Published in final edited form as:

Depress Anxiety. 2009 ; 26(6): 568–574. doi:10.1002/da.20412.

Depressive Characteristics of Adult Psychiatric Inpatients with a History of Multiple versus One or No Suicide Attempts

Brandon E. Gibb,

Binghamton University

Margaret S. Andover, and

Brown University and Butler Hospital

Ivan W. Miller

Brown University and Butler Hospital

Abstract

A growing body of research suggests that individuals with a history multiple suicide attempts exhibit more severe psychopathology than individuals with only one or no previous suicide attempts. Given the strong link between diagnoses of major depression and suicide risk, our primary goal was to determine which specific depressive characteristics differentiate multiple attempters from patients with one or no previous attempts. In a sample of 121 depressed adult psychiatric inpatients, we found that patients with a history of multiple suicide attempts exhibited higher levels of suicidal ideation and depressive symptoms, but not hopelessness or dysfunctional attitudes, than the other two groups. In addition, multiple attempters reported an earlier age of major depression onset.

Keywords

multiple attempter; suicidal ideation; depression; hopelessness

A history of past suicide attempts is one of the best, if not the best, single predictors of future death by suicide (for reviews, see Gould, Greenberg, Velting, and Shaffer, 2003; Harris and Barraclough, 1997; Mo cicki, 2001). Traditionally, researchers have grouped all patients with a history of suicide attempts into a single category. However, a growing body of research suggests that there may be meaningful differences between patients with a history of one versus multiple suicide attempts. Specifically, studies have found that multiple attempters exhibit more depressive symptoms, suicidal ideation, and hopelessness than single attempters (Esposito, Spirito, Boergers, and Donaldson, 2003; Forman, Berk, Henriques, Brown, and Beck, 2004; Goldston *et al.*, 1998; Kaslow, Jacobs, Young, and Cook, 2006; Rudd, Joiner, and Rajab, 1996). Although multiple attempters also exhibit more symptoms of borderline personality disorder and are more likely to meet criteria for the disorder than are single attempters (Corbitt, Malone, Hass, and Mann, 1996; Forman *et al.*,

2004; Rudd *et al.*, 1996), attempter group differences in depressive symptoms, suicidal ideation, and hopelessness are maintained even after statistically controlling for diagnoses of borderline personality disorder (Forman *et al.*, 2004), suggesting that group differences are not due simply to the presence of this disorder. Also, there is no evidence that single versus multiple attempters differ in age (Esposito *et al.*, 2003; Forman *et al.*, 2004; Goldston *et al.*, 1996; Rudd *et al.*, 1996), suggesting that differences in the number of previous suicide attempts are not due simply to some individuals having a greater opportunity to make repeated attempts because they are older.

Although major depression is the psychiatric disorder most strongly linked to suicide (for a review, see Stolberg, Clark, and Bonger, 2002), little is known about how the characteristics or course of this disorder may differ among patients with a history of multiple versus one or no suicide attempts. For example, although, as noted above, a number of studies have shown that multiple attempters do not differ in age from single attempters, it is possible that multiple attempters experience an earlier age of onset for depression. Although not focused specifically on diagnoses of major depression, there is some evidence that multiple attempters do have an earlier onset of Axis I disorders than individuals with one or no suicide attempts (Rudd *et al.*, 1996). In contrast, there is preliminary evidence that multiple attempters may not differ in the duration or recurrence of their depressive episodes (Joiner, Rudd, Rouleau, and Wagner, 2000; Rudd *et al.*, 1996). Another question that remains unclear from previous research is the extent to which multiple attempters differ in terms of depressive cognitions. Specifically, although research has provided support for differences in hopelessness (Esposito *et al.*, 2003; Forman *et al.*, 2004; Kaslow *et al.*, 2006; Rudd *et al.*, 1996), it is not clear whether these differences would extend to other cognitive factors such as dysfunctional attitudes. Finally, although there is clear support for attempt history differences in levels of suicidal ideation (Forman *et al.*, 2004; Rudd *et al.*, 1996), research has suggested that overall levels of suicidal ideation encompass two distinct factors, one reflecting motivation for suicide and the other reflecting preparation (Beck, Brown, and Steer, 1997; Holden and DeLisle, 2005; Joiner, Rudd, and Rajab, 1997; Joiner *et al.*, 2003). There is evidence that the latter of these two factors, termed “resolved plans and preparation”, is more strongly linked to patients’ history of suicide attempts and eventual death by suicide (Joiner *et al.*, 2003). Joiner (2005) has hypothesized that this factor would also distinguish multiple attempters from those with only one suicide attempt. In the only study of which we are aware to test this hypothesis, Holden and DeLisle (2005) found that, consistent with Joiner’s (2005) hypothesis, women’s number of previous suicide attempts was significantly related to their level of suicide preparation, but not motivation.

The primary goal of this study was to determine which characteristics of depressed adult psychiatric inpatients would differentiate those with a history of multiple attempts from those with one or no prior suicide attempts. Specifically, we sought to replicate previous findings of attempt history differences in suicidal ideation, depressive symptoms, and hopelessness. In addition, we sought to extend previous findings by examining whether patients’ attempt status history would also be related to their levels of dysfunctional attitudes and the characteristics/ course of their depression (i.e., age of onset, number of depressive episodes, duration of most recent episode). Finally, in addition to examining overall levels

of suicidal ideation, we focused on the separate dimensions of “resolved plans and preparation” and “suicidal desire and ideation”. We hypothesized that patients with a history of multiple suicide attempts would exhibit higher levels of suicidal ideation (particularly the preparation dimension), depressive symptoms, hopelessness, and dysfunctional attitudes than would patients with one or no prior suicide attempts. We also predicted that multiple attempters would report an earlier age of major depression onset. Finally, based on previous research (Esposito *et al.*, 2003; Forman *et al.*, 2004; Goldston *et al.*, 1996; Joiner *et al.*, 2000; Rudd *et al.*, 1996), we did not expect that the attempt history groups would differ significantly in terms of lifetime number of major depressive episodes, the duration of the current episode, or demographic variables (sex, age, race, education).

Method

Participants

Participants in this study consisted of 121 depressed psychiatric inpatients recruited between 1991 and 1995 to participate in a treatment study comparing the efficacy of pharmacotherapy with or without cognitive-behavioral psychotherapy and family treatment. Participants in the treatment study were randomized to treatments that either matched or mismatched their levels of family or cognitive dysfunction (for further details, see Miller *et al.*, 2005). Patients were recruited from an acute care university-affiliated psychiatric hospital. Inclusion criteria were: (a) currently living with one or more family members, (b) *DSM-III-R* diagnosis of Major Depressive Disorder according to the Structured Clinical Interview for *DSM-III-R* (Spitzer, Williams, Gibbon, and First, 1990a), (c) score upon admission to the hospital on the Modified Hamilton Rating Scale for Depression (Miller, Bishop, Norman, Maddover, 1985) and the Beck Depression Inventory (Beck, Rush, Shaw, and Emery, 1979) greater than 17. Subjects were excluded if they met any of the following criteria: (a) *DSM-III-R* criteria for a current episode of bipolar disorder, current alcohol or drug dependence, somatization disorder, or schizophrenia; (b) presence of organic brain syndrome; or (c) a medical condition for which antidepressants were contraindicated. The mean age of the patients was 37.97 years ($SD = 11.83$ years; range 17–71). Ninety (74.3%) of the patients were women and 113 (93.4%) were Caucasian. Details and results of the treatment outcome study are described elsewhere (Miller *et al.*, 2005).

Measures

The Modified Scale for Suicidal Ideation (MSSI; Miller, Norman, Bishop, and Dow, 1986), an 18-item clinician-administered inventory, was used to assess patients' levels of suicidal ideation. The MSSI is a modified version of the Scale for Suicidal Ideation (Beck, Kovacs, and Weissman, 1979). Total scores on the MSSI can range from 0 to 78, with higher scores reflecting higher levels of suicidal ideation. In previous studies, total scores on the MSSI (MSSI-Total) have demonstrated strong internal consistency, interrater reliability, and concurrent validity with expert clinicians' ratings of suicidal ideation (Miller *et al.*, 1986; Rudd & Rajab, 1995). MSSI total scores have also been found to differentiate patients with and without a history of suicide attempts (Miller *et al.*, 1986; Rudd & Rajab, 1995). In addition to total scores, we also examined the Suicidal Desire and Ideation (MSSI-SDI) and Resolved Plans and Preparations (MSSI-RPP) subscales (Joiner, Rudd, & Rajab, 1997).¹ As

with the total scale score, these two subscales have demonstrated good internal consistency and there is evidence that MSSI-RPP scores discriminate patients with and without a history of suicide attempts (Joiner et al., 1997). Patients' histories of previous suicide attempts were assessed following the MSSI by a series of questions concerning number and types of previous suicide attempts. Specifically, participants were asked, "Have there been times when you tried to kill yourself?" Participants endorsing one or more prior suicide attempts were asked a series of follow-up questions, including questions regarding the total number of attempts and their age the time of the first attempt. Consistent with previous studies (e.g., Rudd et al., 1996), patients' histories of prior attempts were trichotomized into zero, one, or multiple prior attempts.

Depressive symptoms were assessed using the Modified Hamilton Rating Scale for Depression (MHRSD; Miller et al., 1985), an interviewer-administered measure, and the Beck Depression Inventory (BDI; Beck et al., 1979), a self-report measure. Total scores on the MHRSD can range from 0 to 72 and total scores on the BDI can range from 0 to 63, with higher scores on both scales indicating more severe levels of depressive symptoms. Studies have supported the reliability and validity of both measures (e.g., Beck, Steer, and Garbin, 1988; Miller et al., 1985).

The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, and Trexler, 1974), a 20-item true-false self-report questionnaire, was used to assess participants' negative expectations regarding the future. Scores on the BHS can range from 0 to 20, with higher scores reflecting more hopelessness. The BHS has demonstrated good internal consistency and concurrent validity with clinician's ratings of hopelessness (Beck et al., 1974), as well as good predictive validity for eventual suicide (Beck, Brown, and Steer, 1989; Beck, Steer, Kovacs, and Garrison, 1985; Brown, Beck, Steer, and Grisham, 2000).

The Dysfunctional Attitudes Scale (DAS; Weisman and Beck, 1978), a 40-item self-report inventory, was used to assess a variety of maladaptive attitudes including sensitivity to social criticism, perfectionistic performance standards, expectations of control, and rigid ideas about the world featured in Beck's (1967; Clark et al., 1999) theory of depression. Response options to each of the questions range, on a 7-point Likert-type scale, from *totally agree* to *totally disagree*. Total scores for the DAS, which range from 1 to 280, are calculated by summing participants' responses to each of the 40 items, with higher scores indicating higher levels of dysfunctional attitudes.

As noted above, patients were administered the Structured Clinical Interview for *DSM-III-R* (Spitzer, Williams, Gibbon, and First, 1990a) to determine inclusion/exclusion criteria. Data from this interview were also used to determine the age of onset for patients' first episode of major depression, the total number of major depressive episodes, and the duration of the current episode.

¹Although Joiner et al. (1997) reversed scored MSSI item 16 (Writing about Death/Suicide) when computing the MSSI-RPP factor, reliability analysis of our data suggested that the item-total correlation of item 16 with the other MSSI-RPP items was positive ($r = .13$). In addition, scoring the subscale without reverse-scoring item 16 resulted in stronger internal consistency than scoring the subscale with item 16 reverse scored. Therefore, the MSSI-RPP factor was created without reverse scoring item 16. This is consistent with the scoring of MSSI total scores, in which responses to all items are summed, without any reverse scoring.

Procedure

All patients were recruited during a psychiatric hospitalization. Following informed consent, patients received a battery of assessment measures and were randomly assigned to treatment, which began after discharge. All measures included in this study were administered while patients were hospitalized and before they were randomly assigned to treatment.

Results

Preliminary analysis revealed that several of the variables exhibited significant skew. Although variables were initially transformed prior to further analysis, results using these variables were virtually identical to those obtained using the untransformed variables. Therefore, for ease of presentation and comparison with other studies, we present only results for untransformed variables.²

Descriptive statistics for the three attempt history groups are presented in Table 1. Attempter group (multiple, single, none) differences were examined with a series of omnibus analyses of variance (for continuous dependent variables) or chi square tests (for categorical dependent variables). For the analyses of variance, significant omnibus tests were followed with Student-Newman-Keuls post hoc tests to determine the pattern of significant between-group differences. For the chi square analyses, significant 3 (attempt history: multiple, single, none) $\times$ 2 (dependent variable: yes, no) chi squares were followed by a series of 2×2 chi squares to determine the pattern of significant differences. The results of these analyses are presented in Table 1 and significant between-group differences are noted with different superscripts. As can be seen in Table 1, the three groups did not differ significantly on the demographic variables examined. As hypothesized, the three groups did differ significantly in terms of current suicidal ideation, with multiple attempters reporting significantly higher levels than single attempters, who in turn, differed significantly from patients with no history of suicide attempts. This pattern was observed for MSSSI total scores as well as for the suicidal desire and ideation and resolved plans and preparation subscales. Although we had hypothesized that multiple attempt status (multiple attempters versus patients with one or no prior suicide attempts) would be more strongly related to scores on the resolved plans and preparations subscale than scores on the suicidal desire and ideation subscale, the difference in the magnitude of these relations was not significant ($r_{\text{effect sizes}} = .39$ and $.44$, respectively; $z = -1.10$, $p = .14$). Consistent with our hypothesis, multiple attempters did report significantly higher depressive symptom levels (MHRSD and BDI) than patients with one or no suicide attempts, with these latter two groups not differing significantly. In contrast, there were no significant between-group differences in levels of hopelessness or dysfunctional attitudes.³ Further, as hypothesized, multiple attempters reported an earlier age of major depression onset than did patients with one or no suicide attempts, with the latter two groups not differing significantly.⁴ Multiple and single attempters also reported significantly more episodes of major depression than patients with no history of attempts,

²For the total number of major depressive episodes variable, a number of participants reported “too numerous to count” ($n = 20$). These values were recoded to be one higher than the next highest value of this variable (i.e., recoded to a value of 21). For the total duration of present episode variable, there were two extreme outliers reporting values of 182 and 418 weeks (these values were 9.76 and 23.27 standard deviations, respectively, above the remaining sample’s mean). These were recoded to be one and two values higher, respectively, than the next highest value reported (i.e., recoded to values of 105 and 106).

but did not differ significantly from each other. Finally, there were no significant between-group differences in the duration of the current depressive episode.

It is possible that the differences observed between multiple and single attempters in terms of current symptoms (suicidal ideation and depressive symptoms) were due simply to the recency of any attempt made rather than to patients' lifetime history of multiple attempts.⁵ A final set of analyses was conducted to examine this possibility, focusing on whether patients' current hospitalization was precipitated by a suicide attempt (suicide attempt at index). Of the patients in this study, 20 (39.2%) were hospitalized because of a recent suicide attempt. The proportion of patients with a history multiple versus single suicide attempt who were currently hospitalized because of an attempt did not differ significantly (46.9% vs. 26.3%; $\chi^2(1, N = 51) = 2.11, p = .15, r_{\text{effect size}} = .20$). This said, patients hospitalized for a recent suicide attempt, compared to patients hospitalized for other reasons, did exhibit higher scores on the MSSI-Total, $t(49) = 2.24, p = .03, r_{\text{effect size}} = .31$, and MSSI-RPP, $t(49) = 2.39, p = .02, r_{\text{effect size}} = .32$. However, suicide attempt at index (yes vs. no) was not significantly related to scores on the MSSI-SDI, $t(49) = 1.74, p = .09, r_{\text{effect size}} = .24$, MHRSD, $t(49) = 0.96, p = .34, r_{\text{effect size}} = .14$, or BDI, $t(49) = -1.73, p = .09, r_{\text{effect size}} = -.24$. Finally, we examined whether the multiple versus single attempter differences in current symptoms (suicidal ideation and depressive symptoms) reported above would be maintained after statistically controlling for suicide attempt at index hospitalization. Each of the significant effects reported above were maintained (all $ps < .03$) with the exception of the attempt status difference in MSSI-RPP, which was reduced to a nonsignificant trend, $F(1, 47) = 3.59, p = .06, r_{\text{effect size}} = .27$. We should also note that suicide attempt at index hospitalization did not moderate any of the links between multiple attempter status and current suicidal ideation or depressive symptoms (all $ps > .12$). These results suggest that the multiple versus single attempter differences were not due simply to the recency with which patients had attempted suicide.

Discussion

Our primary goal in this study was to examine which depressive characteristics do versus do not differentiate patients with a history of multiple suicide attempts. Consistent with the results of previous studies (e.g., Esposito *et al.*, 2003; Forman *et al.*, 2004; Rudd *et al.*, 1996), we found that depressed adult psychiatric inpatients with a history of multiple suicide attempts reported more suicidal ideation and depressive symptoms at intake than did patients with one or no prior suicide attempts. In addition, multiple attempters reported an earlier age of major depression onset than did patients with one or no prior attempts. In contrast,

³Given these unexpected findings, we examined them further. Each of the effect sizes for the pairwise comparisons between multiple attempters and patients with one or no previous attempts on levels of hopelessness and dysfunctional attitudes were small ($r_{\text{effect sizes}} = .04 - .16$), suggesting that the nonsignificant effects were not due simply to our sample size. In addition, although we also examined the DAS Performance Evaluation and Approval by Others subscales (cf. Cane, Olinger, Gotlib, and Kuiper, 1986) in separate ANOVAs, no significant differences between the three attempt history groups were observed ($ps = .30$ and $.91$, respectively).

⁴We also examined patients' age at first suicide attempt and found that multiple attempters were significantly younger at the time of the first attempt ($M = 19.75, SD = 9.45$) than single attempters ($M = 27.47, SD = 11.69$), $t(49) = 2.58, p = .01, r_{\text{effect size}} = .35$. Examining the discrepancy in age between first MDD and first suicide attempt as a function of suicide attempt history (multiple vs. single), however, yielded a nonsignificant result, $t(49) = 0.64, p = .95, r_{\text{effect size}} = -.01$, suggesting that the age of first attempt differences overlapped with the age of first MDD.

⁵We thank an anonymous reviewer for suggesting this possibility.

however, we found no evidence for attempt status differences in hopelessness, dysfunctional attitudes, or duration of current major depression. Although we did find that multiple attempters reported more episodes of major depression than patients with no history of suicide attempts, single attempters exhibited the same pattern and did not differ significantly from multiple attempters.

There were also some unanticipated results in this study. First, both suicidal ideation subscales – resolved plans and preparations and suicidal desire and ideation – differentiated the three attempt history groups. In contrast to our hypothesis, multiple attempt status was not significantly more strongly related to the resolved plans and preparations factor than the suicidal desire and ideation factor. This is in contrast to Joiner's (2005) theory, in which he hypothesized that multiple attempters would be more strongly characterized by levels of resolved plans and preparations than suicidal desire and ideation. One potential reason for the current findings may be that we focused on patients' current levels of suicidal ideation, and stronger effects for the resolved plans and preparations factor may be observed when focusing on patients' "worst point" suicidal ideation (cf. Joiner *et al.*, 2003). Future research should continue to test this possibility.

A second unexpected finding from the current study was the nonsignificant group difference in hopelessness, which is in contrast to a number of previous studies (e.g., Esposito *et al.*, 2003; Forman *et al.*, 2004; Kaslow *et al.*, 2006; Rudd *et al.*, 1996). This finding is also surprising given evidence that elevated levels of hopelessness are a risk factor for future death by suicide (e.g., Beck *et al.*, 1985; Beck *et al.*, 1989; Brown *et al.*, 2000). It is possible that the current lack of significant between-group differences may have been due, in part, to characteristics of our sample. Specifically, our focus on psychiatric inpatients diagnosed with major depression may have resulted in ceiling effects in terms of hopelessness. Indeed, the mean hopelessness scores in each of our three groups are higher than those reported in other studies of multiple versus single attempters (e.g., Forman *et al.*, 2004; Kaslow *et al.*, 2006; Rudd *et al.*, 1996). In addition, whereas 10% of our sample attained the maximum possible level of hopelessness (score of 20 on the BHS), none of our participants exhibited ceiling effects on the other measures. Indeed, levels of suicidal ideation and depressive symptoms exhibited by participants in the current study were similar to those reported in previous studies (e.g., Forman *et al.*, 2004; Rudd *et al.*, 1996). Therefore, it is possible that the lack of group differences in hopelessness were due to ceiling effects in our sample. We should also note that the other measure of depressive cognitions used in the current study, dysfunctional attitudes, also did not exhibit significant between-group differences. Although not due to ceiling effects on the DAS (no participants in the current study scored the maximum possible on the DAS), it is possible that stronger differences would have been observed for forms of dysfunctional cognitions hypothesized to be more suicide-specific such as perceived burdensomeness (cf. van Orden, Lynam, Hollar, and Joiner, 2006) or self-injury implicit associations (cf. Nock and Banaji, in press). Finally, it is possible that among depressed psychiatric inpatients, multiple attempters are more strongly differentiated by non-cognitive symptoms of depression (e.g., affective symptoms) than by cognitive symptoms.

The results of this study add to a growing body of research suggesting that individuals with a history of multiple suicide attempts may represent a distinct population characterized by an earlier age of onset and more severe psychopathology (see also Esposito *et al.*, 2003; Forman *et al.*, 2004; Goldston *et al.*, 1996; Rudd *et al.*, 1996). Given the significant link between previous suicide attempts, particularly multiple attempts, and eventual death by suicide (Nordentoft *et al.*, 1993), the logical question becomes, How do we best identify those most at risk for repeated suicide attempts? The current results suggest that a strong developmental predictor may be an early age of onset for major depression (and first suicide attempt). What remains unclear is the mechanism by which these factors contribute to repeated attempts. Joiner (2005; Joiner *et al.*, 2005) has suggested that the link between past and future suicide attempts is mediated by habituation (individuals habituate to the pain and social stigma of suicide attempts) and opponent process (as fear and pain decrease with repeated attempts, reinforcing qualities increase). Although there is some evidence from cross-sectional and retrospective studies supporting Joiner's hypothesis (for a review, see Joiner, 2005), no prospective studies have been conducted. Clearly this is an important area for future research and the current results suggest that it may be particularly useful to focus on individuals with an earlier age of first suicide attempt (e.g., during childhood or adolescence) in testing these hypotheses.

We should also note that suicide attempt group classifications (multiple, single, none) in the current study were based on assessments conducted at a single point in time. Given the high-risk nature of this sample, it is likely that some of the patients classified as single attempters (and possibly some with no lifetime attempts) will make a suicide attempt in the future (cf. Leon, Friedman, Sweeney, Brown, and Mann, 1990). Indeed, one or more of the nonsignificant between group differences observed in this study may have been due to a subgroup of single attempters whose presentation was similar to multiple attempters and who may be at particular risk for making one or more suicide attempts in the future. To the extent this is true, an important question for future research would be how best to identify those individuals with one suicide attempt who are at greatest risk for making another suicide attempt in the future.

This study exhibited a number of strengths including its focus on clinician-administered measures of psychopathology and suicidal ideation and attempts. This said, however, there were limitations as well. The primary of these is that we could not examine whether suicide attempt history prospectively predicted future suicide attempts nor could we examine the hypothesized mediators of this relation. Second, because we focused specifically on depressed adult psychiatric inpatients, it is unclear whether the current results will generalize to other samples. Thus, although our focus on depressed psychiatric inpatients maximized the base rate of individuals reporting multiple suicide attempts, and therefore our statistical power, it would be important to know whether the current results replicate in a less severely impaired sample (e.g., depressed outpatients), given the importance of understanding potential risk factors for suicide in depressed patients more generally. Also, all participants in the current study were required to be living with at least one family member (e.g., parent, spouse), which may affect the generalizability of the current results. This said, the current findings are largely consistent with those reported previously (e.g., Esposito *et al.*, 2003;

Forman *et al.*, 2004; Goldston *et al.*, 1996; Kaslow *et al.*, 2006; Rudd *et al.*, 1996), giving us additional confidence in the results.

In summary, the current results add to the growing body of research suggesting that multiple attempters may represent a distinct patient population. Future research should focus not only on better differentiating factors that do versus do not distinguish these patients, but also on developmental variables that may help to determine which individuals are at greatest risk for suicide attempts in the future. Studies are also needed to determine the mechanism by which individuals with a prior suicide attempt are at increased risk in the future. Based on the current results, it appears that the population of potentially greatest interest for this research would be those who experienced their first episode of depression during childhood or adolescence, particularly those who have already made one or more suicide attempts.

Acknowledgments

This article was supported by National Institute of Child Health and Human Development grant HD048664 to Brandon E. Gibb and National Institute of Mental Health grants MH44779 and MH58866 to Ivan W. Miller.

References

- Beck, AT. Depression: Clinical, experimental, and theoretical aspects. New York: Harper & Row; 1967.
- Beck AT, Brown G, Steer RA. Prediction of eventual suicide in psychiatric inpatients by clinical ratings of hopelessness. *J Consult Clin Psychol.* 1989; 57:309–310. [PubMed: 2708621]
- Beck AT, Brown G, Steer RA. Psychometric characteristics of the Scale for Suicidal Ideation with psychiatric outpatients. *Behav Res Ther.* 1997; 35:1039–1046. [PubMed: 9431735]
- Beck AT, Kovacs M, Weissman A. Assessment of suicidal intention: The Scale for Suicide Ideation. *J Consult Clin Psychol.* 1979; 47:343–352. [PubMed: 469082]
- Beck, AT.; Rush, AJ.; Shaw, B.; Emery, G. Cognitive therapy of depression. New York: Guilford; 1979.
- Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clin Psychol Rev.* 1988; 8:77–100.
- Beck AT, Steer RA, Kovacs M, Garrison B. Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *Am J Psychiatry.* 1985; 142:559–563. [PubMed: 3985195]
- Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: The Hopelessness Scale. *J Consult Clin Psychol.* 1974; 42:861–865. [PubMed: 4436473]
- Brown GK, Beck AT, Steer RA, Grisham JR. Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *J Consult Clin Psychol.* 2000; 68:371–377. [PubMed: 10883553]
- Clark, DA.; Beck, AT.; Alford, BA. Scientific foundations of cognitive theory and therapy of depression. New York: Wiley; 1999.
- Corbitt EM, Malone KM, Haas GL, Mann JJ. Suicidal behavior in patients with major depression and comorbid personality disorders. *J Affect Disord.* 1996; 39:61–72. [PubMed: 8835655]
- Esposito C, Spirito A, Boergers J, Donaldson D. Affective, behavioral, and cognitive functioning in adolescents with multiple suicide attempts. *Suicide Life Threat Behav.* 2003; 33:389–399. [PubMed: 14695054]
- First MB, Spitzer RL, Gibbon M, Williams JBW. The Structured Clinical Interview for DSM-III-R personality disorders (SCID-II): I. Description. *J Personal Disord.* 1995a; 9:83–91.
- First MB, Spitzer RL, Gibbon M, Williams JBW. The Structured Clinical Interview for DSM-III-R personality disorders (SCID-II): II. Multi-site test-retest reliability study. *J Personal Disord.* 1995b; 9:92–104.

- Forman EM, Berk MS, Henriques GR, Brown GK, Beck AT. History of multiple suicide attempts as a behavioral marker of severe psychopathology. *Am J Psychiatry*. 2004; 161:437–443. [PubMed: 14992968]
- Goldston DB, Daniel S, Reboussin DM, Kelley A, Ievers C, Brunstetter R. First-time suicide attempters, repeat attempters, and previous attempters on an adolescent inpatient psychiatry unit. *J Amer Acad Child Adolesc Psychiatry*. 1996; 35:631–639. [PubMed: 8935210]
- Goldston DB, Daniel SS, Reboussin BA, Reboussin DM, Kelley AE, Frazier PH. Psychiatric diagnoses of previous suicide attempters, first-time attempters, and repeat attempters on an adolescent inpatient psychiatry unit. *J Amer Acad Child Adolesc Psychiatry*. 1998; 37:924–932. [PubMed: 9735612]
- Gould M, Greenberg T, Velting DM, Shaffer D. Youth suicide risk and preventive interventions: A review of the past 10 years. *J Amer Acad Child Adolesc Psychiatry*. 2003; 42:386–405. [PubMed: 12649626]
- Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry*. 1960; 23:56–62.
- Harris EC, Barraclough B. Suicide as an outcome for mental disorders: A meta-analysis. *Br J Psychiatry*. 1997; 170:205–228. [PubMed: 9229027]
- Holden RR, DeLisle MM. Factor analysis of the Beck Scale for Suicide Ideation with female suicide attempters. *Assessment*. 2005; 12:231–238. [PubMed: 15914724]
- Joiner, T. Why people die by suicide. Cambridge, MA: Harvard University Press; 2005.
- Joiner TE Jr, Rudd MD, Rajab MH. The Modified Scale for Suicidal Ideation: Factors of suicidality and their relation to clinical and diagnostic variables. *J Abnorm Psychol*. 1997; 106:260–265. [PubMed: 9131846]
- Joiner TE Jr, Rudd MD, Rouleau MR, Wagner KD. Parameters of suicidal crises vary as a function of previous suicide attempts in young inpatients. *J Am Acad Child Adolesc Psychiatry*. 2000; 39:876–880. [PubMed: 10892229]
- Joiner TE Jr, Steer RA, Brown G, Beck AT, Pettit JW, Rudd MD. Worst-point suicide plans: A dimension of suicidality predictive of past suicide attempts and eventual death by suicide. *Behav Res Ther*. 2003; 41:1469–1480. [PubMed: 14583414]
- Kaslow NJ, Jacobs CH, Young SL, Cook S. Suicidal behavior among low-income African American women: A comparison of first-time and repeat suicide attempters. *J Black Psychol*. 2006; 32:349–365.
- Leon AC, Friedman RA, Sweeney JA, Brown RP, Mann JJ. Statistical issues in the identification of risk factors for suicidal behavior: The application of survival analysis. *Psychiatry Res*. 1990; 31:99–108. [PubMed: 2315425]
- Miller IW, Bishop SB, Norman WH, Maddover H. The Modified Hamilton Depression Rating Scale: Reliability and validity. *Psychiatry Res*. 1985; 14:131–142. [PubMed: 3857653]
- Miller IW, Norman WH, Bishop SB, Dow MG. The Modified Scale for Suicidal Ideation: Reliability and validity. *J Consult Clin Psychol*. 1986; 54:724–725. [PubMed: 3771893]
- Miller IW, Keitner GI, Ryan CE, Solomon DA, Cardemil EV, Beevers CG. Treatment matching in the post-hospital care of depressed inpatients. *Am J Psychiatry*. 2005; 162:2131–2138. [PubMed: 16263854]
- Mo cicki EK. Epidemiology of completed and attempted suicide: Toward a framework for prevention. *Clin Neurosci Res*. 2001; 1:310–323.
- Nock MK, Banaji MR. Prediction of suicide ideation and attempts among adolescents using a brief performance-based test. *J Consult Clin Psychol*. in press.
- Nordentoft M, Breum L, Munck LK, Nordestgaard AG, Hunding A, Laursen Bjaeldager PA. High mortality by natural and unnatural causes: A 10 year follow up study of patients admitted to a poisoning treatment centre after suicide attempts *Br Med J*. 1993; 306:1637–1641.
- Rudd MD, Joiner T, Rajab MH. Relationships among suicide ideators, attempters, and multiple attempters in a young-adult sample. *J Abnorm Psychol*. 1996; 105:541–550. [PubMed: 8952187]
- Rudd MD, Rajab MH. Use of the Modified Scale for Suicidal Ideation with suicide ideators and attempters. *J Clin Psychol*. 1995; 51:632–635. [PubMed: 8801239]
- Spitzer, RL.; Williams, JBW.; Gibbon, M.; First, MB. Structured Clinical Interview for DSM-III-R, Patient Edition (SCID-P). Washington, DC: American Psychiatric Press, Inc; 1990a.

- Spitzer, RL.; Williams, JBW.; Gibbon, M.; First, MB. Structured Clinical Interview for DSM-III-R Axis II Disorders (SCID-II). Washington, DC: American Psychiatric Press, Inc; 1990b.
- Stolberg, RA.; Clark, DC.; Bonger, B. Epidemiology, assessment, and management of suicide in depressed patients. In: Gotlib, IH.; Hammen, CL., editors. Handbook of depression (pp. 581–601). New York: Guilford; 2002. p. 581-601.
- Van Orden KA, Lynam ME, Hollar D, Joiner TE Jr. Perceived burdensomeness as an indicator of suicidal symptoms. *Cogn Ther Res*. 2006; 30:457–467.
- Weissman, A.; Beck, AT. Development and Validation of the Dysfunctional Attitudes Scale: A preliminary investigation; Paper presented at the meeting of the American Educational Research Association; Toronto, Canada. 1978.

Table 1

Summary of Analyses Comparing Inpatients with No, One, or Multiple Prior Suicide Attempts

Measure	No Attempts (n = 70)	Single Attempters (n = 19)	Multiple Attempters (n = 32)	F/ χ^2
Demographics				
Age	39.43 (12.24)	34.95 (9.59)	36.47 (11.88)	1.42
Sex (% female)	68.57%	89.47%	78.13%	3.75
Race (% Caucasian)	94.29%	94.74%	90.63%	0.54
Education (% graduated H.S.)	82.86%	78.95%	84.38%	0.25
Suicidal Ideation				
MSSI-Total	13.99 (12.22) ^a	21.11 (11.99) ^b	29.44 (13.31) ^c	17.10 ^{***}
MSSI-SDI	7.74 (6.61) ^a	11.37 (5.58) ^b	15.75 (6.55) ^c	17.17 ^{***}
MSSI-RPP	5.61 (5.39) ^a	8.47 (5.72) ^b	11.56 (5.96) ^c	12.67 ^{***}
Depressive Symptoms/Cognitions				
MHRSD	36.56 (6.10) ^a	36.32 (6.34) ^a	40.41 (6.03) ^b	4.80 ^{**}
BDI	32.21 (7.82) ^a	30.74 (8.95) ^a	37.16 (8.57) ^b	5.08 ^{**}
BHS	14.44 (5.02)	14.95 (5.03)	16.09 (3.90)	1.33
DAS	153.75 (42.01)	161.65 (42.62)	166.97 (47.18)	1.08
Depression Characteristics/Course				
Age of 1st MD onset	31.90 (12.70) ^a	27.32 (9.96) ^a	19.78 (11.02) ^b	11.44 ^{***}
Total # MDs	3.90 (4.93) ^a	8.00 (9.04) ^b	10.31 (8.62) ^b	10.53 ^{***}
Duration Present Episode (weeks)	12.27 (22.00)	11.74 (15.56)	17.47 (25.42)	0.68

Note. MSSI-Total = Modified Scale for Suicidal Ideation – Total Score. MSSI-SDI = Modified Scale for Suicidal Ideation – Suicidal Desire and Ideation factor. MSSI-RPP = Modified Scale for Suicidal Ideation – Resolved Plans and Preparations factor. MHRSD = Modified Hamilton Rating Scale for Depression. BDI = Beck Depression Inventory. BHS = Beck Hopelessness Scale. DAS = Dysfunctional Attitude Scale. MD = Major Depression. Values presented are means (standard deviations) or percentages. Means or percentages with different superscripts differ significantly at $p < .05$.

^{**}
 $p < .01$.

^{***}
 $p < .001$.