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Suicide and Life-Threatening BEHAVIOR

ORIGINAL ARTICLE

The Suicide Status Form-4 (SSF-IV) as a potentially therapeutic suicide risk assessment tool

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Abstract

Background: Empirically supported suicide risk assessment and conceptualization is a central aim of the Zero Suicide model. The Suicide Status Form (SSF) is the essential document and scaffolding of the Collaborative Assessment and Management of Suicidality—Brief Intervention (CAMS-BI) and is hypothesized as an example of a psychological assessment as therapeutic intervention (PATI). However, this hypothesis has never been directly tested.

Methods: $N = 57$ patients deemed at risk for outpatient suicidal behavior and treated as part of an inpatient psychiatric consultation and liaison service were recruited to participate in CAMS-BI at a Level 1 trauma center in the southeastern United States. During the CAMS-BI process, patients were asked to rate their subjective units of distress (SUDS) at five time points throughout the intervention ($k = 285$).

Results: The omnibus random intercept multilevel model revealed a significant difference in pre- to post-session ratings of SUDS across patients. Post hoc pairwise comparisons revealed no significant differences between SSF sections (e.g., Section A, Section B, and Section C) and relative reductions in SUDS; however, there was an observable trend toward a favorable effect of Section A of the SSF.

Conclusions: The SSF may represent an example of PATI pending replication and extension of the current results.

KEYWORDS

CAMS, inpatient, intervention, suicide risk assessment, therapy

INTRODUCTION

Level 1 (i.e., inpatient) psychiatry represents a critical contact point and opportunity for intervention with patients who are suicidal. Some estimates suggests that the suicide rate post-discharge from Level 1 psychiatry is nearly 300 times the national average of the general population (Chung et al., 2019). The Zero Suicide Framework (Brodsky, Spruch-Feiner, & Stanley, 2018), which intends to address the need for improved treatment of suicidal risk recommends behavioral health practitioners and relevant systems assess, intervene, and monitor using empirically supported instruments to conceptualize outpatient risk for suicidal behavior.

Unfortunately, accurate prediction of suicidal thoughts and behavior (STB) is plagued by several well-documented clinical and empirical phenomena including low base-rate of suicide in the general

population (Belsher et al., 2019), zero-inflated outcomes (Cukrowicz et al., 2013), and concealment and nondisclosure (Anestis & Green, 2015; Kyron et al., 2020) of STB. Empirically supported instruments for suicide risk assessment (e.g., the Columbia Suicide Severity Rating Scale (Posner et al., 2011)) and the Suicide Ideation Scale (Beck et al., 1988) typically evince questionable efficacy at detecting the phenomenon of interest (e.g., suicidal ideation) or predicting endorsement of suicidal ideation (SI) or suicidal behavior within shorter time scales (e.g., 3 months (Brown et al., 2020; Gutierrez et al., 2021)). Apropos, some have suggested that attempting to predict suicidal behavior may be a "red herring" given the emergent nature of the phenomenon of suicide (Klonsky et al., 2020). Considering difficulty in predicting suicidal behavior inherent to available risk assessment tools, scholars (Oakey-Frost et al., 2024; Jobes, 2023) have suggested that suicide risk assessment (1) consider lived experience of STB, (2) be conducted collaboratively with active patient participation, (3) be conceptualized as more than a simple data gathering tool used to "predict" risk or suicidal behavior, and (4) formulate a case conceptualization of relative, subjective risk for suicidal behavior, to include plan for stabilization (Jobes, 2023).

The Collaborative Assessment and Management of Suicidality (CAMS) is a suicide-specific clinical framework designed to target and treat suicide risk across a range of patients in different settings (Jobes, 2023). CAMS uses the Suicide Status Form (SSF) as the scaffolding for the CAMS framework. The SSF is a semi-structured collaborative suicide risk assessment instrument which, when used with adherence, facilitates a functional assessment of a patient's unique suicidal crisis, and identifies treatment targets (called "suicidal drivers") to support management and reduce the need for suicidal coping. It is argued that the SSF can be "therapeutic" throughout the treatment process (Jobes, 2016, 2023). This claim is often made citing meta-analytic research which examines the relative effect of psychological assessment as therapeutic intervention (PATI) on patient centered therapeutic outcomes (Poston & Hanson, 2010). Indeed, this *preliminary* meta-analysis includes one CAMS retrospective treatment comparison (Jobes et al., 2005), and the results of the PATI meta-analysis were promising. A large- and small-medium effect in favor of PATI for therapeutic process and overall effect of the assessment on patient symptoms, respectively, was observed (Poston & Hanson, 2010).

However, two major limitations exist if attempting to claim the SSF as a therapeutic risk assessment instrument. First, and perhaps most simply, the hypothesis of the SSF as a therapeutic risk assessment tool has never been *directly* tested. Second, the aforementioned meta-analysis (cf. Poston & Hanson, 2010) sparked a robust peer reviewed retort from Lilienfeld et al. (2011) who challenged many of the conclusions drawn from the results observed by Poston and Hanson (2010), namely the inclusion of CAMS in the meta-analysis which, admittedly, is a *treatment* protocol that includes other therapeutic and intervention components (e.g., safety planning), rather than simply a suicide risk assessment protocol (Jobes, 2023). In response to these concerns, Hanson and Poston (2011) removed the CAMS treatment paper (Jobes et al., 2005) and replicated their initial observed effects. Accordingly, any conclusions about the CAMS framework or the SSF as PATI are limited, if not plainly untested. Thus, the claim that the SSF is a "therapeutic" suicide risk assessment tool, although based in extensive clinical experience and expertise, has not been empirically examined.

Level 1 psychiatry typically admits patients experiencing significantly elevated levels of emotional and cognitive distress and, as Ward-Ciesielski and Rizvi (2020) observe, the primary objective of Level 1 psychiatry is facilitating reductions in this transdiagnostic target as quickly and effectively as possible. Distress reduction and maintenance thereof is a particularly important outcome during inpatient care; in addition to the emotional and psychological distress experienced during a suicidal crisis, many patients experience restraint, seclusion, exposure to other violent patients, and even sexual assault (Frueh et al., 2005). Thus, behavioral interventions which complement the overarching goal of subjective distress reduction related to suicidal crisis and other Level 1 phenomena may be potent tools in supporting improvements in psychiatric care for Level 1 patients.

Moreover, completing single session interventions (SSI) like CAMS-Brief Intervention (CAMS-BI (Oakey-Frost et al., 2023)) are related to reductions in subjective distress for psychiatric inpatients. Reductions in anxiety sensitivity, negative affect, negative perceptions of broad sociological distress, and increases in perceived ability to manage such sociological distress have also been observed for other SSIs (Vujanovic et al., 2012; Wasil et al., 2021). These results stand in conjunction with evidence suggesting that Crisis Response Planning (CRP) can potentiate reductions in negative mood (e.g., depression, agitation, and shame) and suicidal ideation (Bryan et al., 2024) while the "enhanced" CRP (i.e., reasons for living discussion included) simultaneously potentiates increases in positive mood ratings (e.g., calmness and hopefulness; Bryan et al., 2017, 2019). Thus, targeted SSI appear to be immediately effective at reducing subjective distress and increasing positive emotions. Fortunately, these aforementioned examples further signal that the repeated measurement of subjective distress is minimally invasive and a valuable

tool for examining the hypothetical therapeutic effects of a given psychological assessment tool.

In the context of Level 1 psychiatry, reduced distress may translate into greater treatment engagement with other care providers and interpersonal interactions with other patients on the unit (Ward-Ciesielski & Rizvi, 2020). However, these are examples of interventions and the *independent* effects of the SSF as PATI have yet to be examined. Indeed, the CAMS framework demonstrates significant effects in favor of subjective distress reduction, treatment acceptability, and higher satisfaction with treatment compared to treatment as usual in parallel with significant reductions in subjective distress (TAU; Comtois et al., 2023; Swift et al., 2021). Accordingly, subjective distress reductions related to the completion of a CAMS intervention may indirectly measure the therapeutic effect of the SSF.

Accordingly, the current study aimed to directly test the hypothesis that suicide risk assessment may be therapeutic, aligning with a PATI framework outlined by Poston and Hanson (2010). Consultations for CAMS-BI (Oakey-Frost et al., 2023), which include the completion of the SSF-IV and a safety plan, were used to test this hypothesis. It was hypothesized that the collaborative completion of the SSF would be related to statistically significant reductions in subjective distress above and beyond any hypothetical therapeutic effect of other components of CAMS-BI (i.e., the safety plan). The second aim of the study was to test whether a given section of the SSF (e.g., Section A) or the collaborative creation of a safety plan were more strongly related to reductions in subjective distress than the other sections/components. The authors are unaware of existing evidence, which tests the independent therapeutic effects of Section A versus Section C of the SSF (i.e., safety and treatment planning); thus, this aim was exploratory, and no formal hypothesis was proposed.

TABLE 1 Demographics.

	M (SD)
Age	33.32 (14.39)
Race/Ethnicity	
White %	61.40% (*n* = 35)
Black/African American %	31.58% (*n* = 18)
Asian/Asian-American %	1.75% (*n* = 1)
Latine %	3.51% (*n* = 2)
Not available %	1.75% (*n* = 1)
Gender	
Woman %	40.35% (*n* = 23)
Man %	57.89% (*n* = 33)
Gender diverse %	1.75% (*n* = 1)
Marital status	
Single %	68.42% (*n* = 39)
Married %	14.04% (*n* = 8)
Divorced %	8.77% (*n* = 5)
Widowed %	3.51% (*n* = 2)
Not Available %	5.26% (*n* = 3)
Lifetime suicidal ideation	
Yes %	92.9% (*n* = 53)
No %	7.02% (*n* = 4)
Lifetime suicidal planning	
Yes %	38.59% (*n* = 22)
No %	61.40% (*n* = 35)
Lifetime suicidal preparation	
Yes %	33.33% (*n* = 19)
No %	66.66% (*n* = 38)
Lifetime suicidal rehearsal	
Yes %	10.53% (*n* = 6)
No %	89.5% (*n* = 51)
Lifetime suicide attempts	
Yes %	50.88% (*n* = 29)
No %	49.12% (*n* = 28)

Note: Suicidal rehearsal = "... a. literal acting out or playing through of the planned suicide attempt."

Abbreviations: M, mean; SD, standard deviation (Jobes, 2023).

METHOD

Participants

Patients ($N = 57$) aged 18–68 ($M = 33.32$, SD = 14.39) who exhibited non-zero risk for an outpatient suicide attempt as determined by attending psychiatrists were referred for CAMS-BI consultation; much of the sample identified as single (68.42%, $n = 39$), White (61.40%, $n = 35$), and cisgender males (57.89%, $n = 33$). Patients received treatment in one of three psychiatric inpatient units or medical/surgical floors at a Level 1 trauma designated hospital in the southeastern United States. Formal exclusion criteria included (1) evidence of an acute manic state in medical records, (2) need for a professional translator, and (3) documented evidence of an intellectual disability. For details on demographics of patients, see Table 1.

Materials

Suicide Status Form-4 (SSF-IV (Jobes, 2016)). The SSF is characterized by section A containing theoretically derived items—the SSF Core Assessment—that are commonly used to capture individual patient suicide risk (e.g., psychological pain, stress, hopelessness, self-hate, and overall

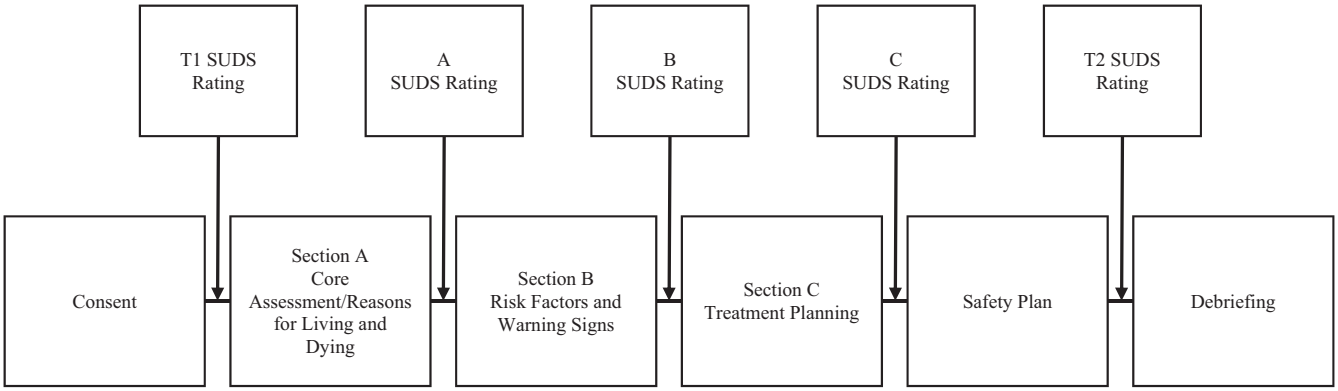

FIGURE 1 Visualization of study methodology. SUDS, Subjective units of distress.

behavioral risk); patients are asked to rate the intensity of these six variables on a scale from one (low) to five (high). Patients then rank the first five variables in terms of their salience for contributing to their individual experience of STB and are also asked to rate their overall risk of death by suicide in the future on a scale from one ("*extremely low risk*") to five ("*extremely high risk*"). Patients also rate the extent to which being suicidal is related to thoughts about themselves and/or others on a scale from one ("*not at all*") to five ("*completely*"), discuss their reasons for dying, reasons for living, wish to live and wish to die (i.e., each rated on a scale from zero ["*not at all*"] to eight ["*very much*"]), and the "one thing" question. Section B of the SSF assesses several empirically derived risk factors and warning signs used to conceptualize risk for future STB (e.g., SI frequency/intensity, suicidal planning, suicide attempts, and perceived burdensomeness); Section C of the SSF includes the collaborative process of treatment planning, driver(s) identification, mutual agreement to treatment conceptualization, mutual agreement for hospitalization need, and completion of a stabilization plan used between sessions to manage suicide risk.[i]

Subjective Units of Distress (SUDS; Wolpe & Lazarus, 1966). SUDS are a self-report rating scale which assess distress on a scale from zero (*no distress*) to 100 (*the worst distress ever experienced*), accompanied by a visual aid for ease of conceptualization (e.g., SUDS "thermometer"). Each patient was asked to provide their SUDS rating at five standardized points throughout the CAMS-BI session.

Procedures

Graduate students enrolled in a clinical psychology doctoral program completed integrated CAMS training and fidelity "check-outs" with an authorized CAMS trainer (author, RPT). These graduate clinicians completed CAMS consultation during standard business hours and received patient referrals via a consult feature in the electronic medical record system (i.e., EPIC). Patients referred for CAMS-BI were approached about participation in the current study unless (1) they fell into one of the aforementioned exclusion categories or (2) patient census was too great that additional time taken to consent/debrief for the study would yield the potential for all consulted patients to not receive care prior to discharge.

Clinicians reviewed and obtained informed consent and HIPAA release authorization, reiterating that participation in the study was voluntary and would not impact the clinical care received. Upon receipt of informed consent and release authorization, the session began with brief psychoeducation of SUDS. Using the SUDS thermometer as a visual aid, the clinician asked patients to rate their current SUDS. The clinician and patient then completed the CAMS-BI (Oakey-Frost et al., 2023); throughout the session, each patient was asked to rate their SUDS at standardized moments: after the completion of Section A, Section B, Section C, and after the completion of the safety plan (i.e., the end of the session[ii]). Thus, each section of the SSF-IV was isolated and hypothetically tested as an independent component of the CAMS-BI procedure (see Figure 1).

Clinicians entered patient information extracted from electronic medical records per completion of the HIPAA release authorization and all data gathered from the SSF into an Excel document stored on an encrypted, password protected electronic storage device at a secure academic medical education facility. Patient identifying information was kept in a separate password protected spreadsheet to ensure patient responses could not be connected with identifying information. Protected health information and protected identifying information was removed from each SSF-IV during data digitization.

SUDS were chosen as a measurement of therapeutic benefit for several reasons: (1) peer reviewed literature indicates that reductions in subjective distress is a primary aim of inpatient psychiatric care (Ward-Ciesielski & Rizvi, 2020) and (2) the demonstrated impact of SSI on

variables like negative affect (Bryan et al., 2024; Vujanovic et al., 2012). It should be noted that although the reduction in subjective distress is an important target for inpatient psychiatric care and itself can be assessed as potential component of PATI, SUDS reductions *alone* should not be assumed as sufficient evidence of therapeutic benefit of the SSF-IV. As Poston and Hanson (2010) indicate, therapeutic outcomes may be both process based (e.g., therapeutic alliance and patient perceived collaboration) and outcome based (e.g., positive and negative affect, skills application).

Finally, (3) the use of the SUDS check-in as an indirect measure of therapeutic effect is ideal in the study and clinical context. Because a CAMS-BI session can range up to 90 min, the study authors hoped to minimize patient burden during the treatment process and minimize disruptions to the standard of care at the corresponding inpatient psychiatric units. Although SUDS are not an ideal measurement proxy for testing assumptions of PATI, the theoretical choice was made in the context of the system of care.

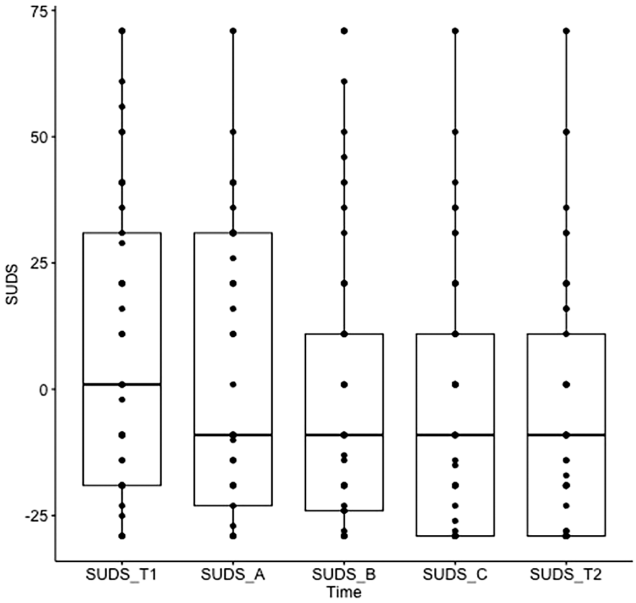

FIGURE 2 Mean centered SUDS nested within each SSF-IV interval. SSF-IV, Suicide Status Form-4; SUDS, subjective units of distress.

Analytical strategy

Power analysis was conducted using an assumed repeated measures design. Five measurements were taken throughout the CAMS-BI session. To detect a small effect (0.15), Power 1—Beta error probability = 0.80, assuming one group, correlation among repeated measures equal to 0.5 and a non-sphericity correction equal to one yielded a minimum sample of 55.

Standardized assessment of SUDS resulted in five assessments per patient, comprising four comparisons (i.e., T1[pre-session] – A; A–B; B–C; C–T2 [post-session]) and $k = 285$.

Observations; see Figure 1 for a visualization of the methodology. Observations were mean centered relative to the grand mean and a longitudinal box plot, and measures of central tendency visualization were generated for patients across time. Using CAMS-BI section (SSF-IV Sections A, B, C, and safety plan) as the independent variable and SUDS as the dependent variable, multilevel models were used to account for the nested structure of the data with random intercepts nested within participants. Models were estimated using the *nlme* package in R using maximum likelihood (ML) estimation.

First, a linear fixed effects model was estimated as the baseline test for SUDS averaged across participants across time. Next, a random intercept mixed effects model was estimated and fit of the two models was compared using likelihood ratio test ($p < 0.05$) and Akaike's Information Criterion (AIC) with reductions greater than 10 points indicating a significant difference between the baseline model and the random intercept model. Next, post hoc comparisons were estimated via Tukey's HSD test for multiple comparison ($p < 0.05$) between all time points across patients; post hoc comparisons examined the possibility that one component of the SSF-IV or safety plan may be more or less therapeutic in potentiating subjective distress reductions.

RESULTS

Longitudinal box plot of grand mean centered SUDS collapsed across patients may be found in Figure 2; additionally, visualization of individual patient SUDS scores across the course of the CAMS-BI session may be found in Figure 3. These individual trajectories indicate a highly diverse experience with the CAMS-BI intervention for each patient consulted. Patient SUDS were on average relatively moderate before the intervention, but with substantial variability ($M = 36.84$, SD = 30.38). In fact, at each time point the SUDS range spanned the entire possible range of the measure (0–100). Upon visual inspection of the boxplot (see Figure 3), Section A of the SSF-IV appeared to potentiate observably larger reductions in SUDS while, on average, SUDS across patients after Section A is completed appeared to remain relatively static. Measures of central tendency at each measurement point may be found in Table 2. Results of the random intercept mixed effects model demonstrated a significantly better fit to the data compared to the fixed effects model, $\chi^2(\text{df}) = 49.712$,

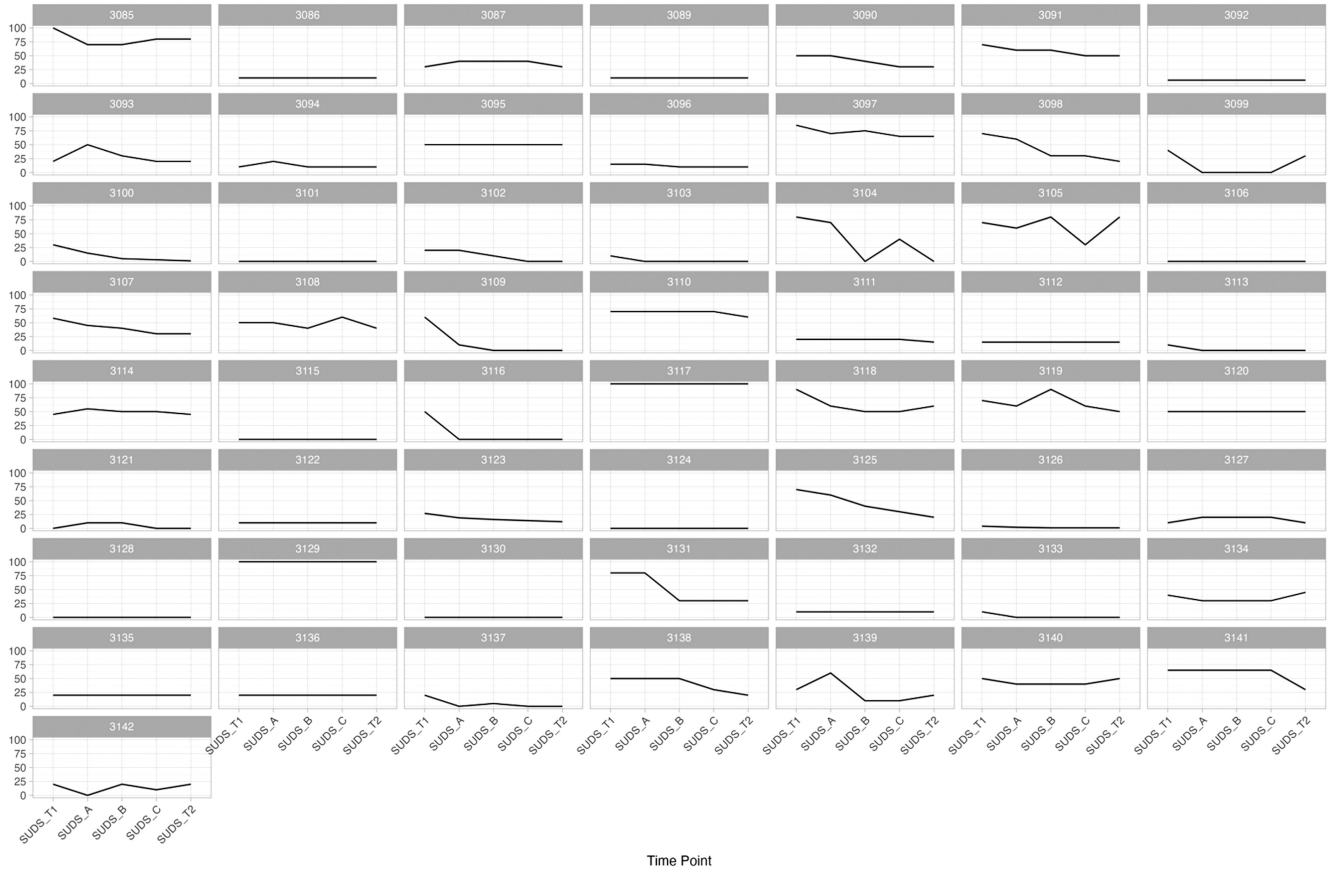

FIGURE 3 Raw individual patient plots of SUDS over the course of each CAMS-BI session. CAMS-BI=Collaborative Assessment and Management of Suicidality-Brief Intervention; SUDS, Subjective units of distress; T1—SUDS A, SSF-IV Section A; SUDS A—SUDS B, SSF-IV Section B; SUDS B—SUDS C, SSF-IV Section C; SUDS C—T2, Safety Plan.

TABLE 2 Raw measures of central tendency across CAMS-BI time points.

Assess. time	M	SD	SE	Min.	Max.
SUDS T1	36.84	30.38	4.02	0	100
SUDS A	31.70	28.77	3.81	0	100
SUDS B	27.33	28.14	3.73	0	100
SUDS C	25.07	26.35	3.49	0	100
SUDS T2	24.29	26.27	3.48	0	100

Abbreviations: CAMS-BI, Collaborative Assessment and Management of Suicidality-Brief Intervention; max., maximum; min., minimum; M, Mean; SD, standard deviation; SE, standard error; SUDS, subjective units of distress.

$p < 0.0001$, AIC = 2362.224 (see Table 3). Results of the model suggested significant successive, additive reductions in SUDS over the course of CAMS-BI.

Results of the Tukey's HSD test for multiple comparisons may be found in Table 4. First, orthogonal contrasts revealed that the overall effect of CAMS-BI is significant such that there are reductions in subjective distress from pre- to post-session, $b = -12.544$, $t(224) = -6.273$, $p < 0.001$; T1—T2 = z-value = −6.329, $p < 0.001$, (see Table 4). Second, orthogonal contrasts revealed no significant differences in SUDS reductions between isolated components of the SSF-IV; notably, data visualization (see Figure 1) and orthogonal contrasts revealed a trend toward large initial reductions in SUDS after completion of Section A of the SSF-IV ($b = -5.140$, $t(224) = -2.571$, $p = 0.011$; T1—SUDS A = z-value = −2.593, $p = 0.072$). However, this difference was *non-significant*; no other individual component(s) of the SSF-IV evinced a significant relationship with larger reductions in SUDS when contrasted with the other sections of the SSF-IV. Additionally, the orthogonal contrasts suggest that the therapeutic effects of the SSF-IV appear to be successive and additive in nature (see Table 4).

DISCUSSION

Adequate assessment and continued monitoring of STB is considered best practice across levels of care (Brodsky et al., 2018); unfortunately, the utility of existing suicide risk assessment tools in predicting future STB is limited at best (Large, 2018; Lotito & Cook, 2015). Thus, a paradigm

TABLE 3 Fixed effects and mixed effects model comparison test results.

	df	AIC	BIC	Loglik	L.ratio	*p*-value
Baseline	3	2403.936	2414.894	−1198.97		
Random intercept	7	2362.224	2387.792	−1174.11	49.712	<0.0001
		Estimate	**SE**	**df**	***t*-value**	***p*-value**
Mixed effects random intercept model point estimates						
(Intercept)		7.793	3.712	224	2.099	0.037
SSF section A		−5.140	1.999	224	−2.571	0.011
SSF section B		−9.509	1.999	224	−4.755	0.000
SSF section C		−11.772	1.999	224	−5.886	0.000
Safety plan		−12.544	1.999	224	−6.273	0.000

Abbreviations: AIC, Akaike's information criterion; BIC, Bayesian information criterion; df, degrees of freedom; LogLik, log likelihood value; L.Ratio, likelihood ratio; SE, standard error.

TABLE 4 Multiple comparisons of means: Tukey's contrasts.

Comparisons	Estimate	SE	*z*-value	*p*-value
T1—SUDS A	**−5.140**	**1.982**	**−2.593**	**0.072**
T1—SUDS B	−9.508	1.982	−4.797	0.001
T1—SUDS C	−11.772	1.982	−5.939	0.001
T1—T2	−12.544	1.982	−6.329	0.001
SUDS A—SUDS B	**−4.368**	**1.982**	**−2.204**	**0.178**
SUDS A—SUDS C	−6.632	1.982	−3.346	0.007
SUDS A—T2	−7.404	1.982	−3.735	0.002
SUDS B—SUDS C	**−2.263**	**1.982**	**−1.142**	**0.784**
SUDS B—T2	−3.035	1.982	−1.531	0.542
SUDS C—T2	**−0.772**	**1.982**	**−0.389**	**0.995**

Note: SSF-IV component piece contrasts are highlighted in bold.

Abbreviations: SE, standard error; SUDS, Subjective units of distress; T1—SUDS A, SSF-IV Section A; SUDS A—SUDS B, SSF-IV Section B; SUDS B—SUDS C, SSF-IV Section C; SUDS C—T2, Safety Plan; T, time.

shift of the clinician's perception of the goals for these assessments may be warranted. Utilizing suicide-focused assessments classified as PATI, which serve as therapeutic interventions in their own right, could be a promising avenue for this shift. The creator of CAMS has long suggested that the SSF is therapeutic in nature, but heretofore no research has tested this hypothesis. As such, the purpose of the current study was to determine if the SSF is an example of PATI in a sample of $N = 57$ inpatients referred for a CAMS-BI session. We sought to determine if completing the SSF was related to significant decreases in subjective distress as would be expected for a PATI-consistent assessment.

Overall, results support the hypothesis that the SSF may be an example of PATI, as evidenced by an average subjective distress reduction in 12 points from pre- to post-session. Although arguably a modest reduction in subjective distress, it is contextually notable given research suggesting that patients hospitalized for STB experience greater negative affect and smaller magnitudes of negative affect improvement compared to inpatients hospitalized for other psychiatric concerns (Cohen et al., 2020). Additionally, it should be noted that these and other (Oakey-Frost et al., 2023) reductions in subjective distress were supported by graduate trainees enrolled in an APA accredited clinical psychology doctoral training program. Such an observation may address a route of scalability and implementation for interventions like CAMS-BI and reifies findings supporting the efficacy of trainee delivered psychotherapeutic intervention (Budge et al., 2013). Importantly, the most significant reduction in subjective distress occurred *prior* to Safety Planning, suggesting that SSF may be an example of PATI above and beyond the therapeutic effects of the specific intervention component of CAMS-BI.

There are several reasons why SSF might demonstrate this therapeutic effect. Most notably, CAMS is consistent with therapeutic models of assessment which highlight the necessity of a strong therapeutic alliance, collaboration, and individualization (Finn & Tonsager, 1997; Poston & Hanson, 2010). The SSF may facilitate a robust therapeutic alliance by encouraging disclosure and open dialogue on suicide, as well as its underlying etiological factors like emotional pain and reasons for dying. Although it is common for clinicians to experience fear and discomfort when discussing suicide with patients (Awenat et al., 2017; Levy et al., 2019), doing so may facilitate decreases in patient distress. For example, Dunkley et al. (2017) conducted a qualitative investigation of clinicians and their patients who survived near lethal suicide attempts. Their results revealed that patients interpreted the extent to which they were "heard" by the clinician as relevant to their mental health care trajectory. Accordingly, the authors asserted that "while empathy is something felt by the clinician, co-bearing is something felt by the patient, akin to a lightening of their load" (Dunkley et al., 2017, p. 273).

Similarly, in a quantitative investigation, Gysin-Maillart et al. (2017) found that the quality of the therapeutic alliance was related to decreased intensity of suicidal ideation at 12-months follow-up, leading researchers to propose that the alliance may have a buffering effect on suicidal ideation (the current study only analyzed SUDS changes). Extant literature demonstrates similar trends (see Dunster-Page et al., 2017 for a review). Using Dunkley et al. (2017) language, the SSF may lead to decreased subjective distress through facilitation of the therapeutic alliance, as it provides opportunity for the clinician to *hear* their patients' wish for suicide and for patients to *feel heard* (Hardy et al., 2007). Indeed, it may be that because patients who are suicidal are typically focused on their reasons for dying (Gysin-Maillart et al., 2022), the SSF enables the patient to maintain focus on suicide while not prematurely discussing protective factors, tantamount to an empathetic failure of the clinician.

Procedurally, the SSF actively encourages collaboration across all sections, commencing with the initiation phase where clinicians are trained to inquire if patients are comfortable discussing their personal experiences with suicide and completing the SSF. Section C, dedicated to treatment planning, underscores collaboration, as both patient and clinician collaborate to delineate treatment targets, set goals, and determine appropriate interventions. The significance of collaboration and consensus on patient–clinician goals in enhancing psychotherapy outcomes is well-documented (for a comprehensive review, see Tryon et al., 2018), although no research to our knowledge has investigated the impact of collaboration on in the moment distress.

Regarding individualization, the SSF aims to comprehend the unique factors driving individual suicide desire, tailoring a personalized treatment plan accordingly. Section C's treatment plan pinpoints the idiosyncratic reasons underlying suicidal ideation, designating these "suicidal drivers" as the focal point of treatment. While no research, to our knowledge, has directly examined the impact of collaboration on in-the-moment distress, it is conceivable that SSF individualization fosters a sense of being understood and cared for by the provider, potentially ameliorating distress. Moreover, evidence suggests that treatment individualization correlates with improved outcomes (Ghaderi, 2006).

Taken together, it is possible that the decreased subjective distress demonstrated throughout the completion of the SSF is related to theoretically important concepts of PATI such as the therapeutic alliance, collaboration, and individualization, although future work is required to support these mechanisms of action. Our results did not show that any specific section of the SSF had a significantly greater impact on subjective distress. The visual correlation between Section A and the greatest decrease in subjective distress is intriguing and warrants further investigation. It is possible that the narrative aspect of Section A compared to the other SSF sections is particularly relevant for subjective distress decrease demonstrated within this study. While it is possible that Section A holds the most pivotal therapeutic "dose," other factors, such as the primacy of Section A compared to other sections, may also contribute to this observation. Importantly, our findings are significant in suggesting that no section of the SSF results in *heightened* distress, consistent with prior work (Gould et al., 2005), and further challenges the notion that discussing and/or assessing suicide risk is distressing or iatrogenic for patients (Coppersmith et al., 2022).

The findings of this preliminary investigation hold important implications for integrating the SSF and CAMS into diverse behavioral healthcare systems as a brief intervention. While it is crucial to recognize that CAMS is intended for use within an ongoing therapeutic context, CAMS-BI shows promise for application in settings where collecting STB information is vital but ongoing therapy may not be feasible, such as primary care and emergency departments. Proof of concept studies have thus far supported the feasibility and acceptability of a single session of key elements of CAMS in emergency departments (Dimeff et al., 2020). However, it remains imperative for future research to delve into the ramifications of employing CAMS-BI as SSI, particularly concerning the establishment of a treatment plan without subsequent follow-through. Future research might also benefit from

determining if certain sections can be modified to improve the therapeutic nature of the SSF or if certain areas can be removed without losing therapeutic value. Understanding the nuances of implementing CAMS-BI in such contexts is crucial for optimizing its effectiveness and ensuring appropriate patient care.

As an example, primary care has the highest relative patient utilization rate prior to suicide attempts compared to Level 1 (inpatient) or emergency department visits; in one study, nearly 40% of patients who died by suicide, made a visit to their primary care provider 60-days prior to their death compared to just 26% of case controls (Ahmedani et al., 2019). Additionally, those who die by suicide average four visits to their primary care provider in the year before their death, significantly more than case controls (Ahmedani et al., 2019). Coupled with the current results, interventions like CAMS-BI could provide immediate relief for suicidal crises via collaborative and compassionate assessment and behavioral intervention for managing future suicidal crises. However, replication and extension within the primary care milieu is required to understand the feasibility and acceptability of such a procedure.

Limitations

The findings of the current study should be understood within the context of several limitations. Firstly, the absence of a control group limits our ability to ascertain whether the SSF yields superior reductions in subjective distress compared to more conventional risk assessment methods (e.g., C-SSRS). Secondly, the study sample consists primarily of White men, which may restrict the generalizability of the findings to other demographic groups. However, it is noteworthy that White men have among the highest rates of suicide deaths in the United States (Centers for Disease Control and Prevention, 2017), underscoring the significance of current findings. While the observed reductions in subjective distress from pre- to post-session are encouraging, further investigation is warranted to ascertain whether these improvements translate into sustained benefits over the course of a hospital stay. To be sure, other outcomes aside from reductions in subjective distress are equally important to measure; for example, can completion of the SSF potentiate greater wish to live or improve positive affect? Such evidence would add significantly to arguments supporting the SSF and CAMS-BI as potent therapeutic tool for diverse behavioral and psychiatric healthcare settings. Additionally, measurement of patient *process* satisfaction and behavioral intervention utilization (i.e., Safety Plan) when compared with other suicide risk assessments (e.g., CSSR-S) may prove enlightening, especially considering these outcomes may be more well aligned with a PATI (Poston & Hanson, 2010).

Next, this protocol deviated from the CAMS protocol (1) via formulation of a treatment plan prior to safety planning and (2) the use of a safety plan template vs. a Stabilization Plan from the CAMS manual (Jobes, 2023). Although these deviations were justified for study design and hospital administration, the deviation from protocol may limit the internal consistency with the CAMS framework. Notably, the SSF has recently been updated to the SSF-V (Jobes, 2023); although there are changes in clinician documentation in the new SSF, the "patient facing" variables remain unchanged from SSF-IV to SSF-V and should not impact the results of the study and future replication efforts. Addressing these limitations will be pivotal in advancing our understanding of CAMS-BI's efficacy and applicability in diverse clinical contexts.

Finally, while acknowledging that measurable SUDS reductions may be a "signal" of therapeutic benefit of the SSF-IV, such an outcome may not be necessary for therapeutic benefit and such reductions *alone* should not be equated with improved therapeutic process or other measurable outcomes (e.g., positive affect improvement and skills utilization/practice). Additionally, reductions in SUDS are not necessary for therapeutic benefit during exposure therapy (Craske et al., 2014); accordingly, attempted replication of the observed trend during CAMS-BI should be conducted using other more direct measures of both process- and outcome-based measures of therapeutic benefit (Poston & Hanson, 2010). Such replication would more stringently test assertions of the SSF as an example of PATI. At this point, it is only clear that completing the SSF with a trained clinician is related to reductions in subjective distress as an indirect measure of therapeutic benefit.

CONCLUSION

In his sobering critique of the role of suicide assessment and prediction within suicide prevention, Large (2018) wrote that "the assessment of suicidal patients should focus on contemporaneous factors and the needs of the patient, rather than probabilistic notions of suicide risk" (p. 197). CAMS-BI and the SSF represent a promising avenue for achieving this goal, as evidenced by its association with reduced subjective distress from pre- to post-session, indicating potential adherence to principles of PATI. Building upon these findings and recognizing the outlined limitations, future research endeavors should aim to elucidate the therapeutic mechanisms underlying engagement with the SSF and explore its effectiveness across diverse healthcare settings using longitudinal design. Prioritizing suicide-focused assessments aligned with the principles of

PATI, such as the SSF, offers a direct benefit to patients while concurrently gathering essential information regarding their STB.

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DATA AVAILABILITY STATEMENT

Research data are not shared.

ETHICS STATEMENT

The data collection for this study was approved by the Franciscan Missionaries of Our Lady University Institutional Review Board (IRB) and was approved for collection under Expedited review procedures; IORG#: IORG0004976. All study participants provided informed consent and HIPAA release authorization prior to participating in this study.

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ENDNOTES

[i]The medical center in which this investigation took place implemented the Safety Planning Intervention (SPI; Stanley et al., 2018) in its emergency department prior to the implementation of the CAMS-BI service in the adult psychiatric inpatient units and medical/liaison consultation service. To use transitions in care (e.g., from the emergency department to inpatient psychiatry) as a time to amend and add to an existing safety plan rather than re-authoring one during CAMS-BI, the Suicide Safety Plan used in the SPI was substituted for the CAMS Stabilization Plan. This change is noted as appropriate when determining how CAMS can best be implemented in diverse clinical settings.

[ii]In typical application of CAMS, a stabilization plan is completed once treatment planning is introduced but before drivers, or treatment plan targets, are identified. In the current investigation, the order of completion was altered so that the treatment plan was introduced, drivers were identified, then a safety plan was completed allowing for discrete evaluation of changes in distress pre and post collaborative driver identification as well as suicide safety plan completion given the previously identified positive impact of the safety plan.

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