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Differential Treatment Outcomes of an Intervention Targeting Suicide Ideation:
How Patient Typology Moderates the Effectiveness of CAMS-PFT vs. TAU

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By

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Differential Treatment Outcomes of a Pilot Intervention Targeting Suicide Ideation:
How Patient Typology Moderates the Effectiveness of CAMS-PFT vs. TAU

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Suicide related behaviors remain a major public health concern, as 1.1 million adults in the United States attempted suicide in 2008. Along with developing more effective treatments targeting suicidality, there remains a need to better differentiate among suicidal persons in order to maximize limited mental health resources. It may be possible to treat select subgroups with routine care, whereas others with greater perceived risk of suicide may require additional services. The current study investigated the moderating effect that suicidal ambivalence and level of chronicity have on treatment outcomes in an adult sample ($n = 50$) receiving either the Collaborative Assessment and Management of Suicidality-Problem Focused Treatment (CAMS-PFT) or treatment as usual (TAU) at an outpatient mental health clinic in the Pacific Northwest. Research staff administered the Scale for Suicide Ideation (SSI), Outcome Questionnaire-45.2, and Reasons for Living Inventory, at the pre-treatment, post-treatment, and 6-months time points. Additionally, the Suicide Status Form (SSF) was administered at the pre-treatment assessment. Suicidal ambivalence was determined by creating specific cut points with the wish to live and wish to die scales on the SSI, and chronicity of suicidality was determined by history of previous suicide attempts. Results from a factor analysis of the SSF suggest that the participants experienced greater persistent levels of elevated stress

as compared with participants in previous research. Using both hierarchical linear modeling (HLM) and multivariate analysis of covariance (MANCOVA), the study measured differences in rates of change on the three outcomes of interest. The analysis of the interaction between Time and Typology suggests that regardless of treatment condition, patients with two or more previous suicide attempts experienced a greater reduction in suicidal ideation as compared to those with less than two previous suicide attempts. A trend towards significance was observed for the interaction between Chronicity and Treatment, with greater reductions in suicidality for patients that received CAMS-PFT. These findings suggest that outpatient treatment may be effective at reducing suicidality and that a more intensive course of psychotherapy may reduce suicidal ideation at a greater rate than treatment as usual.

This dissertation by Stephen S. O'Connor fulfills the dissertation requirement for the doctoral degree in clinical psychology approved by David A. Jobes, Ph.D., as Director, and by Barry Wagner, Ph.D., Marcie Goeke-Morey, Ph.D., and Katherine Anne Comtois, Ph.D., MPH, as Readers.

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DEDICATION

This dissertation is dedicated to Gerald and Nellie Stuart and
Joseph and Vivian O'Connor, in memoriam.

CONTENTS

DEDICATION	iii
LIST OF ILLUSTRATIONS	vi
ACKNOWLEDGMENTS	vii
Chapter	
1. INTRODUCTION	1
A Review of the Empirical Literature on the Treatment of Suicidality	
The Collaborative Assessment and Management of Suicidality – Problem Focused Therapy	
A Review of Empirical Literature on Typologies of Suicidality	
The Purpose of the Present Study	
2. METHOD	27
Setting	
Participants	
Materials	
Procedures	
Statistical Analyses	
3. RESULTS	36
Factor Analysis	
Pretreatment Differences	
Time x Typology Interaction	

Typology x Treatment Interaction

4. DISCUSSION	46
Factor Analysis	
Pretreatment Differences	
Time x Typology Interaction	
Typology x Treatment Interaction	
Limitations	
Suggestions for Future Research	
Conclusion	
MEASURES	60
REFERENCES	70
CONSENT FORM	78

ILLUSTRATIONS

Table	Page
1. Inter-Item Correlation Matrix of the Five Core Theoretical SSF-II Items	3
2. Factor Analysis Results: Promax Rotated Structure Matrix	37
3. Comparison of Means for SSI, OQ.45, & RFL at Pretreatment for Chronicity Groups	39
4. Comparison of Means for SSI, OQ.45, & RFL at Pretreatment for Suicidal Ambivalence Groups	40
5. Comparison of Fixed Effects for SSI, OQ.45, & RFL for Chronicity Groups	41
6. Comparison of Fixed Effects for SSI, OQ.45, & RFL for WTL/WTB Groups	42
7. Comparison of Mean Change Scores for SSI, OQ.45, & RFL at Post-Treatment Between Groups Comprising Chronic*Treatment Condition	44
8. Comparison of Mean Change Scores for SSI, OQ.45, & RFL at Post-Treatment Between Groups Comprising WTB*Treatment Condition	45
 Figure	
1. Scree Plot for Factor Analysis	38
2. Line Graph for HLM of Acute vs. Chronic for SSI	42

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CHAPTER 1

Introduction

Over 32,000 citizens die by suicide each year in the United States (Kung, Hoyert, Xu, & Murphy, 2008). While suicide accounts for 1.3% of the annual overall death rate, the frequency of deliberate self-harm is staggering; a suicide attempt occurs once per minute (Kung et al., 2008). The reality for many persons who make such an attempt is a routine cycle of short-term inpatient hospitalization characterized by a treatment approach that focuses heavily on underlying psychopathology. Upon discharge, institutions will often set up outpatient services with a to-be-determined clinician for those patients not currently connected to a treatment provider in the community. This treatment will most likely entail a limited number of sessions with an emphasis on medication management and a treatment plan focused on specific clinical diagnosis (Jobes, Comtois, Brenner, Gutierrez, in press). Judging by the high recidivism rates for individuals with suicide attempts (Skeem, Silver, Aippelbaum, & Tiemann, 2006), there is much left to be desired from the current standard-of-care approach to managing high-risk patients.

In general, individuals discharged from inpatient psychiatry services are at increased risk for subsequent suicide attempts (Goldacre, Seagroatt, & Hawton, 1993; Ho, 2003). In fact, Goldacre et al. found that during the initial 28 days post-discharge, men were seven times as likely and women three times as likely to die by suicide as compared with the remaining 337 days in the year. More recent findings suggest that up to 17% of annual suicide occur within 30 days post hospitalization (Wels, Bradberry,

Carter, Ferguson, & Kozareva, 2006). Given that the suicide rate is increased for individuals following hospital discharge, the additional risk factor of previous suicide attempts or ideation significantly raises the patient's tier of risk (Wingate, Joiner, Walker, Rudd, & Jobes, 2004). Therefore, it is of the utmost importance that those persons expressing suicidality upon discharge, regardless of perceived intentionality by assessing clinicians, receive appropriate suicide-specific care.

Yet, there is considerable concern with current protocols for handling suicidal patients post-hospitalization, due mostly to the lack of empirical evidence supporting standard-of-care treatment (Clark & Kerkhof, 1995). The current research literature reflects a limited number of randomized trials investigating the efficacy of managing suicide risk following hospitalization. When focusing on reduction of completed suicides following hospitalization, only one randomized control trial (RCT) has shown an experimental intervention to be significantly more effective than treatment as usual (TAU; Motto & Bostrom, 2001).

Motto and Bostrom (2001) conducted a study comparing the efficacy of an intervention for individuals recently discharged from a hospital following either suicidal ideation or a severe depressive episode that consisted of a series of personalized letters sent to the individual's residence over a 5-year period. The letters were written to simply inform the individuals that the hospital staff were thinking of them and wished them the best in their recovery efforts. The study compared this approach to a no-contact control group. Following a 2-year period, participants receiving the experimental treatment exhibited a significantly reduced rate of completed suicide as compared to participants in the control group. While intervention gains no longer existed at the 5-year assessment

period, it was noted in a review by Comtois and Linehan (2006) that gains made within the initial 2-years following hospital discharge encompass the sensitive period for completed suicide in persons with prior attempt history; therefore, the results suggest that the experimental intervention may be an effective method of reducing death by suicide during the most crucial period following hospital discharge. Aside from focusing specifically on suicide prevention, additional research has been conducted to investigate the efficacy of experimental interventions to reduce suicide-related behaviors (SRB), including re-attempts and persistent ideation.

Efficacy of Interventions for Suicide-Related Behaviors

While behavioral interventions have failed to show consistent efficacy in reducing suicide rates, the current literature suggests that several experimental mental health treatments have resulted in a significant reduction of SRB as compared to TAU (Comtois & Linehan, 2006; Hawton et al., 1998, 2005; van der Sande et al., 1997; Linehan et al., 2006). A recent literature review by Comtois and Linehan suggests that successful outcomes have been limited to interventions occurring in an outpatient setting, and that several recent metaanalyses' (e.g., Hawton et al.; van der Sande et al.) conflicting results may be due to mere differences in categorization of trials (i.e., allotment of a particular treatment into either a problem-solving or stand-alone category). However, Hawton et al. posit that regardless of group allotments, the relative dearth in suicide-specific RCT's limits the overall power to draw conclusions about the efficacy of current treatments. Despite this caveat, it is still meaningful to review the current literature in order to examine promising methods for treating SRB.

The provision of intensive care with adjunct outreach services vs. standard care has been the focus of several interventions. The results from this approach have been mixed. It appears that the interventions involving in-person exchanges between patients and care providers were the most helpful in reducing SRB at follow-up (van Heeringen et al., 1995; Welu, 1977; Termansen & Bywater, 1975), with the exception of one study (Chowdhury, Hicks, & Kreitman, 1973). Methods that proved useful included face-to-face follow-up services after discharge (Termansen & Bywater) and home-based service provision (Welu; van Heeringen et al). It should be noted that while several of these studies displayed significant results when compared to control groups, a metaanalysis of in-person studies found no significance of the overall impact when compared to controls (Hawton et al., 1998).

In addition to measuring intensive outreach services, several studies have measured continuity of care for individuals recently released from inpatient hospitalization following SRB; however, none of the current interventions have proven to be successful at reducing SRB for a prolonged period of time. Both Moller (1989) and Torhorst et al. (1987) provided on-going outpatient services with the same clinician who had worked with the client in the inpatient setting. The results from both studies suggest that although participants complied with treatment at a greater rate, they were actually more likely to harm themselves as compared with participants who met with a new clinician upon discharge from inpatient services.

A more recent study measured a telephone intervention taking place at either 1 or 3-months post-discharge from an ED following self-poisoning (Vaiva et al. 2006). The telephone call was conducted by a trained psychiatrist who would review and amend the

personalized treatment plan as needed, and would also provide brief supportive therapy and risk assessment on a case-to-case basis. While the 1-month intervention showed significantly reduced re-attempt rates as compared to the passive control group, there were no differences between groups using intention to treat analysis.

One of the most promising approaches to reducing SRB has been the Postcards From the EDge intervention employed in a unique treatment setting in Newcastle, Australia (Carter, Clover, Whyte, Dawson, & D'Este, 2005). The intervention approach replicates the letter writing idea employed by Motto and Bostrom (2001), only in the form of generic, computer generated postcards that are sent to patients who recently attempted suicide by self-poisoning. The hospital setting in which the researchers performed the study only treats patients who had attempted suicide through self-poisoning, which may contribute somehow to the effect that the interventions had on the participants. Results from the study showed that two years post-suicide attempt, women, but not men, who received the postcards were significantly less likely to re-attempt suicide and also had significantly fewer hospital days than patients who did not receive the follow-up letter intervention. Thus, this intervention has been shown to work with women who attempt suicide by self-poisoning. Given that women are more likely to attempt suicide than men (Nock, Borges, Bromet, Cha, Kessler, & Lee, 2008) and that self-poisoning is the most common method of attempt (Nock et al. 2008), these findings suggest that a postcard program could have a major public health impact if implemented on a large scale.

Evidence-Based Psychotherapies Applied to Suicide Related Behaviors

Beyond interventions aiming to reduce SRB by experimenting with modalities of treatment provision, researchers have tested the efficacy of applying evidence-based psychotherapies with this target population. Dialectical behavioral therapy (DBT; Linehan, 1991) has received the most rigorous testing to date, followed by cognitive behavioral therapy (CBT; Beck, Emery, Shaw, & Rush, 1979) and interpersonal psychotherapy (IPT; Klerman, Weissman, Rounsaville, Chevron, 1984).

DBT is a psychotherapy originally developed to treat individuals with borderline personality disorder (Linehan, 1991). The treatment focuses on the development of effective coping strategies to replace maladaptive behaviors. The underlying theory posed by Linehan is that persons with borderline personality disorder have severe difficulties regulating their emotions due to heightened sensitivity and a slow return to baseline emotional arousal (Linehan). When these persons are at heightened levels of affect, they become suicidal and engage in self-harm behavior in an attempt to relieve their intense distress. DBT focuses on improving self-control and problem solving by integrating behavioral and mindfulness techniques, which in turn is meant to reduce suicide-related behaviors, as well non-suicidal self-injurious behaviors, such as cutting and burning without intent to die, which are seen as impulsive acts born out of desperation.

DBT treatment lasts for one year, consisting of both one 60-minute individual session and one 2.5-hour skills-group session per week. Four modalities comprise the group modality of treatment. Namely, they are mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance. Individual sessions focus more heavily on helping the patient recognize the relationship between their emotions, thoughts, and behaviors.

Research amassed from several randomized clinical trials suggests that DBT is effective at reducing SRB. Earlier trials compared DBT with TAU, which included case management to assist with psychosocial needs for both conditions (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Heard, & Armstrong, 1993). In addition to having reduced SRB, participants enrolled in the DBT treatment group were found to have spent fewer days hospitalized in an inpatient psychiatry unit, to experience less anger, and to have better social adjustment based upon both assessor and self-perception.

A follow-up study compared DBT with therapy by experts, which predominately consisted of an insight-oriented, psychodynamic approach (Linehan et al., 2006). During the one-year follow-up period, participants in the control condition made twice as many suicide attempts, engaged in a greater amount of self-harm behavior, were hospitalized and visited emergency departments more often, and had greater lethality present during suicide attempts as compared to those enrolled in the DBT treatment condition.

Furthermore, the control group dropped out of treatment at a greater rate.

Given the proven efficacy of DBT in reducing suicide attempts and other forms of SRB, it has been lauded by both the research and clinical community as a useful treatment for difficult to treat patients. However, there are several limitations to implementing the treatment in the community. First, the sample used for previous DBT trials has been limited to patients with borderline personality disorder. Thus, the treatment has been constructed for a certain type of person who experiences suicidality and there is no evidence that the treatment would work for patients with a primary mood disorder, such as major depression. Second, the amount of resources required to fund one patient in DBT is significant. Although the treatment does save hospitals significant costs

by reducing days hospitalized, it requires a large investment up front, which many community mental centers simply can not offer. If a patient is non-Medicaid eligible or lacks health insurance, they are responsible for a significant portion of the funding. Finally, the treatment requires intensive training of therapists, which requires significant time and funding. Thus, while DBT has proven to be an effective treatment for a certain population of suicidal patients, it is still important to continue testing other forms of therapy that may also be effective in reducing SRB with differing patient populations and that are less cost prohibitive. One such treatment is cognitive behavioral therapy.

Cognitive behavioral therapy was initially developed as a treatment for major depressive disorder (Beck, Emery, Shaw, Rush, 1979). While the treatment focuses on skill acquisition similar to DBT, the treatment also targets distorted thought processes. CBT has been shown to be an effective form of treatment for numerous mental health problems, including many forms of anxiety, depressed mood, and some forms of psychosis (Butler, Chapman, Forman, & Beck, 2006; Haby, Donnelly, Corry, & Vos, 2005). The current literature suggests that CBT is malleable to small changes made to directly address specific issues that are particular to certain populations (Butler et al.).

Throughout the 1980's and 1990's, researchers tested the use of CBT to treat SRB in several different modalities with differing results. In a small, randomized control trial, CBT with an emphasis on improving problem solving skills was found to be significantly more effective than TAU in reducing suicide attempts, depression, and hopelessness at the 6-months follow-up assessment (Salkovskis, Atha, & Storer, 1990). This study implemented an interesting design, wherein one session of treatment was first provided in the inpatient psychiatry unit and then the participants received the remaining four

treatments in their place of residence. Other studies during this time were less successful at reducing SRB by implementing CBT to at-risk patients.

Four separate trials were conducted that utilized manualized problem-focused CBT to treat high risk patients, none of which was shown to be effective at reducing SRB as compared with TAU. Several studies provided in-home therapy (Gibbons, Butler, Urwin, & Gibbons, 1978; Hawton et al., 1981) and others provided therapy in a formal clinic setting (Hawton et al., 1987; van der Sande et al., 1997), yet none proved that a manualized, problem solving adaptation of CBT was effective in reducing SRB.

Most recently, Brown et al. (2005) completed a trial implementing 10-sessions of cognitive therapy for a sample of individuals recruited from emergency departments (ED) following a suicide attempt within the previous 48-hours. The research team adapted CBT to include an in-session exposure to suicidal thoughts followed by the participant displaying personalized CBT strategies to cope successfully. This is a form of relapse prevention, as the therapist would elicit suicidal thoughts by inducing a depressed mood, and would then help coach the patient through a predetermined list of crisis skills to decrease sadness and extinguish suicidal thinking. In addition to treatment, both the experimental and control group received enhanced usual care to increase the likelihood that follow-up appointments were attended.

Results from Brown et al. (2005) suggest that the CBT intervention was more effective than care as usual at preventing subsequent suicide attempts across the 18-month assessment period. The CBT intervention resulted in a 50% reduction in re-attempts as compared to participants in the control group. Additionally, the CBT group experienced significantly greater declines in depression at multiple time points and

hopelessness at the 6-month period. However, it was found that participants in both conditions continued to experience suicidal ideation at a similar rate.

A recent meta-analysis was conducted to measure the overall effectiveness of CBT interventions used to reduce suicide behavior (Tarrier, Taylor, & Gooding, 2008). The study included CBT trials that included a control group of any sort (wait list, active therapy, treatment as usual), an experimental condition that consisted of a cognitive and/or behavioral therapy approach to treatment, and suicidal behavior or self-harm as an outcome variable. The study included 28 total studies in the meta-analysis.

Findings from the study suggest that overall, CBT was effective at reducing suicidal behaviors in a heterogeneous patient population, as the studies included a variety of ages, treatment foci, length, and setting (Tarrier, Taylor, & Gooding, 2008). Upon further analysis of the data, CBT proved to be effective at reducing suicidal behavior when compared to all forms of control groups; however, CBT was only effective when directly targeting suicidal behavior. It was not effective at reducing suicidal behavior when focused solely on reducing depression, of which suicidal thoughts are a possible symptom in the Diagnostic and Statistical Manual, Fourth Edition (APA, 2000). As mentioned above, the study conducted by Brown and colleagues did specifically target SRB, in which typical CBT techniques were modified to address thoughts and behaviors related specifically to suicidality. Finally, CBT proved to be ineffective at reducing suicidal behavior in adolescents, but effective in treating adults.

One final method of sub-analysis included a measure of research design rigor, known as the Clinical Trials Assessment Measure (CTAM; Tarrier & Wykes, 2004). The measure assesses the strength of the methodology employed in a scientific study, and

includes the following variables: “sample size and recruitment method, allocation to treatment, assessment of outcome, control groups, description of treatments, and data analysis” (Tarrier & Wiles, p.81). This is an important factor to consider given the recent findings that psychotherapy is less effective at treating adult depression when controlling for the methodological rigor of the design (Cuijpers, van Straten, Bohlmeijer, Hollon, & Andersson, 2009). The study found that while CTAM scores were significantly associated with effect size in the CBT studies, CBT continued to show a significant effect at reducing suicidal behavior when controlling for CTAM score. This finding suggests that even though less rigorous studies do show larger effect sizes, a lack of methodological soundness cannot account for the overall effect found in the meta-analysis.

One final evidenced based psychotherapy to have been tested as a possible treatment for SRB is brief psychodynamic interpersonal psychotherapy (BPIP; Guthrie et al., 2001). BPIP is a four-week therapy that targets interpersonal difficulties that are theorized to contribute to psychological dysfunction (Hobson, 1985). In previous trials, the study was found to be an effective treatment for depression (Shapiro et al., 1994; Shapiro, Rees, & Barkham, 1995) and has most recently been adapted to treat individuals with a Hispanic background diagnosed with major depression (Markowitz et al., 2009).

The study recruited 119 adults who were admitted to the emergency department following deliberate self-poisoning. The patients were randomized to either the experimental group, where they received four sessions of BPIP in their own place of residence, or to TAU, which typically consisted of referral for follow-up care by the primary care physician. At the 6-month follow-up assessment, patients in the BPIP group

reported significantly less suicidal ideation, symptoms of depression, and self-harm behaviors. No individuals in either group died by suicide. Additionally, there were no group differences in service utilization at the 6-month assessment. This finding suggests that despite the reduction in SRB and depression, patients that received BPIP continued to require the same amount of professional health services, which translates into no cost savings. However, 6-months is a rather short follow-up and it may be useful to track service utilization at additional time points to assess the effect of the brief psychotherapy.

Development of a Framework to Guide Therapy with Suicidal Individuals

Research that has been conducted on the aforementioned psychotherapies all required that study clinicians adhere to the specific therapeutic model being tested. Adherence to a specific psychotherapy has two major requirements: 1) the therapist is applying certain techniques that must be conducted in each therapy session, and 2) the therapist is not using any techniques that are representative of other psychotherapies (Waltz, Addis, Koerner, & Jacobson, 1993). Adherence by clinicians is crucial, as it increases the ability to attribute therapy outcome to the actual therapy itself. While this is important for conducting rigorous efficacy research, it may prove difficult to provide such treatment in the community, where patients tend to have co-occurring disorders and therapists have differing levels of training and expertise. Only the CBT study conducted by Brown and colleagues (2005) took place outside of a controlled laboratory environment; still, training in CBT is an intensive process and all study therapists were clinical psychologists, who had undergone extensive training in CBT.

The Collaborative Assessment and Management of Suicidality Problem Focused Treatment (CAMS-PFT) is a framework to guide therapists who are involved in treatment

with a suicidal patient (Jobes, 2006). The idea of creating a framework instead of a new psychotherapy has much to do with an emphasis on “real-world” therapy, where clinicians integrate psychotherapy approaches as they work with complicated clients. Thus, there is not an expectation for therapists to set aside their own theoretical background and in-session approaches when conducting therapy, which is often the case when implementing a new psychotherapy with a patient.

The two guiding philosophies of CAMS-PFT are collaboration and suicide focus (Jobes, 2006). Collaboration requires that the clinician adhere to three important areas: 1) express empathy with the patient’s suicidal wish (e.g., non-judgmentally stated understanding of how the expressed problems could lead one to wish to die), 2) design and modify all assessments interactively with equal input from both the clinician and the patient, and 3) design and modify all interventions with equal input from both the clinicians and the patient. Suicide focus requires that the content of the discussion be relevant to the identified stressors that are driving the patient’s suicidality. The therapist will commonly redirect the client back to a discussion of suicide-related factors when the client trends towards topics that are not relevant. Additionally, the therapist will continually connect the client’s behaviors, thoughts, and emotions as either reinforcing or extinguishing suicidality. In effect, the therapist is communicating to the client that the focus of therapy is to resolve the client’s suicidality before moving towards a discussion of alternative concerns.

Secondary to the philosophy of CAMS-PFT, clinicians are expected to follow a set format for assessing current risk of suicidality, which includes the identification of direct and indirect “drivers” of suicidality (Jobes, Moore, & O’Connor, 2008; Jobes,

Comtois, Brenner, & Gutierrez, in press). The therapist assesses risk with a suicide-specific measure at the beginning of each session, followed by collaborative problem-focused interventions targeting those specific issues that contribute to the patient's suicidality. Together, the therapist and client construct a treatment plan for the upcoming week that is specific to the identified drivers that contribute to the patient's suicidality. The treatment plan includes any referrals made for services beyond the scope of the therapist's expertise, such as medication management or assistance with vocational rehabilitation.

Therapy is conducted in a 1:1 format for approximately 50 minutes per week. Suicidality is determined to have been resolved after three consecutive sessions wherein the client denies any suicidal thoughts, feelings, and behaviors (Jobes, 2006). Once CAMS-PFT is completed, the therapist and client decide what the logical next step will involve, with the possibility of referral for additional therapy to target other persistent psychological issues or termination of treatment altogether.

Limited empirical evidence exists that supports the use of CAMS-PFT for clients with suicidal ideation (Jobes, 2006). In a non-randomized cased controlled study involving Air Force personnel, participants receiving CAMS-PFT resolved their suicidality an average of 4 sessions sooner than patients receiving care as usual (Jobes, Wong, Drozd, & Kiernan, 2002). Additionally, participants in the CAMS-PFT group had significantly fewer appointments with non-mental health medical providers as compared to the control condition.

Most recently, researchers at the University of Washington have conducted a randomized pilot study measuring the feasibility of delivering CAMS-PFT to a sample of

suicidal patients referred by a large, urban medical center. Treatment occurred once per week in an outpatient community mental health clinic and was delivered by trained clinicians. A control condition consisting of case management and psychiatric medication management was delivered to participants randomized to the care as usual condition.

Results from the study have not yet been published. However, the treatment team delivering CAMS-PFT has noted that different typologies of clients seem to exist that may be associated with treatment response and resolution of suicidality. Determining which clients are most likely to respond to certain treatments has been an emphasis of clinical trial research for many years (Whalley & Hyland, 2009), as it would help clinicians steer patients towards the most appropriate form of therapy as quickly as possible. Additionally, it would increase cost savings by avoiding delivery of therapies with low odds of significantly improving functioning and reducing suicidality. Two of the most empirically based methods for establishing useful typologies of suicidality include chronicity of suicidality and suicidal ambivalence.

Chronicity of Suicidality

The current literature suggests that suicidality is a heterogeneous construct, meaning that individuals with suicidal ideation may present in differing ways (O'Connor, Jobes, Lineberry, Bostwick, 2010). The manner in which suicidal thoughts are experienced may in turn impact specific foci of treatment (Jobes et al, 2007; Sansone, 2004). Jobes and colleagues have placed a major emphasis on understanding the phenomenological experience of individuals with suicidal ideation through both quantitative and qualitative data analysis (Jobes, 2000; Jobes et al., 2004; O'Connor et al., 2010). While content analyses of qualitative data has led to a more thoughtful and

dynamic way to conceptualize *differences* in suicidal ideation, the quantitative analysis of specific measures of suicide-risk has yielded the strongest evidence for *differing typologies* of suicidality (Conrad et al., 2009).

Quantitative approaches employed by Jobes and colleagues have focused primarily on the five constructs of suicidality assessed with the Suicide Status Form (SSF), namely psychological pain, stress, agitation, hopelessness, and self-hate (Jobes et al., 1997). The first three constructs (i.e., psychological pain, stress, & agitation) represent the cubic model of suicidality proposed by Shneidman (1996), which propounds that the maximization of intensity in all three constructs results in a suicide attempt. The fourth construct, hopelessness, stems from the work of Beck and colleagues (Beck et al., 1979) and has been shown to correlate highly with suicide-related behaviors (Beck, Brown, Berchick, Stewart, & Steer, 1990; Fawcett et al., 1987). The construct of self-hate comes from the work of Baumeister (1990), and describes a more trait-based, self-loathing element to suicidality.

Previous research employing a factor analytic approach to measuring the psychometric properties of the SSF suggests two separate groupings of the five core constructs (Jobes et al., 1997; Conrad et al., 2007). The most recent investigation included 149 participants recruited from an inpatient hospital setting in the Midwest and revealed a two-factor solution labeled as “chronic” and “acute” (Conrad et al., 2007). The “chronic” group included the constructs of psychological pain, hopelessness, and self hate, while the “acute” group was comprised of the stress and agitation constructs. The two-factor solution accounted for 74% of the total variance, a substantial improvement over the previous factor analysis (Jobes et al.) that accounted for 36% of the common

variance and also resulted in a similar two-factor solution labeled “chronic non-resolvers” and “acute resolvers.”

MANOVA findings from Conrad et al. (2007) suggest that the type of distress reported by individuals on the SSF is distinct to suicide-related behaviors. The data suggests that individuals with active suicidal ideation reported significantly elevated ratings of the core SSF constructs as compared with a non-suicidal control group, while ratings of overall distress (i.e., non-suicide specific) did not differ significantly. These outcomes provide criterion validity for the SSF core constructs, strengthening the assertion that the two-factor model produced in Conrad et al. reflects distinct suicidal typologies, rather than latent variables related to more generalized distress.

In addition to the research by Jobes and colleagues, other researchers have discussed the categorization of chronic and acute suicidal typologies. Sansone (2004) describes the acute type of suicidal person as struggling to manage current obligations that are perceived as being out of their control or dealing with a profound loss or onset of illness. The acutely suicidal person is feeling temporarily overwhelmed by the current demands of life and is entertaining the thought that they would be better off dead. The degree of stress that they are under is likely to lead to the development of an Axis I disorder, such as major depressive disorder.

In contrast, the chronic suicidality typology reflects a person with a detailed history of mental health problems and multiple suicide attempts (Sansone, 2004; Rudd, Joiner, Rajab, 1996; Joiner & Rudd, 2000). Suicidality has a more pronounced interpersonal function, as it is often intended as a form of communication or expression of emotional pain (Fine & Sansone, 1990). For individuals in the Chronic typology, SRB

has often been reinforced by the environment as an effective form of coping for these individuals, as it is likely to mobilize their support network and increase their level of control. Indeed, Jobes, Wong, Conrad, Drozd, & Neal-Walden (2005) describes those with chronic suicidality as experiencing suicidal thoughts as ego-syntonic meaning that the thoughts are viewed as being consistent with one's self-image. As such, thoughts of suicide may be soothing, as opposed to a person in the Acute typology, who would experience suicidal thoughts as alarming and in conflict with their sense of self. Yet, the reliance on suicidality as a form of problem solving often results in severe levels of shame, which ultimately leads to long-term emotional suffering (Brown, Linehan, Comtois, Murray, & Chapman, 2009).

In a study of 332 psychiatric patients with a history of some form of suicidality, those with two or more suicide attempts had significantly earlier onset of mental illness and perceived themselves as having limited problem solving capabilities (Rudd et al., 1996). Perceived problem solving ability is related to self-efficacy, which is a strong predictor of depression and helplessness (Maciejewski, Prigerson, & Mazure, 2000; van Randenborgh, de Jong-Meyer, Huffmeier, 2009). Thus, these individuals are more likely to suffer from persistent mental health problems even when they are not experiencing acute stressors, which is more reflective of Axis II symptomatology, specifically borderline personality disorder (Rudd et al.).

Rudd (2006) has created the Fluid Vulnerability Theory (FVT) of suicidality to help explain differences between acute and chronic typologies. Through a body of research (Rudd et al., 1996; Joiner & Rudd, 2000; Bryan, Johnson, Rudd, & Joiner, 2008), individuals with a history of multiple suicide attempts have been shown to re-

experience suicidal thoughts, feeling, and/or behaviors at a significantly greater and quicker rate in response to perceived stressors.

A recent study conducted by Bryan et al (2008) found elevated mood states (i.e. hypomania) to be a signifier of individuals with one prior suicide attempt who were most likely to reattempt suicide within 12 months. While this finding reinforces the current belief that individuals with bipolar disorder are at increased risk for multiple suicide attempts (Raja & Azzoni, 2004), it also reinforces the FVT, which states that individuals with a propensity towards intense and agitated mood states would be more likely to experience an acute suicidal crisis. Given that the sample was predominately male (4:1 ratio) it appears that the study findings may be the most representative of males who would be considered in the Chronic typology. In addition to personality and psychiatry traits, there is evidence that suggests that individuals with chronic suicidality may have neurological impairments that negatively impact problem-solving capability and increase overall risk of SRB.

Several studies point towards actual neurological impairments in individuals with chronic suicidality that reduce problem-solving capabilities through impaired autobiographical memory functioning. Linehan, Camper, Chiles, Strosahl, and Shearin (1987) conducted a study that utilized the Means-Ends Problem Solving Test (MEPS) to investigate differences in problem solving efficacy between inpatient psychiatric patients with a history of chronic suicidality vs. patients with a history of only suicidal ideation or no history of SRB. The results suggest that individuals in the parasuicide group showed a greater number of passive problem solving solutions on the MEPS compared with individuals from the other two groups. Such passive responses can be generalized to the

individual's response style to stressful situations, where they are unable to be proactive in their problem-solving approach and revert back to behaviors related to unsuccessful coping in the past.

Orbach, Bar-Joseph, and Dror (1990) followed the study by Linehan et al. (1987), with a partial replication examining the problem-solving effectiveness in parasuicidal persons. As with the previous study, both a suicide ideation group and a healthy, control group were utilized as comparisons to those with a history of chronic SRB; however, a different method for measuring problem-solving was implemented, wherein a content analysis of qualitative data was used to create several distinct categories for a more sophisticated analysis of responses. The results suggest that individuals with a history of chronic SRB exhibited less versatility, heightened negative affect, less relevance to the specific problem-solving task, and a more general coping style.

Williams et al. (2006) recently completed a study to investigate the effects of depressed mood on problem solving and autobiographical memory in individuals with a history of past suicide attempts. They combined the MEPS measure for problem solving and the autobiographical memory test to track autobiographical memory specificity, and created three separate groups, the first consisted of individuals with multiple suicide attempts, a second included depressed participants without a past suicide attempt, and a third consisting of normal controls. Results from the study offer several important findings to strengthen the theory that problem solving ability is significantly reduced in those with chronic suicidality, as participants in the chronic suicide attempt group reported a lower number of specific memories and performed significantly worse than all other participants in terms of problem solving capabilities.

Suicidal Ambivalence

In addition to the acute and chronic typologies, a recent study by Brown, Steer, Henriques, and Beck (2005) suggests that risk for suicide can be formulated based on the ratio of a person's reported wish-to-live (WTL) vs. wish-to-die (WTD). The study drew from a sample of 5,814 individuals who had all completed the Scale for Suicide Ideation (SSI; Beck, Brown, & Steer, 1997). By reversing the wish-to-live (WTL) value (0-2; i.e., reverse coding) and adding it to the wish-to-die (WTD) value (0-2), the sample was split into 2 groups, one of which was comprised of the most severe high-low rated (i.e., highest WTD + lowest WTL) individuals. Multivariate survival analysis revealed that individuals with the most severe rating on the WTL/WTD scale were at significantly greater risk of completed suicide. This study offers a powerful predictive model for overall suicide risk, as the outcome was actual completed suicide rather than time to hospitalization or future suicide attempt.

Prior research by Kovacs and Beck (1977) investigated the relationship between the WTL/WTD ratio and lethality of suicide attempt in a sample of patients recently hospitalized following an attempt. Results from the study suggest that an ambivalent stance towards one's own life may contribute to suicidal intent, as those individuals reporting conflicting scores (i.e., high-high, low-low) had similar ratings on the Suicide Intent Scale (Beck, Schuyler, & Herman, 1974). This finding supports the theory that conflict arising from the internal debate between life and death affects intent of lethality in suicidal individuals, which the authors labeled as the internal struggle hypothesis. Additionally, the study's results suggest that it may be meaningful to conceptualize suicidal patients in 3 separate categories – High WTL/Low WTD, Conflicted, and Low

WTL/High WTD- in order to properly assess the impact of internal conflict on risk of lethality.

On-going research by Jobes and colleagues (Jobes, Grohmann, & Lineberry, 2006) points towards further differences that may exist between suicidal individuals based on their reported WTL/WTD ratio. For example, it has been shown that while family is the major *protective* factor for those reporting a low WTL/WTD score, it is also the most salient *reason for dying* reported by those with elevated scores on the WTL/WTD scale. This latter finding is also reflected by recent research from Joiner and colleagues (Ribeiro & Joiner, 2009; Van Orden, Witte, Gordon, Bender, & Joiner, 2006), in which perceived burdensomeness on one's family and environment is linked with an increased risk for suicide-related behavior. Such studies have a high likelihood of improving the manner in which clinicians conceptualize treatment planning for suicidal individuals, as they assist in determining specific areas of concern that can be prioritized during individual sessions.

A recent unpublished study by O'Connor and colleagues (2009) investigated suicidal ambivalence as a means for establishing different typologies of suicidality. The internal struggle hypothesis formulated by Brown et al (2005), which posits that suicidal individuals simultaneously wish to live and to die, provided a framework for studying suicidal ambivalence. The study adapted the Brown methodology for combining the WTL/WTD scale to analyze a cross-section of inpatients admitted to the Mayo Psychiatry and Psychology Treatment Center for acute suicidal ideation or attempt behaviors (N=86). In this manner, three distinct typologies of suicidality were created – low WTD/high WTL, Conflicted, and high WTD/low WTL – and hypothesized to operate in

a linear fashion in terms of risk of lethality for suicide and overall distress. A discriminant analysis using five variables – Overall Risk for Suicide (ORS) variable on the SSF (Jobes, 2006); the Beck Hopelessness Scale (Beck, Weissman, Lester, & Trexler, 1974); the Outcome Questionnaire-45 (Lambert, Hansen, et al., 1996); the Reasons for Living scale (Linehan, Goodstein, Nielsen, & Chiles 1983); and Gender – revealed three distinct groups.

Following the discriminant analysis, the ability to correctly classify individual cases into their respective suicidal ambivalence groupings was investigated. The results suggest that 76.7% of original grouped cases were correctly classified based on the four predictor variables. After controlling for the effect of chance, 82.1% of the WTD group, 74.2% of the Conflicted group, and 74.1%, of the WTL group were correctly classified into the hypothesized groups.

A series of pairwise tests were conducted to determine on which variables all three groups showed significant differences of group means. The results suggest that all group means on the ORS variable were significantly different from one another ($p < .001$ on all pairwise comparisons). Additionally, all pairwise comparisons were significant for group mean differences on Hopelessness ($p \leq .01$ on all comparisons). For both RFL and overall level of functioning, the results suggest that while the WTL group differs significantly from both the Conflicted and WTD groups, the Conflicted and WTD groups are relatively similar in terms of group means. This was especially true for the overall level of functioning variable.

This study supports previous research investigating the internal struggle hypothesis and the ability to create three separate typologies of suicidality based upon the

construct of suicidal ambivalence. Specifically, the reported WTL and WTD scores may indicate the severity of a person's suicidality. Understanding suicidal ambivalence seems to be an important factor to consider when engaging a suicidal person in therapy.

Proposed Study

The current study proposes to investigate the impact of moderating variables in treatment outcomes for patients enrolled in a randomized clinical trial comparing the Collaborative Assessment and Management of Suicide-Problem Focused Treatment (CAMS-PFT) vs. treatment as usual (TAU). More specifically, patients will be grouped a priori into theoretically based typologies that reflect chronicity and perceived lethality. Using the SSF ratings from pretreatment assessment, patients will be grouped into either an acute or chronic typology. As a means of conceptualizing perceived lethality, patients will be grouped into either a Wish to Live (WTL), Conflicted, or Wish to Die (WTD) typology based on the Likert ratings of the WTL and WTD variables on the SSI (Brown et al., 2005).

The main hypotheses and predictions of the study are as follows: Hypothesis 1: Patient response patterns on the SSF variables at pre-treatment will replicate the findings from an earlier study by Conrad et al. (2007). Prediction 1: Two separate factors will be found as a result of a factor analysis on SSF Likert responses, which will reflect acute and chronic latent variables. Prediction 2: Factor 1 will consist of the Self-hate, Hopelessness, and Pain variables, while Factor 2 will be comprised of the Agitation and Stress variables. Prediction 3: The Chronic factor will account for a larger amount of the variance than the Acute factor.

Hypothesis 2: Across both CAMS-PFT and TAU conditions, patients in the acute typology will show a greater reduction in suicidality and overall distress than individuals in the chronic typology. Prediction 4: All patients with an acute typology in both CAMS-PFT and TAU will show a greater reduction in suicidality and overall distress than individuals with a chronic typology as measured by the SSI total score, OQ.45 total score, and RFL total score at the post-treatment and 6 month assessment.

Hypothesis 3: Across both CAMS-PFT and TAU conditions, patients in the WTL and Conflicted (WTL/C) typology will show a greater reduction in suicidality and overall distress than individuals in the WTD typologies. Prediction 5: All patients in the WTL/C typology will show a greater reduction in suicidality and overall distress as measured by the SSI total score, OQ.45 total score, and RFL total score at the post-treatment and 6 month assessment.

Hypothesis 4: There will be a significant interaction effect between Chronicity Typology and Treatment condition at reducing suicidality and overall distress. Prediction 6: Change scores between pretreatment and posttreatment assessments will result in a greater reduction in suicidality and overall distress for both Acute and Chronic patients receiving CAMS-PFT as compared to TAU, as measured by the SSI total score, OQ.45 total score, and RFL total score at post-treatment. Hypothesis 5: There will be a significant interaction effect between Suicidal Ambivalence Typology and Treatment condition at reducing suicidality and overall distress. Prediction 7: Change scores between pretreatment and posttreatment assessments will result in a greater reduction in suicidality and overall distress for both WTL/Conflicted and WTD patients receiving

CAMS-PFT as compared to TAU, as measured by the SSI total score, OQ.45 total score, and RFL total score at post-treatment.

CHAPTER 2

Method

Participants

The study sample consisted of 50 individuals between the ages of 18-65 years who actively endorsed enduring suicide-related behaviors (SRB) while being treated as an inpatient on either a medical/surgical floor or psychiatric unit at Harborview Medical Center (HMC) of the University of Washington in Seattle, Washington. Inclusion criteria consisted of 1) active suicidal ideation at the conclusion of the hospital stay, and 2) discharge planning by HMC clinical staff that involved a “next day appointment” (NDA) at the Harborview Mental Health Outpatient Clinic. Exclusion criteria included active psychosis or mania, aggressive behavior, a level of cognitive impairment indicating poor outcome for outpatient psychotherapy, or insufficient proficiency in the English language.

Instruments

Scale for Suicide Ideation-Current (SSI-C; Beck et al., 1997). The primary assessment tool in the larger study was the SSI-C, which is a self-report measure where participants respond to 19 questions related to the highest intensity of suicidal ideation, including attitudes, behaviors, and plans in the past 2 weeks. While the instrument represents a wide-spectrum of suicide-related behaviors, previous studies using this scale have chosen to dichotomize the scores into a binary outcome (yes/no) when reporting existence of current suicidal ideation (Brown et al., 2005). However, analyses used in the present study utilized the entire response set in order to track intensity and pattern of

suicidal ideation across multiple assessment periods. The SSI has shown high internal consistency ($\alpha = .84$) and good criterion and convergent validity (Beck et al).

Outcome Questionnaire-45.2 (OQ-45.2; Lambert, Hansen, et al., 1996). The OQ-45.2 is a 45-item self-report measure of generalized psychiatric symptomatology, interpersonal experiences, and social functioning. Each question is answered using a 5-point Likert scale, with a higher total score indicating lower overall functioning. Previous studies suggest the OQ-45.2 has good test-retest reliability ($r = 0.84$; Lambert, Burlingame, et al., 1996) and internal consistency ($\alpha = .93$; Lambert, Hansen, et al., 1996).

Reasons for Living Inventory (RFL; Linehan, Goodstein, Nielsen, & Chiles, 1983). The RFL is a 48-item self-report measure containing reasons why a person would choose not to commit suicide. Each item requires a response on a 6-point scale of agreement/disagreement (1 = not at all important; 6 = extremely important). Previous research suggests that individuals with lower overall scores on the RFL are more likely to have past suicide attempts (Oquendo et al., 2004). The RFL has shown acceptable levels of test-retest reliability ($r = .83$; Osman, Jones, & Osman, 1991) and internal consistency ($\alpha = .74$ to $\alpha = .94$; Linehan et al., 1983).

Suicide Status Form (SSF-II-R; Jobes, 2006). The SSF-II-R was utilized in tracking, assessing, and treating suicide risk in the experimental treatment group. Additionally, the TAU group completed a sub-section of the assessment, which consisted of the 5 SSF-II-R “core” variables mentioned below, as well as the current overall behavioral risk of suicide. The SSF-II-R is a self-report measure that consists of both

qualitative and quantitative assessment of suicide-related variables. At the outset, the constructs of psychological pain, stress, agitation, hopelessness, and self-hate are assessed using a 1-5 rating scale and a brief prompted written response. Additionally, the client's overall risk of suicide is measured with a rating scale. The remainder of the SSF-II-R measures, intra vs. inter-psychic pain, reasons for living and dying, wishes to live vs. die, and a written response regarding the "one thing" that would eliminate the client's suicidal ideation. The core SSF-II-R assessment has shown good to excellent criterion and convergent validity as well as excellent test-retest reliability in previous research studies (Conrad et al., 2009; Jobes et al., 1997).

Procedures

For those individuals identified by staff as possible candidates who also expressed interest in the study, the study screener provided an overview of the study and obtained informed consent. Participants then completed a pre-treatment assessment and were randomly assigned to one of two treatment conditions through the use of a computerized randomization program.

Random Assignment. Participants were randomly assigned to CAMS-PFT or treatment as usual (TAU). A minimization random strategy was implemented in order to compensate for a relatively small sample size and to achieve balanced matching of certain key variables, including history of suicide attempt, gender, and on-going use of psychotropic medications.

In addition to randomized patients, the current study assigned 9 participants to CAMS-PFT as training cases for clinicians. All these sessions were coded using an

empirically based adherence measure created for the original study. Two pilot cases were removed from the analysis due to poor adherence to the CAMS-PFT treatment. Finally, four non-randomized patients were assigned to CAMS-PFT in the original study to bolster overall sample size and increase statistical power.

Treatment Conditions. Individuals assigned to the CAMS-PFT intervention ($n=26$) received up to 12 weeks of weekly 1:1 psychotherapy with a CAMS-PFT trained clinician. CAMS-PFT involved a collaborative approach to managing SRB, with an emphasis on coping, problem solving, and creating reasons for living. Furthermore, the approach is noteworthy in that the issue of suicide is treated as the target of the treatment, rather than as a symptom of an Axis I or Axis II DSM-IV diagnosis (e.g., major depressive disorder or borderline personality disorder). Within each CAMS-PFT session, the clinician reviewed factors related to the client's current suicidality, including psychological pain, stress, agitation, hopelessness, and self-hate using the "Suicide Status Form (SSF-II-R; Jobes, 2006). All treatment sessions were videotaped and reviewed by research team members at The Catholic University of America for adherence to the treatment model.

The control group ($n=19$) received TAU services, consisting of standard NDA protocol by the Harborview Mental Health Services Crisis Intervention Service (CIS). This approach required that CIS clinicians conduct a next day intake appointment with referred clients, provide individual counseling not to exceed 8 sessions, and refer for medication management and/or on-going counseling with a mental health practitioner, as needed. While provision of individual counseling by CIS clinicians varied based on

clinical factors, the majority of participants received 8 weeks of counseling services. Modality of supervision for CIS clinicians followed the normal format of weekly team meetings, involving team lead, staff psychiatrist, and division manager.

The study attempted to hold all environmental factors constant across treatment groups. Services for both treatment conditions were conducted by CIS clinicians and took place in HMHS offices. The same CIS psychiatrists, who followed standard procedures for pharmacotherapy provision across groups, provided medication management. Furthermore, clinicians followed the standard Harborview Medical Center guidelines for assessing imminent risk of suicide and referral to inpatient psychiatric care. Thus, participants should have experienced similar systemic variables across treatment conditions. Finally, in order to ensure for continuity of care, participants in each condition received adequate referrals for further services, as needed.

Statistical Analyses

As we approached this between group research design with repeated measures at pretreatment, post-treatment, and 6-month follow-up, it became clear that there would be two major phases to the study. Phase I would consist of creating typologies and conducting a factor analysis to investigate the degree to which factors underlying participants' suicidality was consistent with those observed in previous studies. Previous research with the SSF-II-R suggested that individuals are likely to endorse a specific constellation of variables that reflects latent response typologies (Conrad et al, 2007; Jobes et al., 1997). Specifically, the constructs of Psychological Pain, Hopelessness, and Self-Hate tended to reflect chronic response styles, whereas the Stress/Press and

Agitation constructs reflected more acute response styles (i.e., short-term descriptors of intense distress).

Phase II thus consisted of between group analyses designed to measure the outcomes on three separate dependent measures. Two statistical approaches were utilized to analyze these data—hierarchical linear modeling (HLM) and multiple analysis of covariance (MANCOVA). HLM was utilized for data that included three time points, and MANOVA was used to measure change scores between pre-treatment and post-treatment.

Power estimates. The current study aimed to measure effect size for MANOVA and follow-up ANOVA by utilizing partial η^2 . This statistic was interpreted using conventional standards (i.e., small effect = .01, medium effect = .06, large effect = .14; Kittler, Menard, & Phillips, 2007). Given the small sample size of this feasibility study, we knew that power estimates for the study were likely to be low, which invariably increases the likelihood of type II error occurring (i.e., not detecting significant results due to low power). It was hypothesized that a medium to large effect size would provide adequate power regardless of the small sample size.

Creating Typologies. The current study created typologies of suicidal patients based upon 1) dividing participants dichotomously into either chronic or acute types based on history of previous suicide attempts, and 2) a trichotomized index score of the wish-to-live/wish-to-die (WTL/WTDL) Likert scales. Participants with one or fewer previous suicide attempts were assigned to the Acute group, whereas those with a history of two or more previous attempts were assigned to the Chronic group. History of attempts

has been shown to be one of the most important prospective discriminating factors between types of persons who experience suicidality (Sansone, 2004; Rudd et al., 1996; Joiner & Rudd, 2000). Gender make-up for each group is as follows: 11 females and 14 males in the Acute group; 11 females and 11 males in the Chronic group.

Creation of the Suicidal Ambivalence Typology followed methods utilized by Brown et al (2005), wherein a suicide index was established by reversing the wish-to-live value (i.e., reverse coding) and adding it to the wish-to-die value (0-2). The resulting scale consisted of 5 possible scores, with low scores indicating increased wish-to-live and higher scores indicating a more severe wish-to-die. By trichotomizing the WTL/WT D scale into typologies reflecting tiers of risk, with WTL being the least severe, WTD as the most severe, and Conflicted in-between, we attempted to gauge outcome across time of suicidal patients based on the moderating effect of their intent to live or die. In order to replicate the approach used by Brown et al (2005), we grouped the WTL and Conflicted persons into one group, and the WTD persons into a separate group, as this approach was found to predict actual death by suicide in longitudinal research (Brown et al., 2005). Gender make-up for each group is as follows: 15 females and 12 males in the WTL/Conflicted group; 7 females and 13 males in the WTD group.

Statistics. The research design used in this study required a sequential approach to analyzing the dataset. To begin, a replication of the factor analysis used in Conrad et al. (2007) was initially conducted to investigate factor-loading styles in the present sample. This involved a maximum likelihood factor analysis, which increased the goodness of fit to the model by allowing for adjustments. After conducting the factor

analysis, a series of *t* tests were performed to investigate pre-treatment differences between groups on the DVs of interest. The groups comprising each Typology were theorized to be ordinal in nature in terms of suicidality and overall level of distress.

The remaining analyses measured between-group differences using two approaches: HLM and MANCOVA. HLM was used to measure differences between typologies on the dependent variables of suicidal ideation (i.e., SSI and RFL) and overall distress (i.e., OQ-45) across three separate time points. HLM was utilized for the time-series analysis due to the ability to retain cases despite having some missing data (Shafer & Graham, 2002; Christensen, Atkins, Yi, Baucom, & George, 2006). A Level 1 equation was created using Time as a predictor of change for each DV. Each Typology was entered separately into a Level 2 equation to measure the moderating effect of Typology on changes to each DV across time. In essence, the Level 2 analysis was measuring the impact of each Typology on the slope of the Time variable.

MANCOVA was utilized to investigate the interaction effect of Typology by Treatment condition on change scores from pretreatment to posttreatment for the DVs of interest. MANCOVA is a powerful approach to measuring group differences, as it maximizes differences between groups on multiple dependent variables and reduces family-wise error. Had this final analysis been completed in HLM, it would have required a three-way interaction term, which would likely be uninterpretable given the small sample size utilized in the current study. Furthermore, because of the greater frequency of missing data at the 6-month assessment, it was decided to focus on change scores

between pre and post-treatment in order to limit the effect of missing cases in each group when using MANCOVA.

CHAPTER 3

Results

Factor Analysis: The dimensionality of the 5 items from the SSF measure was analyzed using maximum likelihood factor analysis and Promax rotation with Kaiser normalization. This approach mirrors the methods utilized in a previous psychometric study of the SSF (Conrad et al., 2009). As such, an exploratory approach was taken to determine how well a two-factor model represented the dimensionality of the SSF. Therefore, it was decided to rotate two factors in the analysis and observe both the eigenvalue for each factor and the resulting scree plot.

In order to establish the degree to which the five SSF variables were multicollinear, a correlation matrix was completed to view inter-item correlations—this approach was initially used in the first psychometric study of the SSF (Jobes et al., 1997). As displayed in Table 1, the inter-item correlations were low to moderate, with highest correlations between psychological pain and stress (.573) and psychological pain and hopelessness (.560). These findings are similar to those in Conrad et al (2009), which also displayed low to moderate inter-tem correlations.

Table 1: Inter-Item Correlation Matrix of the Five SSF-II Items

SSF-II Item	1	2	3	4	5
1. Pain	—	.57*	.36*	.56*	.48*
2. Stress	.57*	—	.38*	.32	.38*
3. Agitation	.36*	.38*	—	.24	.11
4. Hopelessness	.56*	.32	.23	—	.37*
5. Self-hate	.48*	.38*	.11	.37*	—

Note: *Correlation is significant at $p < .01$ (two-tailed).

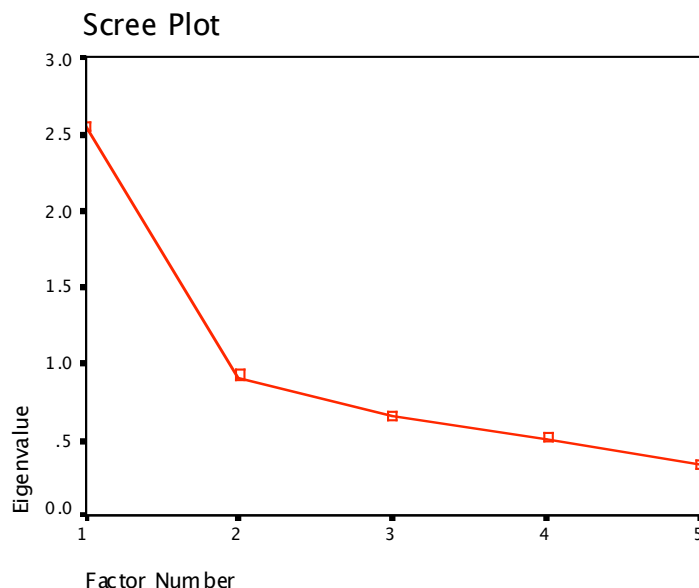
The first cluster of item loadings accounted for 20.5% of the total variance (eigenvalue = 2.55), while the second factor accounted for 13.9% of the total variance (eigenvalue = .925). Together, a total of 34% of the total variance was explained by the two factors. The variables Psychological Pain, Stress, Hopelessness, and Self-Hate comprised Factor 1, while the variable Agitation comprised Factor 2 (See Table 2). The resulting Scree Plot displayed a leveling off of the slope between Factor 2 and 3, suggesting that a two-factor solution is appropriate when interpreting the dimensionality of the SSF. Following the extraction method, all but one variable (self-hate) showed a communality of $>.4$, suggesting the model provided an acceptable fit for the variables as a whole.

Table 2: *Factor Analysis Results: Promax Rotated Structure Matrix*

SSF-II Item	Factor 1	Factor 2
<i>Pain</i>	.89***	.39
<i>Stress</i>	.63***	.40
<i>Hopelessness</i>	.62***	.254
<i>Self-hate</i>	.56***	.125
<i>Agitation</i>	.387	1.0***

Note: ***Value is greater than 0.5

Figure 1: Scree Plot for Factor Analysis



Pretreatment Differences: A series of independent-samples *t* tests were conducted to evaluate pretreatment differences on the SSI, OQ.45, and RFL between groups for each typology. This initial analysis was completed to investigate the assumption that the groups within each Typology are ordinal in nature and would be expected to display differing means of severity to a certain extent. The two typologies were comprised of two groups each: acute and chronic for chronicity; WTL/Conflicted and WTD for suicidal ambivalence. The decision to group the WTL and Conflicted groups was due to a limitation in sample size, as well as previous research by Brown et al. (2005) that displayed greater likelihood of death by suicide for individuals who report a much stronger desire to die than to live. Based upon the Brown et al. coding system, these individuals would be classified as WTD in the current study.

For the chronicity typology, total *N* of 50 was reduced due to missing data as follows: *N* = 48 for SSI; *N* = 44 for OQ.45; and *N* = 38 for RFL. Levene's Test for

Equality of Variances was significant for the RFL, $F = 5.43$, $p = .026$, thus equal variance were not assumed between groups on this measure at pretreatment and a separate t score was calculated when equal variance are not assumed. No significant pretreatment differences between the acute and chronic groups were observed on the DVs, however there was a trend towards significance for the SSI, $t(46) = -1.66$, $p = .10$.

Group means are displayed in Table 3.

Table 3. Comparison of Means for SSI, OQ.45, & RFL at Pretreatment for Chronicity Groups

	<u>Acute</u>		<u>Chronic</u>		<u>Univariate</u>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>
SSI	20.52	8.49	24.09	6.11	-1.66*
OQ.45	89.13	22.72	91.43	20.10	-0.35
RFL	157.09	57.72	156.75	37.46	0.21

* $p \leq .01$

** $p \leq .05$

*** $p \leq .001$

For the suicidal ambivalence typology, total N of 50 was reduced due to missing data as follows: $N = 48$ for SSI; $N = 44$ for OQ.45; and $N = 38$ for RFL. Levene's Test for Equality of Variances was not significant for any of the pretreatment analyses, thus equal variance were assumed between groups on all measures. Significant pretreatment differences were observed between the WTL/Conflicted group and the WTD group on the SSI, $t(46) = -4.93$, $p = .000$, and RFL, $t(36) = 2.43$, $p = .02$. Group means are displayed in Table 4. The 95% confidence interval for the difference in means was wide for the SSI, ranging from -12.60 to -5.29, and quite wide for the RFL, ranging from 6.12 to 67.77.

Table 4. Comparison of Means for SSI, OQ.45, & RFL at Pretreatment for Suicidal Ambivalence Groups

	<u>WTL/Conflicted</u>		<u>WTD</u>		<u>Univariate</u>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>
SSI	18.50	7.02	27.45	4.80	-4.93***
OQ.45	87.12	23.07	94.72	18.11	-1.17
RFL	173.48	46.95	136.53	46.17	2.43**

* $p \leq .01$

** $p \leq .05$

*** $p \leq .001$

Treatment Outcomes for Typologies: Hierarchical Linear Modeling (HLM) was utilized to determine the effect of the two typologies (chronicity and suicidal ambivalence) on the three dependent variables (DV), SSI, OQ.45, and RFL at the post-treatment and 6-month assessments. This approach was used rather than a repeated measures, two-way MANOVA due to the constraint of missing data, which would have meaningfully reduced the overall sample sizes sacrificing statistical power. The data points for pretreatment, posttreatment, and 6-months were coded as 0, 3, and 6. The value of 0 was used for the pretreatment assessment in order to ensure that HLM used this timepoint as the intercept value in order to offer greater control for pretreatment differences in total score for each DV.

For each Level 1 Model, Time was entered as the predictor variable. The Level 2 Model included either the Chronic or Suicidal Ambivalence variable as the predictor variable. Thus, the Level 2 Model was investigating whether the slope for Time was significantly affected by each participant's typology.

Initial analysis of the Level 1 Model for SSI resulted in a Reliability Estimate of 0.124, suggesting that most of the variability is within subjects. As Gibbons et al (1993) have noted, this is a common occurrence in studies that recruit specific populations rather

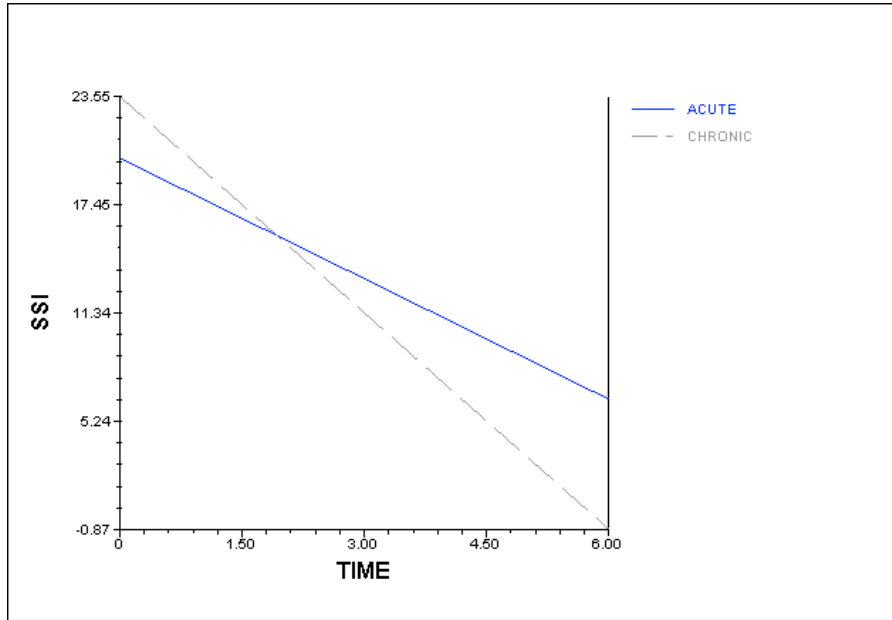
than the general population. For instance, inclusion criteria required active suicidality, which would automatically reduce the variability between subjects at the intercept (i.e., pretreatment assessment). For this reason, we decided not to include the random effects for the intercept in any of the three models, but did include random effects for the interaction between each moderating variable (e.g., Chronicity and Suicidal Ambivalence) and the slope of time in the Level 2 Model.

Outcomes for Chronicity Groups: Total $N = 50$ was reduced due to missing data to $N = 45$. Fixed effects and variance components are based on 45 cases. The final estimation of fixed effects with robust standard errors suggested evidence of an effect of Chronicity on the trajectory of change for the SSI, $B = -1.80$, $SE = 0.77$, $t(43) = -2.34$, $p = .02$, with Chronic participants displaying a greater reduction in overall SSI score as compared with Acute participants. There was no evidence of an effect of Chronicity on the slope of Time for either of the remaining DVs: OQ.45, $B = .48$, $SE = 1.83$, $t(43) = 0.26$, $p = .78$, and RFL, $B = 1.55$, $SE = 2.66$, $t(43) = 0.58$, $p = .56$. See Table 5 for comparisons.

Table 5. Comparison of Fixed Effects for SSI, OQ.45, & RFL for Chronicity Groups

	<i>t-ratio</i>	<i>Standard Error</i>	<i>p-value</i>
SSI	-2.34	0.77	0.02
OQ.45	0.26	1.83	0.78
RFL	0.58	2.66	0.56

Figure 2: Line Graph for HLM of Acute vs. Chronic for SSI



Outcomes for Suicidal Ambivalence Groups: For suicidal ambivalence, total $N = 50$ was reduced due to missing data to $N = 45$. For all three DVs, there was no evidence of an effect of Suicidal Ambivalence on the slope of Time: SSI, $B = -.84$, $SE = 0.73$, $t(43) = -1.15$, $p = 0.26$; OQ.45, $B = .83$, $SE = 1.71$, $t(43) = 0.48$, $p = .63$; and RFL, $B = -2.05$, $SE = 2.82$, $t(43) = -0.73$, $p = .47$. See Table 6 for comparisons.

Table 6. Comparison of Fixed Effects for SSI, OQ.45, & RFL for WTL/WTG Groups

	<i>T-ratio</i>	<i>Standard Error</i>	<i>p-value</i>
SSI	-1.15	0.73	0.26
OQ.45	0.48	1.71	0.63
RFL	-0.73	2.82	0.47

Interaction Effects for Chronicity and Treatment Condition: A MANOVA and follow-up ANOVAs were utilized to test the hypothesis that there would be a significant interaction

effect between Chronicity Typology and Treatment condition at reducing suicidality and overall distress. Total $N = 50$ was reduced due to missing data to $N = 28$ at post-treatment. Interaction effects were not investigated at the 6-month time point due to the reduction in sample size. Box's test of equality of covariance matrices was not significant, $F(18, 1303) = 1.02, p = .43$, suggesting that matrices of the DVs are equal across groups. With the use of Wilks' criterion, the interaction effect was not significant for change scores at post-treatment, $F(3,22) = 1.57, p = .225$. The results reflected a strong association between the interaction and the combined DVs, partial $\eta^2 = .18$.

An ANOVA for each DV was conducted as a follow-up test to the MANOVA at the post-treatment time point. Of note, there were no significant differences between groups at the pretreatment assessment on any of the outcome variables of interest. Differences on SSI change scores trended towards significance, $F(1,24) = 3.09, p = .09$. A closer look at the group means suggests that the difference between Chronic individuals receiving either CAMS-PFT or TAU contributed most to the modest effect size, partial $\eta^2 = .12$. Both ANOVA for the OQ.45, $F = .12, p = .75$, and the RFL, $F = .03, p = .87$, were nonsignificant between groups at the post-treatment assessment. Group means are presented in Table 7.

*Table 7. Comparison of Mean Change Scores for SSI, OQ.45, & RFL at Post-Treatment Between Groups Comprising Chronic*Treatment Condition*

Acute Group	CAMS		TAU	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
SSI Change	-8.00	3.47	-8.71	3.94
OQ.45 Change	-20.00	7.26	-12.86	8.24
RFL Change	5.89	11.24	0.71	12.74

Chronic Group	CAMS		TAU	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
SSI Change	-23.43	3.94	-10.00	4.66
OQ.45 Change	-18.00	8.24	-16.40	9.74
RFL Change	15.71	12.74	6.20	15.08

Interaction Effects for Suicidal Ambivalence and Treatment Condition: A MANOVA and follow-up ANOVA were used to test the hypothesis that there will be a significant interaction effect between Suicidal Ambivalence Typology and Treatment Condition at reducing suicidality and overall distress. Total $N = 50$ was reduced due to missing data to $N = 28$ at post-treatment. Interaction effects were again not investigated at the 6-month time point due to the reduction in sample size. Box's test of equality of covariance matrices was not significant, $F(18, 956) = .74, p = .77$, suggesting that matrices of the DVs are equal across groups. With the use of Wilks' criterion, the interaction effect was not significant for change scores at post-treatment, $F(3,22) = 0.30, p = .83$. The results reflected a small association between the interaction and the combined DVs, partial $\eta^2 = .04$.

An ANOVA for each DV was conducted as a follow-up test to the MANOVA at the post-treatment time point. ANOVA for all measures resulted in nonsignificant

differences between Suicidal Ambivalence*CAMS and Suicidal Ambivalence*CAU

groups: SSI, $F = .05$, $p = .83$; OQ.45, $F = .37$, $p = .55$; and RFL, $F = .88$, $p = .36$. Group

means are presented in Table 8.

*Table 8. Comparison of Mean Change Scores for SSI, OQ.45, & RFL at Post-Treatment Between Groups Comprising WTD*Treatment Condition*

WTL/ Conflicted Group	CAMS		TAU	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
SSI Change	-13.27	3.61	-8.14	4.35
OQ.45 Change	-18.73	6.51	-18.14	8.16
RFL Change	11.64	9.78	15.00	12.26

WTD Group	CAMS		TAU	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
SSI Change	-18.00	5.36	-10.80	5.36
OQ.45 Change	-20.00	9.66	-9.00	9.66
RFL Change	7.00	14.51	-13.80	14.51

CHAPTER 4

Discussion

The current study endeavored to determine whether a participants' theorized typology of suicidality impacted their treatment in a feasibility pilot study measuring the effectiveness of an experimental treatment, CAMS-PFT. The results of the data analyses suggest that suicidal patient typology may be helpful in estimating patient response to treatment in general, and whether a patient may benefit from a more suicide-specific intervention to address their suicidality.

SSF Factor Analysis

To begin, a factor analysis was conducted to examine the dimensionality of the core SSF assessment. This undertaking was deemed important because the SSF provides an indication of how the specific population recruited in the current study experiences suicidality. As noted above, the SSF is comprised of 5 core items that are considered “drivers” of suicidality, in that they are hypothesized to be the driving force behind a person's suicidal ideation (Jobes et al., in press). The results suggest that the variables are somewhat inter-correlated, which is to be expected given that they all relate to the same overarching construct (i.e., suicidality). Yet, each variable maintained adequate unique variance to be considered an independent construct in its own right.

The first prediction to be tested posited that the factor analysis would result in a two-factor structure, which would reflect acute and chronic variables. The factor analysis resulted in only one factor loading with an eigenvalue of greater than 1.0, which is considered the traditional convention for interpreting factor loadings (Tabachnick &

Fidell, 2006). The first cluster of items consisted of Psychological Pain, Stress, Hopelessness, and Self-Hate. The second factor consisted of the Agitation variable, which had an eigenvalue of .93 (just below the 1.0 cutoff).

Thus, our prediction regarding two factors was not completely supported, as the eigenvalue for the second factor loading was below 1.0. However, the fact that Agitation was the lone variable represented in the second factor loading is consistent with previous research on acute suicidality (Sansone, 2004; O'Connor et al., 2010), in that agitation is theorized as the driving force that enables a person to make a suicide attempt (Shneidman, 1998). Indeed, Nock et al (2009) recently published a study based on data from the World Health Organization that suggests that a disorder related to hyperarousal, such as PTSD, was predictive of those persons experiencing suicidal ideation who were most likely to make a suicide attempt. One could theorize that increased stress leads to increased agitation, which may explain why these two variables have hung together in previous psychometric studies.

A quick glance at pretreatment scores on the five SSF constructs shows that the Stress variable had the highest mean score, suggesting that the patient population struggled with a great degree of current stressors. This is not a major surprise given the rate of homelessness, poverty, unemployment, and co-occurring substance abuse that participants in our sample deal with on a daily basis. Harborview Medical Center is the only Level 1 Trauma center in Washington State, and the Crisis Intervention Service, to which all patients were officially referred for treatment (either CAMS or TAU) is a service provided to patients with limited medical benefits who are currently in an

emotional crisis. It is not a stretch to conclude that the sample recruited for the current study represents the most severe population for CAMS-related research. Thus, these individuals experience what could be deemed as “chronic stress,” which would sensibly cause the Stress variable to share common variance with the other “Chronic” variables of Psychological Pain, Hopelessness, and Self-Hate, rather than the truly “Acute” variable of Agitation. Therefore, the second prediction that variables included in each factor will replicate findings from Conrad et al (2009) was refuted.

The third and final prediction regarding the factor analysis posited that the Chronic factor would account for a greater amount of the variance than the Acute factor. This prediction was proven correct, as the Chronic cluster accounted for 20.5% of the total shared variance, as compared with 13.9% for the Acute factor. The two factor loadings account for far less of the total variance when compared to a recent factor analysis conducted at an inpatient psychiatry unit in a Midwestern hospital (Conrad et al., 2009) where the two factors accounted for 69% of the total variance. It is not clear why less shared variance was accounted for in these two factors, although the aforementioned study by Conrad and colleagues had a sample size twice as large as that used in the current study. Additionally, the Mayo sample may have consisted of a more heterogeneous sample, in terms of socioeconomic status. However, the explained shared variance in the current study is similar to that in an early psychometric trial of the SSF that involved suicidal participants recruited from a counseling center in a Mid-Atlantic university where the two factors accounted for 36% of the total shared variance (Jobes et al., 1997).

Pretreatment Differences Within Typologies

Prior to performing the actual analysis of change across time, a series of *t* tests was completed to investigate pretreatment differences. The main purpose of this initial analysis was to test the assumption that the groups within each Typology would indeed show differences in terms of severity of suicidality and overall distress, as they are theorized as being ordinal in nature. The results suggest that while those individuals with 2 or more previous suicide attempts had somewhat greater current suicidality, the differences were not significant on the SSI, OQ.45, or RFL. Thus, it appears as though the two groups within the Chronic typology did not differ in terms of acute symptomatology, both general and related to suicidality.

In terms of pretreatment differences between groups that comprise the Suicidal Ambivalence Typology, significant differences were found on both of the SSI and RFL assessments, but not for overall level of functioning as measured by the OQ.45. This finding is consistent with previous research where individuals with a greater desire to die reported fewer reasons for living and greater perceived risk of suicide (O'Connor et al., 2009). While chronicity is based upon actual behaviors and individuals can only move in one direction (e.g., acute to chronic), suicidal ambivalence is theoretically a construct on which a person can move bilaterally, which may in turn impact the ability to assign them to a specific group within a typology across time. One solution would be to administer the Lifetime SSI measure, which measures the most severe episode of suicidal ideation, as a predictor in a survival analysis for actual death by suicide (Brown et al., 2005). This would prevent the possibility of a person transitioning from one form of Suicidal

Ambivalence to another over time. However, examining the fluidity of suicidal ambivalence is beyond the scope of the current study and was thus not examined.

Typology Outcomes Across Treatment Conditions

The fourth and fifth predictions in the study posited that regardless of treatment condition, the theoretically less severe groups within each Typology (Acute and WTL/Conflicted) would show a greater reduction in suicidality and overall distress as measured by the three DVs, SSI, OQ.45, and RFL. Three time points were used to measure change scores, being pretreatment, post-treatment, and 6-month assessments. As mentioned earlier in the Methods section, because the focus of the study was on effectiveness rather than efficacy, standards for internal validity were not stressed as greatly as generalizability. Therefore the number of sessions each participant received, whether in CAMS-PFT or TAU, was dependent upon the clinical judgment of the treating clinician and the consulting research team.

The results suggest that for the Chronic Typology, the patients with greater than one prior suicide attempt showed a greater reduction in suicidality on the SSI than individuals with less than two previous attempts from pretreatment to 6-month assessment. No significant differences were observed in terms of trajectories across time on either the OQ.45 or RFL. As for the Suicidology Ambivalence Typology, no significant differences were observed between groups on changes across time for the SSI, OQ.45, or RFL.

Thus, only one significant difference was observed using HLM analysis, and that difference actually ran counter to what was predicted. In trying to understand why the

Chronic group experienced a greater reduction in suicidality than the Acute group, it is important to consider possible factors related to etiology of suicidality for each group. Individuals with chronic suicidality are hypothesized as having a greater need for interpersonal connectedness than those persons who experience an acute episode of suicidal ideation in response to an unresolved stressor (Sansone, 2004) For example, Jobes et al. (1997) have argued that individuals with acute suicidality can also be thought of as “acute resolvers,” meaning that suicidality is related to a struggle with problem solving. Therefore, suicidal thoughts will quickly resolve once specific stressors have been addressed.

In contrast, individuals with chronic suicidality are more apt to experience a persistent need for increased attachment and validation of their emotional experience (Jobes et al., 1997). Because self-hatred has been included as a “Chronic” variable in previous psychometric studies of the SSF, these persons are also considered as having a greater degree of trait-level personality dysfunction and therefore a more entrenched form of psychopathology. This assertion is consistent with additional research describing the modal person who suffers from chronic suicidality (Rudd et al., 1996; Joiner & Rudd, 2000). Additionally, whereas Acute persons may have problems dealing with a limited number of current stressors, Chronic persons have been shown to have greater deficits in overall problem solving capabilities that only improve with long-term psychotherapy and skills training (Linehan et al., 1987).

Therefore, it was hypothesized that individuals with chronic suicidality would show a slower reduction in suicidality as compared to those with acute suicidality, as the

drivers of suicidal ideation would be more related to long-standing interpersonal deficits rather than solvable problems. This theory base may hold up with higher functioning, less economically distressed populations, but this was not the case for the sample recruited for the current study.

As mentioned above in the discussion regarding the factor analysis findings, this sample of participants experiences persistent economic hardships, including poverty and homelessness, problems which are not likely to resolve over the course of short term psychotherapy. Anecdotal evidence from study clinicians suggests that inability to establish and/or maintain stable housing and an adequate income were frequently reported as drivers of suicidality for study participants. Recovery from poverty requires the attainment of a series of smaller goals rather than generating a more effective solution for one seemingly intolerable situation (Perese, 2007). Therefore, participants who were suicidal due to acute stressors were unlikely to experience resolution of their problems over the course of a 6-month window.

Evidence from studies by Motto and Bostrom (2001) and Carter et al. (2005) may offer insights into why Chronic individuals responded better to some form of therapy, regardless of type, than Acute individuals. While neither study measured suicidal ideation per se, they both measured recidivism of suicidal behavior and have been shown to have significant impacts on reducing suicidal attempts (Carter et al) or suicides (Motto & Bostrom). Through letter writing interventions, both studies apparently created a perception of connection between discharged patients and treatment providers following a period of hospitalization related to increased suicide-related behavior. In the current

study, all study participants were assigned to a care provider with whom they were able to work for up to 3 months.

Thus, it would make sense that Chronic participants experienced a greater reduction of suicidality as compared with Acute participants, as their suicidal ideation may be more readily addressed by connectedness with a committed and empathic care provider. There is less emphasis on the need to solve specific problems and a greater emphasis on reducing rumination, engaging in positively reinforcing activities, and transitioning into long-term psychotherapy. This theory is further reinforced by the fact that one of the inclusion criteria for the current study was the absence of a current mental health provider. Each participant was enrolled in CIS, which offers short-term crisis services through the Harborview Mental Health Outpatient Clinic for participants with a dearth of resources and assets.

In creating the a priori hypothesis that the WTL/Conflicted group would show a greater response to any treatment compared with the WTD group, the emphasis was on past research showing that the WTD group is ultimately a more lethal group in terms of dying by suicide. The lack of significance in the outcomes of interest does not necessarily address the extent to which connection with a treatment provider is related to the underlying needs of either the WTL/Conflicted group or the WTD group. The fact that all participants improved may indicate that psychosocial and interpersonal stressors may not differentiate between groups in the same manner as between multiple attempters and those with one or fewer attempts. Yet, this finding does offer evidence that the construct

of Suicidal Ambivalence is not simply redundant with that of Chronicity, an important consideration when interpreting the final set of analyses.

Interaction Effects for Typology and Treatment Condition

The final set of analyses completed for the current study investigated possible interaction effects between Typology and Treatment condition. The sixth and seventh predictions posited that CAMS would be more effective than TAU at reducing suicidality and improving overall level of functioning in both groups within each Typology.

Although it would have been useful to utilize HLM to complete the interaction analysis, it was not feasible to complete a 3-way interaction given the small sample size.

Therefore, a MANCOVA analysis was completed using change scores created by subtracting pretreatment scores from post-treatment scores. MANCOVA are generally helpful at reducing family-wise error and maximizing the differences in group means between independent groups (Tabachnick & Fidell, 2007). Results for the interaction between Chronicity and Treatment Condition resulted in non-significance when all DVs were used in the equation. Although the main analyses were not significant, partial $\eta^2 = .18$, nevertheless suggests a relatively large effect for the overall model (Kittler, Menard, Phillips, 2007). This discrepancy between large effect size and lack of significance may be related to the small sample size included in the analysis.

Similar assertions regarding limitations of sample size may be applied to interpreting the results from follow-up ANOVAs measuring the interaction effect between Chronicity and Treatment on single DVs. Although there does not appear to be an interaction effect for the OQ.45 and RFL, the SSI results suggest a large effect size

and a p value trending towards significance. Upon review of the group means for each group, CAMS-PFT participants appeared to have a greater change in SSI scores at the post-treatment mark. However, these assertions should be accepted with caution due to the large standard errors and small sample size for each group. Previous research suggests that large effect sizes in small sizes have the potential to overestimate the actual strength of the effect (Kraemer, Mintz, Noda, Tinklenberg, & Yeasavage, 2006).

The interaction effect between Suicidal Ambivalence and Treatment condition was less substantial. The effect size was small in relation to that of the Chronicity*Treatment interaction (.16 vs. .04), and the p value reflected neither a trend nor significance in differences on change scores between groups. Upon review of the group means for each group, it does appear that Chronic participants had greater change scores as compared to TAU, and that the lack of effect is possibly related to the small sample size.

Limitations of the Current Study

Although important findings were discovered, it is necessary to recognize specific methodological concerns that limit the present study. First, the sample size used for the statistical analysis is most likely underpowered, which increases the likelihood of Type II errors occurring. As such, it is entirely possible that between-group differences exist that were not actually identified in the data analysis. For instance, the overall change scores on the RFL suggest that those participants with a Chronic typology who received CAMS increased the number and/or intensity of reasons for not wanting to die, while those receiving TAU changed in the opposite direction. However, the small sample sizes

measuring the interaction between Typology and Treatment prevent adequate power to measure true effect sizes. The same is true for the HLM analysis investigating the moderating effect of Typology on the trajectory of changes occurring across time.

Second, the current sample includes several cases that were not randomized into a particular treatment. The initial phase of the study required study clinicians to meet adherence standards in conducting CAMS-PFT before they could begin treating participants randomly assigned to a treatment during the study. However, the research team created an adherence form that was completed by either a research assistant or David Jobes, who created CAMS-PFT, to determine adherence to the CAMS framework. All pilot cases were videotapes and reviewed using the adherence measure. Two cases were eliminated from the current study due to the clinician's inability to properly treat pilot cases using the CAMS-PFT framework.

Third, the study is technically a feasibility trial, the task of which is determining whether conducting such a study is achievable with the targeted population in the proposed setting. Accordingly, the methodology changed slightly over the course of the entire study. For instance, recruitment methods were amended to include patients from the inpatient psychiatry units at Harborview Medical Center after 6 months of struggling to recruit an adequate number of participants. Initially, recruitment was to occur in patients who were treated either in the emergency department or on a medical/surgical floor, but who did not meet criteria for inpatient hospitalization. Therefore, there may be subtle differences in the individuals first recruited during the early pilot phase as compared with those randomly assigned to treatment.

Fourth, the utilization of past suicide attempts to determine chronicity is limited by the exclusion of other key variables associated with chronicity, such as self-hatred, emotion dysregulation, reported nature of suicidal thoughts, and history of inpatient hospitalizations. Adding these criteria to an algorithm for chronicity would enhance the ability to differentiate between chronic and acute suicidal individuals. Yet, as mentioned in the introduction and discussion sections, previous research has shown that multiple suicide attempters differ in significant ways from those with zero or one attempt, and they are more likely to reattempt suicide in the future. Therefore, it is meaningful to investigate the moderating effect that past attempts has on treatment outcomes.

Assessment time points were also affected by a change in methodology that occurred over the course of the study. Halfway through the study, it was decided that instead of assessing participants at the post-treatment and 6-month time points, assessment would be administered once per month until the 6-month time point. Therefore, it is possible that the added assessments may have resulted in unwanted treatment effects for those engaging in more frequent interactions with research personnel. Finally, the current study is limited by missing data. The reality of treatment development research with at-risk populations is that many participants have chaotic lives that prevent efforts by research staff conduct follow-up assessments. This limitation significantly affected the MANOVA and ANOVA analysis, as they are more sensitive to missing data. In comparison, HLM is able to account for missing data without eliminating cases, which is one of the main reasons that it was used over a time series

MANOVA and ANOVA when measuring the interaction of Typology and Time (Shafer & Graham, 2002; Atkins, 2005).

Future Directions

The current study has provided an expansion of previous research examining chronicity and suicidal ambivalence. To our knowledge, this is the first study to investigate the moderating effect of suicidal typologies on changes in level of functioning for patients receiving mental health services in an outpatient setting. The results suggest that the experimental condition, CAMS-PFT, may be more effective at treating the most severe suicidal patients, in terms of history of suicidal behaviors and desire to die. Future studies with larger overall sample sizes are needed to determine whether this finding is valid, as studies with small sample sizes that have moderate to large effect sizes often lead to overestimation of the true effect sizes for experimental conditions (Kraemer et al., 2006).

Additionally, future research is needed to determine how long treatment effects are maintained following the completion of treatment. Researchers who conducted the original study from which this data was used have received IRB approval to conduct a follow-up assessment at the 12-month mark and have begun to do so.

Conclusion

The current study investigated the extent to which Typology of suicidality affects the outcome on measures of suicidality and overall quality of life for individuals enrolled in a study measuring the effectiveness of CAMS-PFT as compared to TAU. The results suggest that by creating typologies of suicidality, it may be possible to match individuals

to specific treatments, which is consistent with stepped-care approaches to managing illness by community providers. The CAMS-PFT is one approach that may provide improved care for suicidal individuals treated in the community.

Outcome Questionnaire (OQ-45)

Looking back over the last week, including today, help us understand how you have been feeling. Read each item carefully and mark the box under the category which best describes your current situation. For this questionnaire, work is defined as employment, school, housework, volunteer work, and so forth.					
	Never	Rarely	Sometimes	Frequently	Almost Always
1. I get along well with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I tire quickly.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel no interest in things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel stressed at work/school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I blame myself for things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel irritated.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel unhappy in my marriage/significant relationship.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I have thoughts of ending my life.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel weak.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I feel fearful.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. After heavy drinking, I need a drink the next morning to get going. (If you do not drink, mark "never".)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I find my work/school satisfying.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I am a happy person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I work/study too much.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I feel worthless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am concerned about family troubles.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I have an unfulfilling sex life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I feel lonely.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I have frequent arguments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I feel loved and wanted.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I enjoy my spare time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I have difficulty concentrating.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I feel hopeless about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I like myself.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Disturbing thoughts come into my mind that I cannot get rid of.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I feel annoyed by people who criticize my drinking (or drug use)..... (If not applicable, mark "never".)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. I have an upset stomach.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. I am not working/studying as well as I used to.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. My heart pounds too much.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I have trouble getting along with friends and close acquaintances.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I am satisfied with my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Never	Rarely	Sometimes	Frequently	Almost Always
32. I have trouble at work/school because of drinking or drug use..... (If not applicable, mark "never".)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I feel that something bad is going to happen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I have sore muscles.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I feel afraid of open spaces, of driving, or being on buses, subways, and so forth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. I feel nervous.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. I feel my love relationships are full and complete.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I feel that I am not doing well at work/school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I have too many disagreements at work/school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I feel something is wrong with my mind.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. I have trouble falling asleep or staying asleep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. I feel blue.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. I am satisfied with my relationships with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. I feel angry enough at work/school to do something I might regret.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. I have headaches.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OUTPATIENT FOLLOW-UP TREATMENT STUDY FOR SUICIDAL INDIVIDUALS
RFLS

INSTRUCTIONS: Many people have thought of suicide at least once. Others have never considered it. Whether you have considered it or not, we are interested in the reasons you would have for **not** committing suicide if the thought were to occur to you or if someone were to suggest it to you.

On the following pages are reasons people sometimes give for **not** committing suicide. We would like to know how important each of these possible reasons would be to you at this time in your life as a reason to **not** kill yourself. Please rate this in the space at the left on each question.

Each reason can be rated from 1 (Not At All Important) to 6 (Extremely Important). If a reason does not apply to you or if you do not believe the statement is true, then it is not likely important and you should put a 1. Please use the whole range of choices so as not to rate only at the middle (2, 3, 4, 5) or only at the extremes (1, 6).

In each space put a number to indicate the importance to you of each reason for **not** killing yourself.

1. Not At All Important (as a reason for **not** killing myself, **or**, does not apply to me, I don't believe this at all).
2. Quite Unimportant
3. Somewhat Unimportant
4. Somewhat Important
5. Quite Important
6. Extremely Important (as a reason for **not** killing myself, I believe this very much and it is very important).

Even if you never have or firmly believe you never would seriously consider killing yourself, it is still important that you rate each reason. In this case, rate on the basis of **why killing yourself is not or would never be an alternative for you**.

In each space put a number to indicate the importance to you of each for **not** killing yourself.

- | | | | |
|----|-----------------------------|----|---------------------------|
| 1. | Not At All Important | 4. | Somewhat Important |
| 2. | Quite Unimportant | 5. | Quite Important |
| 3. | Somewhat Unimportant | 6. | Extremely Important |
-

- | | | |
|-------|----|---|
| _____ | 1. | I have a responsibility and commitment to my family. |
| _____ | 2. | I believe I can learn to adjust or cope with my problems. |
| _____ | 3. | I believe I have control over my life and destiny |
| _____ | 4. | I have a desire to live. |
| _____ | 5. | I believe only God has the right to end a life. |
| _____ | 6. | I am afraid of death |
| _____ | 7. | My family might believe I did not love them |

1.	Not At All Important	4.	Somewhat Important
2.	Quite Unimportant	5.	Quite Important
3.	Somewhat Unimportant	6.	Extremely Important

- _____ 8. I do not believe that things get miserable or hopeless enough that I would rather be dead
- _____ 9. My family depends upon me and needs me
- _____ 10. I do not want to die
- _____ 11. I want to watch my children as they grow
- _____ 12. Life is all we have and is better than nothing
- _____ 13. I have future plans I am looking forward to carrying out
- _____ 14. No matter how badly I feel, I know that it will not last
- _____ 15. I am afraid of the unknown
- _____ 16. I love and enjoy my family too much and could not leave them
- _____ 17. I want to experience all that life has to offer and there are many experiences I haven't had yet which I want to have
- _____ 18. I am afraid that my method of killing myself would fail
- _____ 19. I care enough about myself to live
- _____ 20. Life is too beautiful and precious to end it
- _____ 21. It would not be fair to leave the children for others to take care of
- _____ 22. I believe I can find other solutions to my problems
- _____ 23. I am afraid of going to hell
- _____ 24. I have a love of life
- _____ 25. I am too stable to kill myself
- _____ 26. I am a coward and do not have the guts to do it
- _____ 27. My religious beliefs forbid it
- _____ 28. The effect on my children could be harmful
- _____ 29. I am curious about what will happen in the future
- _____ 30. It would hurt my family too much and I would not want them to suffer
- _____ 31. I am concerned about what others would think of me
- _____ 32. I believe everything has a way of working out for the best
- _____ 33. I could not decide where, when, and how to do it
- _____ 34. I consider it morally wrong
- _____ 35. I still have many things left to do
- _____ 36. I have the courage to face life
- _____ 37. I am happy and content with my life

1.	Not At All Important	4.	Somewhat Important
2.	Quite Unimportant	5.	Quite Important
3.	Somewhat Unimportant	6.	Extremely Important

- _____ 38. I am afraid of the actual "act" of killing myself (the pain, blood, violence)
- _____ 39. I believe killing myself would not really accomplish or solve anything
- _____ 40. I have hope that things will improve and the future will be happier
- _____ 41. Other people would think I am weak and selfish.
- _____ 42. I have an inner drive to survive
- _____ 43. I would not want people to think I did not have control over my life
- _____ 44. I believe I can find a purpose in life, a reason to live
- _____ 45. I see no reason to hurry death along
- _____ 46. I am so inept that my method would not work
- _____ 47. I would not want my family to feel guilty afterwards
- _____ 48. I would not want my family to think I was selfish or a coward

OUTPATIENT FOLLOW-UP TREATMENT STUDY FOR SUICIDAL INDIVIDUALS SCALE FOR SUICIDE IDEATION (SSI)

Interviewer: “Think about a time in the last two weeks (or day things were so bad it brought you to the hospital- if admitted longer than 2 weeks ago) that you felt the most suicidal or the worst off emotionally. Think about that day and answer all of the following questions how you would have answered that day:” (If answers for SSI01-SSI05 are “0”, code SSI06-SSI19 “-8” and skip to next measure.)

I. CHARACTERISTICS TOWARD LIVING/DYING

*SSI01 _____ WISH TO LIVE

INT: “Can you tell me about your desire to live, your wish to live on that day? Was it moderate to strong? Weak? Or None?”

0 = Moderate to strong

1 = Weak

2 = None

*SSI02 _____ WISH TO DIE

INT: “Can you tell me about your desire to die, your wish to die on that day? Was it moderate to strong? Weak? Or None?”

0 = None

1 = Weak

2 = Moderate to strong

*SSI03 _____ REASONS FOR LIVING AND DYING

INT: “Would you say that your reasons for living outweighed your reasons for dying? Would you say that your reasons for dying outweighed your reasons for living? Or were they about equal?”

0 = For living outweigh for dying

1 = About equal

2 = For dying outweigh for living

*SSI04 _____ DESIRE TO MAKE ACTIVE SUICIDE ATTEMPT

INT: “(On that day) what was your desire to make an active suicide attempt, to actively harm yourself, actively kill yourself? Was there no desire at all? Was it a weak desire, or moderate to strong?”

0 = None

1 = Weak

2 = Moderate to strong

*SSI05 _____ PASSIVE SUICIDAL ATTEMPT

INT: “On that day did you have any passive suicidal feelings? For instance would you, in fact, take precautions necessary to save your life? Would you take medicine to save your life? Would you drive safely to keep yourself alive? Or, would you be deliberately careless, leaving life and death to chance? An example might be, crossing the street without looking, having a fatalistic attitude that if you live, you live; if you get hit, it was meant to be, i.e. not really caring what happens; being very careless with your life. Or, would you actively avoid steps to save or maintain your life, i.e. if you were diabetic, would you deliberately avoid taking your insulin as a way of showing that you didn’t care about life or death?”

0 = Would take precautions

1 = Would leave life/death to chance

2 = Would avoid steps necessary to save or maintain life

INT: (AT PRE-TX ONLY) If subject scores “0” for SSI04-SSI05, STOP interview and code the rest “-17”.

II. CHARACTERISTICS OF SUICIDE IDEATION/WISH

*SSI06 _____ TIME DIMENSION: DURATION

INT: “Did you have thoughts of suicide for brief, fleeting periods, i.e. momentary thoughts or images that come and go in a few seconds and do not interfere with the your ability to concentrate, solve problems, or attend to tasks? Were they longer than that, i.e.

suicidal thoughts that last a few minutes at a time and occupy your full attention but the thoughts do not last long enough to disrupt your activities? Or were they continuous, i.e. you are often absorbed in thoughts of suicide, thoughts pre-occupy you for many hours of the day and markedly disrupt your ability to concentrate and to attend to tasks?”

0 = Brief, fleeting periods

1 = Longer periods

2 = Continuous (chronic), or almost continuous

※SSI07 _____ TIME DIMENSION: FREQUENCY

INT: “How often did you have thoughts of suicide? Did they occur rarely, occasionally, i.e. you thought about suicide once or twice (at most) during a depressive episode, and no more than three or four times in a year? Did the thoughts occur more frequently, that is, intermittently, i.e. you did not think of suicide more than once a day (on average) during a depressive episode or more than once a week (on average) during one year? Or, did you have the thoughts all of the time or most of the time, i.e. you think of suicide at least once a day?”

0 = Rare, occasional

1 = Intermittent

2 = Persistent or continuous

※SSI08 _____ ATTITUDE TOWARD IDEATION/WISH

INT: “What were your attitudes toward suicide? Did you reject the notion of suicide, meaning that you feel that suicide is not a good option; it’s not okay to do; it’s wrong? Or was your attitude uncertain; you feel generally suicide may be wrong, but in some cases it’s okay, that if you are depressed enough, it makes sense...it’s understandable, but it could be a tragic mistake; you’re not sure? Or did you feel that suicide is your right; it’s okay to do; it’s something that you have choice about, and you accept that choice?”

0 = Rejecting

1 = Ambivalent; indifferent

2 = Accepting

※SSI09 _____ CONTROL OVER SUICIDAL ACTION/ACTING-OUT WISH

INT: “With regard to your suicidal thoughts, did you feel that you have control over those thoughts? Can you have the thoughts without doing anything to harm yourself? Or, were you not sure whether or not you could control your actions? Are your thoughts so strong that you might act on them? Did you feel that your thoughts about suicide are so strong that you have no sense of control over your actions, that you are in danger of harming yourself or killing yourself at any time?”

0 = Has sense of control

1 = Unsure of control

2 = Has no sense of control

※SSI10 _____ DETERRENTS TO ACTIVE ATTEMPT (e.g.,family, religion; serious injury if unsuccessful; irreversible) **Indicate deterrents, if any:** _____

INT: “Did thinking about anyone or anything prevent you from taking your own life, (i.e. family concerns; religious beliefs; the possibility of serious, irreparable injury if the attempt is unsuccessful; the pain and suffering involved in a suicide attempt; the fear of hurting or disturbing significant others; the belief that others need you; the fear of death; responsibility for a job)? Would [deterrents] absolutely prevent you from attempting suicide? Or, are you unsure that your concern about [deterrents] would absolutely prevent you from attempting suicide?”

0 = Would not suicide because of deterrent

1 = Some concern about deterrents

2 = Minimal or no concern about deterrents

*SSI11 _____ REASON FOR CONTEMPLATED ATTEMPT

INT: “When you thought about killing yourself, what were the main reasons? Was the main reason in order to get attention, to get revenge on someone who has hurt you, in order to let the world know how hurt you are or how much help you need? Or was the main reason to escape, to solve problems, to leave all the problems behind, to just end it all and get away from everything? Was it a combination of both: part of you wants help, wants to cry for help, wants to show that you need attention but part of you would also like to end all your problems and escape?”

0 = To manipulate the environment, get attention, revenge

1 = Combination of “0” and “2”

2 = Escape, surcease, solve problems

III.CHARACTERISTICS OF CONTEMPLATED ATTEMPT

*SSI12 _____ METHOD: SPECIFICITY/PLANNING

INT: “Had you thought of ways to kill yourself?” *(If ‘No’ score 0, skip to SSI13) If ‘Yes’: “How would you have killed yourself? (Ask additional questions to ascertain whether or not the subject has a specific suicide plan. If the subject cannot state the location or the height of the window from which she plans to jump, or if the subject does not know what kind of pills she would use, or how many pills she would need take, or where she would get the pills, score 1. If the subject reveals a specific plan, such as ‘I’d take out my gun and shoot myself in the head,’ or ‘I’d take all of my Benedryl, drink a fifth of whiskey, get into my car in the garage, turn on the engine and go to sleep forever,’ score 2.*

0 = Not considered

1 = Considered but details not worked out

2 = Details worked out/well-formulated

*SSI13 _____ METHOD: AVAILABILITY/OPPORTUNITY

INT: “Had you worked out the way to carry out your thoughts of suicide? Did you have the chance right then? Did you think that you would have the chance to kill yourself soon?” *(If subject answers i.e. ‘I’d shoot myself, but I don’t own a gun, and besides, with all my business and family obligation, I’d never get the chance to pull it off without someone noticing that something was wrong’ etc. score 0, skip to SSI14. If the subject believes that he could obtain the means to kill himself and that he could find the opportunity but the actions would require him to make special efforts i.e. ‘I’d have to make sure that I sent my kids away to my mother’s place upstate for the weekend, then I’d have to get a prescription for sleeping pills, and then I’d have to drive to a motel far away where nobody could call me or find me’ etc. score 1. If the subject has both the means and the opportunity readily available i.e. owns a gun and ammunition and lives alone score 2a. If the means and the opportunity will be available soon i.e. subject’s parents will be on vacation next week and the subject will be left alone with a medicine cabinet full of the parents’ medications score 2b.)*

0 = Method not available; no opportunity

1 = Method would take time/effort; opportunity not really available

2a = Method/opportunity available

2b = Future opportunity or availability of method anticipated

*SSI14 _____ SENSE OF “CAPABILITY” TO CARRY OUT ATTEMPT

INT: “Did you believe that you had the know-how, the ability, and the motivation to commit suicide? Did you know exactly what you’d have to do to cause your own death, and did you feel sure that you would not hesitate to harm yourself?”

0 = No courage, weak, afraid, incompetent

1 = Unsure of courage, competence

2 = Sure of competence, courage

*SSI15 _____ EXPECTENCY/ANTICIPATION OF ACTUAL ATTEMPT

INT: “Did you expect or anticipate at some point in the future that you will actually make a suicide attempt? Were you certain that you will not make an attempt? Were you unsure? Or, were you absolutely sure that at some point in the future you will make an attempt?”

0 = No

1 = Uncertain, not sure

2 = Yes

IV. ACTUALIZATION OF CONTEMPLATED ATTEMPT

***SSI16 _____ ACTUAL PREPARATION**

INT: “Did you take any steps to make it possible for you to take your own life? In other words: had you actually put your method into place?” *(Has not made any preparations, score 0. Preparations are not quite complete, i.e. has started collecting pills, score 1. Preparations are complete, i.e. the subject has acquired a sufficient quantity of pills to take his own life; the subject possesses a loaded gun, score 2.)*

- 0 = None
- 1 = Partial (e.g. starting to collect pills)
- 2 = Complete (e.g. had pills, razor, loaded gun)

***SSI17 _____ SUICIDE NOTE**

INT: “Did you start or finish writing a suicide note? What were the contents of the note?”

- 0 = None
- 1 = Started but not yet completed or deposited; only thought about
- 2 = Completed; deposited

***SSI18 _____ FINAL ACTS IN ANTICIPATION OF DEATH (insurance, will, gifts, etc.)**

INT: “Did you tie up loose ends because you anticipated dying? For example, did you take out an insurance policy or prepare a will?”

- 0 = None
- 1 = Thought about or made some arrangements
- 2 = Made definite plans or completed arrangements

***SSI19 _____ DECEPTION/CONCEALMENT OF CONTEMPLATED ATTEMPT**

INT: “Sometimes people hesitate to talk about their suicidal thoughts because other people will think they’re crazy or they will have to stay in the hospital. Could this have gone on with you? With your thoughts about suicide, did you tell someone close to you? Or did you hesitate? Did you deliberately not tell anybody so that no one could stop you?”

- 0 = Revealed ideas openly
- 1 = Held back on revealing
- 2 = Attempted to deceive

OUTPATIENT FOLLOW-UP TREATMENT STUDY FOR SUICIDAL INDIVIDUALS

Rate each item according to how you feel right now.

- 1) RATE PSYCHOLOGICAL PAIN (*hurt, anguish, or misery in your mind, **not** stress, **not** physical pain*):

Low pain: 1 2 3 4 5 :High pain

- 2) RATE STRESS (*your general feeling of being pressured or overwhelmed*):

Low stress: 1 2 3 4 5 :High stress

- 3) RATE AGITATION (*emotional urgency; feeling that you need to take action; **not** irritation; **not** annoyance*):

Low agitation: 1 2 3 4 5 :High agitation

- 4) RATE HOPELESSNESS (*your expectation that things will not get better no matter what you do*):

Low hopelessness: 1 2 3 4 5 :High hopelessness

- 5) RATE SELF-HATE (*your general feeling of disliking yourself; having no self-esteem; having no self-respect*):

Low self-hate: 1 2 3 4 5 :High self-hate

- 6) RATE OVERALL RISK OF SUICIDE:

Extremely low risk:
(will **not** kill self)

1 2 3 4 5

:Extremely high risk
(will kill self)

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UNIVERSITY OF WASHINGTON
CONSENT FORM
Outpatient Follow-Up Treatment Study for Suicidal Individuals

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Researchers' statement

We are asking you to be in a research study. The purpose of this consent form is to give you the information you will need to help you decide whether to be in the study or not. Please read the form carefully. You may ask questions about the purpose of the research, what we would ask you to do, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions, you can decide if you want to be in the study or not. This process is called "informed consent." We will give you a copy of this form for your records.

PURPOSE OF THE STUDY

We are interested in evaluating two approaches to outpatient mental health follow-up for patients who come to the emergency room/hospital/Crisis Intervention Services (CIS) because they are thinking about killing themselves or have attempted suicide. Both treatments are considered "next available appointments" in that the hospital or CIS will give you the next available appointment with a clinician at Harborview Mental Health Services to evaluate how you are doing and what additional care you might need. This is similar to what your clinician has planned for your follow-up if you don't participate in the study.

One treatment is the standard approach provided at Harborview Mental Health Services which includes seeing a mental health clinician and a psychiatrist for evaluation, treatment with psychiatric medications, support and validation, and referral for longer term care, housing, or other resources if you need them. The other treatment includes all of these things but also includes an experimental intervention focused specifically on changing the problems that are putting you at risk to kill yourself. We would like to see if the experimental treatment is an effective addition to the standard treatment alone.

STUDY PROCEDURES

Assessments

If you consent to participate, you will be interviewed today to confirm your eligibility for the study and to gather some pre-treatment information. The assessment interview will be conducted by a research interviewer and will last from 30-60 minutes. The assessments in the interview are about the following issues: self-injury over your lifetime, any thoughts or plans of killing yourself that led to your admission to the hospital or to seek care from CIS,

your reasons for living, any emotional or physical problems, and what medical, mental health or substance abuse treatment you have received. The most personal and sensitive questions we will ask concern what led to you thinking of killing yourself, background such as “since you were 12 years old, have you had any form of consensual sexual contact with a person of the same sex” and medical treatment you may have had. You are free not to answer any questions you do not wish to answer.

We would like some interviews to be audio taped in order to confirm the reliability of the interviews – that is, regardless of who gives the interview, the responses are almost the same. However, audio taping of assessments is optional and will only occur if you consent to it on the audio/video tape consent form.

We will repeat the interview every month for the next six months and again at a year from today. Thus, there will be a total of 8 interviews and 6-10 hours of assessment over the 12 months of the study. With your consent, we will contact you by phone (and by mail if we cannot reach you by phone) to confirm your interest in the study as well as your phone number and address and schedule the follow-up interview. We would also like your permission to contact you about future interviews or an additional follow-up study after the 12 month interview is complete. Saying yes now does not mean you have to do the additional interviews. Your permission simply allows us to contact you in the future.

Treatment

You will be randomly assigned (that is, like flipping a coin) to either

1. A standard “next available appointment” with a mental health clinician who will evaluate your needs and provide follow-up care including psychiatric evaluation, support and validation, psychiatric medications if they seem appropriate and you are willing, and referral to resources you may need OR
2. #1 plus an intervention focusing on evaluating and treating the specific problems that put you at risk to kill yourself.

Treatment will be provided at Harborview Mental Health Services (which is a couple of blocks away from the hospital). You will be provided with a specific appointment time with a specific clinician who will provide the treatment you were assigned to receive. Both treatments will last as long as seems appropriate to your clinician and yourself with the expectation that treatment will generally not last longer than 11 sessions. We will not tell you which treatment it is to prevent you being biased about what to expect. If you would like, after completing the 12 month assessment, we can provide this information in a debriefing session with our research coordinator.

After you have started treatment with the study, we may find that you need treatment that is not part of the study. If so, we will withdraw you from the study and help you get the treatment that you need. You or your health insurance would be responsible for the costs of such treatment.

As part of this study, we are asking you to give us permission to examine:

- your past and present inpatient and/or outpatient medical records

- your past and present inpatient and/or outpatient mental health records
- your past and present inpatient and/or outpatient substance abuse records

from Harborview Medical Center and University of Washington Medical Center, as well as future records during the 12 months of follow-up.

We may request permission to contact other past/present/future providers of medical, substance abuse or psychiatric inpatient and/or outpatient treatment to review your records and extract data for the research project. If so, you will be asked to sign a separate release of information form.

RISKS, STRESS, OR DISCOMFORT

It is expected that the interviews and questionnaires will be stressful for some people. Some people may experience increased emotional discomfort as they discuss past or present problems or their treatment history. Other people find this a useful way to express some of their feelings and gain helpful information about themselves. Interviews can be broken into sessions, include breaks, etc. as needed to decrease any discomfort you may experience. If during the interview today your discomfort should become extreme, a clinician will be available to help you. If it were during the telephone follow-up, the interviewer would assist you in contacting your outpatient treatment provider, if you have one, or county crisis services.

Likewise, meeting with a mental health clinician or psychiatrist can be stressful for some people, although again, others find it a helpful way to not only learn about themselves but also gain support and benefit from the clinician's advice. There are also risks if you are prescribed psychiatric medications. You are not required by this study to take any medications. However, if you do, the risks and benefits of each medication will be discussed with you by the psychiatrist before it is prescribed to you. The psychiatrist is also available for any questions or problems you might have with the medication and your clinician will provide you with referrals for follow-up of any medications you are still taking at the end of study treatment. Any concerns about treatment and medications will be addressed by your mental health clinician or psychiatrist. Any concerns about assessments or the study overall will be addressed by a research assistant or the project director, Dr. Katherine Anne Comtois.

If you are randomly assigned to the experimental treatment, video and/or audiotaping of your sessions will be conducted to assure the clinicians are following the treatment correctly, to improve the details of the treatment, and to analyze how what happens in treatment impacts the outcome of treatment. These tapes will be maintained indefinitely. However, you will be able to review the recordings and delete portions that you have discomfort with being maintained.

ALTERNATIVES TO TAKING PART IN THIS STUDY

If you choose not to participate in this study, you will be referred back to your Harborview clinician who can discuss comparable follow-up appointments you can receive outside of this study.

BENEFITS OF THE STUDY

This study provides direct benefit in that all participants will receive treatment at Harborview Mental Health Services. However, if you are randomized to the standard treatment option, this treatment will be comparable to what you would receive as a discharge plan from your Harborview clinician if you are not in the study. If you are randomized to the experimental condition, you will receive a new treatment that has been effective as an outpatient treatment study but has not been shown to be effective for patients who have just been to the emergency room or hospital. The purpose of this study is to see if it is indeed more effective than standard care. This study will benefit future patients who come to the hospital or CIS because they are thinking of killing themselves or have made a suicide attempt because it will provide information to Harborview and other local agencies to improve the treatments they offer to suicidal patients.

OTHER INFORMATION

You will be free to discontinue the study at any time without penalty or loss of benefits to which you are otherwise entitled.

You will be compensated for completing the interview today with a reimbursement of \$20. You will receive \$15 for the 1 month, 3 month, 6 month, and 12 month assessments and \$10 for the 2 month, 4 month and 5 month assessments. You can also receive an extra \$5 for each follow-up interview that you call us to schedule instead of us calling you and an additional \$5 for each follow-up interview you complete when it was originally scheduled. So the total amount you can earn over the course of the study is \$180. If you choose not to complete any part of the interview or you choose to withdraw from the study once you have started, you will receive the reimbursement for the interviews you completed by that time and for the interview during which you decided to withdraw.

All information you provide us will be strictly confidential with the following exceptions:

- If we have strong reason to believe that you are in danger of suicide, we will take steps to save your life.
- If you tell us you are going to hurt a person you identified to us, we will connect you with someone who can help you prevent the danger and/or alert that person or the police.

Government or university staff (including institutional oversight review offices at the research site, the UW, or state and federal regulators) sometimes review studies such as this one to make sure they are being done safely and legally. If a review of this study takes place, your records may be examined. The reviewers will protect your privacy. The study records will not be used to put you at legal risk of harm.

A code number will be assigned to your data and your name will not be linked to the data. The connection between your data and code number will be kept separately. Your data will

be placed in a locked room and only the research staff will have access to it. Your data will be kept in an identifiable form until February 2013. Data in an unidentifiable form will be retained until Feb 2016.

None of the forms used in our assessment interviews will be part of your medical record. However, forms specific to this research will be used by clinicians in the experimental arm of the study and will be part of the medical record. Your permission to review your medical records includes giving the study permission to copy these forms, remove all identifying information, and analyze the information with other assessment data.

Katherine Anne Comtois, Ph.D.

Investigator's Signature Principal Investigator's Name
Date

Signature of person obtaining consent Date Person obtaining consent Printed Name

Subject's statement

This study has been explained to me. I volunteer to take part in this research. I have had a chance to ask questions. If I have questions later about the research, I can ask one of the researchers listed above. If I have questions about my rights as a research subject, I can call the Human Subjects Division at (206) 543-0098. I give permission to the researchers to use my medical records as described in this consent form. I will receive a copy of this consent form.

Printed name of subject Signature of subject Date

Copies to: Researcher
 Subject