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Self-Efficacy to Avoid Suicidal Action: Factor Structure and Concurrent Validity Among Adults in Substance Use Disorder Treatment

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Abstract

Individuals with substance use disorders (SUDs) are at high risk of suicidal behaviors, highlighting the need for an improved understanding of potentially influential factors. One such domain is self-efficacy to manage suicidal thoughts and impulses. The study provides psychometric data about the Self-Efficacy to Avoid Suicidal Action (SEASA) scale within a sample of adults seeking SUD treatment (N=464). Exploratory factor analysis supported a single self-efficacy construct. Lower SEASA scores, or lower self-efficacy, were reported in those with more severe suicidal ideation and those with more suicide attempts, providing evidence for convergent validity. Implications of measuring self-efficacy in the context of suicide risk assessment are discussed.

Individuals with substance use disorders (SUDs) are at significantly elevated risk for suicidal behavior (Conner & Duberstein, 2004; Moscicki, 1997, 2001). Compared to those without SUDs, individuals with alcohol or drug dependence are six to seven times more likely to attempt suicide (Kessler, Borges, & Walters, 1999). In addition, depending on the substance, SUDs are associated with between 10 and 14-fold increased risk of death by suicide (Wilcox, Conner, & Caine, 2004). Consistent with these data, those entering SUD treatment commonly report previous suicide attempts, with estimates of lifetime attempts ranging between 19% and 26% (Britton & Conner, 2010; Ilgen, Jain, Lucas, & Moos, 2007a; Wines, Saitz, Horton, Lloyd-Travaglini, & Samet, 2004). Moreover, although involvement in SUD treatment is associated with reduced risk of suicidal behavior (e.g., Darke et al., 2007; Ilgen, Harris, Moos, & Tiet, 2007b), following treatment, a significant number of individuals make a non-fatal suicide attempt or die by suicide (Darke et al., 2007; Ilgen et al., 2007a, 2012; Wines et al., 2004). Taken together, the considerable risk of suicidal behaviors among individuals with SUDs calls for a better understanding, and improved assessment, of factors that influence this risk. One potentially important domain,

which might also inform effective intervention approaches, involves the extent to which individuals seeking SUD treatment perceive themselves as being capable – or having self-efficacy— to manage suicidal thoughts and impulses without acting on them.

The construct of self-efficacy has received relatively little attention in the field of suicidology, but has been extensively examined in other areas, including the field of addiction (e.g. Maisto & Connors, 2006). Developed as a component of social cognitive theory, but widely used since as a stand-alone construct, self-efficacy pertains to a belief in one's capability to succeed in a particular situation (Bandura, 1977, 1982). According to this theory, self-efficacy beliefs are influenced by four sources: mastery experiences, vicarious experiences, verbal persuasion, and emotional or physiological arousal (Bandura, 1977). Self-efficacy is a powerful predictor of a broad range of health behaviors, including management of diabetes, weight control, prevention of sexually transmitted diseases, and improved outcomes across multiple types of addictive behaviors and SUDs (Hurley, & Shea, 1992; Ilgen, McKellar, & Tiet, 2005; Ilgen, Tiet, Finney, & Moos, 2006; Maibach & Murphy, 1995; Multon, Brown, & Lent, 1991; Witkiewitz & Marlatt, 2004). Applied in context of suicide risk, individuals with low self-efficacy about managing suicidal thoughts and impulses would be expected to experience greater difficulty refraining from suicidal behaviors. As such, assessing self-efficacy to avoid suicidal action could facilitate identification of individuals who are particularly vulnerable to future suicide attempts and could influence the implementation of targeted interventions addressing suicide risk. For example, inquiring about self-efficacy to refrain from suicidal behavior, in addition to other risk and protective factors, might help in guiding initial case conceptualization (e.g., identifying situational triggers that lower self-efficacy for avoiding suicidal action), selecting appropriate focus of intervention (e.g., modifying a safety plan), and monitoring client progress (e.g. change in self-efficacy beliefs).

The purpose of this study is to provide psychometric data about a new scale, the Self-Efficacy to Avoid Suicidal Action (SEASA), designed to assess perception of one's capacity to refrain from attempting suicide. We describe the development of the SEASA and examine its relationship with suicidal ideation and history of suicide attempts within a large sample of adults seeking SUD treatment. As evidence for concurrent validity, we hypothesize that individuals with current suicidal ideation and past suicide attempts, particularly with history of more than one attempt, will report lower self-efficacy beliefs.

Methods

Participants

Participants included 305 men (65.73%) and 159 women (34.27%) over 18 years of age ($M=34.59$; $SD=0.51$) enrolled in a residential substance use disorder treatment program in southeastern Michigan. The racial/ethnic composition of the sample included 286 (61.64%) Caucasian, 133 (28.66%) African American, 17 (3.66%) Hispanic/Latino, 14 (3.02%) American Indian, and 3 Asian (0.65%) participants; 10 (2.16%) of participants self-identified as "Other." Approximately 64% of participants were unemployed, 16% were unemployed due to disability, 18% were employed full- or part-time, and 1% were retired.

Data were collected from 2008-2009 as part of a pilot randomized controlled trial of a cognitive-behavioral intervention designed to address suicide risk in adults with SUDs led by one of the co-authors (M.A. Ilgen). The present study is based on data from the initial screening portion of the intervention study. Participants were recruited by research staff in person via presentations made at didactic groups at the treatment site, were informed of the study protocol, and provided written consent before completing the initial screening questionnaire. Exclusion criteria included inability to speak English or provide voluntary written consent and presence of acute psychotic symptoms. Participants were compensated \$10 for completing the initial screening. The study was approved by the participating university's Institutional Review Board.

Measures

Self-Efficacy to Avoid Suicidal Action (SEASA)—The development of the SEASA was modeled after an existing, widely used, measure of self-efficacy to avoid substance use, the Situational Confidence Questionnaire (SCQ; Annis & Graham, 1988), which was designed to assess confidence to resist in possible trigger situations (e.g., negative emotional states, negative physical states, interpersonal conflict). To indicate level of confidence, respondents rate each item on a 6-point scale (0%, 20%, 40%, 60%, 80%, 100%). The SCQ has demonstrated good psychometric properties, including test-retest reliability, internal consistency, and construct and predictive validity (e.g., Annis & Graham, 1988; Ilgen et al., 2005). The initial SEASA items were modeled after the SCQ to assess specific situations that may make it more difficult to resist acting on suicidal urges (negative emotional states or suicidal ideation, physical pain, interpersonal problems) and were adapted to be relevant to individuals experiencing a suicidal crisis. Members of the research team with expertise in SUDs and suicide risk developed an initial list of items with potential to assess self-efficacy to avoid suicidal behavior, including different situations that might interfere with the ability to refrain from making a suicide attempt. The goal was to use a similar structure to the SCQ and, like the SCQ, to measure self-efficacy in different situations. Different situations were generated and discussed by the expert panel. The initial items were further edited by the expert panel, resulting in a 21-item SEASA scale (Table 1). The items are rated on a 10-point scale ranging from 0 (“very uncertain”) to 9 (very certain). This response format is more consistent with self-efficacy scale construction recommendations and other scales assessing self-efficacy of other behaviors (Bandura, 2006). Respondents are instructed to “Circle the number which best fits how certain you are about how you would act in each of the following situations.” Further item selection, reported in this study, was conducted to produce a more succinct measure following a factor analysis, which indicated that all items loaded onto a single factor. The additional item deletion was guided by theory and expert consensus. The final SEASA scale is comprised of 6 items.

Suicidal Ideation and Lifetime Attempt—The Beck Scale for Suicide Ideation (BSS; Beck & Steer 1993; Beck, Steer, & Ranieri, 1988), a 21-item self-report measure, assesses suicidal thoughts in the last week (first 19 items on a 3-point scale) and number of previous suicide attempts and seriousness of the intention to die during the last attempt (last 2 items). Scores range from 0 to 38 (the last two items are not included in the score). The BSS has strong internal consistency ($\alpha = .97$) and moderate to high item-total correlations (.56

to .92) (Beck et al., 1988). The validity of BSS was established by its correlation of .90 with psychiatrists' ratings of suicidality and of .94 and .90 with Scale for Suicide Ideation (SSI), the clinician administered version of BSS (Beck et al., 1988).

Substance Use—The University of Arkansas Substance Abuse Outcomes Module (SAOM) (Smith et al. 1996) is a self-report measure that utilizes different modules to assesses the degree of substance use consumption (quantity and frequency), associated social and functioning consequences, substance use diagnosis, and relevant information about patient characteristics such as age of onset, information previous treatment, and social support. This study provides the descriptive information about alcohol and drug use in the 28 days before treatment. Alcohol use questions concern the number of days of alcohol use, the average consumption per drinking day, the maximum consumption, and the number of binge days (more than five drinks were consumed). The SAOM substance use screen also measures the number of days that participants used each of the following drugs: marijuana, cocaine or crack, prescribed stimulants, non-prescribed stimulants, prescribed sedatives, non-prescribed sedatives, heroin, prescribed opiates, non-prescribed opiates, PCP, other hallucinogens, inhalants, anabolic steroids, and tobacco. The SAOM has been found in to be reliable and to correlate well with other measures of substance misuse in addiction treatment settings. Smith et al. (1996) reported good test-retest reliability for these questions (ICC = .81 to .99) and concurrent validity with the Addiction Severity Index (McLellan et al., 1992) for last month alcohol use ($r=0.85$) and drug use ($k=0.84$).

Data Analysis

The factor structure of the initial 21 SEASA items was analyzed using exploratory factor analysis with a maximum likelihood extraction. Guided by theory and expert consensus, items were reduced to create a more parsimonious SEASA measure (described below in the item reduction process section). Concurrent validity analyses were based on this final SEASA measure. All correlations were examined with Pearson-product-moment correlation coefficients. Group differences in SEAM ratings based on suicide attempt history were examined with General Linear Models. Analyses were conducted using Stata and SAS software.

Results

Clinical Characteristics of the Sample

Approximately 19% of participants ($n=88$) reported one previous suicide attempt in their lifetime and 14% ($n=64$) two or more attempts. A total of 103 (22.20%) participants reported current suicidal ideation, defined as active desire to kill oneself or unwillingness to take steps to avoid death in a life-threatening situation (Beck & Steer, 1993). The mean suicidal ideation score on the BSS for this group was 7.95 ($SD=4.53$). Among the five most frequently reported substances abused in the four weeks before treatment entry were alcohol (60%), marijuana (46%), cocaine or crack (40%), opiates and narcotic pain killers (34%), stimulants (25%), and sedatives or hypnotics (18%).

SEASA Development Process

Description of the Initial SEASA Items—The mean total score for all 21 items was 141.6 (SD=55.6) for the entire sample and 93.3 (SD=49.2) for the subsample of participants who endorsed current suicidal ideation. Table 1 includes item-level descriptive statistics, including mean and standard deviation, for these samples. Inter-item correlations were high (0.65-0.93 for the full sample; 0.42-0.90 for current suicidal ideators). Chronbach's alpha was 0.99 for the entire sample and 0.98 for the suicidal ideators subsample.

Exploratory Factor Analysis—Exploratory factor analysis (EFA) with a maximum likelihood extraction was initially conducted on all 21 items, first utilizing the full sample and then a subset of participants with current suicidal ideation. An eigenvalue greater than the Kaiser criterion of 1 was obtained for only one factor. The one-factor solution explained 92% and 84% of the variance in the full and current ideators samples, respectively. Factor loadings are shown in Table 1. It is worth noting that a high proportion of participants in the full sample scored at the upper limit of self-efficacy ratings while, as might be expected, the current ideator subsample showed greater variability in ratings and more normally distributed SEASA scores. These differences are also reflected in average total scores. However, the fact that the factor structure and loadings were similar for the entire and current ideator samples provides confidence in the factor structure produced for the overall sample.

Item Reduction Process—Although the one-factor solution is conceptually coherent, the high factor loadings and inter-item correlations suggest some item redundancy. To lower respondent burden and improve the practical value of the measure, we explored a shorter version of the scale. Because the factor analysis showed that all 21 items performed very well, item selection was not based on identifying items with highest loadings to avoid selecting a more arbitrary set of items. Instead, we were guided by theory and expert consensus to construct the shorter scale. A six-member research team, including three co-authors, reached consensus to eliminate 15 items to reduce redundancy, maximize the measure's face-validity and improve its clarity. In addition to eliminating unclearly or awkwardly worded items, the item reduction process was also guided by self-efficacy theory, particularly the importance of assessing self-efficacy in specific situations; we thus retained most items focusing on situation-specific triggers, while deleting items that were not clearly worded. Balancing theoretical rationale for item retention with a more general scale construction recommendation to retain a smaller number of items (i.e. four to five items) when internal consistency for a narrowly defined construct is very high (0.80 and above; Clark & Watson, 1995), the consensus was reached for a final SEASA scale with 6 items. These are items 2, 4, 5, 16, 17, and 18, which are highlighted in bold in Table 1 and also presented in Table 3. As shown in Table 3, we have omitted "self harm" from questions 4 and 5, previously included in the parentheses, to more clearly refer to suicide attempts in future use of the SEASA.

Description of the final SEASA Scale—The mean total SEASA score was 40.3 (SD=16.3) for the entire sample and 26.2 (SD=14.6) for the subsample of participants who endorsed current suicidal ideation. Inter-item correlations are reported in Table 2.

Chronbach's alpha was 0.96 for the entire sample and 0.93 for the suicidal ideators subsample. We conducted another EFA with a maximum likelihood extraction on the final 6 SEASA items, first with the full sample and then with a subset of participants with current suicidal ideation. Factor loadings for the full sample were as follows: 0.84 (item 2), 0.86 (item 4), 0.81 (item 5), 0.93 (item 16), 0.91 (item 17), and 0.96 (item 18). For the current suicidal ideation subsample, factor loadings were: 0.77 (item 2), 0.83 (item 4), 0.75 (item 5), 0.85 (item 16), 0.82 (item 17), and 0.92 (item 18).

Concurrent Validity of the SEASA Scale

The final SEASA scale was significantly correlated with suicidal ideation as measured by BSS in the expected direction (Pearson's r was -0.59 for ideators sample for whom ideation severity could be calculated; $p < 0.0001$) with higher scores on BSS, indicative of more severe suicidal ideation, associated with lower SEASA ratings. In addition, the mean SEASA score for suicidal ideators ($M=26.2$, $SD=14.6$) was significantly lower relative to the mean score of those not meeting the threshold for current suicidal ideation (Beck & Steer, 1993), defined in the study as non ideators ($M= 44.4$, $SD = 14.4$); $t=11.26$, $p < 0.0001$. Also offering support for the scale's concurrent validity, history of suicide attempts differentiated individuals with lower and higher self-efficacy scores. The average SEASA score for those with no suicide attempts ($M=44.2$; $SD = 15.6$) was significantly higher compared to those with one ($M=35.8$; $SD=14.0$, $t=8.4$, $p<0.0001$) and two or more ($M=28.4$; $SD = 15.6$, $t=15.8$, $p<0.0001$) attempts; the difference in self-efficacy between individuals with multiple versus one-time suicide attempts was also significant ($t=7.4$, $p<0.003$). Similarly, compared to individuals with current suicidal ideation but no suicide attempt history ($M=33.1$; $SD=14.5$), suicidal ideators with one ($M=25.1$; $SD=12.6$, $t=7.9$, $p=0.02$) and multiple ($M=20.9$; $SD=14.3$, $t=12.2$, $p=0.0002$) suicide attempts reported significantly lower SEASA scores. However, unlike in the full sample, and possibly due to reduced statistical power, there was no difference in self-efficacy ratings between one-time and multiple suicide attempters in the subsample of individuals with current suicidal ideation ($t=4.2$, $p=0.19$).

Discussion

Using a large sample of individuals seeking SUD treatment, this study describes the development of a new measure designed to assess self-efficacy to refrain from suicidal behaviors. The SEASA scale assesses an individual's perceived ability to refrain from suicidal action in different situations that might trigger a suicidal crisis, including contexts with particular relevance for individuals misusing alcohol and drugs – a group at elevated risk for suicidal behavior (Conner & Duberstein, 2004; Moscicki, 1997, 2001). To the best of our knowledge, a measure of self-efficacy to avoid suicidal behavior has not been previously developed and evaluated either among those with SUDs or any other population at elevated risk for suicide. Examining self-efficacy in the context of suicide risk – and its role as a potential determinant of suicidal behavior – fills an important gap in the literature. Specifically, because self-efficacy has been consistently shown to influence actual behavior across various health behavior domains (Hurley, & Shea, 1992; Ilegu et al., 2005, 2006; Maibach & Murphy, 1995; Multon et al., 1991; Witkiewitz & Marlatt, 2004), determining

self-efficacy to manage suicidal urges could similarly improve prediction of suicidal behaviors. Although longitudinal research is needed to establish this link prospectively, our study provides initial evidence pointing to the value of examining self-efficacy in this context. In addition, the study of self-efficacy has the potential to add to our understanding of modifiable factors that can inform effective interventions with suicidal individuals.

An exploratory factor analysis of all SEASA items revealed a single factor structure in the entire SUD treatment-seeking sample, providing support for a single underlying self-efficacy construct across different situations. The single factor structure was also found in a subset of participants with current suicidal ideation whose self-efficacy ratings, as might be expected, had greater variability. This provided additional support for the items measuring a single underlying self-efficacy or confidence in the ability to refrain from engaging in suicidal behaviors across a number of high-risk situations. However, because the single-factor structure and high factor loadings, in addition to high internal consistency, suggest some item redundancy, the next step in the measure development process involved item reduction to develop a more parsimonious scale. This final 6-item SEASA might thus have greater practical value in assessment of self-efficacy when time constraints or respondent burden are of concern.

The results also provide evidence for convergent validity of the SEASA in the entire sample and the smaller subset of individuals reporting current suicidal ideation. A history of a suicide attempt differentiated individuals reporting lower and higher self-efficacy to avoid suicidal behaviors in the future. More specifically, individuals with no previous suicide attempts held the highest self-efficacy beliefs while those with multiple suicide attempts reported the lowest capacity to refrain from future suicidal behavior. By the very nature of their history, individuals with previous suicide attempts might have experienced a reduced sense of mastery to safely manage suicidal thoughts and behaviors in the future, consistent with self-efficacy theory suggesting that a key influential source of self-efficacy is previous successful performance (Bandura, 1977). It is important to note that while the general pattern of findings was similar in the subset of participants with suicidal ideation, the difference in self-efficacy ratings between individuals with one versus multiple previous attempts was not found; however, this inconsistency might have been due to limited statistical power. Additional research is needed to address this question in a sample with sufficient statistical power. Providing additional evidence for the SEASA's convergent validity, participants with more severe suicidal ideation reported lower self-efficacy to refrain from suicidal behaviors. This is consistent with self-efficacy theory and previous work suggesting that physiological arousal and negative affective states lower self-efficacy beliefs (Bandura, 1977; Kavanagh & Bower, 1985).

Limitations

This study has several important limitations. The predominantly male sample of younger adults from the midwestern region of the United States may have limited generalizability. In addition, participants were recruited from a single residential SUD program and findings may not apply to individuals from outpatient clinics or the community. Another important

limitation is that we did not examine the scale's predictive validity, and future longitudinal research is needed to explore the degree to which SEASA is associated with subsequent suicidal behavior. In addition, prospective studies are also needed to examine other types of reliability, such as test-retest. Unfortunately, we did not have access to additional measures to be able to establish other types of validity, such as incremental and divergent validity. Additional limitations of the measure development process were that the items were not pilot-tested with focus groups, but were developed based on theory and expert consensus only, and the final scale was not subsequently tested on an independent sample. Additional research is needed to confirm the factor structure of the SEASA in a sample of substance users as well as in other settings and populations. In addition, although this study focused on confidence to manage suicidal thoughts and impulses, the more immediate precursors to suicidal behavior, it is worth mentioning that there are other ways that the construct of self-efficacy could be relevant to the study of suicidal thoughts and behaviors. For example, it may be useful for future work to examine self-efficacy to live a meaningful life or a life worth living. Despite these limitations, this study is the first to examine a measure of self-efficacy to avoid suicidal behavior, addressing an important gap in the literature.

Implications

The present study has important implications for identifying and intervening with individuals with SUDs who, as a group, are at an increased risk for suicidal behaviors (Conner & Duberstein, 2004; Moscicki, 1997, 2001). However, because the scale is not solely intended for individuals with SUDs, the self-efficacy construct and corresponding situational triggers may also apply more broadly to other high-risk populations. Additional studies are needed to validate the scale in different populations.

Our findings provide initial evidence that SEASA is a valid measure of self-efficacy beliefs to avoid suicidal behavior and point to its potential value in assessing these beliefs among substance users and other high-risk groups. For example, the scale could prove useful in clinical risk formulation when considering a number of risk and protective factors to determine level of suicide risk. An individual with suicidal ideation and low self-efficacy beliefs to safely manage these thoughts might be at greater risk than an individual with greater self-efficacy. Similarly, although a history of a suicide attempt is the strongest risk factors for future suicidal behavior (e.g., Joiner et al., 2005), previous suicide attempters who nevertheless have confidence in their capacity to avoid suicidal behavior might be less vulnerable to suicidal behavior compared to attempters with low self-efficacy. Along these lines, assessing self-efficacy may provide an estimate of the extent to which an individual will be able to sustain his or her coping efforts at the time of a suicidal crisis. Indeed, previous research in the addictions field has shown that self-efficacy to abstain from alcohol was related to greater alcohol abstinence both directly and indirectly via improved coping skills (Litt, Kadden, Cooney, & Kabela, 2003). Future research is needed to examine how self-efficacy ratings can be incorporated into suicide risk formulation with suicidal individuals, and the extent to which inquiring about self-efficacy in this context can augment clinical decision-making; indeed, we are currently conducting a study with adolescents seeking psychiatric emergency services to try to answer some of these questions.

Our study also adds to the literature of modifiable factors with potential utility as an intervention target with suicidal individuals. For example, asking about self-efficacy to avoid suicidal action after implementing an intervention might provide valuable information about the intervention's impact on the individual's confidence to refrain from suicidal behavior. If the individual reports low confidence about safely managing suicidal thoughts and urges, further adjustments to the intervention might be warranted (e.g. revising the safety plan while taking into account specific situational triggers). In addition, the individual's self-efficacy ratings might guide decision-making about appropriate level of care (e.g., outpatient versus inpatient services). Similarly, periodic assessment of self-efficacy in the course of therapy with suicidal individuals could provide measurable and useful information about client progress. Intervention approaches that incorporate a focus on strengthening self-efficacy beliefs to refrain from suicidal behavior might be a promising area of intervention with high-risk individuals. For example, while not directly referring to self-efficacy in the intervention protocol, existing efficacious approaches, such as cognitive behavioral treatment (Brown et al., 2005), may influence self-efficacy beliefs by focus on improving adaptive coping skills to prevent future suicidal crises. As such, measuring changes in self-efficacy within the context of a randomized trial of interventions for suicidal individuals could also provide important information about the extent to which self-efficacy serves as a mediator of the effect of suicide-focused interventions. Finally, another focus for future research might be to determine for whom assessing self-efficacy is most useful (e.g. moderator effects) and if there are particular subgroups of at-risk individuals for whom assessing self-efficacy are especially meaningful in predicating actual suicidal behavior or response to intervention.

Conclusions

In summary, our study provides initial data demonstrating that the SEASA scale provides meaningful information about the construct of self-efficacy assessed in the context of suicide risk, with potential relevance for improving intervention approaches with vulnerable populations. Although our findings warrant some caution due to the study's limitations, they provide a starting point inviting further research focusing on the construct of self-efficacy within the suicide literature. In particular, we encourage prospective research -- with different high-risk populations -- that would allow for examining the scale's utility in predicting suicidal behavior, in addition to defining which specific level or threshold of self-efficacy is the strongest predictor of suicidal behavior. Moreover, investigations of this construct's potential role as a mediator of suicide-focused interventions are also encouraged in future research.

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Table 1
Descriptive Statistics and Factor Structure of initial SE/ASA items

Item	Factor Loadings					
	Full Sample (N=464)		Ideators (N=103)		Full	Ideators
	Mean	SD	Mean	SD	Full	Ideators
1. How certain are you that you will not have serious suicidal ideation (thoughts) in the future?	6.44	3.23	4.21	2.76	.80	.67
2. How certain are you that you will not attempt suicide in the future?	6.80	3.15	4.28	2.87	.87	.82
3. If at some point in the future you had suicidal thoughts, how certain are you that you could decrease those thoughts of suicide quite a bit?	6.83	2.95	5.01	2.71	.85	.81
4. If at some point in the future you had suicidal thoughts, how certain are you that you could resist harming yourself (making a suicide attempt)?	6.91	2.97	4.80	2.80	.90	.91
5. If at some point in the future you had suicidal thoughts, how certain are you that you could resist harming yourself (making a suicide attempt) if you were using alcohol or other drugs?	6.31	3.13	4.34	2.91	.83	.76
6. If at some point in the future you had suicidal thoughts, how certain are you that you could resist harming yourself (making a suicide attempt) if you were clean and sober?	7.17	2.83	5.40	2.88	.88	.84
7. If at some point in the future you had suicidal thoughts, how certain are you that you can make a <i>small-to-moderate reduction</i> in those thoughts by using methods other than taking extra medications, using alcohol or drugs, or making a suicide attempt?	6.61	3.00	4.56	2.66	.83	.77
8. If at some point in the future you had suicidal thoughts, how certain are you that you can make a <i>large reduction</i> in those thoughts by using methods other than taking extra medications, using alcohol or drugs, or making a suicide attempt?	6.56	3.06	4.50	2.73	.83	.78
9. How certain are you that you could control future suicidal thoughts if you relapse to alcohol or drug use?	5.98	3.29	3.40	2.89	.86	.76
10. How certain are you that you could control future feelings of wanting to harm yourself or make a suicide attempt?	6.92	2.87	4.39	2.82	.94	.91
11. How certain are you that you could do something to help yourself feel better if you were feeling blue in the future?	6.74	2.68	4.76	2.64	.87	.81
12. How certain are you that you could deal with frustration in the future without harming yourself or making a suicide attempt?	7.12	2.71	4.80	2.75	.94	.93
13. How certain are you that you could deal with a relapse to alcohol or drug use in the future without harming yourself or making a suicide attempt?	6.77	2.90	4.62	2.89	.89	.82
14. How certain are you that you will be able to cope with future suicidal thoughts?	7.03	2.83	4.67	2.89	.94	.92
15. How certain are you that you could control future suicidal thoughts when you are worried?	6.95	2.84	4.49	2.79	.95	.95
16. How certain are you that you could control future thoughts of suicide if you were experiencing physical pain?	6.92	2.81	4.58	2.85	.91	.81
17. How certain are you that you could control future suicidal thoughts if you lost an important relationship?	6.48	3.03	3.74	2.82	.89	.75
18. How certain are you that you could control future suicidal thoughts if you lost a job, could not find employment, or suffered a financial crisis?	6.92	2.86	4.48	2.82	.94	.87
19. How certain are you that you could control future suicidal thoughts if you were lonely?	6.64	2.98	3.97	2.81	.94	.85
20. How certain are you that you could control future suicidal thoughts if you suffered legal consequences?	6.60	3.03	3.90	2.86	.90	.74
21. How certain are you that you have enough support to deal with future suicidal thoughts?	6.95	2.93	4.45	2.90	.90	.80

Notes: Range = 0-9; Bolded items were retained

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Table 2

Inter-item Correlations of the final SE/ASB items

		Suicidal Ideators Only (N=103)							
		2	4	5	16	17	18		
	2		.79	.60	.59	.64	.66		
	4	.83		.74	.68	.62	.72		
	5	.76	.81		.59	.56	.67		
Full Sample (N=464)	16	.76	.77	.72		.70	.82		
	17	.73	.75	.71	.85		.80		
	18	.78	.79	.75	.91	.89			

Note: All Pearson correlations are significant at $p < 0.0001$

Table 3

Final SE/ASA Items

Please read each of the statements below carefully and circle the number which best fits how certain you are about how you would act in each of the following situations

	Very uncertain							Very certain												
1. How certain are you that you will not attempt suicide in the future?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
2. If at some point in the future you had suicidal thoughts, how certain are you that you could resist making a suicide attempt?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
3. If at some point in the future you had suicidal thoughts, how certain are you that you could resist making a suicide attempt if you were using alcohol or other drugs?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
4. How certain are you that you could control future thoughts of suicide if you were experiencing physical pain?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
5. How certain are you that you could control future suicidal thoughts if you lost an important relationship?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
6. How certain are you that you could control future suicidal thoughts if you lost a job, could not find employment, or suffered a financial crisis?	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9