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# Evidence for the interpersonal theory of suicide in a clinical sample in Mexico

Maria Gabriela Hurtado Alvarado  
*University of Toledo*

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A Dissertation

entitled

Evidence for the Interpersonal Theory of Suicide in a Clinical Sample in Mexico

by

Maria Gabriela Hurtado Alvarado

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Doctor of Philosophy Degree in Clinical Psychology

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Dr. Joseph D. Hovey, Committee Chair

---

Dr. Jon D. Elhai, Committee Member

---

Dr. Jason C. Levine, Committee Member

---

Dr. Jason P. Rose, Committee Member

---

Dr. Rebecca Lusk, Committee Member

---

Dr. Patricia R. Komuniecki, Dean  
College of Graduate Studies

The University of Toledo

August 2015

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An Abstract of  
Evidence for the Interpersonal Theory of Suicide in a Clinical Sample in Mexico

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Maria Gabriela Hurtado Alvarado

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Previous research findings have shown that suicide rates have significantly increased within the past few years in Mexico. However, there is a limited amount of evidence available regarding suicidal behaviors in Mexico. The main purpose of the present study is to (1) identify who is at risk of experiencing suicidal ideation, (2) examine the generalizability of the model proposed by the interpersonal theory of suicide to other cultures, and (3) examine the relationship between depression, hopelessness, interpersonal needs, and the acquired capability to die regarding suicidal behaviors, as dictated by the interpersonal theory of suicide in an inpatient adult sample in Mexico. A total of 199 adults receiving inpatient treatment for substance use participated in the present study. The participants completed a survey packet of self-report questionnaires in a paper-pencil format. The survey included the Personal Resources Questionnaire (PRQ-85; Weinert, 1987), the Beck Hopelessness Scale (BHS; Beck et al., 1974), the Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown, 1996), the Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2008), the Acquired Capacity for Suicide Scale (ACSS; Van Orden et. al., 2008), and the Suicide Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001). The findings showed that depression, hopelessness,

thwarted belongingness, and perceived burdensomeness had a significant association with suicidal behaviors. On the other hand, social support had a significant negative association with suicidal behaviors. Additionally, the acquired capacity to die was not associated with suicidal behaviors. Two hierarchical regressions were conducted to further examine these relationships. The results revealed that the interaction between the interpersonal needs did not predict suicidal ideation. However, the main effects for depression were significant predictors of suicidal ideation. In the second set of analyses, the interaction between perceived burdensomeness and the acquired capacity significantly predicted suicidal behaviors, whereas the hypothesized three-way interaction did not. The findings of this study can aid in the understanding of the critical contributors to suicidal behaviors among Mexican adults. The primary implication of these findings is to inform the development of appropriate suicide prevention efforts.

Para mis papas, que me ofrecieron el mundo. Muchas gracias por todo su apoyo y cariño.

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## **Chapter One**

### **Introduction**

According to the World Health Organization, every year approximately 800,000 people die by suicide worldwide, which translates to 1 death by suicide every 40 seconds. Suicide continues to be a concern for high-income countries; however, it is low and middle-income countries that undertake the largest strain of global suicide. These countries have lower amounts of budget allocation for public health resources, which translates to a limited infrastructure and human resources to provide services to their communities. Therefore, efforts to prevent suicidal behaviors are scarce in low and middle-income countries. As a result, the WHO (World Health Organization [WHO], 2009) has noted that it is imperative for suicidal research to be conducted in highly populous low and middle-income countries, such as Mexico.

Mexico ranks fourth among all Latin American countries in its number of suicides (WHO, 2009). Moreover, there is limited available evidence in the country regarding suicidal behaviors. The statistics about suicidal behaviors obtained through the National Institute of Statistics and Geography (INEGI) and other research groups in Mexico have significant methodological deficiencies (i.e., reduced power, limited measures, poor design) and some are event discrepant (Aguila, 2010). Nonetheless, epidemiological studies, such as the WHO worldwide survey (2008), have found that suicide in Mexico has continued to increase since the 1990s. In fact, suicide is now the second leading cause of death in Mexico such that suicide increased from 2.0 in 2010 to 7.7 deaths per 100,000 individuals in the past three years (Cordova, Cubillas & Roman, 2011). In short, despite the overall low suicide rate in Mexico, the available data suggests that there is

a significantly growing increase in suicide rates in Mexico. The fast paced increase in the suicide rates is extremely concerning and therefore, it is imperative that suicide research identifies the factors that contribute to this growth.

Unfortunately, regardless of the available evidence presented above, suicide continues to be ignored as a public health problem. The gap in the research literature regarding the etiology of suicidal behaviors among individuals of Mexican-origin, including the exploration of factors that may increase and/or ameliorate suicidal risk, has been a significant barrier in the creation of adequate prevention and intervention programs. In fact, the psychiatric emergency services available are very limited outside metropolitan areas, such as Mexico City, Guadalajara, and Monterrey. For example, there are no suicide risk assessment protocols in place at most emergency services (Borges, 2010). Therefore, the main purpose of the present study is to identify proximal factors that contribute to suicidal behaviors among Mexican individuals in order to inform intervention efforts in clinics that provide care to at-risk individuals, such as those that participated in the present study.

It is important to note that, because of the limited research conducted in Mexico regarding suicidal behaviors, as well as the similarities found in suicidal behaviors among Mexican individuals living in Mexico and in those living in the U.S., studies conducted in the U.S. will be used to guide the hypotheses in the present study. The findings from the few available studies that have examined well-established predictors of suicidal behaviors (i.e., internalizing symptomatology, hopelessness) among individuals living in Mexico (Monge, Cubillas, Román y Abril, 2007; Almanzar, Valadez, Fausto & García de Alba, 2003) are consistent with studies conducted in the U.S (e.g., Baumann, Kuhlberg, &

Zayas, 2010; Garcia, Skay, Sieving, Naughton, & Bearinger, 2008; Guiao & Esparza, 1995; Hovey, 1998; Hovey & King, 1996; Kuhlberg, Pena, & Zayas, 2010; Locke & Newcomb, 2005; Pena et. al., 2008; Queralt, 1993; Razin et. al., 1991; Smokowski, Bacallao, & Buchanan, 2009). Specifically, similarly to the U.S studies, depressive symptoms, family conflict, and hopelessness have been found to be associated with suicidal ideation in Mexican individuals (Valadez-Figueroa, Amezcua-Fernandez, Quintanilla-Montoya, Gonzalez-Gallegos, 2005).

The following sections will provide a description of the present study. First, the interpersonal theory of suicide will be introduced and the evidence for the theory will be examined. Second, the role of hopelessness and depression as well-established predictors of suicidal behaviors will be presented. Third, the hypotheses, methods, and procedures that guided the study will be discussed. Fourth, the findings of the study will be presented and their implications will be discussed.

### **Interpersonal Theory of Suicide**

Much of suicide research has been conducted without a theoretical framework. However, there are several theories that have been proposed in order to explain suicidal behaviors (e.g., biological, psychodynamic, cognitive-behavioral, family systems). To note, some of the theories available have been able to explain the prevalence and mechanisms of suicidal behaviors. For example, cognitive behavioral theories center on the role of hopelessness (Beck, Steer, Kovacs, & Garrison, 1985) which have been able to explain the relationship between hopelessness and eventual death by suicide.

Nevertheless, suicide is an intricate phenomenon as it is comprised of multiple risk factors. For instance, depression is a robust predictor of suicidal behaviors. In fact,

most individuals that die by suicide suffer from depression. However, most individuals that suffer from depression do not die by suicide. When these factors are tested in isolation, this leads to imprecision in their conceptualization as they have a complex and robust relationship to suicidal behaviors. Hence, a comprehensive theory that is able to account for each risk factor as well as its conceptualization in the context of other risk factors is necessary in order to improve the prediction of suicide.

Recently, Joiner (2005) proposed the interpersonal theory of suicide. This theory has attempted to bring years of research together in order to explain the complex phenomenon that is suicide. In brief, the interpersonal theory of suicide aims to identify the most proximal factors to suicidal behaviors based on previous research (i.e., impulsivity, prevalence of suicidal attempts and behaviors) (Van Orden et al., 2010).

The interpersonal-psychological theory of suicide predicts that for suicidal behavior to occur, suicidal desire and fearlessness of death must be present. This model is presented in Figure 1. According to this theory, suicidal ideation occurs when perceived burdensomeness and thwarted belongingness are experienced at the same time; therefore the theory highlights that the interaction of perceived burdensomeness and thwarted belongingness will be stronger than the impact of each factor separately. Perceived burdensomeness is the perception that one is a burden for family and friends, thus creating the misperception that loved ones “will be better off without me” whereas thwarted belongingness is the feeling of alienation from others.

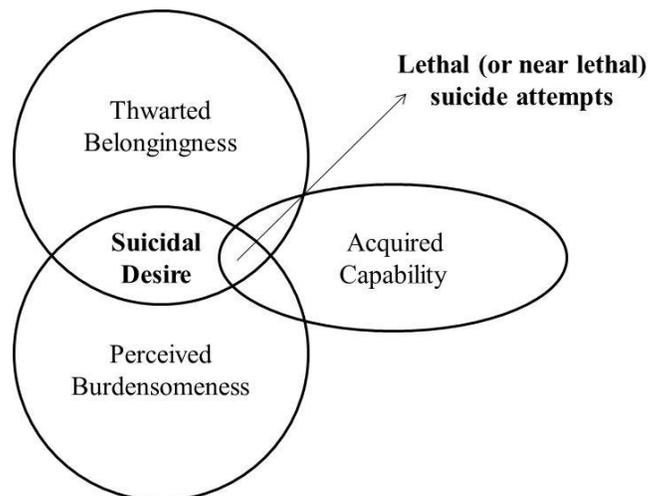
A handful of studies have examined the interaction of perceived burdensomeness and thwarted belongingness. The findings of these studies suggest that perceived burdensomeness and thwarted belongingness are critical predictors of suicide attempts

and suicidal ideation above and beyond well-established predictors of suicide (Conner, Britton, Sworts, & Joiner, 2007; Joiner et al., 2002; Van Orden, Lynam, Hollar & Joiner, 2006). However, according to this theory, an individual will be at a higher risk for suicide if suicidal ideation becomes suicidal desire. For this to occur, in addition to perceived burdensomeness and thwarted belongingness, hopelessness about these states must also be present. It is important to note that the hopelessness state as described by the theory differs from that proposed by Beck and colleagues in that it comprises only hopelessness about perceived burdensomeness and thwarted belongingness rather than about general expectations about oneself and the future.

As stated above, the interpersonal needs (i.e., perceived burdensomeness and thwarted belongingness) and hopelessness are necessary but not sufficient for suicide to occur. An individual will not attempt suicide unless a decreased need for self-preservation is present. The author refers to this fearlessness of death as an acquired capability to die. An individual acquires this fearlessness of death through repeated exposure and habituation to painful experiences (e.g., exposure to violence, aggression, non suicidal self-injury).

Figure 1

*Assumptions of the Interpersonal Theory of Suicide*



**Perceived Burdensomeness.** There have been several studies that have examined the relationship between perceived burdensomeness and suicidal behaviors. For example, in a study by Joiner (2002) the authors examined 60 suicide notes. The results revealed that an increased sense of burdensomeness differentiated among the most serious suicide attempts and highest levels of lethality. This was supported through additional studies that have found perceived burdensomeness to be a significant predictor of serious suicidal behavior above and beyond hopelessness, depression, and functional impairment (Cukrowicz, Cheavens, Van Orden, Ragain, Cook, 2011; Van Orden, Lynam, Hollar, & Joiner, 2006).

**Thwarted Belongingness.** The relationship between a low sense of belonging and suicidality has been extensively studied through previous research (e.g., Van Orden et al., 2010), which has linked perceived alienation and a reduced sense of belonging to a desired group to greater suicidal risk. For example, suicidal ideation among college students is highest during summer when compared to spring and fall (Van Orden et al., 2008); and suicide attempts decrease during holidays, celebrations, and times of national tragedy (Joiner, Hollar, & Van Orden, 2006). In an earlier study by Westefeld and Furr (1987) social isolation was identified as the single most common cause of suicidal attempts among young adults. Additionally, social isolation has been found to account for a large portion of the variance regarding suicidal risk (i.e., hopelessness and suicidal behaviors) among Hispanics (Chang, Sanna, Hirsch, & Jeglic, 2006).

**Acquired Capability for Suicide.** In a study by Selby and colleagues (2010) the authors found that the participant's acquired capability to die increased through exposure to combat and military training. The theory indicates that exposure to this type of stimuli

subsequently increases tolerance to pain and decreases one's fear of death. Evidence suggests that suicide attempters have higher levels of fearlessness, decreased pain sensitivity, and a history of provocative events (Smith, Cukrowicz, Poindexter, Hobson, & Dexter, 2010). Additionally, research findings have shown that the acquired capability factor has a strong relationship with previous suicide attempts (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). Moreover, fearlessness of death has been shown to differentiate among suicide attempters and ideators (Smith et al., 2010).

**Direct Examinations of the Interpersonal Theory of Suicide.** A handful of studies have directly examined the interpersonal theory of suicide. In a series of studies by Van Orden et al. (2008) the authors examined (1) the interaction between perceived burdensomeness and thwarted belongingness as predictors of suicidal ideation, (2) the role of painful and provocative experiences as predictors of the acquired capability, and (3) the interaction between the perceived burdensomeness and the acquired capability to die as predictors of suicide thoughts and behavior among college students ( $N= 309$ ). The findings in the study provided support for the assumptions by the interpersonal theory such that the interaction among the interpersonal needs constructs significantly predicted suicidal ideation. Moreover, higher levels of fearlessness of death were found among those with more previous suicide attempts. Finally, the interaction between perceived burdensomeness and the acquired capability significantly predicted suicidal risk as determined by clinicians conducting suicide risk assessments.

In a subsequent study, Joiner and colleagues (2009) also examined (1) the interaction between perceived burdensomeness and thwarted belongingness, and (2) a three-way interaction among perceived burdensomeness, thwarted belongingness, and the

acquired capability to die. The findings revealed that low levels of belongingness and an increased sense of burdensomeness significantly predicted suicidal ideation beyond the influence of depression among adults ( $N= 815$ ). Moreover, they found a significant interaction between low levels of belongingness, high levels of burdensomeness, and the lifetime number of suicide attempts in predicting current suicide attempts. This last interaction was also able to differentiate among ideators and attempters.

The findings from the two series of studies described above were replicated by Bryan et al. (2010) in a military sample and college students ( $N= 537$ ). The findings differed in that the three-way interaction was not significant in this sample. The authors provided two possible explanations for this discrepancy in their findings. One possible explanation is that thwarted belongingness might be a less robust predictor of suicide when compared to perceived burdensomeness; however, it is also possible that thwarted belongingness is a stronger predictor of current suicidality rather than past suicidality, which was the outcome measure in their study. Another possible explanation is that thwarted belongingness is not a stable factor, but rather varies through time, with more acute levels leading to suicidal ideation. Therefore, it could be that the levels of thwarted belongingness among the participants were low due to several factors, such as being part of a significant group like the military.

In a following study, Monteith and colleagues (2013) tested the interpersonal theory of suicide in an inpatient veteran sample ( $N= 185$ ). The authors found that the interaction between perceived burdensomeness and thwarted belongingness significantly predicted suicidal ideation. However, the interaction between perceived burdensomeness, thwarted belongingness, and the acquired capability did not predict suicidal behaviors.

Suicidal behaviors were defined as previous suicide attempts in this study. The authors attributed their findings to the fact that the most recent attempt of the participants had taken place years before participating in the study; therefore, it was difficult to assess the interpersonal factors and the acquired capacity as immediate predictors of suicidal behaviors.

There have been two studies that have examined the interpersonal theory of suicide in Latinos. In an initial study by Garza and Pettit (2010), the authors examined the role of perceived burdensomeness in predicting suicidal ideation among adult Mexican women ( $N= 73$ ) at a community health center in the U.S. The findings showed that perceived burdensomeness significantly predicted suicidal ideation above and beyond depression. In fact, women were 96% more likely to experience suicidal desire in the presence of high levels of perceived burdensomeness.

In a more recent study, Hurtado (2013) examined the interpersonal theory of suicide among Mexican adolescents living in Mexico ( $N= 152$ ). The findings in this study showed that family conflict and depression were the most significant predictors of suicidal behaviors. Further analyses showed that perceived burdensomeness and thwarted belongingness significantly moderated the relationship between depression and suicidal behaviors in this study. For example, those individuals that experienced depressive symptoms with high levels of perceived burdensomeness reported more suicidal behaviors than those who were experiencing depressive symptoms and low levels of perceived burdensomeness.

The discrepancy in the results among these studies regarding the role of the interpersonal needs factors could be likely due to the diversity in the outcome measures

used (i.e., suicidal ideation compared to general measures of suicidal behaviors, self-harm, and suicidal desire). For example, some studies assessed solely suicidal ideation, which would have a stronger association to the interpersonal needs and not the acquired capacity. In order to test the interpersonal theory as a whole, it is necessary to capture all aspects of the suicide behavior spectrum. The discrepancy on the findings could also be due to the difference in age, gender, or other characteristics in the study samples (e.g., community vs. clinical, civilian vs. military) such that it would make some factors more salient to a specific group. However, further research is necessary in order to clarify the differences found in these studies.

### **Suicide Risk and Protective Factors in Latinos**

#### **Hopelessness**

Hopelessness refers to having negative expectations about the future usually accompanied by the notion that these negative outcomes are inevitable (Beck & Weissman, 1974). Hopelessness also encompasses loss of motivation, anhedonia, and negative emotions. Several studies have found hopelessness to be a critical predictor for depression, suicidal ideation, attempts, and completed suicide across community, clinical, and Latino samples (Beck, Brown et al., 1990; Beck, Kovacs & Weissman, 1975; Dyer & Kreitman, 1984). For example, in a longitudinal study, Beck and colleagues (1985) found that hopelessness was a significant predictor of completed suicide among individuals who had been receiving inpatient care due to severe suicidal ideation. Additional studies have attempted to explain the mechanisms in the relationship between hopelessness, other critical predictors of suicide (i.e., depression), and suicidal behaviors. These findings suggest that hopelessness acts as a mediator between depression and suicidal behaviors

(Goldston et al., 2001; Rudd, Joiner & Rajab, 1996; Spirito, Overholser, & Hart, 1990). Additionally, hopelessness has been found to be able to differentiate among suicide attempters and non-attempters even when controlling for depressive symptoms (Asarnow & Guthrie, 1989; Morano, Cisler, & Lemerond, 1993; Rich, Kirkpatrick-Smith, Bonner & Jans, 1992; Spirito, Williams, Stark & Hart, 1988).

There are only a few studies that have studied hopelessness among Mexican individuals. The available evidence has found that Latinos report the highest levels of hopelessness when compared to other ethnic groups (Alegría et al., 2007; Phinney & Ong, 2007); moreover, the findings suggest that hopelessness is a key predictor for depressive symptomatology and suicidal ideation among Latinos (Chang, Sanna, Hirsch, & Jeglic, 2010; Hovey & King, 1996; Karel & Moye, 2002; Myers et al., 2002).

## **Depression**

According to the Center for Disease Control and Prevention, approximately 1 in 10 adults suffer from depression (Center for Disease Control and Prevention [CDC], 2012), thus making this disorder one of the most significant mental health problems experienced by the general population.

Studies have examined the differences in prevalence of depression among Latinos and other ethnic groups. The findings of these studies have been mixed. For example, epidemiological studies suggest that there are no significant discrepancies among ethnic groups (e.g., Hasin, Goodwin, Stinson, & Grant, 2005); however, studies like the National Comorbidity Survey suggest that Latinos are two times more likely to suffer from depression than other ethnic groups (Breslau, Kendler, Su, Aguilar-Gaxiola, & Kessler, 2005). Additional studies suggest that Latinos report higher levels of symptom

distress than other ethnic groups (e.g., Golding & Burnam, 1990). Fortunately, a meta-analysis examining depression among Latinos in the U.S. was conducted recently (Mendelson, Rehkopf, & Kubzansky, 2008), thus shedding light on this issue. The results suggest that Latinos report high rates of depressive symptoms, but are not diagnosed with depression more often than their Caucasian and African American counterparts. This could be due to the lack of access to health care, differences in symptom presentation (i.e., somatization), and language barriers. Despite this discrepancy, depressive symptoms have been associated with increased levels of suicidal ideation and suicide attempts in this group (Hovey, 2000).

Depression has been identified as a critical contributor to suicidal behaviors. Numerous studies have found depression to be associated with suicidal thoughts and attempts (e.g., Sourander, Helstela, Haavisto, Bergroth, 2001; Wild, Flisher, & Lombard, 2004), however only a few studies have examined the relationship between depression and completed suicide (Dumais, 2005; Shaffer, 1996; Suominen et al., 2004). For example, in a comprehensive study, Shaffer et al., (1996) examined the relationship among well-established predictors of suicide. The authors conducted a psychological autopsy of 120 subjects in New York. Their findings showed that 91% of the subjects who committed suicide and 23% control subjects (i.e., non-suicide death) met DSM-III criteria for major depressive disorder, respectively 52% and 26% had experienced depressive symptoms for more than 3 years.

### **Goals and Purposes of the Present Study**

Generally, the focus of the study is to examine suicidal behaviors among Mexican individuals. As stated above, this study will use the interpersonal theory of suicide as a

theoretical framework. The interpersonal theory of suicide has received a lot of attention within the past few years. Several studies have examined the factors proposed in this theory with samples in the U.S (e.g., Joiner et al., 2009; Van Orden et al., 2009) and have found that this theory successfully predicts suicidal behaviors. However, it is important to investigate the generalizability of the interpersonal theory to other cultural groups and nations.

So far, only a few studies have examined the interpersonal theory in other countries (e.g., Hurtado, 2013; Zhang et al., 2013). The available findings suggest that there are a few differences in the applicability of the theory to other ethnic groups; specifically some factors might be more salient in other cultures. For example, Zhang and colleagues (2013) found that perceived burdensomeness and the acquired capability to die, but not thwarted belongingness significantly predict suicidal ideation in Chinese individuals.

Additionally, one of the main goals of the study is to identify immediate risk factors for suicidal behaviors among Mexican individuals. Other studies have focused mostly on healthy community samples (Hurtado et al., 2013), and thus proximal risk factors for suicidal behaviors might not be as salient as in a clinical sample. Specifically, the present study aims to answer the following questions within an inpatient sample of Mexican adults: (1) Who is at risk of suicidal ideation? (2) What is the relationship between depression, hopelessness, interpersonal needs, and the acquired capability to die regarding suicidal behaviors?

First, it is hypothesized that depression, hopelessness, perceived burdensomeness, thwarted belongingness, and the acquired capacity to die will have a significant positive

association with suicidal behaviors. On the contrary, social support will have a significant negative association with suicidal behaviors.

Second, the interaction of perceived burdensomeness and thwarted belongingness is hypothesized to be significant, such that individuals experiencing perceived burdensomeness and thwarted belongingness at the same time will experience suicidal ideation. This hypothesis is in accordance with the interpersonal theory of suicide, for which previous studies have found a stronger effect when these factors interact with each other (e.g., Joiner, 2009), than when they are examined independently. This hypothesis will be tested while controlling for well-established predictors of suicidal behaviors (i.e., depression, social support, and hopelessness).

Third, based on the findings of Hurtado (2013), it is hypothesized that the factors as described by the interpersonal theory of suicide will significantly predict suicidal behavior in this sample due to the high level of importance placed on social support networks in the Latin culture. Additionally, the model might be particularly relevant for this sample since all of the participants are receiving inpatient care due to substance use, which has been linked to an increased capability to die (Bryan et al., 2010). Therefore, the intersection of the interpersonal needs and the acquired capacity is hypothesized to significantly predict suicidal behaviors. This model will also be tested using hopelessness, depression, and social support as covariates.

## Chapter 2

### Method

#### Participants

A total of 200 adults participated in the present study. The final sample consisted of 199 participants. One participant was identified as an outlier. Further analysis of his data revealed inconsistent responses to the questionnaires, specifically the SBQ (i.e., contradictory endorsement of previous suicide attempts across questions).

The participants consisted of individuals that were recruited at 7 substance use rehabilitation centers in Northern Mexico. These clinics provide long-term substance use treatment in an inpatient setting with a diverse quality of care: (1) Two facilities conducted empirically-supported treatment for substance use. (2) Three of the clinics provided long-term inpatient stay to individuals diagnosed with substance use disorders. (3) Two of the clinics were inpatient clinics associated with a government hospital. These two clinics provided time-limited care for individuals with substance use and mood disorders. The later five clinics had very scarce economic resources and provide mostly support (i.e., peer-to-peer, religious-based) for their patients.

The participants were on average 27.56 years of age ( $SD= 10.70$ ) and 9% of the sample was female. Seventy percent of the participants identified as Catholic, 16.2% identified as Christian, 13.8% of the participants identified as Other religious denomination (e.g., Jewish, Muslim). Fifty five percent of the participants indicated that often they do not have enough money to pay for their monthly expenses where as 45% reported being able to cover their global needs each month. Thirty-two percent of the participants indicated that they are unable to cover their basic needs each month and 68%

reported having enough money to cover their basic needs. Finally, 78.8% of the participants indicated that they were unable to cover their health needs whereas 21.2% reported that they were able to cover their basic health needs.

## **Measures**

**Demographic form.** The demographic form included items on participant's age, gender, grade, ethnicity, religion, family income, and living accommodations (i.e., health care, basics, and global needs). The questions regarding living accommodations were obtained through the Resource Center for Minority Aging Research at the University of California in San Francisco (UCSF) (e.g., "In the past 12 months, was there ever a time when your family did not have enough money to pay its monthly bills", "In the past 12 months, was there ever a time when your family did not have enough money for food?", "In the past 12 months, was there ever a time when your family did not have enough money for medical care for you or another family member?"). A composite variable was created in order to obtain an approximate measure of SES, and then *dummy* coded to place the participants into a low, medium, and high status category (i.e., coded as 0, 1, and 2). Unfortunately, due to the limitations of the clinics in which the study was conducted, it was not possible to obtain detailed medical records, health conditions, or progress in the program.

**Personal Resources Questionnaire (PRQ-85; Weinert, 1987).** This measure consists of 25-items that assess the dimensions of social relationships (i.e., intimacy, social integration, nurturance, worth and assistance) and an individual's personal resources and satisfaction with these resources. The respondents use a 7-point Likert scale ranging from 0 (*strongly agree*) to 6 (*strongly disagree*). The highest score of the

PRQ-85 can be 150 with higher scores indicating higher levels of social support. The reported reliability of this measure has been 0.87 among Mexican individuals (Hurtado, 2013). In this study, the reliability was also .87.

**Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2008).** The INQ consists of 15-items that examine the extent to which individuals feel connected to others and the extent to which they feel like a burden to their family and friends (e.g., “these days the people in my life would be happier without me”; “these days, I feel that there are people I can turn to in times of need”). This scale uses a scale that ranges from 0 to 6 (0= not true for me, 6=very true for me). Higher scores in the subscales reflect higher levels of perceived burdensomeness and thwarted belongingness. This measure has shown excellent reliability ( $\alpha = 0.82$  and  $.72$  for the perceived burdensomeness and thwarted belongingness subscales respectively; Hurtado et al., 2013). The reliability in this study was  $.83$  for perceived burdensomeness and  $.82$  for thwarted belongingness.

**Beck Hopelessness Scale (BHS; Beck et al., 1974).** This is a 20 true-false-item measure consisting assessing negative attitudes toward the future. Higher scores in this measure indicate higher levels of hopelessness (e.g., “my future seems dark to me”). To note, a score of 8 or higher has been associated with an increased risk in suicidality (Beck et al., 1993). The BHS has an excellent reported reliability and validity in previous studies (Smokowski, Buchanan, & Bacallao, 2009), and  $\alpha = 0.80$  among Latinos (Chang et al., 2013). The reliability was  $.83$  in this study.

**Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown, 1996).** The BDI-II consists of 21 items assessing the participant’s depressive symptomatology. The respondent selects one statement from a set of multiple-choice answer that best reflects

their experience within the past 2 weeks. The scores are coded from 0-3 with higher scores indicating greater depressive symptomatology. The following clinical cut-offs have been determined for this measure: 0–13 reflects minimal depression; 14–19 mild depression; 20–28 moderate depression; and 29–63 severe depression. This measure is one of the most widely used measures of depressive symptomatology and has shown an excellent reliability among Latinos ( $\alpha=0.91$ ; Wiebe & Penley, 2005). The reliability in this study was consistent with previous study ( $\alpha=.90$ ).

**Acquired Capability for Suicide Scale (ACSS; Van Orden et. al., 2008).** This was originally a 20-item self-report measure that assesses the participant’s fearlessness of death. However, recent findings suggest the use of a shorter version due to a stronger factor structure (Ribeiro, Witte, Van Orden, Selby, Gordon, Bender, & Joiner, 2013). This scale uses a 5-point Likert scale ranging from 0 to 4 (0 = ‘Not at all like me’, 4= ‘Very much like me’). This measure has demonstrated adequate reliability,  $\alpha= 0.67$  in previous studies. The reliability of this measure was 0.70 in this study.

**Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001).** The SBQ consists of 4 items assessing the history of suicide behaviors, suicidal ideation within the past year, previous suicide attempts, and the likelihood of future attempts. Higher frequency of suicidal behaviors is reflected in higher scores. The reported reliability of this measure is  $\alpha=0.88$  (Bryan et al., 2010; Hovey & King, 1996; Osman et al., 2001). The reliability for this study was .80.

## **Procedures**

The participants were approached in a group setting by lay staff members (i.e., typically on-site psychologists) at each of the clinics, provided with a brief description of

the study, and then invited to participate in the study. All of the potential participants were provided with an informed consent form. Those individuals that were interested in participating in the study returned their completed forms to the staff. The lay staff then provided the participants with the room number in which research staff was located. The research staff was in a separate room from the recruitment area in order to protect the confidentiality of the participants. To note, the research staff remained in the facilities for approximately 6 hours so that participants could stop throughout the day as it became convenient for them and their participation did not interfere with their scheduled activities (i.e., psychotherapy, group meetings). The research staff consisted of one medical professional and one clinical psychologist. The staff completed an online human subject research course in order to comply with the institutional review board requirements at the University of Toledo.

The participants completed the survey packet in paper-pencil format. After participants completed informed consent, they were provided with a questionnaire packet containing the measures described above. Some of the measures used in the study have not yet been validated in Spanish. The versions used in this study were translated for the purposes of a previous study. These measures were translated and back-translated using the method proposed by Brislin (1990) by two bilingual-bicultural graduate students. The research staff was consulted in order to assess the face validity of the measures.

The estimated time for completion of the questionnaire packet was approximately 40 minutes. Refreshments were provided to the participants while completing these measures. Upon completion of the packet, each of the participants was provided a handout that contained educational information and resources regarding suicidal

behaviors and depression. The handout included signs and symptoms of suicidal behaviors and depression, as well as community resources (i.e., places that provide psychological services). In addition, the participants were debriefed at the end of the session by research staff. During the debriefing session, the participants were provided with information regarding the purpose of the research and the possible implications of the findings. None of the participants were reimbursed for their participation. These procedures were consistent in all of the clinics that participated in the study.

After completing data collection at each site, the consent forms and surveys packets were stored in a secure cabinet in the hospital's office. This office was only accessible to research staff and was provided to us with the sole purpose of storing these records. Research staff was able to deliver the consent forms and the survey packets so that they would be stored at the University of Toledo.

### **Statistical Analyses**

**Power Analysis.** In a previous study by Van Orden et al., (2008) which examined the interaction of perceived burdensomeness and thwarted belongingness in predicting suicidal ideation, power was estimated to be [ $f^2=$ ] .43. Power analyses revealed that in order to have an (1-beta) 80% chance to detect a significant large effect, a total of 45 participants were needed.

A large effect size was selected based on a previous study by Bryan and colleagues (2010) that examined directly the interaction between perceived burdensomeness, thwarted belongingness, the acquired capacity to die in predicting suicidal behaviors in a clinical sample (Bryan, Morrow, Anestis & Joiner, 2010). The effect size found for the relationship among perceived burdensomeness, thwarted

belongingness, and the acquired capacity to die as predictors of suicidal behaviors was estimated to be  $[f^2=]$  1.27. Analyses revealed that with alpha set at .05 and power (1-beta) set at .80, a sample size of 27 participants was needed to detect an effect of this magnitude. Given the power analyses the total sample size should consist of at least 72 individuals thus, the present study has an adequate level of power.

**Data Screening.** The data were entered in IBM SPSS 19. Descriptive statistics were obtained in order to screen the data for collinearity, outliers, and missing values. Missingness was examined by creating a dummy variable (0= missing, 1= not missing), which was then correlated to sociodemographic variables, independent and outcome measures (Allison, 2002; Enders, 2010). The missing data was found to be missing at random, thus, maximum likelihood estimation was used in order to handle missing data (Graham, Hofer, & MacKinnon, 1996)

The data were then examined to ensure compliance with the assumption of normality. A correlation of  $> 0.9$  or a Variance Inflation Factor (VIF) greater than 10 was used as a benchmark for multicollinearity (Myers, 1990). None of the variables were redundant and thus, all of them were included in subsequent analyses. Mahalanobis distance was then explored in order to assess for the presence of outliers. A level of  $p < .001$  was used in order to assess statistical significance of this test. Only one outlier was present in the data. Upon further analyses, the responses of the participant were deemed invalid due to significant inconsistencies across the questionnaires. The data was then examined for the presence of kurtosis and skewness. The benchmark values used are  $\geq 2$  for skewness and  $\geq 7$  for kurtosis respectively (Tabachnick & Fidell, 2007). There was no significant skewness or kurtosis on any of the variables used.

**Regression Analyses.** First, the R-square value was examined as it provides information regarding the variance that is explained by the model. Then, the main effects can be assessed through the evaluation of the standardized model coefficients. These can be interpreted as the change in the outcome variable per 1-unit change in the in

## **Chapter 3**

### **Results**

#### **Descriptive Statistics**

The means and standard deviations of all the variables of interest are shown below in Table 1. In regards to the variables of interest, participants reported a moderate level of social support. This score is comparable with previous findings from adult community samples (Hovey & Magaña, 2000). Additionally, the participants endorsed a high level of hopelessness. Using the criteria proposed by Beck et al., (1988) which has associated a cut-off score of 9 or above with higher suicidal risk, 82% were classified at a minimal level of hopelessness, and 18% at a high level of hopelessness.

The sample also endorsed a high level of depression. Specifically, using the clinical cut-off scores proposed by Beck, Steer, and Brown (1996), 33.7% were classified as minimally depressed, 22.8% as mildly depressed, 33.7% as moderately depressed, 7.2% as severely depressed, and 2.1% as extremely depressed.

Finally, the participants endorsed an overall high level of suicidal behaviors. The scores were further examined using the criteria proposed by Osman et al (2001). The authors determined a score of 8 or above to identify most accurately those individuals at a risk for suicide in both community and inpatient adult samples. Following these guidelines, 18.7% of the sample was classified as at high risk where as 81.3% was not. T-tests revealed that the participants did not differ in any of the variables of interest based on gender. However, they did differ in the rates of depression and suicidal behavior based on their age. Therefore, age will be used as a covariate in both regression analyses.

Additionally, a MANOVA showed that participants did not differ based on the site in which data was collected.

Table 1  
Means, standard deviations, and correlations among all measures

Variable	1	2	3	4	5	6	7	8	Mean	SD
1. Social Support	--								125.24	25.01
2. Hopelessness	-.28**	--							5.17	2.31
3. Depression	-.34**	.41**	--						16.55	10.99
4. PB	-.40**	.33**	.57**	--					2.53	1.48
5. TB	-.48**	.16*	.14*	.18**	--				2.80	1.54
6. ACSS	.03	.00	.10	.06	-.01	--			8.83	5.87
7. SBQ	-.13*	.27**	.45**	.36**	.10*	.12	--		5.72	2.31
8. Age	-.03	.04	-.06	.05	.05	-.09	-.20**	--	29.87	10.31

Note. PB, perceived burdensomeness; TB, thwarted belongingness; ACSS, acquired capability suicide scale; M, means; SD, standard deviations. For gender, men were coded as "1".

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Furthermore, 70.1% of the sample indicated that they have never attempted suicide, 14.5% of the participants reported having attempted suicide once before, 11.1% reported two previous suicide attempts, and 15.7% reported three or more previous suicide attempts. Regarding level of intent, out of those individuals that had previously attempted suicide, 13.3% reported a low level of intent and 86.7% reported a moderate to high level of intent for their latest attempt within the last month. Those individuals with previous suicide attempts differed significantly on their rates of social support, depression, hopelessness, and perceived burdensomeness. These findings are depicted in Table 2. Among those individuals who attempted previously, they did not differ in any of the variables of interest when compared based on their level of intent.

Table 1 shows the intercorrelations between all of the variables in the study. Most of the relationships were in the hypothesized direction except for the acquired capability which was not significantly associated with any of the variables included in the study. In

regards to the strength of the relationships, there were some notable findings.

Hopelessness, depression, and perceived burdensomeness had a significant moderate relationship with suicidal behaviors. Thwarted belongingness and social support had a mild relationship with suicidal behaviors.

Table 2  
*Means and standard deviations of mental health measures in attempters compared to non-attempters*

<i>Variable</i>	<i>Attempters</i>	<i>Non-Attempters</i>	<i>t</i>	<i>p</i>	<i>d</i>
Social Support	119.40 (26.81)	126.79 (23.84)	1.87	.03	.29
Depression	22.31 (10.82)	13.52 (10.09)	5.39	.001	.84
Hopelessness	6.49 (4.47)	4.47 (3.54)	3.31	.001	.50
PB	3.15 (1.78)	2.26 (1.25)	3.77	.001	.75
TB	2.87 (1.33)	2.76 (1.64)	.440	.33	.07
Acquired Capacity	8.96 (5.56)	8.60 (6.05)	.367	.36	.46

### **Regression Analyses**

Two hierarchical regressions were conducted in order to assess the relationship among the interpersonal needs factors and the acquired capacity as predictors of suicidal behaviors. The first regression analysis was conducted in order to predict suicidal ideation. It was hypothesized that the interaction of perceived burdensomeness and thwarted belongingness would significantly predict suicidal ideation. To measure suicidal ideation two items from the SBQ-R2 were used (i.e., How often have you thought about killing yourself in the past year? Have you thought about or attempted to kill yourself?).

As a first step, depression, social support, hopelessness, and age were entered as covariates in the regression. In the second step, perceived burdensomeness and thwarted belongingness were entered as predictors. Finally, on the third step, the interaction between perceived burdensomeness and thwarted belongingness was entered. To note, all of the predictors were centered (Aiken & West, 1991) prior to entry into the regression

analyses. The results revealed that the interaction between the interpersonal needs did not predict suicidal ideation and there was a lack of  $\Delta R^2$ . However, the main effects for depression were significant predictors of suicidal ideation. These analyses are depicted below in Table 3 and Figure 2.

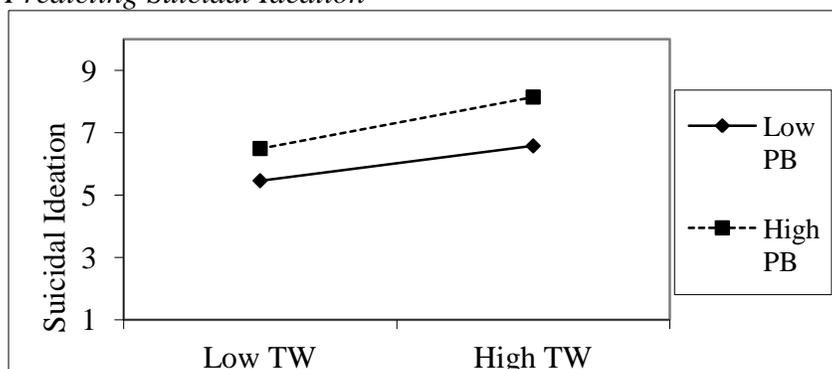
Table 3  
*Hierarchical Regression Equation Predicting Suicidal Ideation*

<i>Predictors</i>	<i>R<sup>2</sup></i>	<i>ΔR<sup>2</sup></i>	<i>B</i>	<i>SE B</i>	<i>β</i>	<i>p</i>
Step 1	.26	.26				
Age			-.04	.01	-.20	.00
Social Support			.00	.01	.02	.42
Depression			.07	.01	.41	.00
Hopelessness			.04	.04	.01	.12
Step 2	.26	.009				
PB			.15	.11	.12	.08
TB			.04	.10	.03	.35
Step 3	.26	.000				
PBXTB			.02	.07	.02	.38

*Note.* PB, perceived burdensomeness; TB, thwarted belongingness; ACSS, acquired capability suicide scale

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Figure 2  
*The Interaction between Perceived Burdensomeness and Thwarted Belongingness in Predicting Suicidal Ideation*



*Note.* PB, perceived burdensomeness; TB, thwarted belongingness

The second regression analysis was conducted in order to assess perceived burdensomeness, thwarted belongingness, and the acquired capability as predictors of

suicidal behaviors. It was hypothesized that the interaction between these factors would significantly predict suicidal behaviors. In order to explore this relationship, crucial predictors of suicide were entered as covariates in the regression equation. Specifically, hopelessness, depression, social support, and age were entered as covariates into the regression as a first step. Perceived burdensomeness, thwarted belongingness, and the acquired capacity were entered as a second step. As a third step, the two-way interactions between thwarted belongingness and perceived burdensomeness; perceived burdensomeness and the acquired capability; and thwarted belongingness and the acquired capability were entered. Finally, the three-way interaction of perceived burdensomeness, thwarted belongingness, and the acquired capacity was entered as a fourth step.

The overall model was not significant. These analyses are depicted in Table 4. More specifically, the results revealed that in step 1, age and depression significantly predicted suicidal behaviors. In step 2, age, depression, and perceived burdensomeness significantly predicted suicidal behavior. The main effects for hopelessness, thwarted belongingness, and the acquired capacity were not significant. In step 3, the interactions between perceived burdensomeness and thwarted belongingness; and between perceived burdensomeness and the acquired capacity significantly predicted suicidal behaviors. Finally, in step 4, age, depression, and the interaction term between perceived burdensomeness and the acquired capability did not predict suicidal behaviors. This relationship is depicted in Figure 3.

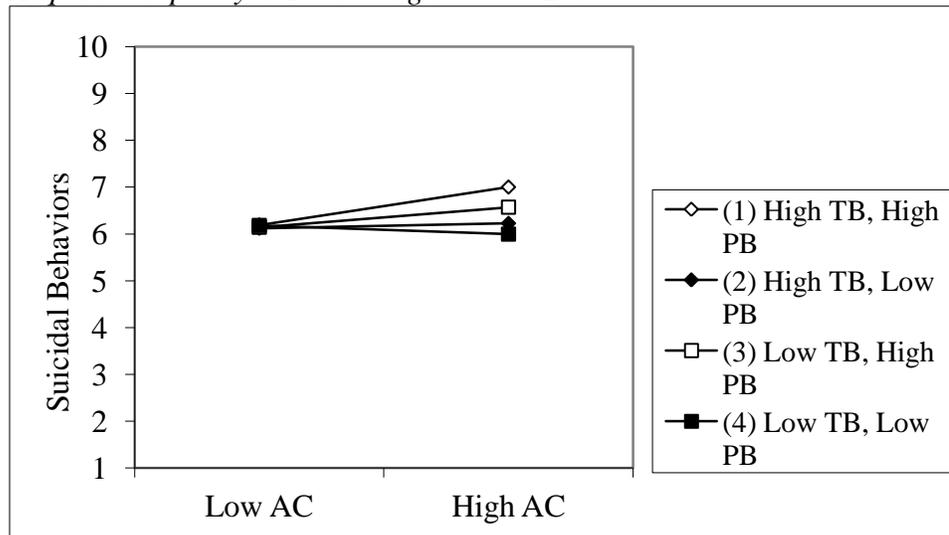
Table 4  
*Hierarchical Regression Equation Predicting Suicidal Behaviors*

<i>Predictors</i>	$R^2$	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Step 1	.36	.36				
Age			-.04	.02	-.15	.02
Social Support			-.01	.01	-.11	.08
Depression			.13	.02	.52	.00
Hopelessness			.04	.05	.05	.24
Step 2	.38	.03				
PB			.34	.15	.19	.02
TB			.15	.14	.08	.15
ACSS			.01	.03	.02	.39
Step 3	.43	.04				
PBXTB			.16	.10	.12	.04
PBXACSS			.06	.02	.17	.01
TBXACSS			.03	.02	.09	.11
Step 4	.43	.00				
PBXTBXACSS			.01	.02	.03	.34

*Note.* PB, perceived burdensomeness; TB, thwarted belongingness; ACSS, acquired capability suicide scale

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Figure 3  
*The Interaction between Perceived Burdensomeness, Thwarted Belongingness, and the Acquired Capacity in Predicting Suicidal Behaviors*



*Note.* PB, perceived burdensomeness; TB, thwarted belongingness; AC, acquired capacity to die

## **Chapter 4**

### **Discussion**

Due to the dramatic increase of suicidal behaviors in Mexico within the last few years, it is important that action is taken immediately to prevent suicide. Unfortunately, the literature regarding the etiology and maintenance of suicidal behaviors among individuals of Mexican origin is scant. This has led to serious limitations in the resources available to the general population. For example, as mentioned above, in some of the clinics that participated in the study there is not protocol in place for crisis intervention or emergency psychiatric services available. Additionally, there are no adequate monitoring tools for suicidal behaviors or to conduct suicide risk assessments. These conditions do not allow for clinicians to provide adequate services to those individuals that are at a high risk for suicide.

As a first step to be able to provide psychiatric care for those individuals at risk for suicide, it is important that we understand some of the factors that contribute to the etiology of suicidal behaviors. However, it has not been until recently that the studies focusing on suicidal behaviors have begun to use theoretical framework. Suicide studies have been able to identify significant risk factors; unfortunately due to the complexity of suicide this is not enough. A significant limitation of suicide research currently is that several of the proposed theoretical constructs are not operationalized in such a way that they can be examined in quantitative studies. Therefore the available literature continues to be unclear about the relationship between well-established risk factors for suicidal behaviors and eventual suicide.

With these limitations in mind, the main purpose of this study was to identify significant factors that contribute to immediate suicidal behaviors among Mexican adults. To our knowledge, this is the first study of suicidality in a clinical sample of Mexican adults that is based on the framework of the interpersonal theory of suicide. For the purpose of this study, we hypothesized that the interpersonal theory of suicide would be able to predict suicidal ideation and suicidal behaviors within the last month from the time in which participants completed the survey.

The sample in this study was comprised of individuals receiving inpatient treatment for substance use disorders. Therefore, it was hypothesized that the interpersonal theory of suicide would be relevant for this sample, as these individuals are at a particular risk for suicide. This was supported by the reports of the participants, which indicated clinical levels of depression, high levels of hopelessness, and suicidal behaviors.

It was hypothesized that the intersection between perceived burdensomeness and thwarted belongingness would predict suicidal ideation. However, even though the interaction was not a significant predictor of suicidal ideation; it was trending in that direction. The main effects for depression significantly predicted suicidal ideation. One explanation for this is that a suicidal ideation-specific measure was not used in this study, and the suicidal ideation items from the SBQ-R2 did not fully capture the construct of suicidal ideation. Another explanation is that perceived burdensomeness is a more salient predictor of suicidal ideation for an inpatient sample. This is consistent with previous findings (Hurtado et al., 2013; Monteith et al., 2013) which have found that thwarted

belongingness only predicted suicide ideation in the presence of high levels of perceived burdensomeness.

It was also hypothesized that the interaction of perceived burdensomeness, thwarted belongingness, and the acquired capacity would significantly predict suicidal behaviors. The findings were not consistent with this hypothesis. The interaction between perceived burdensomeness and thwarted belongingness significantly predicted suicidal behaviors. Additionally, the interaction between perceived burdensomeness and the acquired capability for suicide also significantly predict suicide behaviors. For example, those individuals with high levels of perceived burdensomeness and an acquired capacity to die reported more suicidal behaviors than those individuals with high levels of perceived burdensomeness and low acquired capacity. There are several potential explanations for these findings. It could be that perceived burdensomeness is the most salient factor when assessing immediate suicidal behaviors. An alternative explanation is that the role of thwarted belongingness might be different than that proposed by the theory. Thwarted belongingness might act as moderator between perceived burdensomeness and the acquired capability to die; hence, this factor might be more salient in a sample with a lower level of perceived social support.

The findings from this study provide partial support for the generalizability of the interpersonal theory of suicide to Mexican adults. Specifically, perceived burdensomeness appears to be a particularly salient construct for this group. The emphasis of this theory on interpersonal constructs is congruent with the sense of obligation in the Latin culture towards one's family and social group. When these expectations are not fulfilled this can cause high levels of distress, and eventually lead to

suicidal behaviors. It could be due that in this sample thwarted belongingness was not a salient risk factor because participants reported a moderate to high level of social support.

### **Limitations**

The cross-sectional nature of this study limits the generalizability of our findings. Longitudinal studies would aid in identifying potential mechanisms of change in suicidal behaviors across time. Specifically, explorations of the changes from passive suicidal ideation to immediate suicide behavior before and after receiving treatment, as well as an exploration of the role of relapse in suicidal behaviors are needed.

Another limitation of the present study was the lack of access to the medical records of the participants. This data would have provided us with more detailed descriptive information about the participants. For example, it would have been helpful to distinguish between different substance use disorders as some of them might be closely linked to an increased acquired capacity to die (i.e., heroine).

Additionally, a suicide ideation-specific measure would have been helpful to provide a comprehensive assessment of suicidal ideation in this sample. Specifically, it would be important to measure suicidal ideation beyond and above its frequency. Information regarding chronicity, intensity, control (i.e., how difficult it is to stop the thoughts of suicide?), and the distinction between passive and active ideation is needed in order to address the hypothesized relationship between the interpersonal constructs and suicidal ideation. This information can aid in differentiating between suicidal ideation and suicidal desire such that the relationship between suicidal ideation and eventual suicide is clarified.

## **Clinical Implications**

Social and cultural elements have a significant impact on the mechanisms underlying suicidal behaviors, such that they shape an individual's emotions and behaviors. As such, these factors might influence the precipitating factors for suicidal behavior (Zhang, Lester, Zhao, & Zhou, 2013). It is because of this influence that the interpersonal theory of suicide was chosen to be the theoretical framework for this study, as it is particularly relevant to Latinos. Specifically, as noted above it has been shown that interpersonal relationships, which are emphasized in this theory, play a central role in the mental health of Mexican individuals. As a result, when those relationships are disrupted Mexican individuals are at a higher risk for suicidal ideation and attempts.

It is important to note that due to the limitation in the existent knowledge, identification of those factors that contribute to suicidal behaviors is a crucial first step in providing adequate mental health services for those in need. The identification of those variables that increase suicidal risk can lead to the creation of effective intervention programs that can aid individuals that are currently struggling with suicidal behaviors.

It is necessary to conduct effective suicide risk assessments that allow clinicians to identify those individuals that are at risk for suicide. The findings of this study suggest that including questions about depression, perceived burdensomeness, thwarted belongingness, and fearlessness of death can provide significant information to determine the level of risk of a patient. It is a standard practice to assess for depression and levels of social support. In addition to these practices, clinicians should also assess an individual's perception of being a burden upon others. Along similar lines, it is important for

clinicians to ask individuals not only about previous suicide attempts, but also about the lethality of previous attempts when conducting risk assessments.

The identification of those factors that provide the most protection to individuals can also inform the development of effective prevention programs in which interpersonal factors can be promoted. Most commonly, prevention efforts are applied when individuals are receiving psychotherapy. Cognitive-behavioral approaches to suicidal behaviors can emphasize cognitive restructuring around suicidal cognitions. Additionally, dialectical behavioral therapy can apply these findings when conducting chain analyses of suicidal behaviors. Specifically, these constructs can be used to identify an individual's vulnerabilities for suicidal behavior. Therefore, the clients can be educated with regards to these factors and apply behavioral skills when they find themselves at a high risk for suicide.

As previously mentioned, there are no psychological emergency services available to individuals exhibiting suicidal behaviors at this time in Mexico. In order to provide emergency psychiatric services such as a suicide prevention hotline, risk assessments, and the delivery of effective interventions, clinicians need to provide a strong rationale to administrators that demonstrate the need for these resources. Therefore, through a presentation of the findings of this study, clinicians can highlight the need for additional psychiatric resources so that policies that would make emergency psychiatric care available at the clinic level are applied.

### **Future Directions**

Future studies should more thoroughly assess passive suicidal ideation, suicidal desire, and suicidal ideation. Specifically, a comprehensive measure that differentiates

between these different levels of suicide ideation would be important to further understand these constructs as contributors to immediate suicidal risk.

It would also be important to have access to the medical records of participants (e.g., information regarding previous hospitalizations, previous suicide attempts, psychiatric disorders). This information would allow researchers to differentiate between levels of lethality and increased exposure to fearful stimuli, and identify potential contributing risk factors for suicidal behaviors (e.g., emotion dysregulation). Additionally, having medical records would help compare the self-report of participants with their records. This is indispensable, as participants sometimes over-endorse or underreport the chronicity of their symptoms. This could be due to having difficulty remembering previous events in detail, social desirability effects, or the presence of certain psychopathologies. Therefore, having an objective measure to assess previous psychiatric and medical history would help clarify some of these relationships.

Future studies should also examine the applicability of these constructs to suicidal assessments. For example, development of ways in which clinicians could incorporate these relevant constructs to monitor suicidality throughout the course of treatment with individuals that might be at a high risk for suicide, such as individuals diagnosed with borderline personality disorder, major depressive disorder, bipolar disorder, and psychotic symptoms, is important.

Assessing the applicability of the measures available to test the interpersonal constructs and the acquired capacity to die in other languages is also needed. Specifically, it is vital to address the factor structure and the fit of the proposed models to languages

other than English such that the measures can be used in these groups and the generalizability of the theory assessed.

In regards to the interpersonal theory of suicide, it is necessary to test the applicability of the theory to other populations, such as other ethnic, age, and clinical (i.e., outpatient, intense outpatient) groups. Some of these groups have been used in previous studies; however, such studies have not tested the constructs proposed by the interpersonal theory altogether.

Furthermore, future research should examine the role of thwarted belongingness in the etiology of suicidal ideation. As mentioned above, a couple of studies have found that it is not a significant factor in predicting suicidal ideation in inpatient settings when perceived burdensomeness is also considered. It is important to note that other studies only found partial support for this construct in community and outpatient settings. Therefore, future studies should assess the role of thwarted belongingness as a moderator between perceived burdensomeness and the acquired capability to die.

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