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Clinical Improvements of Suicidal Outpatients: Examining Suicide Status Form Responses as Predictors and Moderators

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This investigation used hierarchical linear modeling (HLM) to examine whether index responses on the Suicide Status Form (SSF) moderated the predicted session-to-session change over course of care in overall symptoms and suicidal ideation. Ninety-two suicidal patients at a university counseling center were studied. Overall, suicidal patients improved symptomatically and decreased their suicidal ideation over the course of care. SSF index ratings of overall risk of suicide significantly moderated the predicted session-to-session change in suicidal ideation over the course of care; patient ratings of frequency of suicidal thoughts were also moderated by index SSF ratings of hopelessness and self-hate. These findings partially replicated earlier data of differential treatment response outcomes and provide valuable assessment and treatment information that is relevant to future research and successful clinical care of suicidal outpatients.

Keywords   assessment, moderators, suicidal ideation, treatment research

Suicide is the 11th leading cause of death for adults and the 3rd leading cause of death among adolescents and college-aged individuals (15–24 years of age) in the United States (Arias, Anderson, & Kung et al., 2003). The National College Health Assessment Survey (NCHA) surveyed 15,977 college students and found that 9.5% of students reported that they had seriously considered attempting suicide within the previous year and 1.5% reported attempting suicide in the previous year (Kisch, Leino, & Silverman, 2005). Similar findings emerged in another survey of college students, in which 9% of the sample reported considering suicide since starting college (Furr, Westefeld, McConnell et al., 2001). While it is ordinarily protective to be in college and university settings, suicide is still the second leading cause of death on campus (Silverman, Meyer, Sloan et al., 1997). Clearly, identifying the students who are suicidal, and properly assessing and treating their suicidal risk, is critical to clinically preventing college student suicide.

In terms of clinical assessment, Jobes, Eyman, and Yufit (1995) found that

clinicians typically eschew the use of suicide-specific risk assessment instruments in favor of interview-based assessments of suicidal risk (with inherently dubious validity and reliability). In an effort to address potential psychometric limitations of a purely interview-based approach to suicide risk assessment, Jobes and colleagues developed the Suicide Status Form (SSF) as a user-friendly psychometrically sound assessment tool that can be used to guide and enhance a clinical interview approach to suicidal risk (Jobes, Jacoby, Cimbolic et al., 1997). The SSF contains six core self-report rating items that assess different aspects of suicidal suffering. It includes five theoretically based items thought to be related to suicide and a sixth item for an *overall risk* rating of completing suicide. The first three items of the SSF were derived from Shneidman's theoretical "cubic" model of suicide (1993). Shneidman suggests that the highest behavioral risk of suicide occurs when three primary psychological forces converge: psychological pain, press, and perturbation. The SSF construct of *psychological pain*, referred to by Shneidman as "psychache," is defined as an intolerable level of intense mental suffering (that can only be ended by suicide). The SSF construct of *stress* (that Shneidman refers to as "press") is the degree of life-stressors that negatively bear down on one's psychological functioning. Shneidman's notion of "perturbation"— termed *agitation* on the SSF—refers to the intense emotional upset that leads a person to feel agitated (i.e., the need to take urgent action, which can spark impulsive self-destructive behaviors). The fourth SSF item, *hopelessness*, originates from Beck's (1986) assertion that hopelessness and suicide are significantly related. Indeed, various studies of completed suicides have shown hopelessness to be one of the most valuable prospective suicide risk variables (Beck, Brown, Berchick et al., 1990; Beck, Steer, Kovacs et al., 1985). The fifth SSF item, *self-hate*, is based on Baumeister's (1990) theory that suicidality reflects a fundamental attempt to escape from unacceptable perceptions of self. According to Baumeister, self-hatred can become so extreme that suicide may become the only viable way to escape severe self-loathing. The final SSF item is *overall risk of suicide*. While not theoretically based, *overall risk* serves as a summary/global assessment of suicidality designed to specifically measure the bottom line potential for actual suicidal behavior.

In terms of clinical care, a useful suicide assessment tool would ideally help a clinician anticipate the potential course of care and prognosis of a case. For example, in a previous study Jobes and colleagues (1997) were able to significantly discriminate categorical treatment outcomes for "acute treatment responders" in contrast to "chronic non-responders" in a study of 102 outpatient suicidal college students using the core SSF ratings described above. However, follow up research was unable to fully replicate this differential categorical treatment outcome finding (Peterson, 2004).

Upon reflection, one of the limits of the Jobes, Jacoby, Cimbolic et al. (1997) and Peterson (2004) methodologies was the nature of the dependent variable. While clinically meaningful, categorical treatment outcomes fail to capture or account for the *process* of changes over the course of care—the potential variability one would otherwise want to retain in any outcome measure is largely eliminated when categorical outcomes are used. In contrast, treatment oriented research examining linear outcomes of multiple data points over the course of clinical care offers more value (e.g., Linehan, Comtois, Murray et al., 2006). The use of hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002), for example, has the potential to detect treatment effects that might otherwise be missed

using categorical outcomes or standard multivariate data analyses (e.g., Ogrodniczuk, Piper, Joyce et al., 2001). By examining multiple data points over the course of treatment, HLM can be used to provide a more precise approach to understanding the true nature of treatment process and outcomes (which might help us understand the contradictory findings of our previous studies). For the purposes of better assessment and treatment, particularly with suicidal patients, it would be valuable to identify reliable predictor variables associated with positive therapeutic changes. By understanding what psychological variables may be associated with resolving suicidality, clinicians could potentially develop optimal treatments for different suicidal states.

In the present study, HLM was used to study first session ("index") SSF self-report ratings and three Behavioral Health Questionnaire (BHQ) related dependent variables obtained at every clinical contact (Kopta & Lowry, 2002). The three BHQ variables were an overall distress score and two suicide-specific questions that appear on the BHQ. For sake of clarity, the SSF modifier rating variables and BHQ dependent variables will be *italicized* throughout our discussion. Thus, within this largely exploratory process-oriented outcome study, we had three primary research questions:

1. As treatment progresses, will there be clinical improvements in overall mental health distress and suicidal ideation?
2. As treatment progresses, do the six SSF self-report ratings—obtained at the index session—moderate the rate of change in suicidal patients' progress over the course of care?
3. Are the six SSF self-report ratings related to suicidal patients' responses to the BHQ items at the start of treatment?

METHOD

Participants

The original sample included 92 undergraduate and graduate students seeking psychotherapy at a mid-Atlantic university counseling center that expressed suicidal thoughts during their outpatient treatment and were thereby entered into a suicide tracking system (refer to Jobes, Jacoby, Cimbolic et al., 1997). All consecutive suicidal students who entered the suicide tracking system during the academic years 2002–2003, 2003–2004, and 2004–2005 were included in this study. Due to administrative errors and significant missing data, the full sample was only used for the first research question; a subsample of 82 patients was used for the second and third research questions. It should be noted however, that symptom trajectories of the 10 excluded participants for the three dependent measures did not significantly differ from the 82 participants who were retained for data analyses of the second and third research questions.

As shown in Table 1, the original patient sample included 57 (62%) females and 35 (38%) males, ranging in age from 17 to 42 years old (mean age was 21.23 years). Fifty-four percent of the sample identified themselves as Caucasian, 28% Asian, and 8% African American. The religious background of the sample was primarily Christian (35%), although 29% of the sample endorsed "None" as their religious affiliation. The majority of the participants were single (84%). Eighty-two percent of the participants were undergraduate students. On the sixth SSF self-report item (asking the participants to rate their *overall risk of suicide* from 1 to 5; 1 = *Will not kill self*; 5 = *Will kill self*), the mean rating was 1.97, $SD = 0.89$. This suggests that the sample consists predominantly of suicide ideators with less intent. Patients' history

TABLE 1. **Demographic Characteristics of Original Sample of Suicidal Patients ($n = 92$)**

Age	Mean: 21.23 years old SD = 3.77 Percent
Gender	
Male	38.0
Female	62.0
Ethnicity	
African–American	7.6
Asian	28.3
Latino/Hispanic	4.3
Native American	1.0
Caucasian	54.3
Other	2.2
Multiple	1.9
Unknown	1.1
Religion	
Buddhist	4.3
Christian	34.8
Hindu	12.0
Jewish	8.7
Muslim	3.3
Other	3.3
None	29.3
Unknown	4.3
Marital status	
Single	83.7
Married/committed relationship	10.9
Separated	2.2
Divorced	1.1
Other	1.1
Unknown	1.1

of suicide attempts and were also gathered on the SSF—23% of the sample reported a previous suicide attempt.

All patients in this study signed a clinical informed consent form that noted the possible future use of information in aggregate (group) form with no individually identifying information. This was thus an archival study; all the data were gathered by clinicians in the routine course of clinical care. Archival data of the research variables were then extracted by the center staff and provided to the investigators in aggregate form.

Measures

Personal Identification Form. All patients completed the Personal Identification Form (PIF)—a demographically-oriented form created by the counseling center—prior to beginning therapy. Included on the PIF was a "Problem Checklist," which lists potential problems that patients may be currently experiencing, such as a conflict with their family, grief over a death, or history of sexual abuse. Each item on the Problem Checklist was rated on a rating scale, with 0 = *severe problem* and 4 = *not a problem*.

Suicide Status Form. The Suicide Status Form (SSF) is a multipurpose suicide risk assessment instrument that is collaboratively completed by the patient and clinician together when suicidality is first clinically identified (Jobes, 2006). The SSF uses 5-point rating scales and various qualitative open-ended questions (refer to Jobes, Nelson, Peterson et al., 2004) to assess the patient's *psychological pain, stress, agitation, hopelessness, self-hate*, and *overall risk of suicide*. On the SSF, higher ratings reflect a more serious suicidal risk. The six variables referred to as the SSF "Core Assessment" have previously demonstrated strong psychometric validity and reliability (Jobes, Jacoby, Cimbolic et al., 1997) with suicidal college students. In a recent replication study with suicidal inpatients, the SSF was shown to have excellent validity and good reliability (Conrad, Jacoby, Jobes et al., in press).

Behavior Health Questionnaire-20. The Behavior Health Questionnaire-20 (BHQ) is a brief questionnaire that uses 20 rating scales

to assess global mental health and current life functioning. Each item uses a 5-point scale ranging from 0 to 4, with higher scores representing *better* mental health (note that the BHQ is scored in a manner opposite to the SSF, described previously). The average BHQ is calculated from all of the items on the questionnaire and provides an index of *overall distress*, and the measure has been shown to have considerable psychometric strength (Kopta & Lowry, 2002). For example, the average BHQ score can be used to significantly distinguish different levels of psychopathology and can detect improvements after three therapy sessions. With relevance to the current study, Weinstein (2002) found that the BHQ effectively differentiated between suicidal and non-suicidal college students at the outset of therapy. Beyond the overall BHQ score, there are two suicide-specific items included on the BHQ-20—one assesses the *frequency of suicidal thoughts*, the other assesses *overall risk of suicide*. The average BHQ score (the index of general symptom distress), and the two suicide specific items from the BHQ were each used as three different dependent measures to address the three research questions.

Procedure

At the start of treatment, all patients in the original sample completed a Personal Identification Form (PIF) and the Behavior Health Questionnaire (BHQ). Anyone in this treatment setting who endorsed having thoughts of ending their life "sometimes" or more frequently than that on the BHQ were entered into the suicide tracking system. Additionally, if other counseling center patients expressed suicidal ideation at any point in the course of their care, they too were entered into the suicide tracking system at the therapist's discretion. Patients completed the initial SSF with their clinician in order to fully assess suicide risk in the index assessment session—refer to

Jobes (2006) for a detailed discussion of the "CAMS" approach for using the SSF. Patients were required to complete a BHQ assessment prior to every subsequent clinical contact over the course of their care. This procedure enabled clinicians to monitor clinical changes in symptoms and distress over the course of care, which in turn, enabled us to identify, track, and monitor session-by-session changes in BHQ variables for all the "Suicide Status" patients that we studied. As part of this agency's standard procedures, clinicians routinely reviewed the suicide-specific items of the BHQ and regularly addressed the patient's suicidality until resolution criteria were met (operationally defined as three consecutive sessions of no suicidal thoughts, feelings, or behaviors—refer to Jobes 2006; Jobes, Jacoby, Cimbolic et al., 1997). In this study we analyzed each patient's first suicidal episode within an academic year; subsequent suicidal episodes after they initially resolved their first suicidal presentation at the counseling center were not included in our data analyses. The participants' time in suicide tracking ranged from 1 to 31 sessions, the mean number of sessions was 7.15 ($SD = 5.38$).

Plan for Data Analyses

Using Hierarchical Linear Modeling 6.01 (HLM; Raudenbush & Bryk, 2002), we examined changes in participants' ratings on the BHQ *overall distress, frequency of suicidal thoughts*, and *overall risk of suicide* measures. HLM, also called multilevel modeling, was an appropriate framework for our study because it allowed us to examine inter-individual differences in participants' change over the course of care, while accommodating missing data and unevenly spaced time intervals between data points (Singer & Willet, 2002).

We created three multilevel models, one for each outcome measure (i.e., BHQ

overall distress, frequency of suicidal thoughts, and *overall risk of suicide*). Each model is comprised of two levels: a within person model (Level 1) that estimates an intercept (i.e., patients' initial BHQ ratings in the first session of treatment) and slope (i.e., average amount of change in the outcome measure per session) for each participant, and a between person model (Level 2) that allows for examination of inter-individual differences in the Level-1 estimates (i.e., most importantly, the slope).

Our initial analyses in this study examined unconditional models, which included time (i.e., treatment session number) as a Level-1 predictor, but no Level-2 predictors. These models allowed us to examine changes in distress and suicidality (i.e., *overall distress, frequency of suicidal thought*, and *overall risk of suicide* as measured with the BHQ) over the course of treatment. The resulting coefficient (i.e., slope; indicated by the Greek letter gamma γ) can be interpreted similarly to an unstandardized regression slope, that is, the change in suicidality associated with each subsequent treatment session.

In the next set of analyses, we examined whether the average amount of per-session change in distress and suicidality over the course of treatment (i.e., the slope in the Level-1 model associated with time) statistically significantly varied across participants. If so, then Level-2 predictors (i.e., SSF ratings recorded at the index assessment session—self-report ratings of *psychological pain, stress, agitation, hopelessness, self-hate*, and *overall risk*) were tested to see if they could account for this variance in change across participants. Level-2 predictors that accounted for portions of the inter-individual variance in change over the course of care were said to "moderate" the changes in the outcome measures over time. In essence, this analysis allowed us to determine whether clinicians could make predictions about the course and length of treatment based upon participants' ratings on the index SSF core items. In addition, we examined whether the index SSF core items could be used to predict the severity of participants' BHQ ratings of *overall distress, frequency of suicidal thoughts*, and *overall risk of suicide* at intake (i.e., the intercept in the Level-1 model for each measure).

The BHQ *frequency of suicidal thoughts* and *overall risk of suicide* outcome measures were on an ordinal scale, requiring the use of Hierarchical Generalized Linear Modeling (HGLM). HGLM is an extension of HLM that accommodates ordinal data by using a logit link function, making this analysis akin to a multilevel cumulative logit ordinal regression (see Raudenbush & Bryk, 2002 for a description of this technique). Since HGLM does not allow missing data at Level 2, we were required to reduce our original sample from 92 to 82 for these particular analyses (as previously noted).

RESULTS

At the start of treatment, the mean BHQ *overall distress* score was 1.95 (*SD* = .58), which falls between "moderately distressed" and "very distressed." The mean response to the BHQ *frequency of suicidal thoughts* item was 1.98 (*SD* = .96), falling between "sometimes" and "often." On the BHQ item asking the patient to rate their *overall risk of suicide*, the mean response was 2.54 (*SD* = .94), which falls between "low risk" and "moderate risk (other descriptive statistics appear in Table 2)."

Research Question 1: Changes in Distress and Suicidality

Our first research question examined whether suicidal patients' distress and suicidality decreased over the course of treatment. As expected, suicidal patients reported decreases over time in *overall*

TABLE 2. Descriptive Statistics

Variable	Mean	Standard deviation
Session number	6.02	5.03
PAIN	2.69	1.12
PRESS	2.86	1.12
AGITATION	1.88	1.38
HOPELESS	2.52	1.21
SELF HATE	2.34	1.31

Variable	Highest category	High category	Low category	Lowest category
OVERALLRISK	2 (2.4%)	23 (28%)	24 (29.3%)	33 (40.2%)
Frequency of suicidal thoughts[a]	76 (10.2%)	154 (20.8%)	197 (26.5%)	234 (31.5%)

[a]81 (10.9%) were missing data.

distress ($\gamma = 0.0030$, $SE = 0.0005$, $p < .001$), frequency of suicidal thought ($\gamma = 0.0069$, $SE = 0.0009$, $p < .001$), and overall suicide risk ($\gamma = 0.0042$, $SE = 0.0010$, $p < .001$). (Note the regression coefficients, γ, are positive because higher ratings on these measures indicate *better* mental health).

Research Question 2: Moderators of Change in Suicidality

The next set of analyses examined the extent to which differences in the average amount of per-session change in outcome measures over the course of treatment could be attributed to SSF ratings at the start of treatment. First, we confirmed that there was indeed significant variation in patients' average amount of per-session change in distress and suicidality over time for each outcome measure: *overall distress scores* $\chi^2(90, N = 82) = 856.38$, $p < .01$, *frequency of suicidal thoughts* $\chi^2(90, N = 82) = 479.28$, $p < .01$, and *overall suicide risk* $\chi^2(90, N = 82) = 212.62$, $p < .01$, respectively. Then we included potential moderators of change over the course of treatment (i.e., index SSF core items of *pain, press,*

TABLE 3. Within and Between-Persons Model of Frequency of Suicidal Thoughts

Fixed effects	Change in log-odds	SE^a	Odds ratio
Intercept, $\beta00$	−3.486	.654***	.030
HOPELESS, $\beta01$	.366	.223*	1.44
SELF HATE, $\beta02$	.396	.165**	1.49
SESSION # $\beta10$	−1.121	.195***	.326
OVERALL RISK1 $\beta11^b$	.481	.253*	1.617
OVERALLRISK2 $\beta12^b$	.590	.265**	1.803
OVERALLRISK3 $\beta13^b$	.853	.180***	2.348
Threshold2, d(2)	2.247	.180***	9.463
Threshold3, d(3)	4.684	.341***	108.168
Random effects	Standard Deviation	Variance	Reliability
Intercept, r0	1.654	2.7354***	.540
SESSION# slope, r1	.757	.573***	.550

[a]Estimated using robust standard errors.
[b]The overall risk variable was dummy-coded with overall risk = 0 as the reference group. There is no OVRSK4 variable because no participant responded with that value.
*$p < .10$.
**$p < .05$.
***$p < .01$.

agitation, hopelessness, self-hate, and *overall risk of suicide*) as Level 2 predictors.

Analyses revealed that changes in BHQ *frequency of suicidal thoughts* were moderated by the SSF *overall risk* rating at the start of treatment (see Table 3). That is, over the course of treatment, patients with lower *overall risk* ratings at intake showed a greater reduction in *frequency of suicidal thoughts* per session than those with more severe *overall risk* ratings. This finding indicates that, on average, patients with greater *overall risk* SSF ratings may require more treatment sessions than patients presenting with lower SSF ratings of *overall risk* in order to reduce their frequency of suicidal thoughts to lower levels. No other index SSF core items had a statistically significant relationship with the variance in the amount of change in *frequency of suicidal thoughts* over the course of treatment. While there was inter-individual variance in the average amount of per-session changes in participants' BHQ *overall distress* and *overall suicide risk* ratings, none of the index SSF core items were statistically significantly related to these outcome measures.

Research Question 3: Relations between SSF Scores and BHQ Ratings at Start of Treatment

To further understand suicidal patients' distress and suicidality, we examined the role of SSF ratings in predicting BHQ scores at the start of treatment. We found that index SSF ratings of *hopelessness* and *self-hate* were statistically significantly related to participants' initial BHQ ratings of *frequency of suicidal thoughts* (i.e., intercept) (see Table 3). On average, participants who indicated more severe ratings of *hopelessness* and *self-hate* also rated their BHQ *frequency of suicidal thoughts* as more severe in their first session. In essence, patients initially reporting high levels of *hopelessness* or *self-hate* begin treatment with higher ratings of BHQ *frequency of suicidal thoughts*, and should be expected to require longer periods of treatment to reduce suicidal thoughts. These various effects can be seen in Figures 1 and 2 where the odds have been converted into probabilities. In both figures the x-axis indicates treatment session number and y-axis represents the predicted probability of the participant indicating the *highest* BHQ ratings of
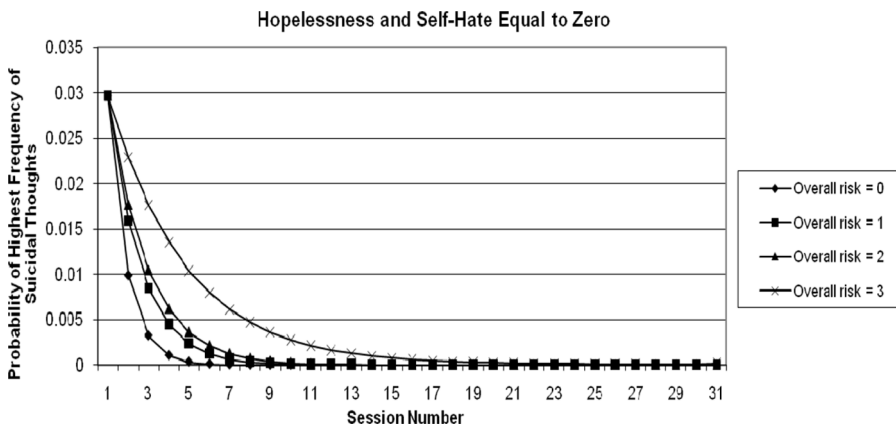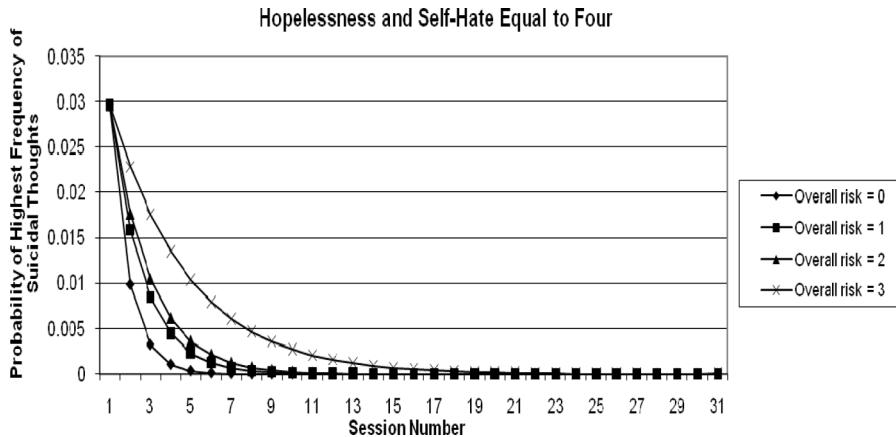

FIGURE 1. *Probabilities of participants having the highest BHQ frequency of suicidal thoughts by index SSF overall risk of suicide rating (with initial SSF hopelessness and SSF self hate ratings equal to zero).*

FIGURE 2. *Probabilities of participants having the highest BHQ frequency of suicidal thoughts by index SSF overall risk of suicide rating (with initial SSF hopelessness and SSF self hate ratings equal to four).*

frequency of suicidal thoughts. In Figure 1 the probabilities are calculated assuming participants indicated low levels of *hopelessness* and *self-hate*. Each line represents a different level of SSF *overall risk* rating. While the overall probabilities of participants rating themselves as having the highest BHQ *frequency of suicidal thoughts* were quite low, session-to-session improvement over the course of care for those with higher SSF *overall risk* was less for those with lower SSF *overall risk of suicide* ratings (i.e., compared to those with lower SSF *overall risk* ratings, it took those with high SSF *overall risk of suicide* ratings longer to reach a point in their treatment where their predicted probability of indicating high BHQ ratings of *frequency of suicidal thoughts* was zero).

Figure 2 shows a dramatic change in probabilities when both SSF *hopelessness* and *self-hate* were rated high; at session one the predicted probability of participants rating themselves as having the highest BHQ *frequency of suicidal thoughts* was 40%, compared to 3% in Figure 1. This finding demonstrated how initial ratings of SSF *hopelessness* and *self-hate* were related to the participants' initial ratings of BHQ *frequency of suicidal thoughts.* Figure 2 also

shows how SSF *overall risk* ratings moderated the predicted rate of change over the course of care, mirroring the effects shown in Figure 1. In general, these figures show that patients' SSF *overall risk, hopelessness*, and *self-hate* ratings can be used to predict both their initial frequency of suicidal thoughts, as well as the expected length of their course of treatment.

DISCUSSION

Overall, suicidal patients in our sample improved over the course of clinical care in terms of overall symptom distress and suicidal thinking. A particularly noteworthy finding was that patients' SSF rating of *overall risk of suicide* in their first session moderated their predicted session-to-session change over the course of treatment in terms of their *frequency of suicidal thoughts*, as measured by the BHQ. Specifically, on average, patients who indicated more severe SSF-measured *overall risk* took longer to decrease their BHQ *frequency of suicidal thoughts* to lower levels, whereas those who reported less severe SSF *overall risk of suicide* scores progressed much more

quickly. Additionally, index SSF ratings of the *hopelessness* and *self-hate* variables were predictive of patients' initial BHQ *frequency of suicidal thoughts*, with those who had higher ratings of SSF measured *hopelessness* and *self-hate* more likely to report higher levels of *frequency of suicidal thoughts* on their initial session BHQ.

These findings are worth discussing in more depth, as they are relevant to contradictory findings of previous research and in relation to clinical relevance. To contextualize our results, as per the "null hypothesis" there would be no expectation that *any* patient index SSF ratings would have any capacity to predict any "down-stream" dependent variable. In our study, individual index SSF ratings failed to predict improvements in BHQ *overall distress* scores or the individual BHQ item rating the *overall risk of suicide*. There was, however, a striking capacity to predict the individual BHQ item assessing the *frequency of suicidal thoughts*—an extremely important assessment construct—by using the index ratings of the sixth SSF variable of *overall risk*.

Interestingly, the predicted course of treatment was further related to index SSF ratings of *hopelessness* and *self-hate*. Critically, this latter finding may be seen as a partial replication of an earlier study in which a discriminant function analysis using index SSF ratings with 104 suicidal college students significantly differentiated categorical treatment outcomes of "acute resolvers" versus "chronic non-resolvers" (Jobes, Jacoby, Cimbolic et al., 1997). In that study, the SSF construct of *hopelessness* was a key discriminating variable among the sub-sample of patients who rapidly resolved their suicidal ideation. In contrast, the SSF *self-hate* construct was a key discriminating variable for the sub-sample with more chronic suicidal ideation over the course of care.

One could interpret this partial replication of this previous research as further evidence that fundamentally different types of

suicidal states exist, with significant clinical implications therein. For example, the rapidly responding suicidal sub-group may have a kind of short-term situational crisis that places them in an acutely suicidal state where *hopelessness* is psychologically central (refer to Jobes, 1995, 2000, 2006). We believe that such psychologically "entrapped" suicidal patients (see Williams, 2001) have a more state-based type of suicidal risk that is perhaps more psychologically "plastic" and thereby potentially more amenable to short-term problem-solving treatment. In contrast, *self-hatred* would seem more trait-based and thereby less plastic and less amenable to rapid therapeutically induced change. Nevertheless, we would like to point out that the more chronically suicidal patients in the current study still became less distressed overall and also demonstrated decreases in suicidal ideation over the course of longer-term care—a further replication of results seen in the Jobes, Jacoby, Cimbolic et al. (1997) study.

In terms of bottom-line clinical implications, not all suicidal states are the same. Based on data from this study, along with previous research, it would appear that we are increasingly able to prospectively differentiate who might quickly reduce/resolve their suicidal ideation in contrast to those who may have more chronic suicidal states (requiring more and longer treatments to produce reductions in suicidal thinking). Such research underscores the importance of systematically studying—and subsequently replicating—suicide risk assessment research using key assessment variables that may have predictive clinical utility concerning possible treatment process and outcomes that might be expected over the course of standard clinical care. As a practical illustration, a training agency may appropriately assign certain suicidal cases with the promise of rapid resolution to a well-supervised but less experienced clinician, whereas cases that may appear to have more potential for chronicity may require

the experience of more senior personnel. Whatever the case, this research opens the door to further treatment-oriented studies that might ultimately enable us to *prescriptively* match certain clinical treatments to certain suicidal states providing more effective care for a range of suicidal patients (refer to Jobes, 1995, 2006).

While this research is promising and responds directly to recent calls for the study of moderators in treatment research (e.g., Kazdin, 2008), there are nevertheless some distinct limitations. This college student sample of suicidal patients is obviously limited, which affects the generalizability of these data. Clearly, similar studies using larger samples that span different ages with more diversity are needed. The current sample included a relatively advantaged group of relatively low-risk suicidal ideators with generally less psychopathology overall in comparison to inpatient samples or suicidal cohorts who are not in a university setting (refer to Lineberry, Brancu, Varghese et al., 2006).

Another potential criticism of the study may pertain to our use of a single item from an established scale as a proxy index of suicidal ideation. While this is widely done in the extant literature (e.g., the many studies that use the suicide question from the Beck Depression Inventory as a dependent variable), we are comfortable using this type of dependent variable for various reasons. First, given the relatively small sample size, the use of a single variable as a dependent measure greatly facilitated our efforts to perform HLM analyses with these data. Multiple indicators, while sometimes yielding better measures of latent constructs, often require factor analyses that, particularly in an HLM framework, often demand much larger sample sizes that are difficult to obtain with this population. In addition, it is important to note that the study did not rely solely on a single variable from the BHQ since we also studied the BHQ *overall distress* score

as well as the *severity of suicidal thoughts* item from the BHQ. Moreover as an unabashed exploratory study, we have clearly generated important results that partially replicated previous research using a completely different methodology, data analyses, and dependent variables. While there were limits to using the BHQ as did, we would like to note that a particular strength of the current study was the routine use of the BHQ at *every* clinical contact. It is well known that in most "real world" clinical settings psychometrically sound assessment tools are rarely if ever used (let alone used at *every* clinical contact)—refer to Jobes, Eyman, and Yufit (1995). Therefore what we lost in terms of optimal internal validity was meaningfully compensated by the notable external validity of this study. Indeed, these data came from a real-world clinic, not a research lab; this particular aspect of our study greatly enhances the generalizability of these data to clinicians "working in the trenches" of outpatient mental health practice.

In conclusion, our use of first session SSF ratings to study linear trajectories of treatment-related process and outcomes is complex and these exploratory data should be interpreted with caution. However, we are nevertheless struck that three of the six core SSF ratings obtained in patient's first session significantly differentiated four different trajectories measuring declinations in suicidal ideation over the course of clinical care. Given the partial replication of previous data pertaining to state vs. trait characteristics of different types of suicidal patients, the implications of these data are notable for clinical practice and future research of more diverse and higher risk suicidal samples.

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REFERENCES

Arias, E., Anderson, R. N., Kung, H. C., et al. (2003). Deaths: Final data for 2001. *National Vital Statistics Reports*, 52.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review*, 97, 90–113.

Beck, A. T. (1986). Hopelessness as a predictor of eventual suicide. *Annals of the New York Academy of Sciences*, 487, 90–96.

Beck, A. T., Brown, G., Berchick, R. J., et al. (1990). Relationship between hopelessness and ultimate suicide: A replication with psychiatric outpatients. *American Journal of Psychiatry*, 142, 190–195.

Beck, A. T., Steer, R. A., Kovacs, M., et al. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry*, 142, 559–563.

Conrad, A. K., Jacoby, A. M., Jobes, D. A., et al. (in press). A psychometric investigation of the Suicide Status Form II with a psychiatric inpatient sample. *Suicide and Life-Threatening Behavior*.

Furr, S. R., Westefeld, J. S., McConnell, G. N., et al. (2001). Suicide and depression among college students: A decade later. *Professional Psychology: Research and Practice*, 32, 97–100.

Jobes, D. A. (1995). The challenge and the promise of clinical suicidology. *Suicide and Life-Threatening Behavior*, 25, 437–449.

Jobes, D. A. (2000). Collaborating to prevent suicide: A clinical-research perspective *Suicide and Life-Threatening Behavior*, 30, 8–17.

Jobes, D. A. (2006). *Managing suicidal risk: A collaborative approach*. New York: The Guilford Press.

Jobes, D. A., Eyman, J. R., & Yufit, R. I. (1995). How clinicians assess suicide risk in adolescents and adults. *Crisis intervention and time-limited treatment*, 2, 1–12.

Jobes, D. A., Jacoby, A. M., Cimbolic, P., et al. (1997). Assessment and treatment of suicidal clients in a university counseling center. *Journal of Counseling Psychology*, 44, 368–377.

Jobes, D. A., Nelson, K. N., Peterson, E. M., et al. (2004). Describing suicidality: An investigation of qualitative SSF responses. *Suicide and Life-Threatening behavior*, 34, 99–112.

Kazdin, A. E. (2008). Evidence-based treatment and practice: New opportunities to bridge clinical research and practice, enhance the knowledge base, and improve patient care. *American Psychologist*, 63, 146–159.

Kisch, J., Leino, E. V., & Silverman, M. M. (2005). Aspects of suicidal behavior, depression, and treatment in college students: Results from the spring 2000 national college health assessment survey. *Suicide & Life-Threatening Behavior*, 35, 3–13.

Kopta, S. M., & Lowry, J. L. (2002). Psychometric evaluation of the behavioral health questionnaire-20: A brief instrument for assessing global mental health and the three phases of psychotherapy outcome. *Psychotherapy Research*, 12, 413–426.

Lineberry, T. W., Brancu, M., Varghese, R., et al. (2006, March). *Clinical use of the suicide status form on a psychiatric inpatient unit*. Poster presented at the Fourth Aeschi Conference, Aeschi, Switzerland.

Linehan, M. M., Comtois, K. A., Murray, A. M., et al. (2006). Two-year randomized controlled trial and follow-up of dialectic behavior therapy vs. therapy by experts for suicidal behaviors and borderline personality disorder. *Archives of General Psychiatry*, 63, 757–765.

Ogrodniczuk, J. S., Piper, W. E., Joyce, A. S., et al. (2001). Investigating follow-up outcome change using hierarchical linear modeling. *Psychotherapy Research*, 11, 13–28.

Peterson, E. (2004). *Assessing suicide risk and predicting treatment outcomes: The role of suicide history, suicide status form qualitative responses, and response style*. Unpublished Dissertation, The Catholic University of America, Washington, D.C.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Silverman, M. M., Meyer, P. M., Sloan, F., et al. (1997). The big ten student suicide study: A 10-year study of suicides on midwestern university campuses. *Suicide and Life-Threatening Behavior, 27,* 285–303.

Shneidman, E. S. (1993). *Suicide as psychache: A clinical approach to self-destructive behavior.* Northvale, NJ: Aronson.

Singer, J. D., & Willet, J. B. (2002). *Applied longitudinal data analysis: Modeling change and event occurrence.* New York: Oxford University Press.

Weinstein, M. J. (2002). *Psychotherapy progress of suicidal students at the johns hopkins university counseling and student development center.* The Chicago School of Professional Psychology, Chicago, IL.

Williams, M. (2001). *Suicide and attempted suicide.* London: Penguin Books.