



## Assessing Motivations for Suicide Attempts: Development and Psychometric Properties of the Inventory of Motivations for Suicide Attempts

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This study describes the psychometric properties of the Inventory of Motivations for Suicide Attempts (IMSA). The IMSA was designed to comprehensively assess motivations for suicide emphasized by major theories of suicidality. The IMSA was administered to two samples of recent suicide attempters, undergraduates ( $n = 66$ ) and outpatients ( $n = 53$ ). The IMSA exhibited a reliable two-factor structure in which one factor represented Intrapersonal motivations related to ending emotional pain, and the second represented Interpersonal motivations related to communication or help-seeking. Convergent validity and divergent validity of IMSA scales were supported by expected patterns of correlations with another measure of suicide motivations. In addition, the IMSA scales displayed clinical utility, in which greater endorsement of intrapersonal motivations was associated with greater intent to die, whereas greater endorsement of interpersonal motivations was associated with less lethal intent and greater likelihood of rescue. Findings suggest the IMSA can be of use for both research and clinical purposes when a comprehensive assessment of suicide motivations is desired.

Suicide is a leading cause of death, killing approximately 36,900 Americans and 3,900 Canadians yearly (Kochanek et al., 2011; Statistics Canada, 2012). Approximately 1 million American adults report experiencing a nonfatal suicide attempt each year (Centers for Disease Control & Prevention, 2011). Suicide attempts that do not end in death can result in a limitation of one's liberties, hospitalization, disrupted relationships, physical pain, permanent injury,

shame, and stigma. Given the severity and variety of negatives outcomes, finding more effective ways to prevent suicide attempts and deaths is essential. However, despite increased prevention efforts, suicide rates in North America have remained relatively constant over the last 50 years (World Health Organization, 2011).

A key to reducing suicidal behavior is to better understand the purpose it serves. One of the motivations common to all suicide attempts, by definition, is to die. However, research suggests the decision to attempt suicide may be motivated by many additional reasons, including escape, communication, altering one's environment, and dealing with an unbearable state of mind (Brown, Comtois, & Linehan, 2002; Chapman & Dixon-Gordon, 2007; Holden et al.,

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1998; Schnyder, Valach, Bischel, & Michel, 1999). Understanding an individual's specific reasons for attempting suicide may allow the clinician and the attempter to find other solutions to solve the precipitating problem. Thus, better assessing the motivations for suicide attempts may improve suicide prevention and intervention.

Another way to improve suicide prevention is to evaluate and advance existing theories of suicidality so they are increasingly accurate and informative. There are many broad theories of suicidality that suggest motivations for suicide attempts. For example, Baumeister (1990) drew on social, personality, and cognitive psychology to posit that suicide attempts were motivated by a need to escape from an especially painful state of self-awareness. Shneidman (1993) theorized that suicide was caused by a desire to end intolerable emotional or psychological pain, what he termed "psychache." More recently, Joiner (2005) presented the interpersonal theory of suicide, which suggests that three domains must be present for a suicide to occur. Perceived burdensomeness and thwarted belongingness, the first two domains, confer the desire for suicide (e.g., suicidal ideation). The third domain, acquired capability, is believed to be necessary in order for an individual to undertake potentially lethal self-harm. However, the motivations suggested by different theories of suicide have rarely been subject to empirical investigation. A measure of motivations informed by existing theories would allow for systematic testing of the various suicidality models and their subsequent refinement and evolution.

Although there has long been interest in why people attempt suicide, empirical research is limited. Compared with the thousands of studies on risk factors for and correlates of suicidality, we could find only 14 on motivations for suicide. Keywords such as "reason," "motivation," and "function" were used as search terms in conjunction with "suicide attempt." Additionally, the reference sections of books and manuscripts known to the authors were

also reviewed for appropriate references. One interview-based measure, the Suicide Attempt Self-Injury Interview (SASII; Linehan et al., 2006), includes questions about suicide motivations. Reasons were generated by clients with borderline personality disorder who engaged in suicidal and nonsuicidal self-injury and then grouped by the authors into four rationally derived scales. The items cover a breadth of reasons; however, some of the scales have exhibited poor psychometric properties (Brown et al., 2002; Bryan, Rudd, & Wertenberger, 2013).

The majority of the limited literature on suicide motivations used the Reasons for Attempting Suicide Questionnaire (RASQ; Johns & Holden, 1997; Holden et al., 1998). The RASQ is based on the work of Bancroft and colleagues conducted in the 1970s. They assessed inpatients admitted for overdoses (regardless of intent) to identify the reasons for their overdoses (Bancroft, Skrimshire, & Simkin, 1976; Bancroft et al., 1979). Twenty years later, Holden and collaborators used the 14 items generated by Bancroft and colleagues to make the RASQ.

The original RASQ study of 173 ideators and attempters found a two-factor solution using principle components analysis (Holden et al., 1998). These factors were titled Extrapunitive/Manipulative and Internal Perturbations. The Extrapunitive/Manipulative factor was characterized by reasons directed toward others (e.g., "frighten someone"), while the Internal Perturbations factor was marked by reasons related to guilt, failure, and a need to escape (e.g., "to get relief from a terrible state of mind"). A more recent study of primarily undergraduates with a lifetime suicide attempt also generated the same factor structure (Holden & DeLisle, 2006). Across studies, internal/intrapersonal motivations were endorsed more frequently than external/interpersonal ones.

By far, the largest study using a version of the RASQ is the WHO/EURO Multicentre Study on Suicidal Behaviour (Hjelmeland et al., 2002). This study

included 1,646 participants from 13 European countries who were each interviewed within 1 week of their attempt. A factor analysis of the RASQ results yielded four factors and a single item. The four factors were (1) Final Exit, (2) Temporary Escape, (3) Care Seeking, and (4) Influencing Others. However, this factor structure has not been replicated. In this sample, the Final Exit factor was the most strongly endorsed regardless of age, gender, or region.

As the first instrument of its kind, the RASQ has helped the field take key first steps toward understanding suicide motivations. However, there are a number of important limitations to the motivations research to date. First, there are at least three shortcomings to the RASQ itself. One weakness is that its items do not comprehensively cover the breadth of theories of suicidality. Furthermore, the items do not clearly align with the key constructs of the major theories of suicidality, which makes it difficult to use the measure to evaluate and improve these theories. A second limitation is that RASQ items were generated by a small sample of British inpatients engaging in a specific type of self-injurious behavior (overdose) approximately 40 years ago. Thus, the items may not fully or accurately capture the possible motivations for suicidal behavior relevant to the broad population of suicide attempters. Third, the structure of the RASQ remains uncertain. While some work indicates a two-factor solution (Holden & DeLisle, 2006), other studies suggested a three-factor solution (Holden & McLeod, 2000) and a four-factor solution (Hjelmeland et al., 2002). The instability of the factor structure raises doubts about the psychometrics of the measure and brings in to question the reliability, validity, and generalizability of reported associations between RASQ motivations and other key aspects of suicidality such as lethality and medical severity.

In addition to these measurement limitations, studies on motivations for suicide attempts also suffer from at least three design limitations. First, a number of studies

combine suicide attempters with suicide ideators and nonsuicidal individuals into a single sample and pool their ratings regarding perceived motivations for suicide. Nonattempters tend to attribute different motivations to suicide attempts than attempters (Hawton, Cole, O'Grady, & Osborn, 1982; James & Hawton, 1985). Thus, asking nonsuicidal individuals to speculate on their reasons for hypothetical attempts is likely to introduce error into the results and obscure genuine motivations for suicide attempts.

A second design limitation is that studies on motivations for suicide attempts have often failed to distinguish between suicidal and nonsuicidal self-injury (NSSI). Attempted suicide and NSSI have different motivations (Baetens et al., 2011; Brown et al., 2002), as well as different descriptive features and correlates (Klonsky & Muehlenkamp, 2007; Muehlenkamp, 2005). Considering instances of NSSI as suicide attempts will lead to inaccurate findings about attempted suicide, especially because NSSI is more prevalent than attempted suicide and will therefore disproportionately influence the findings of studies that combine NSSI and attempted suicide into a single measure or sample (Klonsky, 2011; Plener et al., 2009).

Third, studies have varied the number, wording, and rating scales of items on the RASQ. These inconsistencies limit our ability to compare and synthesize results across studies and establish foundational knowledge about suicide motivations. Given the various measurement and design limitations described earlier, an important next step in suicide research is to build on what has been learned from the RASQ and construct a reliable, valid, and comprehensive measure of motivations that is informed by existing theories of suicidality.

This study was developed to address this need. The first aim of the study is to establish the psychometric properties of the Inventory of Motivations for Suicide Attempts (IMSA), a comprehensive measure of motivations for suicide attempts with scales that are keyed to the major theories

of suicidality. The second aim is to explore how different motivations relate to different clinical presentations and levels of suicide risk. This aim is addressed by examining the relation of motivations for suicide attempts to characteristics of suicide attempts (e.g., lethality, intent, level of planning, pre-attempt communication).

## METHODS

### *Development of Measure*

The IMSA is based on the prevailing theories of suicidality and on discussions with other suicide researchers and clinicians. Four items were generated for each of 10 scales: Hopelessness, Psychache, Escape, Burdensomeness, Low Belongingness, Fearlessness, Help-Seeking, Interpersonal Influence, Problem-Solving, and Impulsivity.

We sought to be overinclusive in the perspectives represented on the IMSA in the hopes of capturing a wide array of plausible motivations. Some of the domains covered by the IMSA are motivations that may be sufficient in and of themselves to lead to a suicide attempt (e.g., Hopelessness), while others are factors that may increase one's motivation to choose such a course of action (e.g., Fearlessness). Additionally, each scale is considered a possible motivation for choosing a particular behavior (suicide attempt), rather than a motivation for feeling suicidal in the first place. For example, fearlessness or impulsivity may be important factors in motivating the choice to attempt suicide, although they would not be reasons that one would feel suicidal. That is, reduced fear of death may be motivation for choosing suicidal behavior, rather than another course of action, in the face of overwhelming emotions or the desire to influence another person.

Items were written by the first author (AMM) and were edited and refined in consultation with the second author (EDK). For the Hopelessness scale, the work of Aaron T. Beck and colleagues (Beck et al.,

1990; Beck et al., 1985) and Abramson and colleagues (Abramson, Metalsky, & Alloy, 1989; Abramson et al., 2000) were consulted, specifically the Beck Hopelessness Scale (Beck, Schuyler, & Herman, 1974; Beck et al., 1974), from which the wording of one item was used directly (i.e., "My future seems dark"). For the Psychache scale, items were based on the work of Shneidman (1993) as well as Holden et al.'s (2001) Scale of Psychache. Items on the Escape scale were constructed using the work of Baumeister (1990). The Burdensomeness scale and Low Belongingness scale were developed from Joiner's writings on the interpersonal theory of suicide and the Interpersonal Needs Questionnaire (Van Orden et al., 2008). The Fearlessness scale was also based on Joiner's interpersonal theory and an associated measure, the Acquired Capability for Suicide Scale (Van Orden et al., 2008). No items were used directly from either of Joiner's measures. The items for the Help-Seeking scale and Interpersonal Influence scale were produced by consulting the RASQ (Holden et al., 1998) and the SASII (Linehan et al., 2006). Items on the Problem-Solving scale were generated by the research team and were inspired by Baechler's (1979) original premise that suicidal behavior was a rational response to solve a specific problem, although they were not associated with his typology of attempts. The items on the Impulsivity scale were written by the authors and informed by their own work (Klonsky & May, 2010). Four additional items that did not align with a specific scale, but were of interest, were also produced.

After approximately 30 pilot participants with suicide attempts completed the measure, descriptive statistics and coefficient alphas were calculated to assess the functioning of the scales. Based on these analyses and low alphas for some scales, one more item was added to each scale, for a total of five items per scale and 54 items on the complete measure.

Respondents were asked to bring their most recent suicide attempt to mind and to complete the stem, "I attempted

suicide because I..." by endorsing each item (range: 0 – *not at all important* to 4 – *most important*). Examples of items include "... could no longer tolerate my emotional pain" and "...needed to persuade someone to change his or her mind." The complete measure was then administered to two samples of recent suicide attempters, as detailed next.

### *Procedures*

Two samples were obtained. For Sample 1, undergraduates who had attempted suicide within the previous 3 years and were at least 19 years of age were recruited through advertisements posted around campus and an extra credit system for psychology undergraduates. For Sample 2, outpatients who attempted suicide within the previous 3 years, were at least 19 years of age, and were currently receiving mental health treatment (either therapy, psychiatric medication, or both) were recruited from the community by way of online ads, announcements at mental health community organizations, and posters throughout Vancouver.

A suicide attempt was defined as "self-inflicted, potentially injurious behavior with a nonfatal outcome for which there is evidence of intent to die" (Silverman et al., 2007). Potential participants answered screening questions to determine whether their experience fit the study's definition of an attempt. Specifically, they were asked whether they had tried to hurt themselves with at least some intent to die. The attempt was then further assessed with a semistructured interview during the study visit (see measures below). Exclusion criteria for both samples included either language or cognitive barriers that prevented completion of the study protocol. Signed informed consent was obtained from all participants. The study was approved by the university's Behavioral Research Ethics Board.

Eligible participants attended a 2-hour research session in which they completed questionnaires and a semistructured inter-

view. At the end of the session, participants were debriefed as to the purpose of the research, positive coping strategies were highlighted as a reminder of healthy ways to manage distress, and current feelings of safety were assessed. The interviewer then provided each participant with a packet of resources, including local and affordable mental health care clinics, as well as 24-hour crisis numbers. Participants were compensated with either extra credit points or \$30 and bus fare or parking validation if needed.

### *Participants*

Sample 1 consisted of 66 undergraduates with suicide attempts during the previous 3 years. The sample was predominantly female (78.8%), with a mean age of 21.6 years ( $SD = 2.6$ ). Regarding ethnicity, the sample was 50% East Asian descent, 23% Indian–South Asian descent, 15% European descent, 9% mixed descent, and 3% Middle Eastern descent one quarter (26%) reported having a minority sexual orientation (i.e., gay, lesbian, bisexual, questioning). Regarding characteristics of suicidality, participants reported a median of two lifetime suicide attempts (range = 1–15). Onset of suicidal ideation occurred at a mean age of 14.5 years ( $SD = 3.6$ ).

Sample 2 consisted of 53 outpatients with suicide attempts during the previous 3 years. Approximately half of the participants were female (52.8%), with a mean age of 38.3 years ( $SD = 12.3$ ). Regarding ethnicity, the sample was 49% European descent, 15% East Asian descent, 11% First Nations descent, 8% mixed descent, 6% Latin American descent, 4% Middle Eastern descent, 4% other descent, and 2% Indian–South Asian descent. Approximately one fifth 19% reported having a minority sexual orientation. Regarding education level, 25% reported partial high school, 38% reported high school graduation or some college, 26% reported college graduation, and 11% reported further education. Thirty-nine percent of the sample reported currently working outside the home.



Regarding characteristics of suicidality, participants reported a median of two lifetime suicide attempts (range = 1–15). Onset of suicidal ideation occurred at a mean age of 17.1 years ( $SD = 9.3$ ).

### *Measures*

*Self-Report Measures.* The IMSA is a self-report questionnaire developed by our laboratory to assess the motivations for suicide attempts emphasized by major theories of suicidality (see Appendix 1 and Appendix 2). It consists of ten 5-item scales, as well as four additional items. Items are rated on 5-point Likert scales ranging from 0 (*not at all important*) to 4 (*most important*). With an outpatient population, the IMSA takes 4 to 6 minutes to complete.

The RASQ (Holden et al., 1998; Johns & Holden, 1997) was used to assess reasons for suicide attempts and help evaluate the construct validity of the IMSA. The RASQ is a 14-item measure with a 7-point Likert scale that assesses two superordinate dimensions: the Internal Perturbation-Based Reasons Scale and the Extrapunitive/Manipulative Motivations Scale.

*Interview Measures.* The SASII (Linehan et al., 2006) is a structured interview designed to assess the frequency, method, severity, context, intent, reasons, and outcomes of self-injurious behaviors. It consists of open-ended, forced choice, yes/no, and Likert-rated questions. The validity of SASII items has been established by comparing interview reports with therapist note, medical records, and coding by expert raters (Linehan et al., 2006). This interview was used to assess the details of the most recent suicide attempt, including reported intent, pre-attempt communication or suicide threats, probability of interruption during attempt, medical risk of method, and lethality of injury incurred. Episodes of nonsuicidal self-injury were not assessed.

The Suicide Intent Scale (SIS; Beck, Schuyler, & Herman, 1974) was used to quantify participants' level of suicidal intent. It is a 15-item measure in which each item

is coded 0–2. The SIS was coded by the interviewer based on the information gathered during the SASII. The SIS has been shown to have good internal reliability and concurrent validity (Ojehagen, Regnell, & Traskman-Bendz, 1991; Power, Cooke, & Brooks, 1985).

## RESULTS

### *Characteristics of the Suicide Attempt*

Among undergraduates, data were collected an average of 19 months ( $SD = 11$ ) after the attempt. Among outpatients, data were collected approximately 16 months ( $SD = 14$ ) after the attempt. In both samples, the most common methods of attempt were overdose (55.6%) and cutting/stabbing (15.9%). Following the attempt, 44.3% of the undergraduates and 61.1% of the outpatients reported requiring medical attention.

### *Descriptive and Internal Consistency Statistics of the IMSA*

Means, standard deviations, and coefficient alphas of the ten IMSA scales were calculated separately for each sample (Table 1). The mean endorsement levels of the scales were similar in the two samples, with Hopelessness, Psychache, and Escape having the highest mean endorsement and Interpersonal Influence, Help-Seeking, and Impulsivity having the lowest. Two scales were rated as “very important” or “most important” by over half the sample, Hopelessness by 63.6% of participants, and Psychache by 65.8%. All scales had a coefficient alpha of .66 or greater with the exception of Problem-Solving ( $\alpha = .55$  undergraduates and  $\alpha = .47$  outpatients). The items on the Problem-Solving scale did not group together, perhaps because each item tapped into a different type of problem (e.g., “It could fix some important practical problems for my family”; “I needed to prevent someone from hurting

**TABLE 1**  
*Means, Ranges, and Reliability Coefficients for IMSA Scales*

Scales	Undergraduates			Outpatients		
	Mean (SD)	Range	$\alpha$	Mean (SD)	Range	$\alpha$
Hopelessness	14.7 (4.4)	3–20	.77	15.4 (4.7)	0–20	.85
Psychache	15.9 (4.4)	4–20	.84	15.2 (4.6)	3–20	.84
Escape	13.0 (5.2)	0–20	.80	13.0 (5.1)	0–20	.77
Burdensomeness	7.5 (6.1)	0–20	.88	8.3 (6.2)	0–20	.87
Low Belongingness	9.0 (5.4)	0–20	.74	9.0 (5.3)	0–20	.73
Fearlessness	7.6 (5.1)	0–20	.74	8.3 (5.3)	0–20	.75
Impulsivity	6.0 (4.8)	0–16	.74	6.3 (4.5)	0–19	.66
Problem-Solving	8.5 (4.0)	0–17	.55	8.5 (4.0)	0–17	.47
Interpersonal Influence	4.8 (5.9)	0–20	.89	3.6 (4.3)	0–20	.80
Help-Seeking	6.1 (5.7)	0–19	.84	5.5 (4.8)	0–19	.74

me”). As Problem-Solving statements were widely endorsed, they were retained as individual items. Thus, the subsequent analyses focused on the nine remaining scales.

#### *Structure*

Exploratory factor analysis (principle axis factoring with promax rotation) was performed in each sample. Notably, inspection of eigenvalues and scree plots indicated factor solutions in each sample that were extremely similar (Tables 2 and 3). The first factor, which we labeled Intrapersonal, consists of internal reasons related to distressing states of mind (Psychache, Escape, Hopelessness, Burdensomeness, Low Belongingness, Fearlessness; eigenvalue = 3.0–3.4). This factor accounted for 32.9% of the variance in the undergraduate sample and 37.7% of the variance in the outpatient sample. The second factor, which we labeled Interpersonal, consists of other-focused reasons relating to a desire to reach out to or influence others (Help-Seeking, Interpersonal Influence; eigenvalue = 1.5–2.0). This factor accounted for 16.9% of the variance in the undergraduate sample and 22.7% of the variance in the outpatient sample. The factors were weakly correlated with each other (undergraduates:  $r = .28$ ; outpatients:  $r = .13$ ).

**TABLE 2**  
*Pattern Matrix with a Two-Factor Solution Undergraduate Sample*

Scales	Factor 1	Factor 2
	( $\alpha = .88$ ) Intrapersonal Motivations	( $\alpha = .91$ ) Interpersonal Motivations
Hopelessness	<b>.52</b>	.02
Psychache	<b>.51</b>	.02
Escape	<b>.81</b>	-.10
Burdensomeness	<b>.46</b>	-.13
Low Belongingness	<b>.46</b>	.27
Fearlessness	<b>.43</b>	.17
Impulsivity	.02	.32
Interpersonal Influence	.03	<b>.77</b>
Help-Seeking	-.01	<b>.89</b>

*Note.* Factor loadings greater than .40 are bolded.

Next, scores from the scales loading on each factor were summed to form Interpersonal and Intrapersonal scales. Although Hopelessness exhibited a negative loading (–.44) on the Interpersonal factor in the outpatient sample, we opted not to include reverse-scored Hopelessness on this scale because the loading on the Intrapersonal factor was more robust (.61) and Hopelessness has a negligible loading on the

**TABLE 3**  
*Pattern Matrix with a Two-Factor Solution*  
*Outpatient Sample*

Scales	Factor 1	Factor 2
	( $\alpha = .92$ ) Intrapersonal Motivations	( $\alpha = .86$ ) Interpersonal Motivations
Hopelessness	<b>.61</b>	-.44
Psychache	<b>.73</b>	-.10
Escape	<b>.87</b>	.04
Burdensomeness	<b>.63</b>	.10
Low Belongingness	<b>.64</b>	.26
Fearlessness	<b>.60</b>	.01
Impulsivity	-.24	.32
Interpersonal Influence	.10	<b>.79</b>
Help-Seeking	.12	<b>.81</b>

*Note.* Factor loadings greater than .40 are bolded.

Interpersonal factor in the undergraduate sample (.02). The Impulsivity scale was not included on either scale because it failed to load at .40 on either scale. Coefficient alphas for the items on the Intrapersonal factor (undergraduates:  $\alpha = .88$  and outpatients:  $\alpha = .92$ ) and Interpersonal factor (undergraduates:  $\alpha = .91$  and outpatients:  $\alpha = .86$ ) indicated excellent internal consistency.

#### *Convergent and Divergent Validity*

We next examined convergent and divergent validity by correlating the two

IMSA scales with two RASQ dimensions: Internal Perturbation and Extrapunitive/Manipulative (see Table 4). The; Internal Perturbation-based reasons scale of the RASQ is conceptually similar to the IMSA Intrapersonal scale in that it assesses motivations related to psychological pain, while the RASQ Extrapunitive/Manipulative Motivations scale is conceptually similar to the IMSA Interpersonal scale in that it measures other-oriented reasons for attempting. As expected, in both samples, the IMSA Intrapersonal scale correlated strongly with the RASQ Internal Perturbation scale, and the IMSA Interpersonal scale correlated strongly with the Extrapunitive/Manipulative Motivations scale. These correlations support the IMSA's convergent validity. In support of divergent validity, the correlation between the IMSA Intrapersonal and RASQ Extrapunitive/Manipulative scales, and the correlation between IMSA Interpersonal and RASQ Internal Perturbation scales, were small and nonsignificant in both samples.

#### *Clinical Utility*

Finally, we conducted exploratory correlational analyses to examine how IMSA motivations relate to characteristics of the suicide attempt (combining undergraduates and community mental health participants into a single sample; see Table 5). The IMSA Interpersonal scale was negatively correlated with suicidal intent (both interviewer and self-report) and

**TABLE 4**  
*Convergent Validity in Each Sample*

	Factor 1 Intrapersonal – Undergraduates	Factor 1 Intrapersonal – Outpatients	Factor 2 Interpersonal – Undergraduates	Factor 2 Interpersonal – Outpatients
Internal Perturbations (RASQ)	.57**	.61**	.18	-.03
Extrapunitive/Manipulative (RASQ)	.22	.06	.83**	.84**

\* $p < .05$ ; \*\* $p < .01$ .



**TABLE 5**  
*Attempt Characteristics and IMSA Motivations in the Combined Sample*

Contextual variable	Factor 1 Intrapersonal	Factor 2 Interpersonal
“Wanted to die” motivation	.37**	-.04
Intent (self-report)	.14	-.25**
Intent (interviewer-rated)	.18	-.19*
Pre-attempt communication	.08	.17
Probability of intervention	-.11	.23*
Medical risk of means	.07	-.14
Lethality of injuries	.04	-.08

\* $p < .05$ ; \*\*  $p < .01$ .

positively correlated with the probability of intervention during the attempt.

In addition, the IMSA includes a single item that evaluates “wanting to die” as an attempt motivation. Virtually all participants (93%) endorsed this item to some degree, although there was variation regarding how important this motivation was perceived to be. The IMSA Intrapersonal scale was positively correlated with higher ratings of this item, while there was no relationship with the Interpersonal scale.

## DISCUSSION

The goal of the present study was to develop a comprehensive, valid, and theoretically grounded self-report measure to assess motivations for suicide attempts. Perhaps the most important contribution of this study is evidence that the IMSA provides reliable and valid information about a number of motivations for attempted suicide. The individual IMSA scales demonstrated good internal reliability, as did two superordinate IMSA scales identified through exploratory factor analysis. The two superordinate scales captured Intrapersonal motivations

(characterized by needing to escape or relieve unmanageable internal emotions and thoughts) and Interpersonal motivations (characterized by a desire to communicate with or influence another individual). These two scales demonstrated excellent convergent and divergent validity when compared with another measure of suicide motivations.

Our finding that IMSA motivations were well represented by two superordinate dimensions, intrapersonal and interpersonal, is consistent with previous theoretical perspectives. For example, Jobes (1995) theorized that there is a spectrum of suicide, with poles he labeled “intra-psychic” (reflecting suicidality that is private, hidden, and unlikely to be identified beforehand) and “interpsychic” (reflecting suicidality that is public, connected to interpersonal challenges, and likely to be shared or performed in the presence of others). Similarly, Linehan and colleagues clustered reasons for self-injurious behavior into rationally derived dimensions. “Emotion relief” and “Interpersonal influence” were the dimensions most commonly endorsed as reasons for suicide attempts: the former appears conceptually similar to the IMSA intrapersonal dimensions and the latter to the IMSA interpersonal dimension (Brown et al., 2002). Thus, a further strength of the IMSA is that its superordinate structure closely aligns with previous theoretical perspectives.

Our study also identified an important way in which the IMSA may have clinical utility. We found that different motivations for attempted suicide related to differences in the kind of suicide attempt made. Specifically, intrapersonally motivated attempts were more strongly driven by a desire to die. In contrast, interpersonally motivated attempts had lower suicidal intent and were more likely to be performed such that intervention from others was likely. These findings are consistent with previous studies reporting that intrapersonal reasons were correlated with intent and preparation, while interpersonal motivations were not (Hjelmeland et al.,

2002; Holden et al., 1998). Our finding regarding interpersonal motivations is also consistent with emerging evidence indicating that interpersonal attempt reasons confer a lower risk of a future attempt (O'Connor et al., 2012). One possibility is that the presence of socially oriented motivations signifies a continued connection to people, a desire to improve these relationships, and a continued investment in living. Thus, presence of interpersonal motivations may signify a persistent connection to living that may counterbalance a desire to die, whereas the absence of interpersonal motivations may signify less ambiguity about the desire to die. Taken together, our findings and the findings of previous studies suggest that motivations for attempts provide important information about suicide intent and lethality and may be useful for estimating suicide risk in both research and clinical contexts.

The present study also yielded useful findings about the relative endorsement of different suicide motivations. First, it is noteworthy that suicide attempters reported a broad range of motivations for their attempts, as reflected by the fact that each of the individual IMSA scales was endorsed by some of the respondents. This pattern supports one assumption underlying the development of the IMSA, that there are a wide array of motivations for suicide attempts.

Second, some motivations were endorsed more than others. Of the individual IMSA scales, Psychache and Hopelessness were the most consistently and strongly endorsed—almost two-thirds of participants rated them as a very important or most important motivation for their attempt. Future research should explore the relative endorsement of motivations in different populations, which will ultimately provide information useful for refining existing suicide theory.

Two of the IMSA scales functioned in what could appear to be a counterintuitive manner. Specifically, the Burdensomeness and Low Belongingness scales are located on the Intrapersonal rather than

Interpersonal dimension. One might have expected the social content of these two motivations to have aligned with Interpersonal motivations. However, suicide may be attempted to escape from aversive emotions (e.g., sadness, anxiety), including interpersonally oriented emotions (e.g., loneliness, shame), without being motivated by a desire to influence others interpersonally. For example, two individuals may both state that they felt suicidal because of the end of a relationship. One may be motivated to attempt to end painful feelings of loneliness (intrapersonal motivation), while the other may be motivated to attempt to make their ex-partner feel sorry (interpersonal motivation). In short, the Intrapersonal dimension includes all motivations related to escaping internally distressing states, including those generated by interpersonal situations, whereas the Interpersonal dimension includes motivations related to influencing or communicating with other people. Burdensomeness and Low Belongingness fall into the former category.

The development of the IMSA provides a useful tool for both clinical and research contexts. First, in the clinical realm, administering the IMSA may lead to better understanding of what problem an individual is trying to solve by attempting suicide. By better assessing the problems motivating the behavior, a clinician can more accurately tailor interventions to help prevent another suicide attempt. For example, a person whose attempt was motivated by desire to end emotional pain may be helped by learning skills to more effectively tolerate and reduce distress, whereas a person whose attempt was motivated by need to communicate with someone else may benefit from training in interpersonal communication skills.

Second, in the area of suicide research, the IMSA provides a tool for other investigators interested in assessing motivations and refining existing theories of suicide. The IMSA can be of use to any program of research desiring a comprehensive assessment of motivations for attempted suicide. In

addition, the IMSA can facilitate empirical evaluation of longstanding models about why people attempt suicide, leading to the refinement and advancement of suicide theory. For example, a number of reasons from distinct suicidality theories (e.g., hopelessness, psychache, escape) appear to be well represented by a superordinate Intrapersonal dimension. It will be useful, then, for theory to clarify the ways in which these motivations overlap conceptually as well as the ways in which they are different. Doing so could lead to theories of suicide that are both more parsimonious and comprehensive.

The IMSA improves on existing measures in four important ways. First, it covers a broader range of suicide motivations, such as burdensomeness and hopelessness, which are not represented on existing measures. Second, it is grounded in major theories of suicidality, which facilitates application of these theories to clinical contexts and evaluation of these theories in research contexts. Third, IMSA motivations are represented by a robust, replicable two-factor structure; previous measures of motivations have yielded unstable factor structures (Hjelmeland et al., 2002; Holden & DeLisle, 2006). Finally, in contrast to the RASQ, the only other measure of suicide attempt motivations with published psychometric properties (Holden et al., 1998), the IMSA was developed and tested with suicide attempters, as opposed to samples containing significant proportions of nonattempters.

This study has important limitations that suggest directions for future research. First, participants were asked to report retrospectively on the motivations for their attempts. Interviews were conducted, on average, 18 months after the attempt occurred. Although instructed to try to remember their mindset at the time of the attempt, recall bias and reinterpretation of the motivations over time may have had an influence. Research with participants temporally closer to their attempts is needed. Second, the size of these samples was small, meeting the lower bounds of the participant-to-scale ratio needed for factor analysis. A

larger sample would improve confidence in the factor structure, although this limitation is ameliorated somewhat by the use of two samples exhibiting similar results. Third, although approximately 50% of this sample reported requiring medical attention after the attempt, the generalizability of the findings could be improved by including even more participants with medically severe attempts. As relationship between attempt motivations and risk would be best explored in a sample with a wide range of intent and lethality, a sample of inpatients hospitalized for their attempts would maximize this variability. In a related point, this study only looked at motivations for nonfatal suicide attempts; whether these results generalize to fatal suicide attempts is unknown. Future work focused specifically on nearly lethal suicide attempts may better approximate motivations for suicide deaths. Additionally, large longitudinal studies of suicide attempters may also identify motivations associated with subsequent suicide deaths. Fourth, while this sample had significant representation of participants of Caucasian and East Asian descent, other groups were underrepresented. It will be important to examine the mean endorsements and structure of IMSA motivations in other racial, ethnic, and cultural groups, as well as samples that can examine any potential gender differences in motivations for attempted suicide.

Our findings also generate important new directions for future inquiry. First, it is unknown whether suicide motivations remain constant for a given individual across multiple attempts or whether motivations vary across attempts within a given individual. This question would be best addressed by longitudinal studies that assess motivations and attempts over time, although retrospective studies examining individuals with multiple attempts may also be useful. Second, the IMSA may also be a useful tool among suicide ideators who have not yet made an attempt, even though it was designed for use with individuals who have already attempted suicide. A modified version could assess what ideators think attempting suicide will

accomplish, and this information may help therapists in choosing interventions and providing psychoeducation to prevent the transition from suicidal thoughts to attempts. Finally, evidence for the IMSA's validity and clinical utility suggests the possibility that the IMSA could improve case conceptualiza-

tion and treatment planning for individuals who have attempted suicide. Future studies should evaluate whether administering the IMSA can improve treatment outcomes either as a supplement to treatment as usual or in the context of developing or refining specialized treatments for suicidal patients.

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## APPENDIX 1. INVENTORY OF MOTIVATIONS FOR SUICIDE ATTEMPTS (IMSA)

Please take a minute to think about your most recent suicide attempt. Indicate the date of your most recent attempt:

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Sometimes people see things differently as time passes. For the purposes of this questionnaire, we are asking about the reasons that were important for you leading up to your most recent attempt, even though you may not have the same thoughts and feelings today. As you answer these questions, try to imagine yourself back in the situation when you were considering attempting suicide and the reasons that were going through your mind at that time.



Next are some common reasons people give for attempting suicide. Please rate how important each of these reasons was to your most recent attempt.

Not at all important	Somewhat important	Important	Very Important	Most Important
0	1	2	3	4

“I attempted suicide because I...”

- 1 ...was so flawed I had to escape from myself.
- 2 ...was feeling hopeless.
- 3 ...had almost attempted in the days or weeks beforehand, but this time it didn't seem as scary.
- 4 ...wanted to make my family better off.
- 5 ...wanted to get help from someone.
- 6 ...lost all hope that things could get better in the future.
- 7 ...couldn't stand all the emotions in my head anymore.
- 8 ...wanted to know if someone really cared about me.
- 9 ...my state of mind was too unbearable.
- 10 ...didn't belong to any community.
- 11 ...wanted to make people sorry for the way they treated me.
- 12 ...wanted to die
- 13 ...needed to get out of an impossible situation.
- 14 ...was only dragging down those around me by staying alive.
- 15 ...needed to persuade someone to change his or her mind.
- 16 ...couldn't stand being aware of my failings anymore.
- 17 ...had thought about it for awhile and finally acted on my plan.
- 18 ...hated myself so much.
- 19 ...didn't have anyone to love.
- 20 ...needed to prevent someone from hurting me.
- 21 ...my emotions were too overwhelming to handle.
- 22 ...seemed like the best way to deal with my problems (e.g., personal, financial).
- 23 ...was so humiliated I couldn't show my face again.
- 24 ...seemed to lose control and I have no idea why I behaved that way.
- 25 ...needed to prove to myself that things were really that bad.
- 26 ...acted on impulse.
- 27 ...was so lonely I couldn't handle it.
- 28 ...needed to make other people understand how distressed I was.
- 29 ...was no longer afraid to try attempting suicide.
- 30 ...was causing too much trouble for those around me.
- 31 ...thought nobody loved me.
- 32 ...had been working myself up and this time I followed through.
- 33 ...didn't have a reason, it just happened.
- 34 ...needed to stop being a burden to others.
- 35 ...needed to stop my mental pain.
- 36 ...wanted to make others afraid.
- 37 ...my future seemed dark.
- 38 ...didn't fit in anywhere.
- 39 ...wanted to make other people feel guilty for not helping me.

- 40 ...my thoughts were too much to bear.  
 41 ...thought it could fix some important practical problems for my family/friends.  
 42 ...the idea just came to me, I didn't really think about it.  
 43 ...needed to get admitted to a hospital so I could get some help.  
 44 ...didn't think things would get better, no matter what I did.  
 45 ...was the most hopeless I'd ever been.  
 46 ...could no longer tolerate my emotional pain.  
 47 ...thought so poorly of myself, dying seemed like a relief.  
 48 ...felt it would help solve some specific problems.  
 49 ...it was a spur of the moment decision.  
 50 ...was a drain on my loved ones.  
 51 ...felt disconnected from everyone in my life.  
 52 ...was less afraid of the physical pain than I used to be.  
 53 ...hoped to influence the actions of people around me.  
 54 ...wanted others to recognize how much I was hurting.

### **Appendix 2. Key for IMSA Items**

Hopelessness: 2, 6, 37, 44, 45  
 Psychache: 7, 9, 21, 35, 46  
 Escape: 1, 16, 18, 40, 47  
 Burdensomeness: 4, 14, 30, 34, 50  
 Low Belongingness: 10, 19, 31, 38, 51  
 Fearlessness: 3, 17, 29, 32, 52  
 Interpersonal Influence: 11, 15, 36, 39, 53  
 Help-Seeking: 5, 8, 28, 43, 54  
 Impulsivity: 24, 26, 33, 42, 49  
 Problem-Solving: 13, 20, 22, 41, 48  
 Other items: 12, 23, 25, 27

### *Superordinate Scales*

1. Intrapersonal Scale – Hopelessness, Psychache, Escape, Burdensomeness, Low Belongingness, Fearlessness
2. Interpersonal Scale – Interpersonal Influence, Help-Seeking