A POSITIVE PSYCHOLOGICAL APPROACH TO SUICIDE RISK IN A CLINICAL SAMPLE

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CHAPTER I

INTRODUCTION

Suicide takes the lives of approximately 32,000 Americans each year (Centers for Disease Control and Prevention, 2005) and touches the lives of thousands more considering that for each completed suicide, there are about 25 attempts (Goldsmith, Pellmare, Kleinmann, & Bunney, 2002). Additionally, suicide is somewhat of a taboo issue in society and individuals often have a hard time understanding why people choose to enact suicide. To help conceptualize suicidal behavior, Joiner (2005) proposed the interpersonal-psychological theory of suicide.

This theory holds that individuals who have high levels of perceived burdensomeness, thwarted belongingness, and acquired capability to enact suicide will be at greatest risk for attempting and completing suicide. First, thwarted belongingness occurs when an individual perceives that they are not a meaningful part of a social group, including close family and friends. Next, a person high in burdensomeness is likely to hold the self-perception that important others would be better off if they were dead due to strain imposed on others (e.g., financial, emotional). The theory holds that a person high in thwarted belongingness and burdensomeness will likely have a desire to die by suicide to escape the emotional pain which ensues. However, to actually end one's life, a person must be able to confront the physical pain and fear involved in a suicide attempt. Thus, a

person with the aforementioned risk factors and the acquired capability to enact suicide—habituation to painful and provocative situations through repeated exposure—will be at the highest suicide risk (Joiner, 2005). Recent studies have supported the importance of these interpersonal suicide risk factors in predicting suicidal ideation and suicide attempts (Davidson, Wingate, Rasmussen, & Slish, 2009; Van Orden, Witte, Gordon, Bender, & Joiner, 2008).

In an attempt to further understand suicidal behavior, several authors have underscored the importance of investigating suicide using constructs of positive psychology (Haghighat, Tatarelli, Pompili, & Girardi, 2007; Grewal & Porter, 2007; Hanna, 1991; Hanna & Green, 2004 Wingate et al., 2006), which focus on human strengths. One prominent theory in positive psychology is hope theory (Snyder, Harris, Anderson, and Holleran, 1991) which is composed of goals, pathways, and agency. A person with high hope tends to have many challenging goals, well defined strategies to achieve their goals (pathways), and plentiful motivation to pursue their goals (agency). Although several studies have demonstrated that people with high hope have lower levels of interpersonal suicide risk (Davidson et al., 2009; Davidson et al., 2010) and lower levels of suicidal ideation (Davidson et al., 2010; Range & Penton, 1994), there is still a dearth of research in this area.

Another well known construct in positive psychology is dispositional optimism (Scheier & Carver, 1985). Dispositional optimism is defined as a future-oriented positive outlook on life and it has been posited that people high in optimism tend to approach adaptive goals and avoid maladaptive goals (Carver, Scheier, & Chang, 2001). Similar to

hope, a few studies have provided evidence that optimism may serve as a buffer for suicidal ideation (Hirsch, Connor, & Duberstein, 2007; Hirsch, Wolford, LaLonde, Brunk, & Morris, 2007) although optimism has not been studied in relation to the interpersonal-psychological theory of suicide.

The current study aimed to replicate previous studies which demonstrated that hope and optimism were negatively associated with suicide risk. Importantly, this study may extend the meager research applying the study of human strength to suicidal behavior. In other words, perhaps individuals who are high in hope and optimism who also undergo a major life change that increases their burdensomeness and thwarted belongingness could overcome this setback better than those without these adaptive traits. Additionally, the sample consisted of outpatient treatment-seeking adults, a sample which could provide novel clinical and theoretical implications for each of these theories. Indeed, no studies to my knowledge investigated hope or optimism and suicide risk in a clinical sample, and few studies have investigated the interpersonal-psychological theory of suicide in a clinical sample (Van Orden, Lynam, Hollar, & Joiner, 2006; Van Orden et al., 2008), further highlighting the importance of the current study.

CHAPTER II

REVIEW OF LITERATURE

The interpersonal-psychological theory of suicide

The interpersonal psychological theory of suicide holds that individuals who contemplate, attempt, and complete suicide often have three risk factors present: (1) thwarted belongingness, (2) perceived burdensomeness, and (3) acquired capability to enact lethal self-injury (Joiner, 2005). First, thwarted belongingness refers to the idea that people at risk for suicide feel like they do not have meaningful social groups to which they belong and that others do not care about them. These groups often include family and friends. Indeed, research has shown that prior to enacting suicide, people frequently withdraw and isolate themselves from social situations (Trout, 1980). It has also been found that among women, those who were never married had the highest risk for suicide followed by married women without children and married women with children (Hoyer & Lund, 1993). In other words, women with children had the lowest suicide rates. In addition, there was a significant negative relationship between number of children and suicide rates such that the greater the number of children a mother had, the less likely she was to have enacted suicide (Hoyer & Lund, 1993). The phenomenon of belongingness has also been investigated in relation sports teams and the effect of "pulling together," or

the common social interactions inherent in cheering for a favorite team. Specifically, Joiner, Hollar, and Van Orden (2006) found that among fans of the Ohio State University Buckeyes and the University of Florida Gators, the worse the teams did, the higher the rates of suicide in the community surrounding the universities. These researchers also found that on the historic date of the "Miracle on Ice" when the United States defeated the favored USSR in hockey, there were lower suicide rates than on any other February 22nd from 1970-1989. Furthermore, it was shown that there were fewer suicides on Super Bowl Sundays than on the Sundays before and after Super Bowls (Joiner et al., 2006). Finally, research has shown that among heroin users, lower belongingness predicted higher likelihood of a past suicide attempt whereas lower belongingness did not predict higher rates of accidental overdoses (Connor, Britton, Sworts, & Joiner, 2007). Consistent with Joiner's (2005) theory, these results demonstrate that levels of belongingness only predicted suicide rates and not other factors that are present in heroin users lives. Thus, research suggests that if the need to belong to an important social group is not met, individuals tend to be at higher risk for suicide.

The second component of Joiner's (2005) interpersonal theory of suicide is perceived burdensomeness, which corresponds to the self-perception that an individual does not contribute meaningfully to important life domains such as work, academics, and social domains. In colloquial terms, these individuals feel like they do not pull their own weight. For example, a person who was formerly the family breadwinner but who started having medical difficulties and high medical bills as they aged, and thus had to retire, would likely experience some degree of perceived burdensomeness. Research has consistently shown that people with chronic medical problems such as cancer and

amyotrophic lateral sclerosis (ALS) often see themselves as a burden on others likely due to the financial, emotional, and time strains sometimes caused by serious medical difficulties (Ashby, et al., 2005; Chio, Gauthier, Calvo, Ghiglione, & Mutani, 2005; Cousineau, McDowell, Hotz, & Hérbert, 2003; de Faye, Wilson, Chater, Viola, Hall, & Seely, 2006; Ganzini, Johnston, & Hoffman, 1999; McPherson, Wilson, & Murray, 2007; Wilson, Curran, & McPherson, 2005). This phenomenon appears to be particularly prevalent among the terminally ill considering that a recent review found that 19%-65% of individuals who were terminally ill reported at least a moderate concern of potential burden caused by their medical condition (McPherson et al., 2007). Further, several studies have found that a perception of burden on family is a major reason terminally ill patients cite to support their desire for physician-assisted suicide (Blendon, Szalay, Knox, 1992; Ganzini, Silveira, & Johnston, 2002; Meier, Emmons, Wallenstein, Quill, Morrison, & Cassel, 1998; Morita, Sakaguchi, Hirai, Tsuneto, & Shima, 2004).

The burdensomeness construct has been found to predict suicidal ideation and suicide attempt status above and beyond age, gender, personality disorder status, depressive symptoms, and hopelessness (Van Orden et al., 2006). Finally, in another study blind raters scored two samples of suicide notes on five dimensions: (1) burdensomeness, (2) attempt to regulate their own emotions, (3) attempt to regulate relationships, (4) emotional pain, and (5) hopelessness (Joiner et al., 2002). The results from the first sample of notes indicated that burdensomeness differentiated between completers and attempters even when the other four dimensions were controlled for; whereas, none of the other dimensions significantly predicted attempter status. In addition, the second study found that burdensomeness (unlike the other four dimensions)

was significantly related to lethality of the method (Joiner et al., 2002). Therefore, when a person perceives that they are a burden to important others or society, their risk for suicide is often elevated.

Taken together, the first two components (thwarted belongingness and perceived burdensomeness) create the *desire* for suicide as a means to escape hopelessness, emotional or physical pain, or unwanted personal circumstances (Joiner, 2005). Indeed, research has shown that the interaction of burdensomeness and belongingness significantly predict suicidal ideation above and beyond age, gender, depressive symptoms, and the main effects of burdensomeness and belongingness which suggests that the combination of these two risk factors may place individuals at especially high risk for suicide (Van Orden et al., 2008).

However, the desire to enact suicide often is not enough, as the individual still must confront the inherent fear and pain which is involved in a suicide attempt. The third component of Joiner's (2005) theory, acquired capability to enact lethal injury, is proposed to be a necessary component of a suicide attempt. This portion of the theory refers to the process of habituation to the fear and pain which is often present in a suicide attempt through a process analogous to the opponent-processes theory (Solomon, 1980). For instance, research has found that when compared with non-suicidal psychiatric patients and healthy controls, individuals who had attempted suicide were significantly more likely to have experienced higher levels of violence in the past (Whitlock & Broadhurst, 1969). In addition, research has shown that even after controlling for common correlates with suicide risk, people who had been subjected to either physical or sexual abuse as children found to be more likely to have attempted suicide at least once in

their life than individuals with a history of molestation or verbal abuse (Joiner, Sachs-Ericson, Wingate, & Brown, 2005).

Also, among both adolescents and adults, it has been shown that individuals who have attempted suicide multiple times were at significantly higher suicide risk than one-time attempters or individuals with suicidal ideation (Lewinsohn, Rohde, & Seeley, 1996; Rudd, Joiner, & Rajad, 1996). Further, Cavanagh, Owens, and Johnstone (1999) found that a history of intentional self-harm was significantly related to death by suicide or undetermined death. Moreover, Van Orden and colleagues (2008) found in separate multiple regression equations that previous suicide attempts and previous exposure to painful and provocative experiences significantly predicted acquired capability to enact suicide. Finally, heroin users frequently subject themselves to physical pain through the injections of heroin they self-administer. Not surprisingly then, research has shown that suicide rates among heroin abusers were approximately 14 times higher than among the general population (Darke & Ross, 2002). Despite this, death by heroin overdose among these individuals is relatively rare, perhaps suggesting that the painful lifestyle and frequent self-injury contribute to the elevated suicide rate (Darke & Ross, 2002). Other research has found that heroin users who have experienced an unintentional non-lethal overdose were significantly more likely to also have attempted suicide (Braydvik, Frank, Hulenvik, Medvedeo, & Berglund, 2007). Overall then, emerging research has suggested that individuals who have been exposed to high levels of painful or provocative events tend to be at a higher risk for suicidal behavior.

Joiner's (2005) theory also holds that individual's with high levels of each component (i.e. thwarted belongingness, perceived burdensomeness, and acquired

capability to enact suicide) should be at especially high risk for suicide because they have both a desire to enact suicide and the capability to carry it out. A recent study partially tested this hypothesis by examining the predictive ability of the interaction between burdensomeness and acquired capability for clinician-rated suicide risk (Van Orden et al., 2008). Since data on thwarted belongingness was not available for this study, this element of the interpersonal-psychological theory of suicide was not examined. Results revealed that the interaction between burdensomeness and acquired capability significantly predicted suicide risk after controlling for gender, age, depression, and the main effects of acquired capability and burdensomeness (Van Orden et al., 2008).

Hope theory

A large proportion of research on suicide examines risk factors for suicide. An alternative approach, as proposed by Wingate et al. (2006) is to examine protective factors for suicidal behavior by using a positive psychology perspective. Hope is a popular construct in positive psychology that has accumulated a significant amount of empirical backing for nearly two decades. Snyder, and colleagues (1991) posited that the cognitive construct of hope consisted of three related elements which aid in the pursuit of goals; goals, pathways (strategies to achieve goals), and agency (motivation to achieve goals). Individuals high in hope tend to have challenging yet achievable goals, more goals and pathways, more agency to achieve goals and tend to continue pursuing their goals even after a setback (Snyder et al., 1991; Shorey, 2003). Further, hope has been linked with better outcomes in mental health (Snyder, 2002).

Specifically, hope has been shown to relate with less negative affect, more positive affect and self-esteem (Snyder et al., 1996), greater benefit finding following a

stressful event (Affleck & Tennen, 1996; Tennen & Affleck, 1999), and better social adjustment (Kwon, 2002). Hope has also been linked to lower levels of dysphoria in several undergraduate samples (Kwon, 2002; Snyder et al., 1991). Similarly, participants who are high in hope tend to endorse less depressive symptoms (e.g. Geffken et al., 2006; Kwon, 2002, Snyder, Hoza, Pelham, & Rapoff, 1997; Thio & Elliott, 2005). For instance, Geffken and colleagues (2006) investigated the relationships between hope, coping strategies, and depressive symptoms in individuals who were the primary caregivers of people with obsessive-compulsive disorder. Results revealed that hope was negatively related to depressive symptoms and positively related to adaptive coping strategies and that coping strategies mediated the relationship between hope and depressive symptoms. The authors suggested that individuals with higher hope evidenced less depression because they tend to avoid the use of denial and disengagement strategies and use more problem focused approaches, making difficult situations seem less daunting (Geffken et al., 2006). Further, among both nurses and children in a burn treatment unit, those with higher hope reported less anxiety symptoms (Barnum, Snyder, Rapoff, Mani & Thompson, 1998; McNeal, 1997). Also, Vietnam veterans receiving outpatient treatment for posttraumatic stress disorder (PTSD) were found to have very low levels of hope (Irving, Telfer, & Blake, 1997) suggesting that individuals who develop PTSD either may drop many of their goal-pursuit behaviors, or that those with high hope are somewhat resistant to develop this disorder.

More recently, a longitudinal study was conducted to examine the relationships between hope, anxiety, and depression (Arnau, Rosen, Finch, Rhudy, & Fortunato, 2007). Participants were asked to complete measures on 3 separate occasions at 1-month

intervals. Results of structural equation modeling analyses revealed that the agency subscale at Time 1 had a negative effect on both anxiety and depression 1 month later whereas the pathways component did not have a significant effect on either of the symptoms. Interestingly, neither anxiety nor depression had a significant longitudinal effect on pathways or agency. Overall, this suggests that agency can effect depression and anxiety over time, but that this effect is not reciprocal. The authors suggest that the pathways component may not have had a significant effect because the pathways and agency may have accounted for the same variance in depression and anxiety scores due to the high intercorrelations between the hope subscales (Arnau et al., 2007).

Relatively little empirical attention has been given to the applications of hope to suicide despite several authors highlighting the potential importance of this research (e.g. Haghighat, et al., 2007; Grewal & Porter, 2007; Hanna, 1991; Hanna & Green, 2004). Two studies have shown that hope is related to lower levels of suicidal ideation (Davidson, Wingate, Slish, & Rasmussen, 2010; Range & Penton, 1994) and research has also found that hope predicts lower levels of perceived burdensomeness and thwarted belongingness (Davidson, Wingate, Rasmussen, & Slish, 2009; Davidson et al., 2010) but higher levels of acquired capability to enact lethal self-injury (Davidson et al., 2009; Davidson et al., 2010). The authors hypothesized that a possible reason hope was related to higher levels of acquired capability is because people with high hope tend to set more goals and more challenging goals than people with low hope, thus potentially putting themselves in more situations where they could experience higher levels of physical or emotional pain (e.g. through failure to achieve a goal or through an accident). Despite this higher level of acquired capability to enact suicide, individuals with high hope are

still at lower risk to attempt or enact suicide due to the lower levels of burdensomeness and belongingness which have been posited to create the desire for suicide (Joiner, 2005). No research to my knowledge has examined hope as a protective factor for suicide in a clinical population. Such research in a clinical population is important because clinical populations tend to have higher rates of suicide than the general population. As such, understanding protective factors in such a population could lead to better intervention techniques for the prevention of suicide.

Dispositional optimism

Another construct in the area of positive psychology that has received a considerable amount of empirical support is dispositional optimism. Dispositional optimism is defined as a generally positive outlook which is present across many life domains (i.e. not situational) and has a future orientation (Scheier & Carver, 1985). Much like hope theory, optimism is a cognitive goal-directive construct wherein individuals high in optimism are proposed to move towards beneficial goals and away from less-useful goals (Carver, Scheier, & Chang, 2001). Snyder (2002) notes several important differences between hope in optimism. Specifically that optimism emphasizes only motivational (or agency-like) thought while hope assigns equal credence to both motivational (agency) and strategic (pathways) thought, optimism emphasizes self-regulation whereas hope emphasizes positive and negative emotions, and that the factor structure of the two scales differ (Snyder, 2002). Research has found that optimists tend to use more problem focused coping and social support (e.g. Aspinwall & Taylor, 1992; Brissette, Scheier, & Carver, 2002; Dougall et al., 2001) than pessimists. Further,

optimists have been found to have better physical and mental health outcomes (See Chang, 2001).

In the area of physical health, research on optimism has demonstrated better outcomes across medical patients and college students. For instance, less fatigue was reported among optimistic college students (Brown & Schutte, 2006) and cardiac patients (Ai et al., 2006). It was also found that optimistic patients with fibromyalgia tended to persist in their health-related goals even on days of increased fatigue and pain relative to their pessimistic counterparts (Affleck et al., 2001). Optimism has also been linked with the report of fewer physical symptoms in college students (Scheier & Carver, 1985; Üstündağ-Budak & Mocan-Aydin, 2005) and higher levels of self-rated health and lower levels of pain among medical patients without a chronic health condition (Achat, Kawachi, Spiro, DeMolles, & Sparrow, 2000). Better stress-related outcomes among optimists such as better sleep quality in patients with stress-related problems (Norlander, Johansson, & Bood, 2005) and a lower likelihood of experiencing negative physical health following daily hassles (Fry, 1995) have been found in some studies. However, two studies (A. Lyons & Chamberlain, 1994; A. C. Lyons & Chamberlain, 1998) found that stressors had a larger impact on physical symptoms among optimists than pessimists. Lastly, optimism of mothers has been linked to higher birth weight of infants (Lobel, DeVincent, Kaminer, & Meyer, 2000; Rini, Dunkel-Schetter, Wadhwa, & Sandman, 1999) but was not related to spontaneous abortion (Nelson, McMahon, Joffe, & Brensinger, 2003). Therefore, it has been repeatedly demonstrated that those with an optimistic outlook tend to have better outcomes across a diverse range of medical problems.

Similarly, patients high in optimism who underwent surgery have evidenced better outcomes. In patients who underwent coronary artery bypass surgery, optimism was related to positive affect, better surgery outcomes (Fitzgerald, Prochaska, & Pransky, 2000), better quality of life, faster recovery, less time needed to return to normal activities (Scheier et al., 1989), and less pain (Mahler & Kulik, 2000). Pessimism was also found to predict health-related interference in life domains and pain following bypass surgery (Mahler & Kulik, 2000). Further, optimistic patients who underwent joint-replacement surgery were found to have less functional disability (Smith & Zautra, 2004), recover more rapidly, have higher levels of self-rated health, and report less pain (Chamberlain, Petrie, & Azariah, 1992) than patients low in optimism. However, one study (Contrada et al., 2004) found that optimism was not associated with the recovery of patients who underwent heart surgery.

Additionally, optimism has been linked to better outcomes among patients with a chronic illness. For instance, optimism was associated with less distress, higher quality of life, and better treatment outcomes in ovarian cancer patients (De Moor et al., 2006), positive appraisal of illness and higher quality of life in African American breast cancer patients (Northouse et al., 1999), and higher levels of immune functioning in prostate cancer patients (Penedo et al., 2006). Another study (de Ridder, Fournier, & Bensing, 2004) found that optimistic patients diagnosed with either Type I Diabetes or multiple sclerosis did not tend to positively bias their symptom report. In other words, they were not unrealistically optimistic and were able to report their symptoms accurately.

Patients with fewer type I diabetes symptoms also have been shown to be higher in optimism (Motivala, et al., 1999). Optimistic patients with rheumatoid arthritis have

been shown to experience less pain (Tennen, Affleck, Urrows, Higgins, & Mendola, 1992; Treharne, Kitas, Lyons, & Booth, 2005) and to perceive more benefits to their illness (Tennen et al., 1992) than pessimists. Similarly, patients high in optimism with temporomandibular joint disorder (TMJ) have been found to have less pain sensitivity and a lower inflammatory response to stress (Costello, et al., 2002). Optimists were also found to be less likely than pessimists to evidence a progression of carotid artery disease over a three-year period (Matthews, Raikkonen, Sutton-Tyrrell, & Kuller, 2004).

The data on optimism and human immunodeficiency virus (HIV) is somewhat mixed. Specifically, optimism was found to be associated with better self-reported health (Tomakowsky, Lumley, Markowitz, & Frank, 2001) and less emotional distress (van Servellen, Aguirre, Sarna, & Brecht, 2002) but also with poorer immune functioning (Tomakowsky et al., 2001) among HIV patients. Finally, levels of optimism were shown to remain stable for 12 months during chronic illness (Fournier, de Ridder, & Bensing, 2002a) and optimism was related to higher levels of self-care among individuals with chronic illness (Fournier, de Ridder, & Bensing, 2002b).

With regard to mental health, individuals high in dispositional optimists have been shown to have lower levels of perceived stress and negative affect, higher levels of positive affect, (Hooker, Monahan, Shifren, & Hutchinson, 1992), better adjustment to college (Aspinwall & Taylor, 1992), less general distress following a traumatic event (Benight & Harper, 2002; Dougall et al., 2001, Sumer, Karanci, Berument, & Gunes, 2005), and less hopelessness and negative moods among homosexual men at risk for AIDS infection (Taylor et al., 1992). Further, optimists have been found to have lower levels of general anxiety symptoms (Brodhagen & Wise, 2008; Ziedner & Hammer,

1992), posttraumatic stress disorder symptoms (Ai, Evans-Campbell, Santangelo, & Cascio, 2006), and obsessive compulsive disorder symptoms (van der Velden et al., 2007). Individuals who have undergone a traumatic event and have high levels of optimism have reported more posttraumatic growth (positive changes following a traumatic event) in some studies (Affleck & Tennen, 1996; Curbow, Somerfield, Baker, Wingard, & Legro, 1993) but not in others (Zoellner, Rabe, Karl, & Maercker, 2008).

Additionally, research has demonstrated that people with high dispositional optimism tend to have less depressive symptoms postpartum (Carver & Gaines, 1987), post-abortion (Cozzarelli, 1993), in parents of children with cancer (Fotiadou, Barlow, Powell, & Langston, 2008), in caregivers of Alzheimer's Disease patients (Hooker et al., 1992) and in individuals who have experienced a traumatic event (e.g. Brodhagen & Wise, 2008; van der Velden et al., 2007; Ziedner & Hammer, 1992). Additionally, optimism has been shown to predict lower depressive symptoms prospectively in longitudinal studies (Bromberger & Matthews, 1996; Carver & Gaines, 1987; Cohen et al., 2001; Epping-Jordan et al., 1999; Fontaine & Jones, 1997; Giltay, Zitman, Kromhout, 2006; Schou et al., 2004; Shnek et al., 2001; Vickers and Vogeltanz, 2000), has mediated the relationship between racism and depressive symptoms (Ong & Edwards, 2008), and also mediated the relationship between benefit-finding and depression in telephone-administered therapy for Multiple Sclerosis patients (Hart, Vella, & Mohr, 2008).

Despite the considerable research investigating dispositional optimism's role in mental health, few studies have applied optimism to suicide. One study (Hirsch, Connor et al., 2007) found that even after controlling for depression severity and hopelessness, optimism predicted less suicidal ideation among college students. Additionally, Hirsch,

Wolford, and colleagues (2007) indicated that optimism served as a moderator for the relationship between negative life events and suicidal ideation and attempts such that those with higher levels of optimism tended to have lower levels of both suicidal ideation and attempts regardless of negative life events. However, optimism did not serve as a protective factor in individuals with the highest levels of negative life events (Hirsch, Wolford et al., 2007).

The current study

Therefore, the current study was designed to bring together two prominent theories in positive psychology—hope and optimism—with the interpersonal-psychological theory of suicide for a potentially greater understanding of suicide risk. Specifically, applying a positive psychological approach, which focuses primarily on human strengths, may help identify important protective factors for suicidal behavior. Although the existing studies incorporating hope and optimism have provided promising results, there is a need for additional research for several reasons. First, to my knowledge, no study has assessed both hope and optimism as predictors of suicide risk or suicidal ideation in the same sample. Therefore, it has not been possible to determine if one of these positive psychological constructs are more useful as protective factors for suicide. Further, no studies examining hope or optimism and suicidal behavior have been conducted with a clinical sample. Individuals in a clinical sample are likely at higher suicide risk than a general undergraduate or community sample, and thus may provide more useful information on protective factors for suicide. Finally, given the importance of drawing clinical implications from empirical studies, assessing risk in treatment-

seeking individuals provides a more valid sample from which important implications can be made.

To address these important gaps in the literature, it was hypothesized among individuals seeking individual outpatient therapy, (1) higher scores on hope and the hope subscales would predict lower levels of perceived burdensomeness (2) lower levels of thwarted belongingness, (3) higher levels of acquired capability to enact lethal self-harm, and (4) lower levels of suicidal ideation. Similarly, it was hypothesized that (5) higher optimism scores would predict lower levels of burdensomeness, (6) lower thwarted belongingness, (7) higher levels of acquired capability, and (8) less suicidal ideation. Also, to further validate the interpersonal-psychological theory of suicide, it was hypothesized (9) that the interaction between burdensomeness and thwarted belongingness would together positively predict suicidal ideation.

CHAPTER III

METHODOLOGY

Participants and Procedure

Participants consisted of 62 adults seeking individual outpatient therapy services at the Psychological Services Center (PSC) at Oklahoma State University. Potential participants were asked to complete the study either at intake or following a therapy session. Intake therapists were encouraged to ask for the participation of consecutive adult intakes seeking individual therapy. During data collection, 84 participants met these inclusion criteria and 62 participated (73.8%). Two of the initial 62 participants were excluded from data analyses due to extreme response style and missing data. The remaining 60 participants (37 female, 23 male) ranged in age from 18-69 ($\mu = 26.15$, *SD* = 9.64). Forty four participants self-identified as Caucasian (73.3%), six as American Indian (10.0%), three as Biracial (5.0%), two as Hispanic (3.3%), two as Asian American (3.3%), one as African American (1.7%), one as other ethnicity (1.7%), and one did not specify (1.7%). Most participants indicated they were currently in school, with ten identifying as freshman (16.7%), eight as sophomore (13.3%), eight as junior (13.3%), thirteen as senior (21.7%), two as other (e.g., fifth year student, 3.3%), and four as graduate student (6.7%). The remaining participants indicated that they were not currently in school (11; 18.3%) or did not specify (4; 6.7%).

Additionally, each client's therapist was asked to participate by answering questions about themselves, their client, and the treatment(s) being used. There were 15 therapist participants (12 female, 3 male) ranging in age from 22-51 ($\mu = 26.27$, *SD* = 6.91). The participants were either bachelors-level (11) or masters-level (4) therapists. Six identified as first year students (40%) six as second year students (40%) and three as third year students (20%). There were no inducements for participation for the clients or the therapists. Both the clients and therapists received full informed consent and all information was de-identified and kept confidential.

Materials

Interpersonal Needs Questionnaire (INQ; Van Orden, Witte, Gordon, Bender, & Joiner, 2008). The INQ was developed to measure levels of thwarted belongingness and perceived burdensomeness in participants. The scale consists of 18 items, with 9 items assessing thwarted belongingness (e.g., "These days, I feel disconnected from other people") and 9 items assessing perceived burdensomeness (e.g., "These days I think the people in my life wish they could be rid of me"). Responses are coded on a 7 point Likert-type scale (ranging from 1 = *Not at all true for me* to 7 = *Very true for me*) with higher scores reflecting greater degrees of thwarted belongingness and burdensomeness. Possible scores range from 9 to 63 on each of the subscales. Alpha reliabilities for the two subscales have been found to be approximately equivalent (Van Orden et al., 2008) In the current study Chronbach's alphas for burdensomeness and belongingness were .90 and .91 respectively.

Acquired Capability for Suicide Scale (ACSS; Van Orden, Witte, Gordon, Bender, & Joiner (2008).The ACSS is a 20-item measure designed to assess the degree of

habituation to painful stimuli (e.g., "I can tolerate a lot more pain than most people") and responses are scored on a 5-point Likert-type scale with a response of 0 = *Not at all like me* and 4 = *Very much like me*. The current scale was derived from the original 5-item scale and which was found to be negatively related to the Reason's for Living Inventory subscale Fear of suicide and an item from the Beck Scale for Suicidal Ideation which assesses courage to end one's life (Bender et al., 2007). Possible scores range from 0-80 and the Alpha reliability in the current study was .83.

Hopelessness Depressive Symptom Questionnaire-Suicidality Subscale (HDSQ-SS; Metalsky & Joiner, 1991; Metalsky & Joiner, 1997). The suicidality subscale of the HDSR was used to measure suicidal ideation. This subscale was designed as a part of a larger scale measuring symptoms of hopelessness in depression. The suicidality subscale consists of 4 items rated on a scale of 0-3 with varied responses corresponding to each number depending on the item and possible scores ranging from 0 to 12. The internal consistency and validity was found to be good for the overall scale and the internal consistency was .86 for the suicidality subscale (Joiner & Rudd, 1995; Metalsky & Joiner, 1997). In the current study, the internal consistency was .93.

Center for Epidemiologic Studies Depression Scale (CES-D; Locke & Putnam, 1971). The CES-D is a 20-item self-report measure where participants rate the severity of depressive symptoms during the previous week (e.g., "I felt sad"). Possible responses on a Likert-type scale range from 0 = *Rarely or none of the time (less than 1 day)* to *3 = Most or all of the time (5-7 days)* and possible scores ranging from 0 to 60. Research has demonstrated that the CES-D has good internal consistency, adequate test-retest

reliability, and can be used with clinical and non-clinical samples (Locke & Putnam, 1971). Internal consistency in the current study was .94.

Zung Self-rating Anxiety Scale (SAS; Zung, 1971). The SAS is a 20-item self-report measure using a 4-point Likert-type scale to assess participants' anxiety symptoms during the last week (e.g., "I feel more nervous and anxious than usual"). The scale ranges from *1 = A little or none of the time* to *4 = Most or All of the time.* Five items are reverse coded and scores range from 20 to 80. In the current study, the Chronbach's alpha was .90.

Revised Trait Hope Scale (HS-R2; Shorey, Little, Rand, Snyder, Monsson, & Gallagher, 2007). The HS-R2 is an 18-item self-report measure which uses a 7-point Likert-type scale ranging from 1 = *Definitely false* to 8 = *Definitely true*. The scale was adapted from the original Trait Hope Scale to explicitly assess participants' goals. Each component of hope is assessed with 6 questions (e.g., goals: "I clearly define the goals that I pursue;" pathways: "I can think of many ways to get out of a jam;" agency: "As long as I have a chance, I'll keep trying."). Total hope scores are calculated by adding the responses to all the questions together and possible scores range from 18 to 144. Research has shown that the HS-R2 is a better predictor of variables such as self-efficacy and general psychological symptoms (Shorey & Snyder, 2004). Internal consistency in the current study was .89.

Life Orientation Test Revised (LOT-R; Sheier, Carver, & Bridges, 1994). The LOT-R is a 10-item self-report measure designed to assess dispositional optimism (e.g., "In uncertain times, I usually expect the best"). Participants respond using a 5-point Likert-type scale ranging from 0 (S*trongly disagree*) to 4 (S*trongly agree*). The scale

contains 4 filler items, 3 positively scored items, and 3 negatively scored items and possible scores range from 6 to 30. Research has revealed that the scale consists of one factor, yields a Chronbach's alpha of .78, and that the LOT-R was found to be valid and highly correlated with the original LOT scale (Scheier et al., 1994). In the current study, the internal consistency was .81.

Therapist Questionnaire (TQ). The TQ is a 7 item measure which assesses the client's presenting problems, diagnosis or diagnoses, type of therapy used, and the therapist's gender, age, year in the program, and highest degree earned. The questionnaire was created for the current study.

CHAPTER IV

RESULTS

Preliminary Analyses

Means, standard deviations, and intercorrelations for all variables are presented in Table 1. Consistent with prior research (Davidson et al., 2009; Davidson et al., 2010; Van Orden et al., 2008), both burdensomeness and belongingness were positively associated with suicidal ideation, anxiety, and depression and negatively associated with hope, the hope subscales, and optimism. Further, hope and optimism were negatively related to depression and anxiety again similar to research reviewed above (e.g., Arnau et al., 2007; Bromberger & Matthews, 1996; Carver & Gaines, 1987; Cohen et al., 2001; Epping-Jordan et al., 1999; Geffken et al., 2006). The mean depression scores ($\mu = 29.93$) are above the 16-point cut off suggested by Locke and Putnam (1971) which is suggestive of depressive symptomology. This score is also above the 17-point and 23-point cut offs which are indicative of possible and probable depressive symptomology in a rural setting respectively (Husaini, Neff, Harrington, Hughes, & Stone, 1980). The mean anxiety scores ($\mu = 42.21$) are comparable to the average scores ($\mu = 46$) of individuals with anxiety disorders in Zung's (1971) original study. Presenting problems and diagnoses of the clients and therapeutic interventions used by the therapist are presented in Table 2. This information was collected from the clients' therapists and was

available for 56 clients. Further, since 42 (75%) of clients participated at intake and intake therapists generally do not suggest a therapeutic intervention, intervention data was available for only 14 participants. Presenting problems were defined as the reason(s) that the clients' identified for seeking therapy, whereas diagnoses refer to official *Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision* (*DSM-IV-TR*) diagnoses. Three most common presenting problems were depressive symptoms (33), anxiety symptoms (28), and relationship difficulties (13). Participants were most frequently diagnosed with Major Depressive Disorder (29), Generalized Anxiety Disorder (11), and Social Anxiety Disorder (6). Finally, most participants were treated with a cognitive-behavioral intervention (8) followed by interpersonal psychotherapy (4), behavior therapy (1), and cognitive therapy (1). It is important to note that presenting problems and diagnoses do not total 56, the total number of participants for whom this data was available, because many clients list more than one presenting problem and some are diagnosed with multiple disorders.

Hope Theory as a Predictor of the Interpersonal Suicide Risk and Suicidal Ideation

To test if hope and the hope subscales predicted the elements of the interpersonal-psychological theory, several hierarchical linear regression analyses were conducted. To statistically control for variables which have been linked to suicide risk, for all analyses, gender, age, and income were entered as independent variables in the first step of the regression. In the second step, anxiety and depression scores were entered. For each hypothesis, the appropriate independent variable (e.g., hope) was entered in the third step of the regression and the dependent variable was added. With regard to burdensomeness, results indicated hope was a significant negative predictor ($\beta = -.26$, $pr^2 = .07$, $p = .044$)

with hope accounting for an additional 4.1% of the variance in burdensomeness. Additionally, agency marginally positively predicted burdensomeness (β = -.26, pr^2 = .07, p = .052), accounting for an additional 5% of the incremental variance. Contrary to hypotheses, neither goals (β = -.16, pr^2 = .03, p = .195) nor pathways (β = -.17, pr^2 = .04, p = .131) significantly predicted burdensomeness. Table 3 presents an overview of these analyses.

To test if belongingness was significantly positively predicted by hope theory, hierarchical linear regressions were again conducted controlling for the aforementioned variables. Again, hope was a significant negative predictor (β = -.31, pr^2 = .07, p = .047; see Table 4) with hope accounting for an additional 4.6% of variance in belongingness. Further, pathways significantly negatively predicted variance in belongingness (β = -.26, pr^2 = .09, p = .024) with pathways accounting for 5.9% in incremental variance. Contrary to hypotheses, neither goals (β = -.14, pr^2 = .02, p = .283) nor agency (β = -.19, pr^2 = .03, p = .172) significantly predicted belongingness.

Next, hope and the hope subscales were examined as predictors of acquired capability. Results revealed that although hope was not a significant predictor (β = .26, pr^2 = .06, p = .073), goals was positively associated with acquired capability, accounting for an additional 6.7% of the variance (β = .30, pr^2 = .09, p = .030). Neither pathways (β = .14, pr^2 = .02, p = .274) nor agency (β = .16, pr^2 = .02, p = .302; see Table 5) were significant predictors of acquired capability. With regard to suicidal ideation, neither hope (β = -.16, pr^2 = .02, p = .304) nor the subscales goals (β = -.06, pr^2 < .00, p = .700); pathways (β = -.17, pr^2 = .03, p = .195); and agency (β = -.12, pr^2 = .01, p = .453) were significant predictors.

Therefore, after controlling for important suicide risk factors, hope and agency were significant negative predictors of burdensomeness while both hope and pathways significantly negatively predicted thwarted belongingness. Additionally, goals significantly positively predicted acquired capability while overall hope approached significance. Neither hope nor any of the hope subscales significantly negatively predicted suicidal ideation.

Optimism as a Predictor of the Interpersonal Suicide Risk and Suicidal Ideation

Similar to the analyses presented above, optimism was examined as a potential predictor of the components of the interpersonal-psychological theory of suicide by conducting several hierarchical regression analyses. Again, gender, age, and income were entered into step 1, and anxiety and depression were entered in as predictors in step 2 of the regression as statistical controls. As displayed, optimism significantly negatively predicted burdensomeness ($\beta = -.43$, $pr^2 = .17$, $p = .002$; see Table 6) and belongingness ($\beta = -.45$, $pr^2 = .17$, $p = .002$; see Table 7) and accounted for 10% and 11.1% of the remaining variance in burdensomeness and belongingness respectively. Contrary to hypotheses, optimism was not a significant positive predictor of acquired capability ($\beta = .16$, $pr^2 = .02$, $p = .339$) or suicidal ideation ($\beta = -.14$, $pr^2 = .01$, $p = .439$).

The Interpersonal-Psychological Theory as a Predictor of Suicidal Ideation

To determine if the interpersonal-psychological theory of suicide significantly positively predicted suicidal ideation, a hierarchical linear regression analysis was conducted. Step 1 and Step 2 of the analysis was identical to the previous analyses. Next, to control for main effects of the interpersonal-psychological theory the main effects of burdensomeness and belongingness were entered in as predictors in Step 3. In Step 4, the

2-way interaction between the burdensomeness and belongingness was entered since the theory indicates that suicidal ideation is the result of the combination of burdensomeness and belongingness (Joiner, 2005). Results indicated that the main effect of burdensomeness ($\beta = .42$, $pr^2 = .11$, $p = .013$) was significant whereas thwarted belongingness was not ($\beta = .16$, $pr^2 = .02$, $p = .325$). Finally, the interaction between burdensomeness and thwarted belongingness approach significance as a positive predictor of suicidal ideation ($\beta = .25$, $pr^2 = .07$, $p = .063$). The results of this analysis are presented in Table 8.

CHAPTER V

DISCUSSION

Joiner's (2005) interpersonal-psychological theory of suicidal behavior proposed that individuals who have a desire (due to high levels of thwarted belongingness and perceived burdensomeness) and the acquired capability to die by suicide are at particularly high risk for suicide attempts and completions. Research has also identified constructs that are associated with lower suicide risk (i.e., protective factors) such as hope and optimism. The current study investigated the interpersonal-psychological theory, hope, and optimism in a sample of outpatient therapy-seeking adults. Results were mainly consistent with our hypotheses that the interpersonal-psychological theory would predict higher levels of suicidal ideation and hope and optimism would predict lower levels of the components of Joiner's theory and suicidal ideation.

The first set of analyses examined hope theory as a positive predictor of interpersonal suicide risk and suicidal ideation after controlling for gender, age, income, anxiety, and depression. Results indicated that both hope and agency significantly negatively predicted thwarted belongingness scores (although agency approached significance $p = .052$). Contrary to hypotheses, the goals and pathways subscales failed to predict incremental variance in burdensomeness. Similarly, both hope and pathways

provided significant negative prediction of scores of thwarted belongingness, while goals and agency were not significant predictors. Although neither hope nor the hope subscales predicted acquired capability, overall hope scores approached significance (p = .073) somewhat consistent with previous studies showing a positive relationship between hope and acquired capability (Davidson et al., 2009; Davidson et al., 2010). Similarly, hope and the subscales did not significantly predict suicidal ideation.

Taken together, these results replicate and expand research indicating that hope serves as a protective factor for interpersonal suicide risk (Davidson et al., 2009; Davidson et al., 2010). Overall hope scores proved to be the most consistent predictors of the components of Joiner's theory of suicidal behavior likely because these scores provide the most accurate index of a person's hope. Specifically, the overall hope scores incorporate the three aspects of the theory (i.e., goals, pathways, and agency) and thus provide more information on each individual's trait hope. It is somewhat expected that people with high hope have lower levels of perceived burdensomeness since people who are consistently setting and achieving meaningful goals through the use of appropriate pathways and strong agency are unlikely to feel that they are not accomplishing or contributing anything meaningful. Indeed, it has been demonstrated that people with high hope have better outcomes in academics after controlling for earlier academic achievement (e.g., Chang, 1998; Curry, Snyder, Cook, Ruby, & Rehm, 1997; Snyder et al., 1991; Snyder et al., 1997) and athletics after controlling for coach-rated athletic ability (Curry et al., 1997).

If one considers that people high in hope also tend to be more friendly, happy, and confident (Snyder, 1994; Snyder et al., 1991) and report more social support (Glass,

Flory, Hankin, Kloos, & Turecki, 2009; Hagan, Myers, & Mackintosh, 2005, Horton & Wallander, 2001), it becomes clearer why hope would prove to be a negative predictor of thwarted belongingness. In other words, those with high hope are more likely to behave in ways that draw people closer and consider themselves to have a stable network of important others to depend on. Thus, a person with high hope is the very likeness of a person with a fulfilled need for belongingness.

Although hope was not a significant predictor of acquired capability, it approached significance. Additionally, previous studies found that hope did significantly positively predict acquired capability (Davidson et al., 2009; Davidson et al., 2010). The authors hypothesized that since people with higher hope tend to set more challenging goals and have more goals overall (Snyder, 1994) they may also be more likely to confront physical and emotional pain due to inevitable failure experiences. That is, since people with high hope are setting challenging goals, they may be taking more calculated risks that sometimes backfire and end in rejection. If an individual encountered enough failure experiences, they may start to habituate to their physical and emotional pain as outlined by Joiner (2005) and thus develop some acquired capability to enact suicide. However, it is important to note that even if an individual has a high level of acquired capability, they will likely not attempt suicide if they lack the desire for death by suicide—which is theorized to be caused by thwarted belongingness and perceived burdensomeness. Further, since people with high hope have been shown to have lower levels of both burdensomeness and belongingness in the current study and others (Davidson et al., 2009; Davidson et al., 2010); they will not tend to desire death by suicide. It is also important to consider that a low level of acquired capability could

merely reflect a certain mental and physical toughness that is gained through experience and could be beneficial. Empirical studies should examine if the higher levels of acquired capability in high hopers merely reflects this adaptive toughness.

The finding that hope and the subscales were not significant negative predictors of suicidal ideation is also contrary to previous research (Davidson et al., 2010; Range & Penton, 1994) and may be due to the relatively small sample size. This smaller sample may have resulted in decreased statistical power so the effect was undetectable, especially considering the correlation between hope and suicidal ideation approached significance. Additionally, although the current sample was a treatment seeking sample, only 6 participants indicated that suicidal behavior was a presenting problem for treatment. It is possible that there were not enough participants who endorsed suicidal ideation for this statistical test to be meaningful.

Dispositional optimism also proved to be a meaningful negative predictor of interpersonal suicide risk. Specifically, after controlling for gender, age, income, anxiety, and depression, people high in optimism tended to have lower scores on both burdensomeness and thwarted belongingness. As discussed earlier, it has been found that a major cause of perceptions of burdensomeness can be medical problems. If a person becomes so sick that they cannot continue to work or their medical bills become so high they cannot pay them, a person may experience high levels of burdensomeness. However, a large literature of empirical studies (as reviewed in the introduction) has suggested that people who have an optimistic outlook tend to adjust more adaptively to physical illness (e.g., Achat et al., 2000; Affleck et al., 2001; Ai et al., 2006; Norlander et al., 2005) and surgery and recover from surgery more quickly (Chamberlain et al., 1992; Fitzgerald et

al., 2005; Mahler & Kulik, 2000; Schieier et al., 1989; Smith & Zautra, 2004) than pessimists. Thus, optimists should also be less likely to report high levels of burdensomeness due to medical problems. Additionally, due to their positive outlook on life, optimists may simply view setbacks in achievement domains in a positive light. For instance, an optimistic person who was fired from their job could view this event as a temporary setback that will prove to be a valuable learning experience. Research has supported a similar idea; that is, people high in optimism are likely to display higher levels of posttraumatic growth following a traumatic event (Affleck & Tennen, 1996; Curbow et al., 1993). For instance, optimists could use the traumatic event as a catalyst to re-examine their life values or direction, realize their own personal strengths, or to not spend time worrying about the small upsets in life.

Optimists have also been shown to have higher levels of social support (e.g., Aspinwall & Taylor, 1992; Brissette, Scheier, & Carver, 2002; Dougall et al., 2001; Matthews & Cook, 2009), seek social support more often (Scheier et al., 1994) and score lower on measures of alienation and social anxiety (Scheier & Carver, 1985) making them less likely to feel like they do not belong. Further, due to the negative association between optimism and depression, it is likely that optimists less frequently engage in negative interpersonal styles such as excessive reassurance seeking (Joiner, Metalsky, Katz, & Beach, 1999) and stress generation (Hammen, 1991). These interpersonal styles are often aversive to others and can serve to push friends and family away. Thus, optimists are unlikely candidates for high levels of thwarted belongingness.

Contrary to hypotheses, optimism was not a meaningful predictor of acquired capability or suicidal ideation. Considering the similarities between hope and optimism in

their future-oriented focus on goal pursuit, it is somewhat surprising that hope was positively associated with acquired capability (although this relationship was no longer significant after controlling for other variables) whereas optimism was not. However, as noted by Snyder (2002), optimism lacks the pathways component of goal pursuit. This difference may have been enough to drop the relationship between optimism and acquired capability below conventional significance. The finding that optimism was not associated with suicidal ideation is contrary to previous research (Hirsch, Connor, & Duberstein, 2007; Hirsch, Wolford et al., 2007) which indicated optimism was a significant predictor of suicidal ideation. Again, it is possible that low sample size is responsible for this analysis not reaching conventional significance.

Finally, results revealed that the main effect of burdensomeness, but not the main effect of belongingness, significantly predicted suicidal ideation after controlling for the aforementioned suicide risk factors. Additionally, although the interaction between burdensomeness and belongingness (which was theorized to result in the desire for death by suicide and suicidal ideation) did not reach conventional levels of significance, the test was again approaching significance (p = .063). Since all the hierarchical regressions which predicted suicidal ideation were marginally significant, it seems possible that these tests would reach conventional significance with a larger sample size. These results indicate that for the current sample, burdensomeness proved to be a more meaningful predictor of suicidal ideation than thwarted belongingness. Overall, Joiner's (2005) interpersonal-psychological theory of suicide was partially supported in the current study. It should be noted that several studies have supported the theory (e.g., Connor et al., 2007; Joiner et al., 2006; Van Orden et al., 2006; Van Orden et al., 2008) and additional

research should be conducted with a larger sample to determine if these marginally significant finds were due to low statistical power.

The current study is not without limitations. As previously mentioned, several of the effects in the study were approaching significance and it and it is possible that these effects would reach significance with more statistical power. If the study had included more participants, the results would possibly be more informative because this issue would be resolved. Further, since this study was conducted with a cross-sectional design, it is not possible to determine if a given variable preceded another in time. A prospective design would allow the test of such an assertion and would strengthen any findings. For instance, it would be possible to compare the effects of optimism on suicide risk to those of suicide risk on optimism over time to determine if one effect is stronger than the other. Finally, this study is somewhat limited in generalizibility given that the majority of participants were Caucasian and all presented to the same student training clinic. It is possible that the results would differ among the various ethnic groups and if the study were conducted in a different clinical setting (e.g., a community-based clinic, a Veteran's Affairs Medical Center). However, it should be noted that the hypotheses regarding hope and interpersonal suicide risk have been tested in a predominantly Caucasian undergraduate sample (Davidson et al., 2009) and an African American undergraduate sample (Davidson et al., 2010) with similar results.

Despite these limitations, the current study may have important implications for clinical practice. Given the recent empirical support for the interpersonal-psychological theory of suicide, applying this framework in the assessment and intervention of individuals at risk for suicide would likely provide additional information during the

assessment and meaningful interventions if a client is in a crisis. Indeed, Joiner, Van Orden, Witte, and Rudd (2009) outline a decision tree to determine a client's level of suicide risk and specific interventions based on the theory. Some examples include increasing a client's feelings of belongingness by emphasizing the therapeutic relationship, and encouraging them to seek social support. To decrease perceptions of burdensomeness, individuals can be encouraged to engage in behavioral activation that contributes to the community such as volunteering or giving blood. Acquired capability is generally less fluid, but clients should still be encouraged to curtail activities that will further increase habituation to pain and fear of death involved in a suicide attempt.

With regard to the positive psychological constructs hope and optimism, it is interesting that both negatively predicted interpersonal suicide risk after common risk factors were controlled for. This may suggest that assessing for levels of hope and optimism in clients at risk for suicide may provide important information for clinicians. Even individuals in a suicidal crisis may be able to identify areas of hope and/or optimism in their life such as an important relationship with a loved one. This glimmer of hope or optimism could then be encouraged by focusing on the importance of this area of the person's life in session or assigning homework focused on this area.

Future research should aim to test the importance of assessing and intervening on burdensomeness and thwarted belongingness as outlined by Joiner and colleagues (2009). Studies could compare the efficacy of a suicide crisis intervention that is informed by Joiner's (2005) model to a traditional suicide assessment and intervention and a waitlist control. Further, it is crucial to test what role hope and optimism play in individuals in a suicidal crisis before any interventions based on these theories are employed in clinical

practice. As mentioned earlier, research studies employing a longitudinal design would allow for the comparison of various effects over time and possibly provide a greater understanding of how these variables interact. Additionally, it would be interesting to compare the relative contributions of hope, hopelessness, and optimism to prediction of suicide risk and suicidal behavior to potentially obtain a more complete picture of suicide risk and preventative factors.

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APPENDIX A

Tables

Table 1: Correlations between the Variables and Their Means and Standard Deviations

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Depress	-										
2. Anxiety	.82**	-									
3. Acquire	-.14	-.28*	-								
4. Burden	.63**	.56**	.06	-							
5. Belong	.55**	.42**	-.15	.59**	-						
6. Ideation	.27*	.30*	.07	.48**	.32*	-					
7. Hope	-.53**	-.45**	.27*	-.51**	-.52**	-.25	-				
8. Goals	-.46**	-.37**	.30*	-.40**	-.40**	-.17	.87**	-			
9.Pathway	-.27*	-.24	.21	-.32*	-.42**	-.20	.71**	.37**	-		
10.Agency	-.57**	-.50**	.19	-.52**	-.47**	-.24	.91**	.78**	.46**	-	
11. Opt	-.65**	-.61**	.24	-.67**	-.62**	-.25	.58**	.36**	.47**	.60	-
M	29.93	42.21	43.25	25.02	31.23	1.22	93.93	32.22	30.82	30.90	20.20
SD	14.81	11.25	13.03	11.62	13.84	2.09	21.90	8.33	7.96	9.86	5.69

Note: *$p < .05$, ** $p < .01$. Depress = Center for Epidemiologic Studies Depression Scale; Anxiety = Zung Self-Rating Anxiety Scale; Acquire = Acquired Capability for Suicide Scale; Burden = Interpersonal Needs Questionnaire-Burdensomeness Subscale; Belong = Interpersonal Needs Questionnaire-Thwarted Belongingness Subscale; Ideation = Hopelessness Depressive Symptom Questionnaire-Suicidality Subscale; Hope = Revised Trait Hope Scale Total Score; Goals = Revised Trait Hope Scale-Goals Subscale; Pathway = Revised Trait Hope Scale-Pathways Subscale; Agency = Revised Trait Hope Scale-Agency Subscale; Opt (Optimism) = Life Orientation Test Revised .

Table 2: Diagnoses, Presenting Problems, and Interventions

Presenting Problems		Diagnoses		Interventions	
	n		*n*		*n*
Depressive symptoms	33	Major Depression	29	Cognitive-Behavioral	8
Anxiety symptoms	28	Panic Disorder	3	Interpersonal	4
Relationship difficulties	13	Social Phobia	6	Behavioral	1
Suicidal behavior	6	Specific Phobia	2	Cognitive	1
Bereavement	3	GAD	11	Intake Session	42
Sexual dysfunction	1	OCD	2		
		Bipolar Disorder	1		
		PTSD	4		
		Personality Disorder	2		
		Adjustment Disorder	9		
		Bereavement	1		

Note: Numbers in the Presenting Problems and Diagnoses column do not total 56 because clients can list more than one presenting problem and receive multiple diagnoses. GAD = Generalized Anxiety Disorder; OCD = Obsessive Compulsive Disorder; PTSD = Posttraumatic Stress Disorder.

Table 3: Hope Theory as Predictors of Burdensomeness

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	0.92	.05		3, 56		.438
Gender			0.28		.04	.785
Age			1.63		.22	.109
Income			0.24		.03	.808
2	7.43**	.41		5, 54		.000
Anxiety			0.62		.08	.538
Depression			2.67		.53**	.010
3	7.28**	.45		6, 53		.000
Hope			-2.07		-.26*	.044
3	6.56**	.43		6, 53		.000
Goals			-1.31		-.16	.195
3	6.73**	.43		6, 53		.000
Pathways			-1.53		-.17	.131
3	7.18**	.45		6, 53		.000
Agency			-1.99		-.26	.052

Note: *$p < .05$, ** $p < .01$.

Table 4: Hope Theory as Predictors of Thwarted Belongingness

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	3.51*	.16		3, 56		.021
Gender			-0.89		-.11	.377
Age			2.82		.36**	.007
Income			-0.01		.00	.992
2	6.13**	.36		5, 54		.000
Anxiety			-0.17		-.04	.864
Depression			2.46		.51*	.017
3	6.10**	.41		6, 53		.000
Hope			-2.56		-.31*	.047
3	5.32**	.38		6, 53		.000
Goals			-1.09		-.14	.283
3	6.43**	.42		6, 53		.000
Pathways			-2.33		-.26*	.024
3	5.52**	.38		6, 53		.000
Agency			-1.39		-.19	.172

Note: *$p < .05$, ** $p < .01$.

Table 5: Hope Theory as Predictors of Acquired Capability

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	4.40**	.19		3, 56		.008
Gender			-2.52		-.31*	.015
Age			-3.11		-.39*	.003
Income			-0.41		.05	.682
2	3.18*	.23		5, 54		.014
Anxiety			-1.56		-.35	.126
Depression			1.06		.24	.294
3	3.33**	.27		6, 53		.007
Hope			1.83		.26	.073
3	3.68**	.29		6, 53		.004
Goals			2.24		.30*	.030
3	2.87*	.25		6, 53		.017
Pathways			1.11		.14	.274
3	2.84*	.24		6, 53		.018
Agency			1.04		.16	.302

Note: *$p < .05$, ** $p < .01$.

Table 6: Optimism as a Predictor of Burdensomeness

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	0.89	.05		3, 56		.454
Gender			0.30		.04	.761
Age			1.59		.22	.118
Income			0.30		.04	.763
2	7.87**	.43		5, 54		.000
Anxiety			0.72		.14	.474
Depression			2.73		.53**	.009
3	9.62**	.53		6, 53		.000
Optimism			-3.31		-.43**	.002

Note: *$p < .05$, ** $p < .01$.

Table 7: Optimism as a Predictor of Thwarted Belongingness

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	3.43*	.16		3, 56		.023
Gender			-0.89		-.11	.378
Age			2.80		.36**	.007
Income			-0.03		.00	.997
2	6.08**	.36		5, 54		.000
Anxiety			-0.14		-.03	.893
Depression			2.46		.51*	.017
3	7.85**	.48		6, 53		.000
Optimism			-3.31		-.45**	.002

Note: *$p < .05$, ** $p < .01$.

Table 8: The Interpersonal-Psychological Theory as a Predictor of Suicidal Ideation

Predictors entered in set	*F* for set	R^2	*t* for predictors	*df*	β	*p*
1	0.28	.02		3, 56		.838
Gender			-0.50		-.07	.621
Age			-0.69		-.09	.493
Income			0.50		.07	.622
2	1.86	.15		5, 54		.117
Anxiety			1.29		.31	.203
Depression			0.38		.09	.705
3	3.19**	.30		7, 52		.007
Burden			2.58		.42*	.013
Belong			1.00		.16	.325
4	3.39**	.35		8, 51		.003
Burden X Belong			1.90		.25	.063

Note: Burden = Perceived Burdensomeness; Belong = Thwarted Belongingness.

APPENDIX B

IRB Form

Oklahoma State University Institutional Review Board

Date	Wednesday, September 03, 2008
IRB Application No	AS0855
Proposal Title:	Clients' Self-Perception, Beliefs About the Future and Mental Health
Reviewed and Processed as	Expedited

Status Recommended by Reviewer(s): Approved **Protocol Expires: 9/2/2009**

Principal Investigator(s):

LaRoke R. Wingate
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Stillwater, OK 74074

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sheila Kennison, Chair
Institutional Review Board

VITA

Collin L. Davidson

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE ROLE OF HOPE IN DELAY DISCOUNTING

Major Field: Psychology

Biographical:

Personal Data: Born in Winona, Minnesota, on July 31, 1983, the son of Craig and Janet Davidson

Education:

Completed the requirements for the Doctor of Philosophy in psychology at Oklahoma State University, Stillwater, Oklahoma in May 2011.

Completed the requirements for the Master of Science in psychology at Oklahoma State University, Stillwater, Oklahoma in December 2007.

Completed the requirements for the Bachelor of Arts in psychology at the University of Kansas, Lawrence, Kansas in May 2006.

Experience: Completed pre-doctoral practica at the Oklahoma State University Health Science Center, Tulsa, Oklahoma, June 2009, and the Veteran's Affairs Medical Center, Oklahoma City, Oklahoma, May 2010.

Professional Memberships: American Psychological Association and Association for Behavioral and Cognitive Therapies.

Name: Collin L. Davidson Date of Degree: July, 2012

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: A POSITIVE PSYCHOLOGICAL APPROACH TO SUICIDE RISK IN A CLINICAL SAMPLE

Pages in Study: 65 Candidate for the Degree of Doctor of Philosophy

Major Field: Psychology

Scope and Method of Study: To examine risk and protective factors for suicide in a clinical sample, 62 individuals seeking outpatient therapy at the Psychological Services Center in Stillwater, Oklahoma were sampled. Participants completed several questionnaires assessing anxiety, depression, suicidal ideation, hope, optimism, and the interpersonal-psychological theory of suicide. The participants' therapist was also asked to complete several demographic questions and information about the clients diagnoses, presenting problems, and intervention(s) used.

Findings and Conclusions: Overall, results revealed that both hope and optimism were significantly negatively related to perceived burdensomeness and thwarted belongingness. This suggests that people who have higher hope or optimism are buffered from suicide risk. Further, the interpersonal psychological theory of suicide approached significance in predicting suicidal ideation. It is important to note that the current study was a strong test of these hypotheses since known risk factors for suicidal behavior were statistically controlled for in all analyses.

ADVISER'S APPROVAL: LaRicka R. Wingate