columbia.edu). Given that suicidal attempt history is a robust predictor of death by suicide,²⁶ the identification of recent suicide attempts is paramount to conducting an adequate suicide risk assessment, especially within an emergency department setting in which patient safety is of utmost importance. Furthermore, since a significant degree of recent suicidal behavior and nonsuicidal self-injury behavior is not detected during routine clinical assessments in emergency department settings, the use of standardized assessment measures may help to improve the detection of suicidal behavior and the accuracy of emergency department-based suicide risk assessment. Further research focused on the effects of missed detection of suicide attempts, nonsuicidal self-injury, and other suicidal behaviors such as attempts interrupted by self and others on outcomes including prospective suicidal behaviors is warranted.

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Potential conflicts of interest: Drs Brown and Stanley have received royalties for the Columbia-Suicide Severity Rating Scale. Dr Brown has also received honoraria and travel funding from Janssen Pharmaceuticals for serving on a suicide advisory board. Drs Currier and Jager-Hyman have no financial relationships with commercial interests.

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REFERENCES

1. Claassen CA, Larkin GL. Occult suicidality in an emergency department population. *Br J*

2. US Department of Health and Human Services, Office of the Surgeon General, National Action Alliance for Suicide Prevention. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, DC: US Department of Health and Human Services; September 2012. <http://www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/full-report.pdf>. Accessed May 20, 2015.
3. US Department of Health and Human Services, Public Health Service. *National Strategy for Suicide Prevention: Goals and Objectives for Action*. Rockville, MD: Government Printing Office; 2001.
4. Silverman MM. The language of suicidology. *Suicide Life Threat Behav*. 2006;36(5):519-532.
5. O'Carroll PW, Berman AL, Maris RW, et al. Beyond the Tower of Babel: a nomenclature for suicidology. *Suicide Life Threat Behav*. 1996;26(3):237-252.
6. Crosby A, Ortega L, Melanson C. Self-directed violence surveillance: uniform definitions and recommended data elements, Version 1.0. Atlanta, GA: Centers for Disease Control and Prevention; 2011. <http://www.cdc.gov/violenceprevention/pdf/self-directed-violence-a.pdf>. Accessed May 20, 2015.
7. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry*. 2011;168(12):1266-1277.
8. Malone KM, Szanto K, Corbitt EM, et al. Clinical assessment versus research methods in the assessment of suicidal behavior. *Am J Psychiatry*. 1995;152(11):1601-1607.
9. Bongiovanni ME, Merville J, Almeida MG, et al. Comparison of clinical and research assessments of diagnosis, suicide attempt history and suicidal ideation in major depression. *J Affect Disord*. 2009;115(1-2):183-188.
10. Healy DJ, Barry K, Blow F, et al. Routine use of the Beck Scale for Suicide Ideation in a psychiatric emergency department. *Gen Hosp Psychiatry*. 2006;28(4):323-329.
11. Beck AT, Steer RA, Ranieri WF. Scale for Suicide Ideation: psychometric properties of a self-report version. *J Clin Psychol*. 1988;44(4):499-505.
12. Spengler PM, White MJ, Ægisdóttir S, et al. The meta-analysis of clinical judgment project: effects of experience on judgment accuracy. *Couns Psychol*. 2009;37(3):350-399.
13. Brickman AL, Mintz DC. Datapoints: US rates of self-inflicted injury and suicide, 1992-1999. *Psychiatr Serv*. 2003;54(2):168.
14. Larkin GL, Smith RP, Beautrais AL. Trends in US emergency department visits for suicide attempts, 1992-2001. *J Crisis Intervention and Suicide Prevention*. 2008;29(2):73-80.
15. Allen MH, Abar BW, McCormick M, et al. Screening for suicidal ideation and attempts among emergency department medical patients: instrument and results from the Psychiatric Emergency Research Collaboration. *Suicide Life Threat Behav*. 2013;43(3):313-323.
16. Boudreux ED, Cagande C, Kilgannon H, et al. A prospective study of depression among adult patients in an urban emergency department. *Prim Care Companion J Clin Psychiatry*. 2006;8(2):66-70.
17. Boudreux ED, Clark S, Camargo CA Jr. Mood disorder screening among adult emergency department patients: a multicenter study of prevalence, associations and interest in treatment. *Gen Hosp Psychiatry*. 2008;30(1):4-13.

18. Boudreax ED, Clark S, Hugli OW, et al. Multicenter study of smoking, depression, and suicidal ideation among emergency department patients. *Ann Emerg Med.* 2005;11(12):1284-1289.
19. McCarthy JF, Valenstein M, Kim HM, et al. Suicide mortality among patients receiving care in the Veterans Health Administration health system. *Am J Epidemiol.* 2009;169(8):1033-1038.
20. American Association for Suicidology. Some facts about suicide and depression. March 5, 2013. <http://211bigbend.net/PDFs/factsaboutsuicideanddepression.pdf>.
21. Mundt JC, Greist JH, Jefferson JW, et al. Prediction of suicidal behavior in clinical research by lifetime suicidal ideation and behavior ascertained by the electronic Columbia-Suicide Severity Rating Scale. *J Clin Psychiatry.* 2013;74(9):887-893.
22. Wilkinson P, Kelvin R, Roberts C, et al. Clinical and psychosocial predictors of suicide attempts and nonsuicidal self-injury in the Adolescent Depression Antidepressants and Psychotherapy Trial (ADAPT). *Am J Psychiatry.* 2011;168(5):495-501.
23. Oquendo MA, Halberstam B, Mann JJ. Risk factors for suicidal behavior. In: First M, ed. *Standardized Evaluation in Clinical Practice.* Arlington, VA: American Psychiatric Publishing, Inc.; 2003:103-130.
24. Beck AT, Beck R, Kovacs M. Classification of suicidal behaviors, I: quantifying intent and medical lethality. *Am J Psychiatry.* 1975;132(3):285-287.
25. Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics.* 1977;33(1):159-174.
26. Brown GK, Beck AT, Steer RA, et al. Risk factors for suicide in psychiatric outpatients: a 20-year prospective study. *J Consult Clin Psychol.* 2000;68(3):371-377.

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