Research report

Change in “resolved plans” and “suicidal ideation” factors of suicidality after participation in an intensive outpatient treatment program

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Abstract

Background: This study aims to investigate factors related to suicide in a unique clinical population with more chronic psychopathology than many outpatient samples.
Method: One hundred and five adult outpatients were included in the current study. We predicted that higher scores on the resolved plans and preparation (RPP) factor of the Beck Suicide Scale [Beck, A.T., Kovacs, M., Weissman, M., (1979). Assessment of suicidal intention: The scale for suicidal ideation. Journal of Consulting and Clinical Psychology 47, 343–352] would predict multiple attempter status even after accounting for co-morbid diagnoses and suicidal ideation (SI) factor scores. Additionally, we predicted that the scores on the RPP factor would decrease less over time than scores on the SI factor.

Results and conclusions: Results were consistent with both hypotheses, suggesting that RPP factor scores were uniquely predictive of status as a multiple attempter and were more stable over time.

Limitations: Mental health diagnoses were rendered without the use of a structured interview and therefore no reliability data were collected.

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Keywords: Suicide; Personality disorders; Multiple attempter; Resolved plans and preparations; Beck Suicide Scale

1. Introduction

Among psychiatric patients with a variety of diagnoses, the ongoing risk of suicide remains extremely elevated and the consequences undeniably devastating. It is estimated that the rate of death by suicide in the general population is 0.01%, while in psychiatric populations it is elevated to 1% (Brown et al., 2000). As many as 90% of individuals who complete suicide have a diagnosable Axis I disorder and 30–40% of these have an Axis II disorder (Duberstein et al., 1997). Comorbidity, or the co-occurrence of two or more psychiatric disorders in a patient, has been shown to predict suicide attempts over and above the effects of any individual diagnosis (Kessler et al., 1999). Chronically suicidal patients with personality disorders in addition to Axis I diagnoses may prove particularly challenging to clinicians.

Studies have shown that the risk of death by suicide for patients with borderline personality disorder and
other personality disorders is substantial (Canetto et al., 1998). Research addressing risk factors, prevention strategies, and treatment outcomes of individuals with suicidal ideation and a history of suicide attempts is invaluable to the mental health field. Thus, this study will investigate risk factors related to suicide in a population of patients (mostly women) with multiple diagnoses, a range of personality disorders, and chronic histories of suicidality. In particular, we describe the use of one model (Joiner et al., 1997) designed to aid clinicians in the prediction of risk for suicidal behavior.

In an effort to aid clinicians with the prediction of risk for suicide in their patients, Joiner and colleagues (1997) have identified two distinct clusters of common suicidal symptoms, one of which might be relatively more serious than the other. They named these factors “suicidal desire and ideation” and “resolved plans and preparation.” The suicidal desire and ideation factor, though highly associated with depression, is less predictive of suicide attempts and completions, and includes symptoms like few reasons for living, wish to die, frequency of ideation, passive attempt, and desire for attempt.

Of relatively more concern are the symptoms comprising the resolved plans and preparation factor, including a sense of courage to make an attempt, availability of means and opportunity for attempt, a sense of competence to make an attempt, duration of suicidal ideation, and intensity of suicidal ideation (Joiner et al., 1997). In fact, research suggests that courage to make an attempt may be a particularly pernicious risk factor (Joiner et al., 1997). Resolved plans and preparation symptoms are more strongly associated with attempted suicide and death by suicide (Joiner et al., 1999), and may actually increase as a patient accumulates practice with each attempt. The authors suggest that differentiation of these two symptom clusters can provide clinicians with a strategy for quantifying risk in their patients and potentially providing more appropriate interventions.

Furthermore, research suggests that individuals with a history of multiple suicide attempts (multiple attempters), compared to single attempters or those who have never attempted suicide (suicide ideators), compose a relatively distinct group with regard to personality characteristics, suicidal symptoms, and more importantly, risk for an attempt (Forman et al., 2004). These individuals are more likely to endorse symptoms on the “resolved plans and preparation” cluster of suicidal symptoms and are at baseline, even under the best conditions, more likely to attempt suicide than single attempters and suicidal ideators (Joiner et al., 1999).

This elevated baseline for suicide attempts may be related to the severity, type, and chronicity of their psychopathology (Joiner et al., 1999), as well as the build-up of resolved plan and preparation factors through repeated suicide attempts, such as courage and competence to make an attempt. It has been suggested that repeated impulsive suicidal acts might actually help impulsive individuals become more planful regarding suicide, in that they are more capable, courageous, and competent to make an attempt (Pettit et al., 2004). Joiner (2005) further suggests that past suicidal behavior itself may be causally linked to future suicide attempts.

Taken together, this research suggests several clinically relevant and empirically sound factors that might assist in the identification of increased risk for suicide and aid clinicians with prevention and treatment. In the current study, we investigated these factors in a unique clinical population with more chronic psychopathology, less stable relationships, and fewer financial resources than many outpatient samples. In fact, the patients involved in the current investigation were often referred for treatment because of their previous lack of treatment response and continued impairment in social and occupational functioning. The patients in this study were examined in a naturalistic setting, providing advantages for potential generalizability and heterogeneity, as well as disadvantages such as less-than-optimal diagnostic strategies and the absence of a control group with which to make comparisons.

We hypothesized that higher scores on the resolved plans and preparation (RPP) factor and the suicidal ideation factor (SI) as well as increased numbers of co-morbid Axis I and Axis II diagnoses would be related to status as a multiple attempter versus a single attempter or never-attempter. More specifically, we predicted a special relationship between RPP factor scores and status as a multiple attempter, such that higher scores on the “resolved plans and preparation factor” of the Beck Suicide Scale (1979) would predict multiple attempter status even after accounting for co-morbid diagnoses and SI factor scores. Additionally, given empirical evidence that components of the RPP factor score may be acquired with practice, these traits may remain more stable than SI factors. As such, we predicted that the scores on the resolved plan and preparations factor would decrease less over the course of treatment than scores on the suicidal ideation factor.

2. Method

2.1. Participants

Written informed consent was obtained from each participant prior to their intake visit and all study
procedures were in compliance with IRB regulations. One hundred and five patients (age 18 or older at the time of intake) were included in the current study. All participants were referred to the Intensive Outpatient Treatment Program (IOP) at a county hospital by a psychiatrist, a psychologist, or other mental health provider. No data are available on those who were referred but chose not to participate in the program. Comprehensive patient data (e.g., demographic information, treatment history, objective questionnaires, diagnoses, and treatment outcome) used in this study were routinely entered into a clinic database.

The program staff consisted of a multidisciplinary team of clinicians who met twice a week to discuss patient care, including a psychiatrist, social worker, psychologist, occupational therapist, and licensed chemical dependency counselor, as well as supervised trainees. Patients were required to attend groups, medication management sessions, and individual therapy three days a week. Each patient was required to retain sobriety for at least 30 days before entering the program and develop a specific crisis plan with his or her individual therapist, addressing self-mutilation, substance relapse, suicidal ideation, and other risky behaviors. Further details of treatment will not be expanded here, as this study does not attempt to comment on treatment outcome, per se.

The sample for the current investigation comprised 13.4% men and 86.6% women. 69.4% of patients had attempted suicide at least once in their lifetime and 70.8% had been hospitalized in a psychiatric facility at least once in their lifetime. Additionally, 52.8% of patients had been hospitalized at least twice and 35.2% had been hospitalized 3 months prior to their intake interview.

Patients admitted to the program carried at least one Axis I or Axis II diagnosis, though many met criteria for co-morbid disorders. More specifically, 52.6% of patients had at least two co-morbid disorders and 11.0% were diagnosed at intake with three or more disorders. More explicit diagnostic information follows: Major Depressive Disorder — 50.1%; Double Depression (Major Depressive Disorder and Dysthymia) — 7.6%; any anxiety disorder — 32.4%; Bipolar Disorder (I and II) — 36.2%; any eating disorder — 3.8%; any substance use disorder — 4.8%; Borderline Personality Disorder — 45.7%; other personality disorder — 2.9%. Unfortunately, information reflecting sub-clinical levels of Axis I or Axis II disorders in the patients assessed was not systematically recorded. It is possible that these percentages serve as an underestimation of the level of psychopathology in this sample.

2.2. Measures and procedures

2.2.1. Scale for suicidal ideation (Beck et al., 1979)

The BSS is a 21-item self-report measure designed to assess multiple factors related to suicide, such as ideation, intensity of ideation, reasons for living, and suicide plans. Each patient completed this measure as part of larger questionnaire battery before treatment began (Time 1) and after the completion of treatment (Time 2). Two factor scales were derived from this measure based on previous research (Joiner et al., 1997): Resolved Plans and Preparation (competence to attempt, intensity of thoughts, courage to attempt, availability/opportunity, specificity of plan, duration of thoughts, and preparation for an attempt) and Suicidal Ideation (items reasons for living/dying, wish to die, frequency of ideation, wish not to live, passive attempt, desire active attempt, expectancy of attempt, deterrent to attempt, and talk of death/suicide).

2.2.2. Axis I and Axis II diagnoses

All diagnoses were made based on the DSM-IV (American Psychiatric Association, 1994) by a psychiatrist and co-director of the IOP treatment program prior to beginning the treatment program and before any questionnaires were completed by the patient. Psychiatrists conducted an in-depth clinical interview with each patient, reviewed referral information, and reviewed pertinent medical records as available.

2.2.3. Multiple attempter status

Before treatment and after the completion of treatment, each patient was asked to complete an extensive questionnaire battery including several questions assessing number of past suicide attempts, self-injuries, psychiatric hospitalizations, and emergency room visits related to mental health.

3. Results

Prior to the analyses, all variables were examined for accuracy of data entry, missing values, and fit between distribution of variables and the assumptions of multivariate analysis. Means and bivariate correlations between all variables of interest are presented in Table 1. Multiple attempter status, number of comorbid diagnoses, suicidal ideation factor scores, and resolved plans and preparation scores were all significantly correlated, as might be expected based on previous research.

Given the high degree of correlation between the variables of interest, a sequential multiple regression analysis was employed to test the hypothesis that the RPP factor was related to status as a multiple attempter.
Table 1
Correlations and descriptive statistics for variables associated with multiple attempter status (N=105)

<table>
<thead>
<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
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<tbody>
<tr>
<td>Number of Axis II</td>
<td></td>
<td></td>
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<tr>
<td>diagnoses (1)</td>
<td></td>
<td></td>
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<tr>
<td>Suicidal Ideation</td>
<td>0.26**</td>
<td>0.21</td>
<td>0.88**</td>
<td>-</td>
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<tr>
<td>factor score (2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Resolved plans and</td>
<td>0.26**</td>
<td>0.31**</td>
<td>0.36**</td>
<td>-</td>
</tr>
<tr>
<td>preparation factor</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>score (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple attempter</td>
<td>0.27**</td>
<td>0.31**</td>
<td>0.36**</td>
<td>-</td>
</tr>
<tr>
<td>status (4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.70</td>
<td>5.32</td>
<td>4.68</td>
<td>1.21</td>
</tr>
<tr>
<td>SD</td>
<td>0.75</td>
<td>5.11</td>
<td>3.90</td>
<td>0.86</td>
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</tbody>
</table>

Note. Suicidal ideation and resolved plans and preparation factor scores taken pre-treatment; Multiple attempter status = 0 — No suicide attempts; 1 — One suicide attempt; 2 — Two or more suicide attempts; *p < 0.05, **p < 0.01.

Total number of diagnoses at intake was added in the first step of the regression equation and SI factor scores were added in the second step to evaluate each variable’s unique contribution to MA status. Results indicated that number of diagnoses at intake significantly predicted status as a multiple attempter (F (1, 103) = 8.52; p < 0.005; R² = 0.07) and after controlling for this variable, SI factor scores also significantly predicted MA status (F (2, 102) = 8.28; p < 0.001; R² = 0.12). RPP factor scores were entered into the third step of the regression equation and resulted in a significant association with MA status even after controlling for number of disorders and the SI factor (F (3, 101) = 6.91; p < 0.001; R² = 0.15), indicating that RPP factor scores predict status as a multiple attempter even after one accounts for number of comorbid diagnoses and an individual’s level of suicidal ideation (see Table 2). In fact, SI factor scores did not significantly predict MA status after RPP factor scores were included in the model, further highlighting the distinctiveness of the RPP factor in the prediction of MA status.

To further test the distinctiveness of the RPP factor in the prediction of MA status, a second sequential multiple regression analysis was used. Again, number of co-morbid diagnoses at intake was added in the first step of the equation and then RPP factor scores were added in the second step. SI factor scores were included in the third step in order to assess their ability to predict MA status after controlling for co-morbid diagnoses and RPP factor scores. Though each step in the model significantly predicted MA status, SI factor scores did not significantly contribute to the prediction of MA status (t = -0.36; p = 0.72). Including SI factor scores in the third step of the model did not result in a significant change (R² change = 0.001).

In the second set of analyses, sample size was substantially decreased due to attrition or absence of data during Time 2. Specifically, only 55 participants were included in these analyses. Independent samples t-tests revealed no significant differences between those who completed the post-treatment paperwork and those who did not on the following variables: number of diagnoses at intake, SI factor scores at Time 1, RPP factor scores at Time 1, number of suicide attempts, and multiple attempter status.

In order to test the hypothesis that the RPP factor would change less over the course of treatment than the SI factor, a Time (2 levels; Time 1, before treatment and Time 2, after treatment) X Factor (2 levels; SI factor and RPP factor) repeated-measure analysis of variance was employed. There was a significant main effect for Time (F (1, 54) = 12.56; p = 0.001) as well as a significant interaction between Time and Factor (F (1, 54) = 5.28; p < 0.03). Pair-wise comparisons revealed that only SI factor means significantly decreased (M difference = 1.57, p = 0.001) from Time 1 to Time 2, while RPP factor means did not significantly decrease (M difference = 0.34; p = 0.29; Fig. 1).

4. Discussion

As predicted, number of co-morbid Axis I and II diagnoses as well as both BSS factor scores (suicidal

Table 2
Sequential multiple regression equation predicting multiple attempter status (N=105)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>R²</th>
<th>T</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV = multiple attempter status</td>
<td></td>
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<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number of diagnoses at intake</td>
<td>0.32</td>
<td>0.11</td>
<td>0.28</td>
<td>0.07</td>
<td>3.26**</td>
<td>8.52**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of diagnoses at intake</td>
<td>0.24</td>
<td>0.11</td>
<td>0.21</td>
<td>0.12</td>
<td>2.20*</td>
<td>8.28**</td>
</tr>
<tr>
<td>Suicidal ideation factor</td>
<td>0.04</td>
<td>0.02</td>
<td>0.26</td>
<td>0.74**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of diagnoses at intake</td>
<td>0.25</td>
<td>0.11</td>
<td>0.22</td>
<td>0.15</td>
<td>2.32*</td>
<td>6.91**</td>
</tr>
<tr>
<td>Suicidal ideation factor</td>
<td>-0.01</td>
<td>0.03</td>
<td>-0.07</td>
<td>-0.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolved plan and preparations factor</td>
<td>0.08</td>
<td>0.04</td>
<td>0.37</td>
<td>2.01*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < 0.05, **p < 0.01.
ideation and resolved plans and preparation) significantly predicted status as a multiple suicide attempter versus a single attempter or a never attempter (suicidal ideator). More interestingly, RPP factor scores predicted multiple attempter status even after controlling for diagnoses and SI factor scores, suggesting that the resolved plans and preparation items are able to differentiate between these groups even within a unique group of patients with significant levels of psychopathology, high rates of Borderline Personality Disorder, significant histories of self-harm and suicide, and deficits in social and occupational functioning.

SI factor scores were not incrementally valid in the prediction of MA status after number of co-morbid diagnoses and RPP factor scores were accounted for, further illustrating the unique ability of the RPP factor scores to aid in the prediction of status as a multiple attempter. Consistent with previous studies (see Wingate et al., 2004), these results imply that the assessment of the RPP items may constitute a particularly powerful method for quantifying risk status in patients and therefore allow for more systematic intervention.

Additionally, the results were consistent with the hypothesis that SI factor scores would decrease more over time than RPP factor scores. Suicidal ideation factors scores significantly decreased, while resolved plans and preparation scores did not significantly decrease over time. Perhaps the resolved plans and preparation items are more likely to constitute dispositions that build up over time, rather than transient states that fluctuate readily in conjunction with mood and stress. Specifically, Joiner (2005) contends that the act of attempting suicide or self-injury may habituate an individual to the negative effects of such an act, such as pain and fear, while also increasing an individual’s courage and competence to self-harm again. Short-term treatment, albeit intensive, is thus less likely to affect such dispositions, though with the high rate of attrition and resulting small sample size at Time 2, it is possible that we lacked the power needed to detect a significant reduction in RPP factor scores. However, we might expect to reduce SI factor scores with various short-term treatments but may have difficulty reducing RPP factor scores.

Studies from various research groups in samples with differing characteristics support Joiner’s (2005) assertion that past suicidal behavior is actually causally related to future suicidal behavior in that past attempts may instantiate the ability to enact future self-injury through mechanisms such as decreased fear and increased habituation to the “taboo” of suicide (Joiner et al., 2005). As such, it is no surprise that RPP factor scores were incrementally predictive of multiple attempter status even within a group of participants with higher instances of suicide attempt, self-injury, and psychopathology than many clinical populations, as multiple suicide attempts would be expected to instill more courage and competence to hurt oneself by virtue of repeated practice.

These results may seem somewhat discouraging as they suggest that RPP factor scores are stable and unlikely to decrease. Is it the case that clinicians can do little to reduce these particular suicidal symptoms once they have been acquired? This question deserves further study, as it may be the case that treatment could at least halt the upward trajectory of these scores or even reduce them. Alternatively, short-term interventions may have the most success at preventing suicide by targeting SI factor scores, which may be more malleable than RPP factor scores. If successful, at-risk individuals may retain the ability to complete suicide (RPP factor) but lack the desire to kill themselves (SI factor scores), therefore preventing attempted suicide. This is consistent with Joiner’s assertion that both ability and desire are needed to complete suicide (Joiner, 2005).

Despite promising results, several limitations must be noted. Diagnoses were rendered by a psychiatrist and no investigation of the reliability of these diagnoses was performed. It is possible that the diagnosing clinicians were biased towards higher rates of Borderline Personality Disorder by the fact that the patient was even referred to the program, as it is known in the community as a resource for individuals with this disorder. A more optimal diagnostic system might have utilized a systematic interview tool such as the Structured Clinical Interview for the DSM (SCID-II; First et al., 1995), which possesses adequate reliability coefficients. Additionally, as there was no control group, this study was unable to examine the effect of the specific treatment model on the variables of interest such as suicidal ideation and BSS factor scores. It should also be noted.
that some individuals who were classified as suicidal ideators or single attempters may go on to become multiple attempters. Lastly, the sample used in the current study was self-selected, in that these individuals were seeking treatment, and a majority of the participants were women, two factors which may limit the generalizability of the reported results.

Overall, this study supports the model for suicidal risk assessment proposed in 1999 by Joiner et al. within a unique population with severe dysfunction related to chronic psychopathology and suicidality. This investigation supports the real-world applicability of an empirical assessment protocol in a setting that desperately needs a systematic approach, given the nature of the patients.

References


