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Interpersonal suicide risk for Latino/a Americans: Investigating thwarted belongingness, perceived burdensomeness, and cultural factors of relevance

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**Interpersonal suicide risk for Latino/a Americans: Investigating thwarted belongingness,
perceived burdensomeness, and cultural factors of relevance**

by

Kelsey E. Engel

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Psychology

Program of Study Committee:
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Karen Scheel
Carolyn Cutrona

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this thesis. The Graduate College will ensure this thesis is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2018

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ABSTRACT

There is evidence that different racial groups not only complete suicide at different rates, but conceptualize suicidal behavior differently (American Association of Suicidology [AAS], 2016; Brownson, Becker, Shadick, Jagers, & Nitkin-Kaner, 2014; Maris, Berma, & Silverman, 2000; Shadick, Backus, & Babot, 2015). Evidence also exists indicating that key culture-based variables such as acculturation, enculturation, and acculturative stress are important variables to explore in research using Latino/a samples (Bernal, 1990; Del Pilar, 2009; Padilla & Lindholm, 1984), and may be related to the suicidal behavior of Latino/as (Fortuna, Perez, Canino, Sribney, & Alegria, 2007; Perez-Rodriguez, Baca-Garcia, Oquendo, Wang, Wall, et al., 2014), especially Latino/a college students (Gomez, Miranda, & Polanco, 2011; Hovey & King, 1996; Saldana, 1994; Walker, Wingate, Obasi, & Joiner, 2008).

The Interpersonal-Psychological Theory of Suicide (IPTS; Joiner, 2005; Van Orden, Cukrowicz, Witte, & Joiner, 2012; Van Orden, Witte, Gordon, Bender, & Joiner, 2008; Van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010), a recent theory in suicidology that has generated a significant amount of research, does not include culture-based factors within its model, and has not been shown to fit well when used to explain the suicidal behavior of racially diverse people (Davidson, Wingate, Slis, & Rasmussen, 2010; O'Keefe, Wingate, Tucker, Thoades-Kerswill, Slis, & Davidson, 2014; Wong, Koo, Tran, Chiu, & Mok, 2011; Garza & Pettit, 2010).

In my study, I tested and expanded upon IPTS, by applying Joiner's construct of *suicidal desire* (as measured by the sub-constructs of thwarted belongingness and perceived burdensomeness) to Latino/a American college students, to examine the ways in which the IPTS theory can predict their past, current, and future suicidal behavior. In addition, I gave

consideration to Latino/a cultural factors by examining the moderating effects of acculturation and enculturation, as well as the potential mediation effects of acculturative stress, on the relation between primary IPTS constructs and past, present, and future suicidal risk. In a sample of 147 Latino/a American college students, results indicate that the IPTS, and perceived burdensomeness in particular, is useful in predicting suicidal risk. Acculturation, enculturation, and acculturative stress were not found to significantly moderate or mediate the relations of the IPTS model. However, enculturation was found to be a particularly salient cultural variable in the explanation of Latino/a American college student's experience of perceived burdensomeness and its relation to their suicidal risk. Implications for continued examination of the role that relevant cultural factors play in the context of thwarted belongingness, perceived burdensomeness, and Latino/a American college student suicidal risk, as well as implications for utilizing the IPTS in future research and clinical work, are discussed.

Keywords: Suicidal behavior; Latino/a Americans; college students; acculturation; enculturation; acculturative stress

CHAPTER 1

INTRODUCTION

In the United States, suicide continues to be among the top ten leading causes of death (American Association of Suicidology [AAS], 2016). More specifically, in the United States, in 2015, more than 40,000 people committed suicide (AAS, 2016), translating to an incidence of approximately 1 person committing suicide every 11.9 minutes and a prevalence ratio of 13.8: 100,000 suicides every year in the general population. For college-aged persons (aged 18 - 24), suicide is the second leading cause of death, only behind deaths categorized as a result of unintentional injury (Centers for Disease Control [CDC], 2015).

Suicide base rates have remained proportionately constant for over the past hundred years (Maris, in press), yet the field of suicidology and the working theories used to understand suicide have remained stagnant. Investigators still strive to understand who commits suicide and why (Rogers & Lester, 2010). The overwhelming majority of completed suicides in the US are committed by European Americans (AAS, 2016), and the majority of extant knowledge surrounding suicide is representative of that same racial group. This reality means that the field of suicidology continues to fail to comprehensively advance theoretically our understanding regarding racial group differences in suicide behavior for non-European Americans. Further, modern suicidologists have acknowledged an existing paradox of racial group differences in suicide; that is, most US cultures of color evince lower incidence and prevalence rates for suicide than European Americans, despite the fact that persons of color face far more social, economic, and psychological adversity on average than do European Americans. Despite working theories in the area of suicidology, which largely adopt a diathesis-stress perspective (cf. Lester & Gunn,

2016), the overwhelming body of empirical research in suicidology has been atheoretical and has not paid due attention to specific culture-based factors that can increase the risk for suicide. This is problematic as when theory does not drive empirical investigations, it becomes difficult (if not impossible) to reconcile inconsistent and non-integrative findings that emerge among various studies. This, in turn, hampers investigators' efforts to achieve clarity concerning what data truly indicate across studies. In the next section, I will briefly lay out the theory that guided my research.

The Interpersonal-Psychological Theory of Suicide

A recent theory that has emerged in the field of suicidology is Joiner's Interpersonal-Psychological Theory of Suicide (IPTS; 2005). The IPTS has gained widespread attention and use among researchers since its development as a way to investigate suicide in a theory-driven manner. Assertions in the IPTS suggest that individuals who attempt suicide must have the *desire* to do so, and the model lays out primary constructs and associated variables suspected of contributing to individuals' desire to take their own lives. To date, the IPTS theory has been largely tested using the fifteen-question Interpersonal Needs Questionnaire (INQ-15), a measure that captures the IPTS theoretical constructs of *thwarted belongingness* and *perceived burdensomeness*, which are seen as the primary variables directly influencing suicidal behavior. This measure was created by Joiner and colleagues to directly assess constructs in the IPTS and has been validated on primarily European American samples (Van Orden et al., 2008; Hill, Rey, Marin, Sharp, Green, & Pettit, 2015). However, neither the IPTS theory nor the INQ-15 measure have been validated using samples of people of color, neither does the theory or measure consider ways in which culture-based variables can affect suicidal behavior.

Van Orden et al. (2008a) highlighted the need for theory driven research on the proximal, causal, and interactive factors involved with suicidal behavior, so that clinicians and researchers may more accurately and comprehensively detect and intervene in cases of suicidal behavior to prevent suicide. Joiner's theory has spurred significant research efforts in the field, and is often cited within current research in suicide for its operationalization of *suicidal desire*, specifically through combining a wide array of empirically supported suicide risk factors into the measurable constructs of thwarted belongingness and perceived burdensomeness. Joiner (2005) devised these constructs based on the fundamental psychological need for humans to avoid a sense of social isolation; social isolation has been found to be one of the most reliable predictors of suicide attempts (Trout, 1980). As described by Van Orden et al., thwarted belongingness represents a lack of reciprocal care, social withdrawal, neglect, abuse, or loss felt by individuals, and spans both personal and public dimensions (Joiner, 2005; Van Orden et al., 2010). Van Orden et al. found relations of this construct to negative physical and mental health outcomes, biological stress responses, and elevations of negative affect.

The second component of 'suicidal desire' is the belief, held by people contemplating suicide, that others would be better off without them. Past research has found family conflict, unemployment, and physical illness to be strong predictors of suicidal ideation (Van Orden et al., 2010; Waern, Rubenowitz, Wilhelmson, 2003; Bastia & Kar, 2009), which underscores the idea that those contemplating suicide may perceive themselves as a burden upon others. Joiner argues that perceiving oneself as a burden, to others as well as society, is a common thread of several interpersonal risk factors and includes elements of self-hate and feelings of being a liability for others (Joiner, 2005; Van Orden et al., 2010, p. 584). Studies have shown that perceived

burdensomeness is strongly related to suicidal ideation (e.g., Filiberti, Ripamonti, Totis, Ventafridda, De Conno, et al., 2001; Joiner, Pettit, Walker, Voelz, Cruz, Rudd, & Lester, 2002).

Joiner argues that both thwarted belongingness and perceived burdensomeness are proximal and causal factors in individuals' desire to commit suicide. He maintains that each construct is a significant independent predictor of suicidal ideation, and that the interactive effect of thwarted belongingness and perceived burdensomeness is more strongly determinant of suicidal ideation (Van Orden et al., 2010). In the IPTS model, both thwarted belongingness and perceived burdensomeness must be present for individuals to 'desire' to commit suicide. However, these two constructs and the IPTS model have found only mixed empirical support, especially in samples of racially diverse populations, an issue that I will discuss further in the next section.

Race and the Interpersonal-Psychological Theory of Suicide

The primary support for the IPTS and its associated measure, the INQ-15, rests on a five sample, 2000 participant, series of studies (Van Orden et al., 2012) conducted by the developers of the theory. Although these authors found that both thwarted belongingness and perceived burdensomeness, independently and interactively, statistically significantly predicted suicidal ideation in all five samples, the racial demography of each sample was identified largely as European American (some as high as 90%). Other studies testing the IPTS have found that the constructs of belongingness and burdensomeness statistically significantly predicted suicidal ideation (Cero, Zuromski, Witte, Ribeiro, & Joiner, 2015; Christianson, Batterham, Soubelet, Mackinnon, Donker, & Soubelet, 2014), but either failed to report, or account for, any racial diversity in their samples.

Studies indicate that people from different racial backgrounds have different rates of suicide, and generally that cultures of color have lower incidence and prevalence rates of suicide as compared with European Americans (AAS, 2016). In many ways, these facts seemingly do not align with the general assumptions of Joiner's IPTS, as people of color would appear to experience, on a regular basis, significant experiences of thwarted belongingness and to receive ubiquitous messages that, as a people, they are burdensome to society. Given that extant suicide research holds as its 'gold standard' the case of European males as the prototypical victim of suicide, we would expect, according to Joiner's theory, that people of color would attempt and complete *more* acts of suicide than European Americans due to these relatively constant societal messages and stressors of thwarted belongingness and burdensomeness.

A few non-replicated studies (Davidson et al., 2010; O'Keefe et al., 2014; Wong, Koo, Tran, Chiu, & Mok, 2011; Garza & Pettit, 2010), either using predominantly racially diverse samples, or that have examined culture-based factors on the endorsement of belongingness and burdensomeness, show only partial support for the IPTS. In these investigations, thwarted belongingness has consistently been found to be a much weaker predictive construct than perceived burdensomeness for suicidal behavior, and the two constructs interactively do not predict suicidal behavior consistently or more strongly as theorized by Joiner. In addition, investigators have directly asserted that cultural factors are an important element to include when studying the suicidal behavior of racially diverse groups, and that the absence of such factors from the IPTS and INQ-15 are possible explanations for the theory finding inconsistent support among racially diverse populations (Davidson et al., 2010; O'Keefe et al., 2014; Wong et al., 2011; Garza & Pettit, 2010). Clearly, accounting for the different ways in which different cultures may endorse and succumb to suicide is essential to advancing our general understanding

regarding individual and racial group differences in suicidality (AAS, 2016; Brownson et al., 2014).

Latino/a Americans and suicide

I dealt specifically with Latino/a Americans in my study; as such, it is pertinent to address known findings specifically concerning this racially diverse group. Generally, Latino/a Americans are an understudied group in suicide research, despite the fact that, for over 15 years, Latino/as have been the largest racial minority group in the United States (US Census Bureau, 2016). The Latino/a population currently comprises 17.6% of the US population, and approximately half of the 2.5 million people added to the US population between the 2014 and 2015 census. Estimates indicate that the US Latino/a population will reach a quarter of the US total population by the year 2060.

Regardless, suicidologists continually reference the lack of data and research regarding suicidal behavior among Latino/a Americans (Baca-Garcia, Perez-Rodriguez, Oquendo, Keyes, Hasin, et al., 2011; Zayas, Lester, Cabassa, & Fortuna, 2005). In the United States, in 2015, 3,303 Latino/a Americans completed suicides as compared with 39,796 completed by European Americans (AAS, 2016). The rate of completed Latino/a suicide (5.8/100,000 base rate) is lower than that for European Americans (15.8/100,000 base rate). However, important to note is that Latino/a Americans have a higher suicide *attempt* rate than non-Latino/a Americans, especially among adolescents and young adults (CDC, 2014; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Studies report that the prevalence of plan formation and suicide attempts are consistently higher among Latino/a teens than their European American and African American peers (CDC, 2014; Locke & Newcomb, 2005; Tortolero & Roberts, 2001).

Given these facts, examining suicidal behavior among Latino/as can provide insight into general and specific risk factors surrounding suicide for this group of people. In the next section, I will briefly identify cultural factors of relevance for Latino/as that I considered in my study as I examined the applicability of the IPTS to this racial group.

Cultural factors of relevance for Latino/as

With approximately 40% of Latino/a Americans identifying as foreign born (U.S. Census Bureau, 2016), scholars have emphasized that cultural factors such as acculturation, enculturation, and acculturative stress are critical to consider (Del Pilar, 2009) in research concerning this racial group. *Acculturation* has been defined as the extent to which people incorporate and adjust to the norms and values of a dominant culture (cf. Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987), while *enculturation* is defined as the extent to which people adhere to their own indigenous culture (Garcia & Lega, 1979; Rogler, Cortes, & Malgady, 1991).

The extent to which Latino/as identify with indigenous culture and the extent to which they identify with majority culture may have effects on not only the amount of belongingness they feel, but also their level of perceived burdensomeness in relation to society. Some past research relating to Latino/a culture (cf. Marin et al., 1987; Rogler et al., 1991) indicated acculturative and enculturative forces can increase or decrease feelings of belongingness and perceived burdensomeness in Latino/as. For example, higher levels of enculturation can offer greater social support opportunities within individuals' indigenous culture. However, Latino/as' perceptions of burdensomeness may also increase, given their stronger connection to their indigenous culture, if they fall short in meeting family or Latino/a community cultural expectations. Conversely, higher levels of acculturation to the majority culture may also have

effects on belongingness and perceived burdensomeness in Latino/as. When racially diverse individuals more closely align with the majority culture, they may internally feel a greater degree of belongingness due to a relative decrease in observable difference from the majority culture (e.g., speaking English, preferring majority culture mannerisms and outward appearances). Yet, despite these efforts to 'fit in' with European American culture, they may simultaneously receive social and personal messages from European Americans that they inherently do not belong to, and will never be truly considered a part of, the US majority culture (cf. Perez, Fortuna, & Alegria, 2008; Helms, 1995). Last, they may receive messages from their indigenous Latino/a culture that they are 'selling out' and do not help present an image of cultural pride or value their home culture (Sue & Sue, 2016).

Although specific research has not been conducted to test the relations between acculturation, enculturation, and acculturative stress with the specific constructs of IPTS, previous research findings do generally suggest that acculturation and enculturation may play a role in the declining mental health status of Latino/as, especially concerning depression and other mental health difficulties associated with suicide (García & Zea, 1997). More specifically, general trends suggest that as Latino/a acculturation to the majority culture increases, so does their suicidal risk (Perez-Rodriguez, Baca-Garcia, Oquendo, Wang, Wall, et al., 2014; Fortuna, Perez, Canino, Sribney, & Alegria, 2007). These findings suggest that acculturation and enculturation can both directly and indirectly affect the suicidal behaviors of Latino/as.

A third culture-based factor, *acculturative stress*, related to both acculturation and enculturation, may also play a key part in the suicidal behavior of Latino/as. The difficulties associated with increasing acculturation (or decreased enculturation) are commonly referred to as acculturative stress. Specifically, acculturative stress is the psychological stress that comes from

the daily conflicts individuals experience as they try to reduce or minimize their cultural differences with the prevailing majority culture (Mena, Padilla, & Maldonado, 1987).

Acculturative stress encompasses many experiences that could affect the level of belongingness or burdensomeness an individual may feel, such as perceived discrimination, role and value conflicts, and cultural awareness related to generational status and time spent in the country (Padilla & Lindholm, 1984; Mena et al., 1987).

My research concerns not only Latino/as and the applicability of the IPTS to this racial group, but most specifically Latino/a college students and the degree to which the IPTS can be used to understand suicidal behavior in this specific population, as well as how the aforementioned culture-based variables of acculturation, enculturation, and acculturative stress may play a part in Latino/a college students' suicidal behavior. Research (cf. Saldana, 1994) has suggested that acculturation, enculturation and acculturative stress can play a strong part in Latino/a college students' general mental health, lending support to the need to examine these constructs in my study. In the next section, I will briefly discuss issues concerning college students generally, as well as Latino/a college student suicide, specifically.

Suicide and College-Aged Populations

Although common practice in research on suicide is to utilize college students as convenience samples, it is important to acknowledge that this age group and population present unique concerns regarding suicide prevalence and behavior, to be understood in its own right. Recent reports indicate that suicide is the second leading cause of death among individuals aged 15 to 34 (CDC, 2014). Therefore, college students, in particular, likely exhibit both specific risks for, and protective factors against, completing suicide.

A recent review of college student suicide by Schwartz (2011) found that, although college students are less likely to complete suicide than their non-student, same-aged peers, the percentage of full-time college students who have seriously considered suicide has been gradually increasing each year (SAMHSA, 2014). Arria, O'Grady, Caldeira, Vincent, Wilcox, et al. (2009) highlighted the ways in which suicidal behavior among college students may be unique to this population, given the developmental transitions that occur in college and young adulthood. With approximately 1000 college students completing suicide each year (Schwartz, 2011; Emory University, 2017), researchers must utilize theory-driven approaches to study suicide, relevant to college students, that can validly capture the unique circumstances and cultural factors surrounding the college student experience.

Suicide and college students of color

College populations are becoming more racially diverse (U.S. Census Bureau, 2015) and college students of color, have been particularly overlooked in suicide research and theory. This group deserves further attention from investigators given that the unique stressors of emerging adulthood, as well as stressors in the campus climate, may be more salient for someone from a diverse culture (Gomez et al., 2011).

Most suicide research regarding college-aged students draws from general campus samples, with little focus on reporting or analyzing data for differences among racial group statuses. However, some studies have begun to establish that college students of color may be at higher risk for suicidal ideation than their European American peers, and that college students of color may not receive proper referrals or obtain help for their concerns surrounding suicide (Kisch, Leino, & Silverman, 2005; Otero, Rivas, & Rivera, 2007; Muehlenkamp, Marrone, Gray, & Brown, 2009; Brownson et al., 2014). These studies have brought attention to the complexity

of understanding risk factors for suicide among diverse racial groups and the questionable utility of using universal assessments or general theory bases with racially diverse groups of college students.

Suicide among Latino/a college students

In a review highlighting the need for more research on the suicidal behavior of Latino/as, Zayas et al. (2005) reported that one in five Latina adolescent girls can be expected to attempt suicide. Studies have also reported that the prevalence of suicide attempts and creating a plan to commit suicide are consistently higher for Latino/a youth than their European American and African American peers (CDC, 2014; Locke & Newcomb, 2005). In fact, college-aged Latinas were twice as likely as their non-Latina peers to have engaged in suicidal ideation (Tortolero & Roberts, 2001). To add concern, replicated findings indicate that young adult Latino/as also report lower rates of help-seeking than their European American peers (De Luca, Schmeelk-Cone, & Wyman, 2015; Brownson et al., 2014). Clearly, further theory-driven examination into the suicidal behavior of Latino/a college students is needed to provide insight into both general and culture-based risk factors surrounding their suicidal behavior.

Importance of the Present Study

There is clear evidence that various racial groups in the US complete suicide at different rates and likely conceptualize their suicidal behavior differently (AAS, 2016; Brownson et al., 2014). Evidence also exists that key culture-based variables such as acculturation, enculturation, and acculturative stress are important variables to explore in research using Latino/a samples (Del Pilar, 2009; García & Zea, 1997; Rogler et al., 1991; Saldana, 1994), and may be related to the suicidal behavior of Latino/as, especially Latino/a college students (Brownson et al., 2014; De Luca et al., 2015; CDC, 2014; Locke & Newcomb, 2005; Tortolero & Roberts, 2001; Zayas

et al., 2005). Finally, scrutiny of empirical findings concerning the IPTS suggest clearly that key culture-based variables that may affect the suicidal behavior of racially diverse groups are not present in the IPTS and the theory may not apply well to racially diverse people (Davidson et al., 2010; O'Keefe et al., 2014; Wong et al., 2011), particularly Latino/as (Garza & Pettit, 2010).

Therefore, in my study, I tested and expanded upon the IPTS, by applying the tenets of the theory to a sample of Latino/a American college students, to examine if the IPTS can predict suicidal risk for this group. In addition, I gave consideration to how the specific cultural factors of acculturation, enculturation, and acculturative stress may affect the suicidal behavior of Latino/a college students, and their endorsed relations of the constructs in the IPTS model.

Specifically, I examined the moderating effects of acculturation and enculturation, and the mediation effects of acculturative stress, on the relation between thwarted belongingness, perceived burdensomeness, and suicidal risk. I sought to test both the applicability of Joiner's theory to a Latino/a college student sample and to clarify the generalizability of IPTS to Latino/a college students.

CHAPTER 2

LITERATURE REVIEW

In this literature review, I define various aspects of suicidal behavior and present the prevalence of suicide in the United States, specifically as these pertain to Latino/a college students. I also review research published in support of Thomas Joiner's Interpersonal-Psychological Theory of Suicide (IPTTS). Finally, I specifically examine how the IPTTS constructs apply to Latino/a college students, and assess the direct and indirect effects that culturally relevant constructs for Latino/as (acculturation, enculturation, and acculturative stress) have on the relation between IPTTS constructs and Latino/a college students' reported past, present, and future suicidal risk.

Definition of Suicidal Behavior and Associated Constructs

Beginning in the mid-1990s (O'Carroll, Berman, Maris, Moscicki, Ranney, & Silverman, 1996) and continuing through today (Rogers & Lester, 2010; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007), there has been a call for a more explicit, standardized, and generalizable definition of suicidal behavior. Suicidology is defined as the scientific study and control of self-destructive behavior (Maris, in press), but in the discipline of psychology, the understanding of what constitutes self-destructive or suicidal behavior has been dependent on varying nomenclature, and inconsistently defined by clinicians, researchers, policy makers, and epidemiologists (Silverman et al., 2007).

De Leo, Burgis, Bertolote, Kerkhof, & Bille-Brahe (2006) provided historical definitions of suicide that included four common and focused themes: 1) the outcome of the behavior; 2) the agency of the act; 3) the intention to die; and, 4) an awareness of the outcomes of the behavior.

These four criteria guide the proposed nomenclature that I believed should be used in suicide research, and are how I differentiate, in my study, among suicidal ideation, suicide attempts, and completed suicide. My definition of suicidal ideation will be based in Joiner's (2005) and Silverman et al.'s (2007) shared conceptualization; *suicidal ideation* includes passive (e.g. "I would be better off dead.") or active ("I want to kill myself.") thoughts of suicide. Within my study, suicidal ideation will be defined as *any communications, threats, or plans which verbally or nonverbally impart, convey, or transmit a desire or intent for future suicidal behavior, but with no direct self-injurious act or component* (Silverman et al., 2007, p. 268).

Suicidal behavior includes both non-lethal and lethal suicide attempts and differs from the idea of 'self-harm' (e.g., controlled cutting of the self or other injurious behaviors), in that the victim has an *intent* to die and an *awareness* of the lethal consequences of their behavior. Suicide attempts can result in no injuries, injuries, or death. Within my study, I will define a *non-lethal* suicide attempt as: *a self-inflicted, potentially injurious act with an intent to die, but that has a non-fatal outcome* (Silverman et al., 2007, p. 273). A lethal suicide attempt is synonymous with completed suicide in that it is: *a self-inflicted, potentially injurious act with an intent to die that had a fatal outcome, resulting in death* (Silverman et al., 2007, p. 273). In my study, lethal suicide attempts resulting in completed suicide will be referenced, generally, as suicide. Non-lethal attempts and suicidal ideation will be always be specified as such, but will be understood to be *pre-intention* acts, possibly preceding, and emphasizing the risk for, a possible completed suicide in the future.

General Incidence and Prevalence of Suicide in the US

In the United States, across all racial and ethnic groups, suicide continues to be among the top 10 leading causes of death (AAS, 2016). Specifically, in 2015, 44,193 people committed

suicide (AAS, 2016). This translates to approximately 1 person committing suicide every 11.9 minutes and an annual prevalence ratio of 13.8: 100,000 in the general U.S. population. For college-aged persons (18 - 24) in the U.S., suicide is the second leading cause of death, behind deaths categorized as the result of unintentional injury (CDC, 2014).

Although suicide base rates have remained constant for over the past hundred years, the theoretical understanding of suicide within the field has remained stagnant, with researchers still striving to understand who commits suicide and why (Maris, in press; Rogers & Lester, 2010). In his most recent review of the history of suicide, Maris (in press) highlights the fact that the absolute number of suicides completed each year has increased as the U.S. population has increased (32,533 suicides in 2005, 38,364 in 2010, and 41,148 in 2013), but that the overall base ratio of prevalence has remained steady at approximately 11 to 12 completed suicides per 100,000 people annually. Ninety percent of these suicides were committed by European Americans (AAS, 2016), and the majority of our data and knowledge surrounding suicide is representative of this same racial group, which fails to advance our understanding regarding individual and racial group differences in suicidality for people of color. Traditionally, suicide research holds the case of the middle aged, European American male as the prototypical victim of suicide, yet modern suicidologists have simultaneously acknowledged the less understood racial group differences in suicide, with some cultures of color evincing lower incidence rates and prevalence ratios (Maris, Berman, & Silverman, 2000).

Suicide and people of color

The suicide rate of African American men is one-third of that of European American men (AAS, 2016). This fact is surprising in that people of color have suffered (and still experience) significant discrimination and oppression (Davidson et al., 2010). Generally, although people of

color face more social, economic, and psychological adversity on average than European Americans, statistics reflect that they are committing suicide at a fraction of the rate that European Americans are (Maris, Berman, & Silverman, 2000). One explanation for this disparity of suicide rates among different races could be that outcome statistics reflect a lower *completion* of suicide, but not necessarily a lower rate of attempts or risk for suicide amongst people of color and students of color (Shadick, Backus, & Babot, 2015). This observation is demonstrated in research regarding the Latino/a population. In 2015, 3,303 Latino/a Americans completed suicide as compared to 39,796 completed by European Americans (AAS, 2016). Although the ratio of completed Latino/a suicide (5.8/100,000 base rate) is comparably lower than that for European Americans (15.8/100,000), Latino/a Americans have a higher attempt rate than other racial groups, especially among adolescents and young adults (CDC, 2014; SAMHSA, 2014). This higher attempt rate by young Latino/as suggests the need for greater sensitivity to cultural differences within suicide research, and also the need for investigators to better account for multivariate cultural identities and the possible interactions of age, culture, and sex in suicide risk assessment.

Suicide and college-aged populations

One group often sampled in suicide research due to convenience, but seldom acknowledged directly as an intended focus sample, is that of college-aged young adults. A common practice in research on suicide is to sample college students at a university setting as to their suicidal behavior, and attempt to generalize these findings across other populations of interest. However, it is important to acknowledge that this age group and population presents its own unique concerns regarding suicide prevalence and behavior.

There are no federal requirements that require higher education institutions to report the number of attempted or completed suicides on college campuses, and as a result, researchers argue that knowledge of college student suicide prevalence is incomplete and often estimated by data obtained within a few select studies, from a comparatively small sample of campuses (Christensen, 2011). Therefore, college students, in particular, may exhibit unique risks for, and protective factors against, completing suicide.

A recent review of college student suicide by Schwartz (2011) found that college students are less likely to complete suicide than their non-student, same-aged peers (7/100,000 vs. 12.1/100,000). However, the percentage of full-time college students who have seriously considered suicide has been gradually increasing each year, with 6.6 % reporting suicidal ideation in 2012, and 8.0 % reporting suicidal ideation in 2013 (SAMHSA, 2014). Researchers have indicated that college students often have more low or no-cost mental health treatment services available to them, possibly leading to their lower rate of suicide completion (Hass, Hendin, & Mann, 2003). As well, although the campus environment can allow for more direct and proximal ways to serve those in need of counseling, the college experience itself can be a stressor that potentially increases suicidal risk among students. Arria et al. (2009) highlighted the ways in which suicidal behavior among college students may be unique to this population given the developmental transitions that occur in college and young adulthood. Changes in family relationships, peer contexts and social support, as well as increased opportunities for alcohol and drug use typically take place during this developmental phase of life. Various environmental issues on campus, such as the high incidence of sexual assault within college environments (Krebs, Lindquist, Warner, Fisher, & Martin, 2009), may affect suicidal behavior (Bryan, McNaughton, Cassill, Osma, & Hernandez, 2013; Tomasula, Anderson, Littleton, & Riley-

Tillman, 2012). With an estimated 900 to 1100 college students completing suicide each year (Schwartz, 2011; Emory University, 2017), researchers must continue to explore appropriate and effective risk assessment measures, as well as utilize suicide theory bases, relevant to college students, that can validly capture the unique circumstances of the college student experience.

Suicide and college students of color

College populations are growing increasingly culturally diverse (U.S. Census Bureau, 2016) and college students of color have been particularly overlooked in suicide research and theory. College students of color, specifically, require further attention from investigators given the unique stressors of emerging adulthood and the campus climate may be more salient for students with minority status (Gomez, Miranda, & Polanco, 2011).

Most suicide research regarding college-aged students does not focus on reporting or analyzing data for differences among racial groups. However, a few published studies have begun to establish that college students of color may be at higher risk for suicidal ideation and suicide than their European American peers. For example, compared to European American peers, Asian American students are more likely to consider suicide (Kisch, Leino, & Silverman, 2005), Latino/a students report higher rates of suicidal ideation (Otero, Rivas, & Rivera, 2007), and up to 15% of American Indian students reported having seriously considered suicide within the past year (Muehlenkamp et al., 2009).

In a large study, encompassing over 70 college campuses and utilizing a racially diverse sample of nearly 15,000 participants, Brownson et al. (2014) examined racial differences among college students for risk of suicide. Using multi-level equation modeling, these researchers discovered stark differences among racial groups concerning attitudes toward suicide. Asian Americans were found to endorse the highest level of distressing thoughts, such as “I wish I was

dead,” but did not express higher rates of having “seriously considered suicide.” Brownson et al. also found that despite a higher endorsement of lifetime suicidal ideation among college students of color, these same students also reported lower rates of help seeking compared to European American students. Of Brownson et al.’s sample, 47% European American students in their sample were advised to seek help by the first person they expressed their ideation to, with 63% of those students eventually receiving professional mental health care. In contrast, only 40% of the Latino/a and Asian American students, 28% of African American students, and 22% of American Indian students in their sample were advised to seek professional help, with less than half of each of these groups of students having received professional care (42% Latino/a American; 35% Asian American; 47% African Americans; 49% American Indians). Brownson et al.’s results highlight the disparities in suicidal experiences and help-seeking behaviors across racial groups, emphasizing the importance of focusing on suicide assessment specifically aimed at students of color on college campuses.

Shadick, Backus, and Babot (2015) discovered that belonging to one or more marginalized groups, such as a culture of color, increases negative mental health outcomes, and often has a significant moderation effect on measures of suicidality as indicated by the suicide item on the Beck Depression Inventory – II (Beck, Steer, & Brown, 1996) as well as other items that ask whether a participant has “seriously thought about” or “seriously tried to commit” suicide (Presley, Meilerman, & Lyerla, 1994). Such findings reinforce that a culturally emic and specific approach can help to better understand how suicidality operates differentially among culturally different populations.

Suicide among Latino/a college students

Latino/as are an under-examined group in the suicide literature, especially Latino/a American college students (Baca-Garcia et al., 2011; Zayas et al., 2005). Zayas et al. (2005) reported that one in five Latina adolescent girls can be expected to attempt suicide, and studies have reported that the prevalence of suicide attempts and plans to commit suicide are consistently higher for Latino/a youth than their European American and African American peers (CDC, 2014; Locke & Newcomb, 2005). In fact, some authors have found that adolescent and college-aged Latinas were twice as likely as non-Latino teens to have engaged in suicidal ideation (Tortolero & Roberts, 2001), and also report lower rates of help-seeking than their European American peers (De Luca et al., 2015; Brownson et al., 2014).

Theoretically (Van Orden et al., 2010), suicidal ideation is a precursor to suicide attempt and completion, and should be studied through the lens of a theoretical model, to not only organize our knowledge of suicide, but also provide a basis for more focused and integrated studies that consider multivariate motivational factors for different racial populations. The following sections will introduce the theoretical perspective and definitions that guide my study - the Interpersonal-Psychological Theory of Suicide (IPTTS).

The Interpersonal-Psychological Theory of Suicide

The Interpersonal-Psychological Theory of Suicide (IPTTS) was introduced by Joiner (2005), in which he presented an extensive review of the suicide prevention literature, and also highlighted the general ineffectiveness of suicide interventions. Van Orden et al. (2008) highlight the need for theory driven research on the proximal, causal, and interactive factors involved with suicidal behavior, so that clinicians and researchers may more accurately and comprehensively intervene in detecting suicidal ideation and preventing suicide.

Joiner and Van Orden et al. (2008) have emphasized that although several risk factors can contribute to suicidal behavior (e.g. childhood adversity, mental illness, and hopelessness), the majority of people with these risk factors will never attempt suicide. In the IPTS theory, Joiner posits that individuals die by suicide because they want to die and are capable of behavior that will result in dying. The theory measures, in a testable way, an individual wanting to die as a function of the desire to commit suicide, or suicidal desire, and an individual being able to commit acts that result in death as a function of acquired capability. Suicidal desire captures suicidal ideation and passive suicidal thoughts, while acquired capability comprises suicidal behavior, including non-lethal and lethal suicide attempts or completion. Acquired capability is based in evolutionary models and theories of habituation, and is comprised of an individual's lessened fear of death and increased tolerance for physical pain (Van Orden et al., 2010, pg. 586). Acquired capability serves as the distinction between individuals who desire suicide and individuals who attempt suicide.

Within Joiner's IPTS model, risk factors are additive to increase suicidal desire, but suicidal desire is not sufficient for death by suicide for an individual must also have the acquired capability for suicide. Similar to the ways in which not all individuals who have a risk factors for suicide will have suicidal desire, not all individuals who have suicidal desire will have the acquired capability for suicide, or will attempt suicide. Therefore, the ability to engage in suicidal behavior is treated as separate from the desire to engage in suicidal behavior. My study will focus specifically on suicidal desire, as the basis of suicidal risk, and most proximal and earliest point of intervention. Joiner's theory has spurred research efforts and is often cited within current suicidology for its operationalization of suicidal desire through new, purportedly

comprehensive and measurable, constructs of *thwarted belongingness* and *perceived burdensomeness*.

Joiner (2005) and Van Orden et al., 2010 have defined 'thwarted belongingness' as *loneliness and a lack of reciprocal care, as evidenced by social withdrawal, neglect, abuse, or loss that spans both personal and public dimensions* (Van Orden et al., 2010, p. 581). These authors defined 'perceived burdensomeness' as the belief that *one's death would be worth more to others than one's life, including elements of both self-hate and feelings of liability to those close to them and to society as a whole* (Van Orden et al., 2010, p. 584).

In following sections, I will describe existing support for Joiner's theory and its two major constructs, but also pose questions surrounding the applicability of the theory to people of color, in light of research findings indicating differences in incidence and prevalence of suicidal behavior for different cultures.

Thwarted belongingness

Joiner (2005) argues that a fundamental psychological need for every human is the need to belong. This idea is not new, as many social psychologists and sociologists, including the famed Emile Durkheim, hold belongingness and social integration as a fundamental, even evolutionary, psychological need (Baumeister & Leary, 1995; Durkheim, 1951). Social isolation has consistently been found to be one of the most reliable predictors of suicide attempts (Trout, 1980), yet, Joiner is the first to highlight this fundamental need to belong as a necessary construct in assessing and predicting suicidal behavior (Van Orden et al., 2010).

As described by Van Orden et al. (2010), in her extensive review of the IPTS theory, *thwarted belongingness* is best captured by the statement "I am alone." This construct maps onto Baumeister and Leary's (1995) definition of the need to belong, but proposes a dimensional,

complex definition of thwarted belongingness anchored by facets of loneliness and the absence of reciprocal care. Joiner asserts that thwarted belongingness, as a construct, accounts for social withdrawal, neglect, abuse, and loss, and spans both personal and public dimensions (Joiner, 2005; Van Orden et al., 2010). However, Joiner's approach is a less categorical and more dimensional, multivariate definition that attempts to account for individual factors that may explain why some socially isolated individuals engage in suicidal behavior while others do not. In describing his definition of thwarted belongingness, Joiner has listed "observable indicators" that underlie the belongingness including facets of loneliness and the absence of reciprocal care (Van Orden et al., 2010, p. 581). Joiner compiles a mass of past research findings to support this construct, ranging from seasonal variation effects to the impact of having a history of childhood abuse on suicidal behavior. Unfortunately, in an effort to create a more comprehensive operational definition, that seemingly spans all meaningful individual factors correlating individuals' need to belong into a multivariate construct representing suicidal risk, Joiner has included so wide a range of associated elements under the singular umbrella of thwarted belongingness, that this core construct becomes somewhat unclear.

Measuring thwarted belongingness in the IPTS

Joiner and colleagues developed the fifteen-question Interpersonal Needs Questionnaire (INQ-15) as a companion instrument to the IPTS, and this measure remains the only published measure in suicidology to assess thwarted belongingness, as defined by the IPTS (Van Orden et al., 2008a). An examination of the items on the INQ-15 reveals that many of the aforementioned observable indicators and anchoring facets of Joiner's belongingness construct are not directly captured or measured in the INQ-15 (see Appendix E), which makes the operationalization of the

construct weak in terms of direct alignment with, and correspondence to, elements in the IPTS model.

Van Orden et al. (2012) examined thwarted belongingness in an adult community sample, finding associations of the construct with negative physical and mental health outcomes, biological stress responses, and elevations of pessimism, anger, and anxiety. Despite this, support for thwarted belongingness as an independent predictor of suicidal ideation has been mixed. For college students specifically, Van Orden et al., (2008b) found that thwarted belongingness significantly predicted suicidal ideation, mediating the relationship between increased suicidal ideation during summer months when students are not on a college campus when they reported higher levels of thwarted belongingness. However, some studies have failed to consistently find that thwarted belongingness is a significant predictor of suicidal ideation (Anestis & Joiner, 2011; Horton, Hughes, King, Kennard, Westers, et al., 2016). Anestis and Joiner (2011), when controlling for sex, depressive symptoms, and negative urgency, did not find support for thwarted belongingness as a significant independent predictor of suicidal behavior in adult outpatients. Most recently, in a sample of adolescent inpatients, Horton, Hughes, King, Kennard, Westers, et al. (2016) found thwarted belongingness to be the least impactful construct of Joiner's theory, with only marginal statistical significance.

Perceived burdensomeness

The second component in the IPTS model of 'desire' for suicide is the belief, held by people contemplating suicide, that others would be better off without them. Past research has found family conflict, unemployment, and physical illness to be among the strongest predictors of suicidal ideation (Van Orden et al., 2010; Waern, Rubenowitz, Wilhelmson, 2004; Bastia & Kar, 2009), underscoring the idea that contemplators of suicide may perceive themselves as a

burden upon others. The relation of burdensomeness and suicide can be traced back to family systems theories, such as that of Sabbath (1969), which drove research uncovering findings indicating that children of unwanted pregnancies (Rosenthal & Rosenthal, 1984) and adolescents who were given messages from parents that they were expendable (Woznica & Shapiro, 1990), had higher rates of suicidal behavior. Similar to Joiner's conception of thwarted belongingness, Sabbath posits that past theoretical models do not account for the many adolescents and adults who receive such messages of 'expendability', but do not commit suicide. Given this, Joiner argues that individuals' *perceptions* of themselves as a burden, to others as well as society, is the common thread of several interpersonal risk factors for suicidal behavior. Further, Joiner argues the importance of measuring of variables such as burdensomeness in a dimensional, multifaceted way. Theoretically, Joiner defines *perceived burdensomeness* as a construct that encompasses individuals' belief that their death would be worth more to others than their life ("I am a burden"), and includes elements of both self-hate and feelings of being a liability to others (Joiner, 2005; Van Orden et al., 2010, p. 584).

Measuring perceived burdensomeness in the IPTS

Similar measurement and clarity concerns are present within the perceived burdensomeness construct as in thwarted belongingness. Distress from negative life events that separate or make individuals reliant on society, such as homelessness, unemployment, or incarceration, and consequential feelings of agitation, low self-esteem, and shame are all reported by Van Orden et al. (2010) to be observable indicators of perceived burdensomeness. However, within the IPTS, it is not clear whether it is the psychological distress experienced by individuals in these situations, or the specific *perception* they have of being a burden on society when encountering these situations, that serves as the core construct of risk. Moreover, such

statuses such as being physically ill or having a lower societal status, both of which are included in Joiner's theoretical construct, are not directly assessed within the INQ-15 (see Appendix D). With eight observable indicators (i.e., distress from homelessness; distress from incarceration; distress from unemployment; distress from physical illness; expendability/unwanted; belief that one is a burden; agitation; self-hatred; and liability) included within the IPTS concerning perceived burdensomeness, six items appear to be related to burdensomeness in the INQ-15, all of which seemingly reflect less on ideas of self-hatred, and more so on perceptions of whether a person feels they contribute to society. In addition, some perceived burdensomeness items in the INQ-15 appear connected to the 'reciprocal care' aspects defined within the construct of thwarted belongingness, generating some concern for overlap between these supposedly separate constructs.

Studies, some of which have been conducted by Joiner and colleagues, have shown that perceived burdensomeness is strongly associated with suicidal ideation. Filiberti et al. (2001) examined psychological autopsies of terminal cancer patients who died by suicide, finding themes that indicated perceiving themselves as a burden was a factor in their desire to commit suicide. In addition, an analysis of over 80 suicide notes highlighted the fact that perceptions of burdensomeness were present with greater frequency in the notes of those individuals who were considered to have made more serious suicide attempts, used more lethal means, and used means that resulted more frequently in death, as compared to those who made less serious, non-lethal suicide attempts (Joiner et al., 2002). In comparison to thwarted belongingness, perceived burdensomeness has found much more consistent empirical support as a statistically significant independent predictor of suicidal ideation in samples of college students, adult outpatients, and adolescent inpatients, (cf. Van Orden et al. 2008b; Anestis & Joiner, 2011; Horton et al., 2016).

Thwarted belongingness and perceived burdensomeness in the IPTS

Joiner argues that thwarted belongingness and perceived burdensomeness are both proximal and causal factors in individuals' desire to commit suicide. He maintains that each construct is a significant independent predictor of suicidal ideation and that thwarted belongingness and perceived burdensomeness must each be present for individuals to possess the 'desire' to commit suicide. Joiner also asserted that the interaction effect of both thwarted belongingness and perceived burdensomeness is more strongly predictive of suicidal ideation (Van Orden et al., 2010) than either element alone. Although the IPTS model has garnered some support in primarily European American samples (e.g., Lamis & Malone, 2011; Van Orden et al., 2012), the predictive operations of the separate constructs, their interactive effects, and the model have gained only mixed empirical support with samples of racially diverse populations, an issue that I will discuss further in the next section.

People of color and the Interpersonal-Psychological Theory of Suicide

In the largest study assessing the validity of the IPTS theory, Van Orden et al. (2012) tested the model across five different samples, totaling over 2000 participants, varying in age and level of psychopathology, in both university and community settings. These authors found that both thwarted belongingness and perceived burdensomeness, independently and interactively, statistically significantly predicted suicidal ideation in all five samples, with the interaction of the constructs explaining more variance than each independent construct on its own. The authors asserted the consistency of their ability to predict suicidal ideation across all five samples as support for their theory. Unfortunately, these authors neither conducted factor analytic tests to support the factor invariance of the INQ-15 across the samples, nor were the samples very racially diverse. For all five samples in their validity study, Van Orden et al. reported that the

majority of participants in each sample identified themselves as European American (some as high as 90%).

Other recent studies testing the IPTS model have found that the constructs of belongingness and burdensomeness statistically significantly predicted suicidal ideation (Cero, et al., 2015; Christianson et al., 2014). However, these studies failed to consistently report on, or account for, the racial diversity of their samples; either data on this point was not collected or not reported on by these authors, and no reporting of specific tests by race were present in their statistical analyses.

A few non-replicated studies (Davidson et al., 2010; O'Keefe et al., 2014; Wong et al., 2011; Garza & Pettit, 2010), have specifically considered the effect of racial demography on the endorsement of belongingness and burdensomeness, and show only partial support for the theory. I will discuss findings from these studies in the next sections by specific non-Latino/a racially diverse groups.

African Americans and the IPTS model

Research indicates that African Americans have dramatically different suicide rates than that of European Americans (5.6 versus 15.8 suicides per 100,000), suggesting that there may be culture-based differences in the suicide-related behavior of the two groups (AAS, 2016). In the only study to specifically test the applicability of the IPTS to African Americans, Davidson et al. (2010) found that thwarted belongingness and perceived burdensomeness significantly predicted suicidal ideation for a group of 115 African Americans in a university sample. More importantly, Davidson et al., discovered that certain protective factors culturally specific to African Americans, such as increased levels of religiosity and hope, moderated the relationship of Joiner's constructs to suicidal ideation so that when religiosity and hope were high, the positive

associations between Joiner's constructs and suicidal ideation were weakened, as compared to when religiosity and hope were low. These results support the idea that particular culture-bound variables can change the relations between belongingness and burdensomeness and a desire to attempt suicide.

American Indians and the IPTS model

In the only study to test the applicability of the IPTS with an American Indian community sample, O'Keefe et al. (2014) found very little support for the model. In a community sample of 171 American Indians, representing 27 different tribes, perceived burdensomeness was found to be a significant predictor of suicidal ideation, yet, thwarted belongingness was not. However, the overall statistical model tested by O'Keefe et al., which included an interaction term for burdensomeness and belongingness, was found to be statistically significant, with higher levels of both constructs being associated with higher levels of suicidal ideation. Nevertheless, the authors warn that their results must be cautiously interpreted, as the amount of variance in suicidal ideation accounted for by perceived burdensomeness was low ($\Delta r^2 = .04$) and the observed interaction effect of perceived burdensomeness and thwarted belongingness ($r^2 = .04$) was only visible after controlling for several other demographic factors, and accounted for less variance than variables such as mental illness and SES ($r^2 = .23$; O'Keefe et al., 2014).

The results obtained by O'Keefe et al. also need to be considered within the context of the higher base rate for suicide among American Indians as compared to that of the general US population (AAS, 2016). In comparison to other racial groups, American Indians show a base rate in suicide completion rates closer to that of European American (12.6 versus 15.8 per 100,000; AAS, 2016). Respectively, the IPTS model and its associated constructs, which have

found support in European American samples, should be expected to hold as robustly for American Indians, a racial group that also has a high baseline rate for suicide. The fact that the constructs hold for the racial group with the highest frequency of suicide completion but not for the group with the second highest frequency rate, suggests that there are other factors, likely cultural, at play in differences in the frequency of suicide among different racial groups. Support for this assertion can be found within other empirical work examining suicidal behavior among various American Indian tribes (e.g., Scheel, Prieto, & Biermann 2011).

Asian Americans and the IPTS model

Despite Asian Americans having drastically lower suicide completion rates than European Americans (6.6 per 100,000 versus 15.8 per 100,000; AAS, 2016), some recent studies have found that Asian American college students endorse significantly more suicidal ideation than their European American peers (Brownson et al., 2014; Wong et al., 2011). However, when testing the IPTS constructs of suicidal desire in a sample of Asian American university students, Wong et al. (2011) found results that only partially support the model. Similar to O'Keefe et al. (2014), these researchers found support for perceived burdensomeness as a predictor of suicidal ideation, but not for thwarted belongingness. Wong et al. conducted a mixed methods study, using qualitative analysis on open ended responses inquiring as to why Asian Americans think their peers in their racial group may ideate about suicide. The authors discovered a theme of unfulfilled expectations within the responses, such as not meeting the standards of their family or peer group. This culture-based, Asian American value of familial expectations is not encompassed within Joiner's two suicidal constructs that purport to lead to suicidal desire. Social and familial expectations are values that can have strong effects within Asian culture (Wong et

al., 2011; Cheng, Fancher, Ratanasen, Connors, Duberstein, et al., 2010) providing additional evidence that cultural context can influence or affect the constructs within the IPTS model.

Latino/a Americans and the Interpersonal-Psychological Theory of Suicide

As my study focused on the applicability of the IPTS model to Latino/a college students and their suicidal behavior, in this section, I will address the general literature on Latino/a suicidal behavior, as well as the specific literature concerning Latino/a college students.

Suicidal behaviors among Latino/a Americans, specifically Latino/a college students, represents a pressing mental health concern. As noted previously, research regarding Latino/a suicidality has not advanced sufficiently, and Latino/as remain under-examined in the suicide literature (Baca-Garcia et al., 2011; Zayas et al., 2005). The American Association for Suicidology reports that 3,303 Latino/a Americans committed suicide in 2015. Despite having drastically lower suicide rates than European Americans, researchers have consistently found trends in which, younger Latino/as in particular, report more suicidal ideation, higher attempt rates, and lower rates of seeking psychological help than their European American peers (Zayas et al., 2005; CDC, 2014; Locke & Newcomb, 2005; Tortolero & Roberts, 2001; De Luca et al., 2015; Brownson et al., 2014). However, only two independent studies have sought to directly and specifically apply the IPTS model to a sample of Latino/as, each of which found mixed results.

With a small sample of 61 Mexican national and Mexican American outpatient women, Garza and Pettit (2010) found partial support for the IPTS model. Similar to O'Keefe et al. (2014) and Wong et al. 2011, these researchers found support for perceived burdensomeness as a predictor of suicidal ideation, but not for thwarted belongingness or for the interaction term of the two constructs.

Of importance, the work of Garza and Pettit (2010) began to focus on the effect unique cultural factors in the Latino/a population, such as *familismo* (a strong sense of identification with, and loyalty, responsibility and attachment to, one's family; cf. Marin & Marin, 1991), have on Joiner's IPTS constructs, but found no statistically significant relations. Garza and Pettit reference restriction of range and power difficulties within their sample as possible reasons that their results did not support Joiner's theory or their predictions that high levels of familismo would interact with high perceived burdensomeness to increase suicidal ideation. Garza and Pettit suggest that investigations replicating their findings are needed with other groups of Latino/as within the United States. Further, Garza and Pettit suggest that researchers continue to focus on cultural specific factors to investigate the validity of Joiner's constructs within ethnic minority samples, and to determine the relevance of both theoretically derived risk factors and culture-based protective factors for Latino/as.

Very recently, Joiner and colleagues were the first to test the IPTS model specifically with a sample of Latino/a American college students ($n = 82$), as compared to a group of non-Latino college students ($n= 245$) and to directly examine ethnicity within the theoretical model. Acosta, Hagen, and Joiner (2017) equated participant's ethnicity to their self-identified racial status as reported on a demographic questionnaire. Acosta et al. hypothesized that the importance of family within Latino/a culture would lead Latino/a college students to feel significantly less thwarted belongingness, perceived burdensomeness, and suicidal desire than their non-Latino/a peers. Moreover, Acosta et al., tested the moderating role of ethnicity within the IPTS model, hypothesizing that Latino/a college students who *did* experience high thwarted belongingness and perceived burdensomeness, despite their family connectedness, would thus experience the highest levels of suicidal desire. The authors found that Latino/a college students felt

significantly less perceived burdensomeness and suicidal desire than their non-Latino/a peers, but did not significantly differ on feelings of thwarted belongingness. Moreover, the authors found moderating effects of ethnicity, but in the opposite direction than predicted. Acosta et al. discovered that Latino/a ethnic status weakened the relationship between thwarted belongingness and suicidal desire, and between perceived burdensomeness and suicidal desire, as compared to non-Latino/a ethnic status.

It is important to note that Acosta et al. (2017) did not directly measure the Latino/a college students' cultural identity or family connectedness. Rather, the authors built their study upon the assumption that self-identifying as Latino/a in a categorical demographic questionnaire would indicate level of adherence to Latino/a cultural values. Acosta et al. states that ethnic status was used as a proxy for collectivism within their study, and that the true level of acculturation or enculturation of their sample was not explored (p. 60). Given that the sample of Latino/a college students explored within Acosta et al.'s study did not significantly differ from the non-Latino/a students on all IPTS constructs, and that ethnicity was measured through a self-reported, categorical variable, the true cultural variance and identification of their sample groups may be questioned. Moreover, Acosta et al.'s sample of students who identified as Latino/a was much smaller than the number of students who identified as non-Latino/a, creating a non-equal comparison across groups, possibly effecting their statistical power and analyses. Acosta et al. recommends that future studies use a measure of cultural orientation along with ethnicity in order to compare ethnicity directly with burdensomeness, belongingness, and suicidal risk (p. 60).

In summary, cultural factors of relevance, such as acculturation, enculturation, and acculturative stress have not been thoroughly examined in IPTS research, and have not yet fully

clarified the applicability of the IPTS model to Latino/a American college students. I will consider these cultural factors in more detail in the next section.

Cultural factors of relevance

Acculturation and enculturation. Given that approximately 40% of Latino/a Americans identify as foreign born, first generation immigrants (US Census Bureau, 2016), scholars have emphasized that acculturation and enculturation are critical to consider within Latino/a American research (Del Pilar, 2009). The examination of acculturation for immigrant groups has been a focus of investigators since the early 20th century (cf. Thurnwald, 1932), with understandings of the parallel importance of enculturation coming to the fore in the mid-20th century (cf. Bonner, 1953). The study of acculturation and enculturation has been a staple in the research of Latino/a populations for more than 30 years (cf. Bernal, 1990; Padilla & Lindholm, 1984).

Acculturation has been defined as the extent to which people incorporate and adjust to the norms and values of a dominant culture (cf. Marin et al, 1987), while *enculturation* is defined as the extent to which people adhere to their own indigenous culture (cf. Garcia & Lega, 1979; Rogler et al., 1991). Investigators examining college student suicide and the applicability of the IPTS to Latino/as have often failed to consider Latino/a students' sense of adherence to their culture or to the majority culture (Acosta et al., 2017). Gonzalez and Morrison (2016) asserted that researchers cannot presume the *extent* to which Latino/a college students identify with their indigenous culture or the majority culture simply because those students report a *general* identification with the Latino/a culture. A general identification as a Latino/a or to the Latino/a culture can encompass a wide range of differing levels of acculturation and enculturation for any given individual. Rather, in current research, a standard (and more accurate) method of assessing

the extent to which individuals identify as Latino/a is by measuring the degree to which they identify with their indigenous and the majority culture.

The level of Latino/a college students' enculturation and acculturation may have effects on both the amount of belongingness Latino/as feel, as well as their level of perceived burdensomeness in relation to society. Based on past research (Oquendo Dragatsi, Harkavy-Friedman, Dervic, Currier, Burke et al., 2005; Hovey, 1999), a strong identification with an indigenous culture can increase feelings of belongingness by increasing social support opportunities within the indigenous culture (e.g., connections with friends, family, and community). Conversely, when considering high levels of enculturation, Latino/as' perceptions of burdensomeness may also increase, especially when they are not fulfilling family expectations or during times of family conflict (Garza & Pettit, 2010).

Identifying with the majority culture may also have effects on suicidal risk, as research indicates that more acculturated individuals are more likely to receive and internalize messages that they inherently do not belong to the US majority culture (cf. Helms, 1995). As well, the support individuals may need to fully engage in majority culture (e.g., ESL classes, financial support, immigration policies) could be experienced as burdensome to society as a whole. Therefore, the level to which Latino/a American students identify with the majority culture (acculturation) may have an effect on their endorsement of thwarted belongingness and perceived burdensomeness, and the relation these constructs have with suicidal desire. Specifically, given past evidence of higher levels of acculturation for Latino/as being connected to higher rates of suicide (Fortuna et al., 2007), when levels of thwarted belongingness and perceived burdensomeness and acculturation are high, ratings of suicidal desire will likely be higher than when levels of acculturation are low. Conversely, when levels of thwarted

belongingness, perceived burdensomeness and enculturation are high, ratings of suicidal desire will likely be lower than when levels of enculturation are low.

Although specific research has not been conducted to examine the relations among acculturation, enculturation, thwarted belongingness, and perceived burdensomeness, research findings do suggest that acculturation and enculturation may play a role in the suicidal behavior of Latino/a students. With a sample of over 6,000 U.S Latino/a participants, Perez-Rodriguez et al. (2014) found the longer Latino/as had been in the United States, the fewer Latino/as present in their social groups, and the lower their identification with their indigenous culture, all independently led to a linear increase in Latino/as' lifetime risk for suicidal ideation and attempts. Perez-Rodriguez et al. suggested that their results indicated there are protective factors in traditional Latino/a culture, specifically high levels of social support, that may be lost when acculturation increases and enculturation decreases. Specifically, the findings of Perez-Rodriguez et al. suggest that the associations between risk factors and suicidal ideation may be stronger for those with high acculturation and/or low enculturation, as compared to those with low acculturation and/or high enculturation.

In another large study, Fortuna et al. (2007) interviewed over 2,500 US Latino/as to examine the psycho-socio and cultural factors associated with suicidal behaviors and the prevalence of Latino/a suicide. These authors discovered that high levels of acculturation were positively correlated with suicide attempts among the Latino/as in their sample. High acculturation has also been associated with higher risk for psychopathology (Breslau, Borges, Trancredi, Saito, Kravitz et al., 2011) and substance use (Caetano, Ramisetty-Mikler, & Rodriguez, 2009). Taken together, these findings suggest that high levels of acculturation are associated with the mental health and suicidal behavior of Latino/as.

Acculturative stress. The difficulties associated with increasing acculturation (or decreased enculturation) are commonly referred to as *acculturative stress* (Saldana, 1994). Acculturative stress encompasses many experiences that could affect the level of belongingness or burdensomeness an individual may feel, such as perceived discrimination, role and value conflicts, and cultural awareness related to generational status and time spent in the country (Padilla et al., 1985; Mena et al., 1987). Acculturative stress has also been found to be a meaningful factor in the academic experience of Latino/a college students (Saldana, 1994) by increasing the level of psychological stress they experience via encountering language, role strain, and interactive difficulties based on their indigenous ethnic identification, especially for those acquiring their education at predominantly European American campuses.

The link between acculturative stress and suicide has been long established for people of color, and Latino/a adolescents and college students specifically. In a landmark study, Hovey and King (1996) established a positive correlation among acculturative stress, depressive symptoms, and suicidal ideation in a sample of 70 immigrant and second-generation Latino/a youths, aged 14 to 20. This study was a mixed methods design, utilizing open-ended questions along with the Social-Attitudinal-Familial-Environmental Acculturative Stress scale. The authors reported that familial tensions and expectations for their future were significant predictors of participants' depression and acculturative stress. Most recently, Gomez et al. (2011), using the Situational-Attitudinal-Familial-Environmental scale of acculturative stress (SAFE-R; Marin & Gamba, 1996), found that Latino/a emerging adults (age 18 to 24) who reported experiencing social acculturative stress and perceived discrimination were three times more likely to have attempted suicide in their past. Taken together, these findings suggest that increased acculturative stress is associated with increased suicidal risk in college-aged Latino/as.

Walker et al. (2008) found that acculturative stress moderated the relationship between depression and suicidal ideation in a sample of 296 African American college students, such that the positive relationship between more extensive depressive symptoms and suicidal ideation was stronger for those with high acculturative stress than those with low acculturative stress. These authors viewed acculturative stress as a factor that may erode the protective effects that religiosity and social support have for African American populations against suicidal ideation (see Davidson et al., 2010). Walker et al. (2008) hypothesized that students' level of acculturative stress, rather than their actual levels of acculturation, increased suicidal ideation. However, Walker et al. did not include acculturation as a variable of interest, and were unable to explore this hypothesis.

Walker et al.'s (2008) hypothesis regarding the damaging role that acculturative stress may extend to Latino/a American college students is testable within my study, as I included both acculturation and acculturative stress as independent variables. As with acculturation, acculturative stress is highly related to the conceptualization of IPTS constructs. However, while acculturation represents the cultural identity of a participant, acculturative stress represents that participant's *experience* due to their cultural identity and the negative effects of acculturation. Therefore, these two variables may perform different roles in explaining the suicidal risk of Latino/a American college students. In this regard, acculturative stress has been found to predict psychological distress in Latino/a Americans over and above acculturation alone (Capielo, Delgado-Romero, & Stewart, 2015; Torres, 2010), but very little research exists to explore how acculturative stress may predict suicidal risk differently than acculturation alone. While acculturated identities may serve to strengthen or weaken construct relationships within the IPTS, acculturative stress may independently explain variance of these constructs within IPTS.

Acculturative stress may serve to capture a similar experience as measured by thwarted belongingness and perceived burdensomeness. Previous research findings indicate that acculturative stress may mediate the relations of thwarted belongingness or perceived burdensomeness in explaining suicidal risk, as it is a more experiential and proximal variable to suicidal ideation than acculturation alone.

The Present Study

For people of color and college students generally, and Latino/a college students specifically, there is evidence that different racial groups complete suicide at different rates and conceptualize suicidal behavior differently (AAS, 2016; Brownson et al., 2014; Maris et al., 2000; Shadick et al., 2015; Zayas et al., 2005). Evidence also exists that key culture-based variables such as acculturation, enculturation, and acculturative stress are important variables to explore in research concerning Latino/a samples (Bernal, 1990; Del Pilar, 2009; Padilla & Lindholm, 1984), and may be related to the suicidal behavior of Latino/as (Fortuna et al., 2007; Gomez et al., 2011; Hovey & King, 1996; Perez-Rodriguez et al., 2014, Saldana, 1994; Walker et al., 2008). Finally, empirical findings suggest clearly that key culture-based variables may affect the suicidal behavior of various racially diverse groups, yet these culture-based factors are not present in the IPTS, raising the question of whether the IPTS applies to racially diverse people (Davidson et al., 2010; Garza & Pettit, 2011; O'Keefe et al., 2014; Wong et al., 2011). The few studies to consider culture based variables within the IPTS model (Acosta et al., 2017; Garza & Pettit, 2011), have failed to fully clarify differences in the extent to which an individual identifies with cultural values or experiences stress as related to their racial identity. As well, the experience of acculturative stress may mediate variance in suicidal risk explained by the theoretical constructs of thwarted belongingness and perceived burdensomeness.

In my study, I tested and expanded upon the IPTS, by applying Joiner's construct of suicidal desire to a sample of Latino/a American college students, to examine ways in which the model can explain suicidal risk. In addition, I gave consideration to how the specific cultural factors of acculturation, enculturation, and acculturative stress may indirectly affect the relations among perceived burdensomeness, thwarted belongingness and suicidal risk among Latino/a college students.

This study regarded acculturation and enculturation as identity variables whose varying levels may moderate the relationships between IPTS constructs, while acculturative stress was hypothesized to more fully represent the experience and symptomatic results of an enculturated identity. As acculturative stress is a more experiential variable, it was predicted to mediate and explain the relationship between IPTS constructs and suicidal ideation.

CHAPTER 3

METHOD

Procedure

To generate a participant pool, I obtained a list of email addresses for all currently enrolled ISU students who identify as Latino/a or Hispanic from the University Registrar's Office. I sent out initial and follow-up email invitations to these students to participate in my research (see Appendix A and B) during the Spring 2017, Summer 2017, and Fall 2017 semesters. I also offered participants the opportunity to enter a random drawing to win one of three \$50 U.S. dollar gift cards to an online retailer, Amazon (See Appendix B).

The recruitment email informed participants of all human subject rights, contained brief informed consent information, and a URL for students to access research materials on Qualtrics™, a firewalled online survey platform. On Qualtrics™, participants read and endorsed full informed consent to participate (see Appendix C) and attested to their adult age (age 18 and over). Following this, participants completed demographic questions, the INQ-15, Suicidal Risk Questionnaire, Acculturation and Enculturation items, and the SAFE-R. Participants were then directed to a debriefing page thanking them for their participation and providing them mental health resource information as well as the phone number to a national suicide hotline.

Participants were clearly advised about the sensitive nature of my research topic concerning their past, current, and future thoughts and behaviors concerning suicide. Due to IRB restrictions (Appendix I), participants who had a past history of suicidal ideation or attempts were cautioned to carefully consider their participation in my study, especially if they felt doing so would cause them any stress or psychological difficulties, or if they were currently dealing

with a mental health issue. Also, any participants who endorsed current, serious suicidal ideation (on SRQ items) during the course of the survey were immediately directed to the debriefing page at the end of the survey. On the debriefing page, I provided mental health agency contact information for local and national counseling services, including the ISU Student Counseling Service, Mary Greeley Medical Center, and The National Suicide Prevention 24-hour crisis Lifeline. This same mental health agency contact information was included within the informed consent document at the beginning of the survey, in case participants experienced discomfort during or after the completion of research materials.

Participants

Full initial return was 184, but due to attrition, I was left with 147 usable cases. Participants ($N = 147$) ranged in age from 18 to 39 ($M = 20$, $SD = 3.89$). The sample was 73% female. Fifty-two percent identified as Mexican American, 13% as Puerto Rican, 10% as Central American, 10% as multiracial, 9% as South American, 2% as Cuban, and the remaining Latino/a national ancestries (e.g., Dominican, Guatemalan, Panamanian) each comprised less than 2% of the sample.

As to generational status, 36% of the sample identified as first-generation Latino/a American; 32% identified as having been born in the US with at least one parent also being born in the US; 14% identified as having immigrated to the US with both parents as a child or as an adult; 8% identified as having been born in the US as well as having one or more grandparents born in the US; 6% identified as being born in the US with one or more great grandparents also being born in the US; and 4% identified as having been born in the US with grandparental lineage extending beyond 4th generation status within the US. Regarding language preference, 55% of the sample reported preferring to speak Spanish at home, with

the remainder preferring English. At college, 97% of the sample reported preferring to use English, with the remainder 3% preferring Spanish.

Measures

Demographic information

Participants completed a demographic questionnaire (see Appendix D) soliciting data on their sex, age, Latino/a ethnicity, language preferences, and generational status.

Interpersonal Needs Questionnaire

The Interpersonal Needs Questionnaire-15 (INQ-15; Van Orden et al., 2008a; Van Orden et al., 2012) is a self-report measure consisting of 9 items that assess participants' sense of thwarted belongingness as well as 6 items that assess participants' sense of perceived burdensomeness (see Appendix E). A revision of the original 25-item scale, the INQ-15 was reduced to resolve issues of item collinearity and to reduce administration time. While many studies have independently reduced and adapted the original INQ-25 to various lengths (12, 18, 20 item scales), the INQ-15 has been found to demonstrate the highest internal consistency, a reliable factor structure, and the highest concurrent validity of all reduced versions (Hill et al., 2015). I chose the INQ-15 for my study, as it is the only reduced version endorsed by Joiner and his colleagues (Van Orden et al., 2012), and because it has been recommended by researchers who have performed confirmatory factor analyses to be superior to other versions of the scale (Hill et al., 2015).

On the INQ-15, participants indicated the degree to which each item was *currently* true for them. Scores could range from 1 to 7, with polar anchors of (1) “*Not at all true for me*” to (7) “*Very true for me*”. Higher scores indicate a *greater* sense of thwarted belongingness or perceived burdensomeness. Scores on each subscale were employed as separate variables, with

subscale scores being divided by the number of items on each scale, to maintain comparability to qualitative anchors. Six of the fifteen items (items 7, 8, 10, 13, 14, and 15) were reverse scored.

The INQ-15 was created to assess the constructs associated with Joiner's IPTS. To date, the INQ and its reduced versions are the only published scale that measures IPTS constructs as they were theoretically defined in the model (Van Orden et al., 2008a). Regarding the validity of the INQ-15, Van Orden et al. (2012), using a sample of over 600 undergraduates, reported that thwarted belongingness was significantly correlated with associated predictors of suicidal ideation, such as loneliness ($r = .91$), lack of social support ($r = .76$), and lack of relatedness ($r = .84$). Concerning discriminant validity, burdensomeness was weakly statistically significantly correlated with autonomy ($r = -.18$), responsibility to family ($r = -.15$), and self-competence ($r = -.26$). Analyses across five separate samples consistently showed that thwarted belongingness and perceived burdensomeness were separate but related constructs (range of $r = .30$ to $.60$), and each independently demonstrated adequate predictive power for future suicide-related issues (OR = 1.64 to 1.83, $p < .05$; Van Orden et al., 2012).

Van Orden et al. (2008a) found strong internal consistency for the INQ-15 subscales, with the thwarted belongingness subscale demonstrating a Cohen's alpha of .85, and perceived burdensomeness a Cohen's alpha of .89.

Moreover, confirmatory factor analyses conducted by Hill et al. (2015) found the INQ-15 to consistently show good model fit across various samples, including military, older adult, and college student samples. With college students in particular, Hill et al.'s confirmatory factor analysis, using global indices of model fit, found a root mean square error of approximation (RMSE) value of .04 (.06 and below indicating good fit), a comparative fit index (CFI) score of

.96 (.95 and above indicating good fit), and a standardized root mean square residual (SRMSR) value of .05 (.08 and below indicating good fit).

Similar to Van Orden et al. (2012), Hill et al. (2015) found strong internal consistency for the INQ-15 subscales with their college student sample. The thwarted belongingness subscale demonstrated a Cohen's alpha of .87, and perceived burdensomeness a Cohen's alpha of .85.

Other studies, investigating thwarted belongingness and perceived burdensomeness in racially diverse samples, have used the 18-question version of the INQ. Many of these studies were published before Joiner's formal validation of a reduced version of the scale (Van Orden et al., 2012). Since then, the INQ-15 has been recommended for future use and has been shown to most consistently demonstrate good model fit, however, the INQ-18 has been shown to perform similarly to the INQ-15, particularly on items of perceived burdensomeness (Hill et al., 2015). Studies utilizing the INQ-18 with racially diverse samples have found Cohen's alphas for an African American sample of .84 for thwarted belongingness and .82 for perceived burdensomeness (Davidson et al., 2010); with an American Indian sample of .91 for thwarted belongingness and .93 for perceived burdensomeness (O'Keefe et al., 2014; and, with an Asian American sample of .88 for thwarted belongingness and .77 for perceived burdensomeness (Wong et al., 2011. Garza et al. (2010), examining only perceived burdensomeness with a sample of 61 Mexican American women, translated 9 perceived burdensomeness items of the INQ-18 into Spanish and found the subscale to have an internal reliability estimate of .79.

Suicidal Risk Questionnaire

Past, current and future suicidal risk was measured using the Suicidal Risk Questionnaire (SRQ; see Appendix F; Westefeld, Cardin, & Deaton, 1992). The SRQ is comprised of three

self-report questions concerning thoughts or behaviors about suicide: past suicide attempts; current thoughts about suicide; and, potential future thoughts about suicide.

Scores concerning suicide ideation or attempts during the past year can range from 1 (*I have never thought about killing myself*) to 5 (*I have tried to kill myself more than once*). Scores for current suicidal ideation can range from 1 (*I never think about killing myself*) to 3 (*I seriously think about killing myself*). Scores concerning future thoughts or behaviors about suicide can range from 1 (*I do not think I will ever think about killing myself*) to 4 (*I might try to kill myself*; see Appendix E). The SRQ items are moderately related to each other (range of $r = .55$ to $.56$; $p < .05$); therefore, Westefeld et al. (1992) combined all scores to obtain a total SRQ score. Higher scores represent *more extensive* past, current, and future suicidal thoughts or attempts.

With respect to validity, the SRQ has demonstrated positive relations with scales measuring depression and hopelessness, constructs that been found to be strong predictors of suicidal ideation (Bostwick & Pankratz, 2000; Beck, Brown, & Steer, 1979). Specifically, significant moderate correlations of .45 (Westefeld, Scheel, & Maples, 1998) and .48 (Westefeld et al., 1992) were found between the SRQ and the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979). The BDI item assessing hopelessness was also found to be moderately correlated with the SRQ current risk item ($r = .44$; Westefeld et al., 1998). Scheel (1999) reported similar correlational magnitudes among the BDI depression and hopelessness items and the past and future SRQ items. The SRQ has also been used in research with a wide range of racial groups (e.g. Whisman, Judd, Whiteford, & Gelman, 2013; Scheel, 1999).

Bidimensional Acculturation Scale for Hispanics

The extent to which participants identify with their own indigenous (Latino/a) and majority (European American) cultures was measured using the Bidimensional Acculturation Scale for Hispanics (BAS; Marin & Gamba, 1996; see Appendix G).

The BAS (Marin & Gamba, 1996) is a self-report measure consisting of 24 items that assess participants' level of acculturation and enculturation, using 12 items each for the acculturation and enculturation domains, measuring the three factors of language use, language proficiency, and use of electronic media. Items assess Spanish and English language use, with participants indicating how often they speak, think, and converse in both languages. Scores range from 1 to 4, using the anchors of (1) *“Almost never;”* (2) *“Sometimes;”* (3) *“Often;”* and (4) *“Almost always.”* Language proficiency is assessed by 6 enculturation items (e.g., “How well do you read in Spanish?”) and 6 acculturation items (e.g., “How well do you read in English?”) capturing how well a participant speaks, reads, writes, and understands media in each language. Language proficiency scores range from 1 to 4, using the anchors of (1) *“Very poorly;”* (2) *“Poorly;”* (3) *“Well;”* and (4) *“Very well.”* Last, the electronic media factor consists of 3 enculturation items (e.g., “How often do you watch television programs in Spanish?”) and 3 acculturation items (e.g., “How often do you watch television programs in English?”) that assess how often a participant uses Spanish or English media (television, music, radio). Electronic media scores range from 1 to 4, using anchors of (1) *“Almost never;”* (2) *“Sometimes;”* (3) *“Often;”* and (4) *“Almost always.”*

To score acculturation and enculturation across all three factors of the BAS, individual participant responses to the 12 items within each acculturation and enculturation were averaged. Each participant was assigned two scores, one an average of all 12 enculturation items, and

another for the average of all 12 acculturation items. These averages represent the level of acculturation and enculturation of the respondent, with average score ranges for each domain ranging from 1 to 4. Following the suggestion of Marin and Gamba, this study used a score of 2.5 as a cutoff score to indicate low or high levels of enculturation and acculturation.

The BAS is one of the few scales that assesses acculturation and enculturation as a non-zero-sum product, in which gains in one domain do not equal losses in another cultural domain (Marin & Gamba). With respect to validity, using a random sample of 254 Latinos within the San Francisco community, Marin and Gamba originally found the two combined overall scores (enculturation and acculturation) of the BAS to correlate with: generational status (later generations were correlated with enculturation at $r = -.42$, and acculturation at $r = .50$); age at arrival in the United States ($r = .41$ for enculturation; $r = -.60$ for acculturation); length of residence in the United States ($r = -.28$ for enculturation; $r = .46$ for acculturation); amount of formal education ($r = -.29$ for enculturation; $r = .59$ for acculturation); proportion of respondents' lives lived in the United States ($r = -.17$ for enculturation; $r = .41$ for acculturation); ethnic self-identification ($r = -.38$ for enculturation; $r = .47$ for acculturation); and with another acculturation scale, the Short Acculturation Scale for Hispanics (SASH; Marin et al., 1987; $r = -.64$ for enculturation; $r = .79$ for acculturation). These correlations were reported by the authors to be higher in magnitude and more statistically significant than other unidirectional and bidirectional scales of acculturation (Marin and Gamba, 1996).

Marin and Gamba (1996) found the three subscales to have very high internal consistency, ranging from $\alpha = .81$ to $.97$. Overall acculturation and enculturation domain scores also showed high internal consistency ($\alpha = .90$ for the enculturation domain; $\alpha = .96$ for the acculturation domain). When dividing their participant pool by racial subgroup and national

ancestry, Marin and Gamba found the subscales had similar reliability indices: Mexican Americans ($\alpha = .93$ for enculturation domain; $\alpha = .97$ for acculturation) and Central Americans ($\alpha = .87$ for enculturation domain; $\alpha = .95$ for acculturation). These similar ethnic-based reliability estimates suggest that this scale can also be used effectively with most Latino/a ethnicities.

SAFE-R Scale

To assess acculturative stress, I used a reduced version of Padilla et al.'s (1985) 60-item Social-Attitudinal-Familial-Environmental (SAFE) scale. The reduced version of this scale was developed by Mena et al. (1987) to assess perceived discrimination and included 17 of Padilla's original items as well as 7 new items developed by Mena et al. (See Appendix H).

The SAFE-R utilizes a Likert scale format, ranging from 1 (*Not stressful*) to 5 (*Extremely stressful*), where participants report the degree to which four contextual domains (social, attitudinal, familial, and environmental) cause them psychological stress. Participants can also endorse that an item is not applicable to them (they have not experienced the statement); these items are scored as zero (0). Example items include: "I have no close friends" to represent social stress; "I often think about my cultural background" to represent attitudinal stress; "Close family members and I have conflicting expectations about my future" to represent familial stress; and, "I often feel ignored by people who are supposed to assist me" to represent environmental stress. Scores on each SAFE-R domain were combined to yield a total score, with the total score being divided by the number of items on the SAFE-R, to maintain comparability to qualitative anchors. My approach to utilizing total SAFE-R scores (versus using subscale domains) is supported by Mena (1987), and has been done in previous research (Hovey & King, 1996; Hovey, 2000).

As to the validity of the SAFE-R, Fuertes et al. (1996) found that all four factors of the SAFE scale were correlated at low to moderate levels with open-ended items created by the authors to assess general stress related to living in the United States (“Do you find anything particularly stressful related to being a Hispanic living in the United States?”; r range from .17 to .51; $p < .01$).

Fuertes et al. (1996) also conducted an exploratory factor analysis on the SAFE items, using principle component analysis with a Varimax rotation to explore emergent factors. Results indicated that Factor 1, containing ten environmental stress items, accounted for 31% of the variance; Factor 2, containing four attitudinal stress items, accounted for 9% of the variance; Factor 3, with four familial stress items, accounted for 8% of the variance; and, Factor 4, with three social stress items, accounted for 6% of the variance. A total of 55% of the variance in SAFE-R scores was accounted for by these four factors. The eigenvalues associated with the factors were, respectively, 7.46, 2.25, 2.02, and 1.52. Fuertes et al. (1996) also found a high internal consistency estimate for the total score ($\alpha = .89$).

Research Questions

Research questions of interest

Question 1. Do thwarted belongingness, perceived burdensomeness, and the interaction of the two (thwarted belongingness and perceived burdensomeness) each explain a statistically significant amount of variance in Latino/a American college student suicidal risk, with the interaction of thwarted belongingness and perceived burdensomeness accounting for the greatest amount of variance in Latino/a American college student suicidal risk?

Question 2. Does acculturation moderate the relation between thwarted belongingness and suicidal behavior?

Question 3. Does acculturation moderate the relation between perceived burdensomeness and suicidal behavior?

Question 4. Does enculturation moderate the relation between thwarted belongingness and suicidal behavior?

Question 5. Does enculturation moderate the relation between perceived burdensomeness and suicidal behavior?

Question 6. Does acculturative stress mediate the relation between thwarted belongingness and suicidal behavior?

Question 7. Does acculturative stress mediate the relation between perceived burdensomeness and suicidal behavior?

Specific hypotheses

Hypothesis 1. Thwarted belongingness, perceived burdensomeness, and the interaction of thwarted belongingness and perceived burdensomeness) will each explain a statistically significant amount of variance in Latino/a American college student suicidal risk, with the interaction of thwarted belongingness and perceived burdensomeness accounting for the greatest amount of variance in Latino/a American college student suicidal risk.

Hypothesis 2. Acculturation will statistically significantly moderate the relation between thwarted belongingness and SRQ scores such that when levels of acculturation and thwarted belongingness are high, ratings of suicidal risk will be higher than when levels of acculturation and thwarted belongingness are low.

Hypothesis 3. Acculturation will statistically significantly moderate the relation between perceived burdensomeness and SRQ scores such that when acculturation and perceived

burdensomeness are high, ratings of suicidal risk will be higher than when levels of acculturation and perceived burdensomeness are low.

Hypothesis 4. Enculturation will statistically significantly moderate the relation between thwarted belongingness and SRQ scores such that when levels of enculturation and thwarted belongingness are high, ratings of suicidal risk will be lower than when levels of enculturation are low.

Hypothesis 5. Enculturation will statistically significantly moderate the relation between perceived burdensomeness and SRQ scores such that when levels of enculturation and perceived burdensomeness are high, ratings of suicidal risk will be lower than when levels of enculturation are low.

Hypothesis 6. Acculturative stress will statistically significantly mediate the relationship between thwarted belongingness and SRQ scores, so that the direct relation between thwarted belongingness and suicidal risk will be reduced to zero (or to a statistically non-significant low magnitude) when acculturative stress is present in the regression equation predicting SRQ scores from thwarted belongingness.

Hypothesis 7. Acculturative stress will statistically significantly mediate the relationship between perceived burdensomeness and SRQ scores, so that the direct relation between perceived burdensomeness and SRQ scores will be reduced to zero (or to a statistically non-significant low magnitude) when acculturative stress is present into the regression equation predicting SRQ scores from perceived burdensomeness.

CHAPTER 4

RESULTS

Power Analysis

I conducted a post-hoc power analysis using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) to determine the statistical power available using my obtained sample size ($n = 147$), to detect an effect size of 0.15 at $p < .05$, given the analyses used in my study. G*Power determined that the critical value for F tests rested at 3.05, offering a power coefficient of .99.

Data Cleaning

Missing data

Data were examined prior to analyses for IRB required exclusions, missing data points, and responses that were out of established Likert scale ranges.

Initially, 184 participants provided responses. However, according to IRB requirements (see Appendix I), participants who affirmatively endorsed on the SRQ, as a current state of mind, that: “I seriously consider killing myself” [$n = 3$]) were not allowed to continue completing research materials and were immediately directed to a debriefing page with information regarding available mental health services. Because removal of these participants from the study occurred during the presentation of the first research measure (the SRQ), the remainder of their response records were empty and therefore were removed from the dataset.

Attrition and missing data were significant issues in my study. Within the 181 remaining cases, a total of twelve participants endorsed either no items whatsoever, or only initial items tapping demographic variables without completing any of the actual study measures. These cases were removed from the dataset.

Three participants failed to endorse only a single item, across study measures; as appropriate, replacement values based on extant subscale average were employed as replacements. Nine participants failed to endorse a single item on the SRQ; these missing data points were simply allowed to be treated as missing cases in analyses, as SRQ items are grounded within three time frames (past, present, future), and could neither be validly averaged nor employ the use of adjacent points as replacement values for individual missing items. Thirty-six participants failed to respond to any items whatsoever on the INQ-15; these values were left as missing cases. Four participants failed to respond to one, single item on a subscale of the INQ-15, the BAS-12, and the SAFE-R scale, but answered all other subscale items. For these four cases, the extant average of each individual's respective subscale score on the INQ-15 or BAS-12, or full scale SAFE-R was calculated and used to replace participants' missing data point. If participants failed to respond to at least 80% of a subscale, averaging was not performed and blank items were left as missing cases. These procedures resulted in a useable sample size of 147 participants, and brought about a modest reduction of sample size and degrees of freedom for certain analyses.

Statistical Analysis Procedures

For all descriptive analyses and analyses of variance, I used the Statistical Package for the Social Sciences (SPSS; 2016, version 24.0). For all moderation and mediation analyses, I used the Hayes PROCESS module (2015, version 2.15) for SPSS for analysis. The PROCESS module employs bootstrapping techniques in order to determine existing confidence intervals and dispersion parameters within the data, through high frequency repeated sampling of the data. Bootstrapping is a powerful method for testing the effects and relations of an intervening variable on the relation of independent and dependent variables (MacKinnon et al., 2004;

Williams & MacKinnon, 2008). The confidence intervals determined by bootstrapping techniques are used to indicate whether the indirect effects of intervening variables are statistically significantly within the distributional relations of independent and dependent variables (e.g., Shrout & Bolger, 2002).

Descriptive Data

The sample means, standard deviations, and ranges of all study measures are presented below in Table 1.

Table 1

Sample Means, Standard Deviations, and Ranges of Study Measures

Items	<i>M</i>	<i>SD</i>	Range	Scale range
1. SRQ	3.98	1.44	3.00-10.00	3-12
2. INQ-TB	2.71	1.25	1.00-5.78	1-7
3. INQ-PB	1.59	1.00	1.00-5.50	1-7
4. BAS-A	3.76	0.29	2.58-4.00	1-4
5. BAS-E	2.46	0.81	1.00-4.00	1-4
6. SAFE-R	1.80	0.80	0.17-4.67	0-5

Note. SRQ = Suicidal Risk Questionnaire; INQ-TB = Interpersonal Needs Questionnaire Thwarted Belongingness; INQ-PB = Interpersonal Needs Questionnaire Perceived Burdensomeness; BAS-A = Bidimensional Acculturation Scale for Acculturation; BAS-E = Bidimensional Acculturation Scale for Enculturation; SAFE-R = Situational, Attitudinal, Familial, and Environmental Scale for Acculturative Stress

INQ-15

The average sample score on the thwarted belongingness subscale was 2.71 (below the scale midpoint and toward the “*Not at all true for me*” anchor) and the average sample score on the perceived burdensomeness subscale was 1.59 (below the scale midpoint and toward the “*Not at all true for me*” anchor). Together, these means indicated participants in this sample, endorsed

low levels of feeling alone or without reciprocal relationships (thwarted belongingness) and low perceptions of themselves to be a burden upon others (perceived burdensomeness).

SRQ

The average sample score on the past suicidal risk item was 1.46 (below the scale midpoint and toward the “*I have never thought about killing myself*” anchor). The average sample score on the current suicidal risk item was 1.17 (below the scale midpoint and toward the “*I have never thought about killing myself*” anchor). The average sample score on the future suicidal risk item was 1.34 (below the scale midpoint and toward the “*I do not think I will ever think about killing myself*” anchor). These three items were combined for a total score of suicidal risk; with a sample average score of 3.98. These sample means indicated that participants reported low levels of suicidal risk, primarily endorsing a response lying between the “never” and “occasionally” item qualitative anchors.

BAS-12

The average sample score on the acculturation subscale was 3.76 (above the scale midpoint and toward the “*Almost always*” anchor). The average sample score on the enculturation subscale was 2.46 (above the scale midpoint and toward the “*Almost always*” anchor). Marin and Gamba (1996) suggested that scores on these subscales can be categorized as ‘low’ (1 to 2.4) or ‘high’ (2.5 to 4) levels of acculturation and enculturation. Using this scheme, these sample means indicated that participants endorsed a categorically ‘high’ adherence to the European American culture (acculturation), with small variability dispersion in scores, and a median cusp average regarding adherence to Latino/a culture. Marin and Gamba (1996) suggested that combined acculturation and enculturation scores of 5 or above indicated

biculturalism, or adherence to both Latino and non-Latino culture, while a score of 2.4 or below on both subscales would suggest little identification with either culture. The average combined subscale scores for the sample was 6.21 (SD = .72; Range = 4.92 – 8), indicating that the sample, on average, endorsed being bicultural.

SAFE-R

The average score on the SAFE-R was 1.8 (below the scale midpoint and toward the “*Not stressful*” anchor). This low mean indicates that the sample, on average, reported experiencing between a “not at all” to “somewhat” level of acculturative stress.

Inter-correlations of Study Measures

First order correlations and instrument alpha coefficients among study measures are presented below in Table 2.

Table 2

Inter-correlations and Alpha Coefficients of Study Measures

Scale	1	2	3	4	5	6
1. SRQ	.73					
2. INQ-TB	.44**	.89				
3. INQ-PB	.55**	.54**	.92			
4. BAS-A	-.03	-.08	-.02	.75		
5. BAS-E	.01	-.09	-.09	-.47**	.95	
6. SAFE-R	.28**	.36**	.36**	-.15	.24**	.90

Notes. **Significant at $p < .01$. Alpha coefficients are on the diagonal. SRQ = Suicidal Risk Questionnaire; INQ-TB = Interpersonal Needs Questionnaire Thwarted Belongingness; INQ-PB = Interpersonal Needs Questionnaire Perceived Burdensomeness; BAS-A = Bidimensional Acculturation Scale for Acculturation; BAS-E = Bidimensional Acculturation Scale for Enculturation; SAFE-R = Situational, Attitudinal, Familial, and Environmental Scale for Acculturative Stress

Relations among SRQ and INQ Subscales

As predicted by the IPTS model, thwarted belongingness and perceived burdensomeness showed a statistically significant moderate relation to each other ($r = .53, p < .01$), indicating that although the two constructs are related, they are largely measuring different constructs.

Total SRQ scores (suicidal risk) had moderate magnitude relations with thwarted belongingness (TB; $r = .48, p < .01$) and perceived burdensomeness (PB; $r = .55, p < .01$). These findings indicated that as participants' sense of thwarted belongingness and perceived burdensomeness increased, so did their self-reported level of suicidal risk, but it is important to note that at most INQ-15 scores shared only approximately 30% of their overall variance with SRQ scores. Thwarted belongingness was most strongly related to participants' self-reported future suicidal risk ($r = .46, p < .01$), followed by participants' endorsed current and past suicidal risk ($r = .39, p < .01, r = .30, p < .01$, respectively). Perceived burdensomeness was most strongly related to participant's current suicidal risk ($r = .50, p < .01$), followed by future and past suicidal risk ($r = .48, p < .01, r = .42, p < .01$, respectively), again, all of these relations accounting for a relatively small amount of shared variance between the measures.

Relations among INQ and BAS-12

Thwarted belongingness, perceived burdensomeness, and past, present and future suicidal risk, showed no statistically significant correlation to participants' endorsed level of acculturation or enculturation. However, these variables were statistically significantly correlated with participants' level of acculturative stress.

Acculturative stress had a low magnitude relation with overall suicidal risk ($r = .28, p < .01$), indicating that as participants' endorsed level of acculturative stress increased, their level of

reported suicidal risk increased. Acculturative stress also had low to moderate relations with both thwarted belongingness ($r = .36, p < .01$) and perceived burdensomeness ($r = .36, p < .01$), indicating as participants' level of reported acculturative stress increased, so did participants' level of thwarted belongingness and perceived burdensomeness,

Participants' levels of acculturation and enculturation on the BAS showed a moderate negative correlation with each other ($r = -.47, p < .01$), indicating that as participants' level of acculturation increases, their enculturation decreases, and vice versa. Participants' level of enculturation also had a low but statistically significant correlation with endorsed levels of acculturative stress ($r = .24, p < .01$). Participants' level of acculturative stress was not significantly related to their endorsed acculturation ($r = -.15$). These findings indicate that the more participants endorse adherence to their Latino/a culture, the higher their level of acculturative stress.

Hypothesis One: Tests of the IPTS Model Assumptions

Hierarchical linear regression analyses were utilized to test my first hypothesis, which sought to replicate Joiner's hypotheses and the explanatory value of the IPTS model within a sample of Latino/a American college students. Joiner hypothesizes that thwarted belongingness and perceived burdensomeness would each significantly predict suicidal risk, and that the interaction of the two would have a stronger predictive relationship than either construct alone. Demographic variables were placed in the first block, via forced entry, to control for variance in their relation to the independent variables of interest. I used a forced entry selection procedure placing thwarted belongingness in the second block perceived burdensomeness in the third block, and the interaction term (perceived burdensomeness X thwarted belongingness) in the

fourth block, to analyze variance accounted for in SRQ scores. The results of this regression analyses can be seen below in Table 3.

Table 3

Summary of Hierarchical Regression for IPTS Variables Predicting Suicidal Risk (N = 141)

Predictor	β	<i>se</i>	<i>t</i>	<i>p</i>	R^2	ΔR^2	F
Step 1 (Demos on SRQ)				.15	.05	.05	1.71
Constant		.82	4.53	<.001			
Sex	.09	.27	1.04	.30			
Age	-.12	.03	-1.33	.18			
Ethnicity	.09	.04	.090	.93			
Generation	.18	.09	2.09	.04			
Step 2 (TB on SRQ)				<.001	.22	.17	7.59
Constant		.79	2.94	<.001			
Sex	.06	.25	.78	.44			
Age	-.07	.03	-.87	.40			
Ethnicity	.02	.04	.27	.79			
Generation	.14	.08	1.87	.06			
TB	.42	.09	5.45	<.001			
Step 3 (PB on SRQ)				<.001	.34	.12	11.58
Constant		.73	3.40	<.001			
Sex	-.03	.23	-.34	.73			
Age	-.03	.03	-.44	.66			
Ethnicity	-.02	.04	-.27	.79			
Generation	.09	.08	1.21	.23			
TB	.20	.10	2.38	.02			
PB	.43	.12	4.98	<.001			
Step 4 (TBxPB on SRQ)				<.001	.35	.01	10.34
Constant		.88	1.99	.05			

Table 3 (continued)

Sex	-.03	.23	-.43	.67
Age	-.04	.03	-.49	.63
Ethnicity	-.02	.04	-.30	.76
Generation	.07	.08	1.01	.31
TB	.41	.19	2.51	.01
PB	.89	.44	2.82	.01
TBxPB	-.60	.11	-1.50	.14

Notes. SRQ = Suicidal Risk Questionnaire; TB = Thwarted Belongingness; PB = Perceived Burdensomeness; TB X PB = Interaction Term for Thwarted Belongingness and Perceived Burdensomeness

The control block of demographic variables accounted for an insignificant 5% of the total variance in SRQ scores. Within this block, only generational status statistically significantly predicted change in suicidal risk ($p < .04$), however the model as a whole was insignificant. Thwarted belongingness, as a single predictor, statistically significantly ($p < .001$) accounted for 17% of the variance in suicidal risk after controlling for demographic variables. Perceived burdensomeness, as a single predictor, statistically significantly ($p < .001$) accounted for 12% of the variance in suicidal risk after controlling for demographic variables and thwarted belongingness. These findings support Joiner's hypothesis that thwarted belongingness and perceived burdensomeness should each account for a statistically significant amount of variance as a sole predictor of suicidal risk. In the fourth block, the interaction of thwarted belongingness and perceived burdensomeness, which represents Joiner's construct of *desire for suicide*, was entered. The interaction of thwarted belongingness X perceived burdensomeness accounted for an insignificant additional .01% of the variance in SRQ scores above and beyond the constructs independently. This finding does not support Joiner's hypothesis that the interaction of the two

constructs, to create suicidal desire, should account for a statistically significant amount of variance in suicidal risk scores, above and beyond each construct independently. My first hypothesis was partially supported, in that thwarted belongingness and perceived burdensomeness each independently explained a statistically significant amount of variance in suicidal risk; however, the interaction of the two (thwarted belongingness and perceived burdensomeness) did not explain a statistically significant amount of variance, as predicted.

Moderation analyses

In hypotheses two through five, I predicted that levels of participant acculturation and enculturation would each moderate the relation between thwarted belongingness and suicidal risk, as well as the relation between perceived burdensomeness and suicidal risk. Four separate moderation analyses were conducted to examine these potential relations. In these analyses, each INQ-15 subscale was entered as a respective independent variable, SRQ scores were entered as the outcome variable, and participants' endorsed level of acculturation or enculturation was entered as the moderator. The results of these moderation analyses are presented in Table 4.

Table 4

Moderation Effect of Acculturation on Thwarted Belongingness and SRQ

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>F</i>
INQ-TB on SRQ				<.001	.20	9.60
Constant	3.93	.10	37.71	<.001		
Acculturation	.00	.43	.01	.99		
INQ-TB	.49	.10	5.18	<.001		
Interaction	.34	.33	1.05	.30		

Notes. INQ-TB = Interpersonal Needs Questionnaire for Thwarted Belongingness; SRQ = Suicidal Risk Questionnaire

Table 4 (continued)

Moderation Effect of Acculturation on Perceived Burdensomeness and SRQ

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>F</i>
INQ-PB on SRQ				<.001	.31	8.53
Constant	3.09	.10	39.97	<.001		
Acculturation	.01	.35	.03	.98		
INQ-PB	.74	.15	4.96	<.001		
Interaction	-1.14	.68	-1.67	.10		

Notes. INQ-PB = Interpersonal Needs Questionnaire for Perceived Burdensomeness; SRQ = Suicidal Risk Questionnaire

Moderation Effect of Enculturation on Thwarted Belongingness and SRQ

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>F</i>
INQ-TB on SRQ				<.001	.19	7.76
Constant	3.92	.11	35.30	<.001		
Enculturation	.09	.15	.58	.56		
INQ-TB	.48	.11	4.47	<.001		
Interaction	.03	.14	.19	.85		

Notes. INQ-TB = Interpersonal Needs Questionnaire for Thwarted Belongingness; SRQ = Suicidal Risk Questionnaire

Moderation Effect of Enculturation on Perceived Burdensomeness and SRQ

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>R</i> ²	<i>F</i>
INQ-PB on SRQ				<.001	.31	8.57
Constant	3.93	.10	38.34	<.001		
Enculturation	.07	.11	.59	.56		
INQ-PB	.77	.16	4.72	<.001		
Interaction	.37	.20	1.88	.06		

Notes. INQ-PB = Interpersonal Needs Questionnaire for Perceived Burdensomeness; SRQ = Suicidal Risk Questionnaire

Hypothesis Two

The relation between participants' thwarted belongingness and reported suicidal risk was not statistically significantly moderated by their endorsed level of acculturation; my first hypothesis was not supported.

Hypothesis Three

The relation between participants' reported level of perceived burdensomeness and reported suicidal risk was not statistically significantly moderated by their endorsed level of acculturation; my second hypothesis was not supported.

Hypothesis Four

The relation between participants' reported level of thwarted belongingness and reported suicidal risk was not statistically significantly moderated by their endorsed level of enculturation; my third hypothesis was not supported.

Hypothesis Five

The relation between participants' reported level of perceived burdensomeness and reported suicidal risk was not statistically significantly moderated by their endorsed level of enculturation, but did show a strong trend toward significance ($p = .06$). This finding suggested that when participant levels of enculturation and perceived burdensomeness were high, the association between perceived burdensomeness and suicidal risk was stronger than when participant levels of enculturation were low.

Mediation analyses

In hypotheses six and seven, I predicted that acculturative stress would mediate the relationship between thwarted belongingness and suicidal risk, as well as between perceived burdensomeness and suicidal risk. Two separate mediation analyses were conducted to examine these relations for each of the two INQ-15 subscales and the SRQ. Each INQ-15 subscale was entered as a respective independent variable, SRQ scores were entered as the outcome variable, and participants' endorsed levels of acculturative stress was entered as the mediator. The results of the mediation analyses are presented below in Table 5.

Table 5

Mediation Effect of SAFE-R scores on Thwarted Belongingness and SRQ scores

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Step 1 (SAFE-R as DV)				
Constant		.16	7.73	<.001
INQ-TB	.23	.05	4.33	<.001
Step 2 (SRQ as DV)				
Constant		.26	10.20	<.001
INQ-TB	.437	.09	5.84	<.001
Step 3 (SRQ as DV)				
Constant		.27	9.32	<.001
SAFE-R	.22	.13	1.74	.08
INQ-TB	.34	.08	4.21	<.001

Notes. SAFE-R = Situational, Attitudinal, Familial, and Environmental Acculturative Stress; INQ-TB = Interpersonal Needs Questionnaire for Thwarted Belongingness; SRQ = Suicidal Risk Questionnaire

Table 5 (continued)

Mediation Effect of SAFE-R scores on Perceived Burdensomeness and SRQ scores

Predictor	<i>b</i>	<i>se</i>	<i>t</i>	<i>p</i>
Step 1 (SAFE-R as DV)				
Constant		.13	10.52	<.001
INQ-PB	.31	.07	4.39	<.001
Step 2 (SRQ as DV)				
Constant		.18	14.75	<.001
INQ-PB	.55	.10	7.98	<.001
Step 3 (SRQ as DV)				
Constant		.24	11.00	<.001
SAFE-R	.22	.12	1.77	.08
INQ-PB	.47	.11	4.39	<.001

Notes. SAFE-R = Situational, Attitudinal, Familial, and Environmental Acculturative Stress; INQ-PB = Interpersonal Needs Questionnaire for Perceived Burdensomeness; SRQ = Suicidal Risk Questionnaire

Hypothesis Six

Acculturative stress did not statistically significantly mediate the relation between thwarted belongingness and SRQ scores. Although acculturative stress did statistically significantly predict thwarted belongingness on its own ($p < .001$), in a mediation model, the association between thwarted belongingness and SRQ scores remained statistically significant ($p < .001$) and was not significantly reduced by the presence of acculturative stress. My fifth hypothesis was not supported.

Hypothesis Seven

Acculturative stress did not statistically significantly mediate the relation between perceived burdensomeness and SRQ scores. Although acculturative stress was a significant

predictor of perceived burdensomeness on its own ($p < .001$), in a mediation model, the association between thwarted belongingness and SRQ scores remained statistically significant ($p < .001$) and was not significantly reduced by the presence of acculturative stress. My sixth hypothesis was not supported.

CHAPTER 5

DISCUSSION

The purpose of my study was to test the Interpersonal-Psychological Theory of Suicide (IPTTS), as well as employing Latino/a cultural variables, with a sample of Latino/a American college students. I examined the primary constructs of the IPTTS, thwarted belongingness and perceived burdensomeness, to find how these constructs could explain variance in suicidal risk for Latino/a American college students. Previous studies concerning the IPTTS have failed to specifically consider culture-based variables when examining and validating the IPTTS, leaving our understanding of the utility and generalizability of Joiner's theory to racially diverse populations limited. Therefore, in my study, I gave consideration to the specific cultural variables of acculturation, enculturation, and acculturative stress, and how these culturally relevant factors might affect Latino/a American college student suicide risk within the IPTTS model. Below, I will briefly review the main findings of my study, my results in the context of the IPTTS model, and implications for research and clinical practice.

Brief Summary of Findings

Overall, the participants in my sample were primarily Mexican American, 20-year-old, females. The majority of this sample were first-generation Latino/a Americans, reporting to have been born in the United States, but with both of their parents having been born in another country. More than half of this sample reported preferring to use Spanish, over English, while at home. On average, my sample reported high acculturation, moderate enculturation, and low acculturative stress.

Participants endorsed low thwarted belongingness, low perceived burdensomeness, and very low suicidal risk. However, participants' reports of both thwarted belongingness and

perceived burdensomeness statistically significantly explained variance in their suicidal risk. The theoretical assertions within the IPTS were generally supported within this sample of Latino/a American college students, with a few exceptions. Perceived burdensomeness was found to be a stronger explanatory construct than thwarted belongingness, and independently, perceived burdensomeness accounted for more variance in suicidal risk than the interaction of perceived burdensomeness and thwarted belongingness together. This finding does not support the concept that suicidal desire is strongest as a product of both constructs together, rather than either one independently. Perceived burdensomeness was found to be a useful construct in explaining variance in Latino/a American college student suicidal risk, while the interactive construct of suicidal desire was not found to be.

Levels of acculturation or enculturation were not found to moderate relations among thwarted belongingness and suicidal risk, and perceived burdensomeness and suicidal risk. Enculturation showed a trend toward statistical significance as a moderator between perceived burdensomeness and suicidal risk, so that when enculturation is high, the relationship between perceived burdensomeness and suicidal risk is stronger, than when enculturation is low. This suggests that enculturation may be an important variable to continue considering when assessing the suicidal risk of Latino/as.

Finally, acculturative stress was not a significant mediator of either the relation between thwarted belongingness and suicidal risk, nor the relation between perceived burdensomeness and suicidal risk. Based on the demography of the sample, which reported high levels of acculturation with low levels of acculturative stress, my results may suggest that levels of enculturation play a more central, and perhaps offsetting, role in acculturative stress than

acculturation when assessing suicidal risk for early generational status Latino/as living and studying in a largely European American environment.

The Interpersonal-Psychological Theory of Suicide

According to Joiner, both thwarted belongingness and perceived burdensomeness are proximal and causal factors in individuals' desire to commit suicide. Joiner maintained that each construct is a significant independent predictor of suicidal risk, and Van Orden et al. (2010) asserted that the interactive effect of these two constructs should operate as an even stronger determinant of suicidal risk than either construct independently.

I found that thwarted belongingness and perceived burdensomeness, as main effects, significantly explained variance in suicidal risk scores, with perceived burdensomeness doing so more strongly as compared to thwarted belongingness. A similar finding has been reported in previous research on the IPTS using samples of color (O'Keefe et al., 2014; Wong et al., 2011; Garza & Pettit, 2010). These consistent findings suggest that thwarted belongingness has less explanatory power in relation to suicidal desire when assessed in racially diverse populations.

Diverse populations may conceive of and endorse thwarted belongingness differently than the largely European American majority population with which the construct was developed and validated. For example, Brownson et al., (2014) and Shadick et al., (2015), found stark differences among racial groups' attitudes and endorsement on traditional suicide measures. Brownson et al., noted that some people color will endorse a statement such as "I wish I was dead," yet not endorse a statement such as "I am seriously considering suicide." These findings suggest the thwarted belongingness items on the INQ-15 may be differentially perceived or interpreted by persons of color, and therefore may not show the same construct validity and relations toward suicidal behavior found within the European American population.

Another point of consideration lies in the differential ability of perceived burdensomeness and thwarted belongingness to uniquely explain suicidal desire, as the two constructs may be conceptually (and psychometrically) somewhat similar to each other. Van Orden et al., (2010) reported a correlation of .58 between these constructs and my results yielded a similar magnitude correlation of .54, these findings suggesting a stable measure of collinearity between the two variables. Further validation studies on the INQ-15 that focus on assessing the ability of these constructs to uniquely tap exclusive domains are in order, to ensure that they jointly capture unique variance in suicidal risk.

As a stand-alone construct, based on my results, perceived burdensomeness has the strongest relation to suicidal risk among Latino/a American college students, suggesting a benefit to further examining this construct in relation to the suicidal behavior of Latino/a American college students. My results replicate and add to a consistent pattern of findings by past researchers supporting that perceived burdensomeness is a more useful construct than thwarted belongingness in predicting suicide in racially diverse samples. Studies examining the IPTS model in racially diverse samples, including Latina American women, American Indian college students, and Asian American college students, have consistently found perceived burdensomeness to explain more variance in suicidal risk, over and above, and at a more significant level, than thwarted belongingness (Garza & Pettit, 2010; O'Keefe et al., 2014; Wong et al., 2011). This consistent finding may suggest that people of color may communicate or conceptualize their suicidal risk through terms of burdensomeness, or find perceptions of burdensomeness more hurtful or impactful. My findings also highlight the importance of attending to perceived burdensomeness in both research and clinical practice, even in the absence

of thwarted belongingness, and draws into question the necessity of both constructs in predicting or examining Latino/a American college student suicidal risk.

Although the IPTS theory has performed adequately in this study and previous literature in predicting suicidal risk, it is important to note that my statistical findings did not fit as well with this highly acculturated Latino/a American college student sample, as it has with majority, European American samples (Van Orden et al., 2010). Despite some identification with similar cultural values in this sample, as held by the majority culture samples examined by Joiner and his colleagues, the IPTS model still failed to hold as asserted by Joiner and colleagues (Van Orden et al., 2010). On the whole, the IPTS model is likely in need of revision as far as the explanatory operations of its constructs, especially thwarted belongingness and the interaction effect of thwarted belongingness and perceived burdensomeness.

Cultural Factors of Relevance

Acculturation and enculturation

I examined the moderating effects of acculturation and enculturation on the relations among thwarted belongingness, perceived burdensomeness, and suicidal behavior. In line with previous research (cf. Marin et al., 1987; Rogler et al., 1991) higher levels of enculturation can offer greater social support opportunities to Latino/as from their indigenous culture, which in turn can serve to decrease feelings of thwarted belongingness and perceived burdensomeness. With respect to higher levels of acculturation, by making efforts to integrate into the majority culture, Latino/a students may receive social and personal messages that, they inherently do not belong to or are taxing upon the US majority culture (cf. Perez, Fortuna, & Alegria, 2008; Helms, 1995), thereby increasing the levels of thwarted belongingness and perceived burdensomeness they experience. However, my findings indicated that acculturation neither

significantly moderated the relation between thwarted belongingness and suicidal risk, nor the relation between perceived burdensomeness and suicidal risk. These results suggest that the degree to which an individual identifies with their indigenous or the majority culture does not affect the relations among thwarted belongingness and perceived burdensomeness with suicidal risk. Important to note, however, is the fact that on average, participants within my study endorsed very high levels of acculturation within a restricted range ($M = 3.76$; $SD = 0.29$), and this lack of variability may have made finding a moderation effect more difficult.

Slightly more variability existed in my sample on levels of enculturation, however, in my study, enculturation did not significantly moderate the relationship between thwarted belongingness and suicidal risk. However, a strong trend toward significance was observed ($p = .06$) for enculturation as a moderator of the relation between perceived burdensomeness and suicidal risk, so that when levels of enculturation were high, the positive association between perceived burdensomeness and suicidal desire was stronger than when enculturation was low. This moderation effect appeared in the opposite direction of what I hypothesized, and conflicts with an extensive literature suggesting that adherence to Latino/a culture can be a protective factor against suicidal risk. My study suggests that having an enculturated identity may strengthen the relation of perceived burdensomeness to suicidal risk.

My findings suggest that for Latino/a American college students who were more strongly tied to their indigenous culture it was more impactful to perceive themselves as a burden. An explanation for this finding may relate to arguments previously explored by Garza and Pettit (2010). These authors hypothesized that although an individual may feel highly connected with her Latino/a family and culture and gain strong feelings of belongingness, with that belongingness may come the pressure to uphold cultural tradition and meet family expectations,

which when not met or consistent with majority culture expectations, could encourage perceptions of burdensomeness.

Notably, it is important to note that in such a highly acculturated sample, enculturation still managed to have a strong effect. The centrality of Latino/a enculturation as compared to acculturation has been noted elsewhere in the literature, and my findings emphasize the importance of measuring cultural affiliation as a bi-dimensional construct, rather than unilateral or synonymous with racial status. Special attention to the effect (and the direction of effect) of enculturation in relation to suicidal risk may be warranted, within minority samples in suicide research.

Acculturative stress

I predicted acculturative stress would statistically significantly mediate the relationship between IPTS constructs and suicidal risk, as previous research has shown this variable to be more proximally related to Latino/a American psychological health than acculturation or enculturation alone (Capielo, Delgado-Romero, & Stewart, 2015; Torres, 2010). However, my hypotheses were not supported. This lack of mediation, and the inability of acculturation to moderate relations among thwarted belongingness, perceived burdensomeness, and suicidal behavior, introduces the idea that enculturation may be the most important construct to examine (in addition to perceived burdensomeness) in using the IPTS in suicide research with the Latino/a population. Researchers have often used acculturative stress as a moderating variable, but given the fact that acculturative stress has been more proximal to the development of psychological disorders (Capielo, et al., 2015; Torres, 2010), as well as directly linked to suicidal risk (Hovey & King, 1996; Gomez et al., 2011; Walker et al., 2008), I expected this construct to mediate the direct effects of thwarted belongingness and perceived burdensomeness within the IPTS model.

Important to note is the fact that levels of acculturative stress were extremely low in this sample and also had a restricted range of variance. As with other culture-based variables in my sample, a skewed and restricted distribution may have affected the ability of these variables to successfully assess indirect effects.

Limitations

Sample

I used a convenience sample of Latino/a American college students from a large Midwestern university, therefore my findings may not be generalizable to other Latino/a samples, especially those in more racially diverse regions of the country. The use of a Midwestern sample may also explain the distribution of culture-based variables in my sample. That is, in Iowa, a largely European American state (US Census Bureau, 2016), findings of moderate levels of enculturation and high levels of acculturation may be a function of Iowa Latino/a students living within an environment that demands a higher identification with the European American majority culture. My findings of low acculturative stress in the face of higher levels of acculturation is more difficult to interpret. This finding may relate to the assertion of some scholars that biculturality is the most healthy and adaptable state for people of color living in predominately European American environments (cf. LaFromboise et al., 1986). Using the coding scheme of Marin and Gamba (1996), a status of biculturality (higher acculturation and higher enculturation scores) was found to be the most frequently endorsed in my sample which had higher acculturation and moderate enculturation scores. This means that the moderate level of enculturation may have offset, to a degree, any acculturative stress that students may feel. Related, because over 60% of the sample was either first or second generation in the U.S., the buffering effects of their earlier generational status (cf. Peña et al., 2008) may

have made the effects of acculturative stress less potent than for those with later generational status. Those with a later generational status may have higher acculturation, but less enculturation, possibly leading to fewer connections to their indigenous culture, less Spanish language use, less *familismo* (less bond to the family of origin), and the other elements common to low enculturation status (Torres, Driscoll, & Voell, 2012).

Another issue of import concerns the fact that I employed a non-clinical, non-suicidal sample, with any participants who endorsed current suicidal ideation being excluded from the study. Although this group formed less than 10% of the initial respondents, this may have altered variability in the SRQ and culture-based variables associated with this state of mind. The findings of my study are best considered and generalized to a non-suicidal, non-clinical sample, absent suicidal ideation. In research conducted with the IPTS model using similar convenience samples (Davidson et al., 2010; Wong et al., 2011; Van Orden et al., 2008b), participants have generally endorsed higher levels of suicidal risk than present in my current sample. The lower endorsement of suicidal risk endorsed within my study likely limited the ability of my investigation to fully examine the phenomenon of IPTS and culture-based variables in relation to suicidal risk.

Measures and instruments

Although all instruments have well-established reliability and validity, concerns remain regarding the use of these measures as they related to the IPTS model.

BAS-12

The BAS primarily relies upon language utility and how often an individual speaks English or Spanish to determine acculturation or enculturation. Although a frequently used tactic in research with Latino/a American samples (Marin & Gamba, 1996), most of the Latino/a

American college students I sampled had personal language preferences or bilingualism, that may not be reflected in their use of English as their primary language. With 55% of my participants reporting that they prefer speaking Spanish to English while at home, but only 3% reported speaking Spanish while at work or school, this chasm is clear. The nature of reporting on the BAS acculturation scale may have created a limited ability to truly determine differences between greater and lesser levels of acculturation and enculturation on suicidal risk.

INQ-15

Questions regarding the IPTS model of suicidal desire and risk, as well as the validity of the INQ-15 used to assess risk factors in the model, are also possible limitations. Concerns regarding collinearity between the constructs of thwarted belongingness and perceived burdensomeness, as well as the construct validity of these domains when used with samples of color, are in question. Future research is needed to ensure the statistically independent and unique nature of these IPTS constructs, and the validity of this model for use with populations of color.

Implications for Future Research

Investigators should seek to replicate my findings, again using a non-clinical sample absent suicidal ideation. Beyond this, the use of a clinical sample of Latino/a American college students, potentially reporting suicidal risk to a greater degree and with more variability, may better assess the assumptions within the IPTS model.

In addition, future investigations would benefit from examining a more diverse range of Latino/a Americans possessing wider levels of acculturation and enculturation, and especially how these variables interplay concerning acculturative stress, and suicidal risk. Actively seeking out Latino/a American college students with higher levels of acculturative stress and suicidal risk

could shine light on how the variables of acculturation, enculturation, and acculturative stress, operate for Latino/a students.

Future research could also benefit from careful use of acculturation scales, and the inclusion of other variables related to Latino/a cultural identity. Measures of cultural identification that rely solely upon language utility, may be sensitive to the context of an English-dominated society or university, rather than an individual's personal cultural attitudes, preference, or values held outside of these environments. Cultural variables of relevance, such as familialism, collectivism, or spirituality, may broaden our understanding of how much a Latino/a individual has adapted to majority culture, or maintains their indigenous cultural values, aside from societal requirements regarding language use. The inclusion of these variables would not only strengthen the literature concerning Latino/a college student suicide, but may also add validity to the constituent elements presumed to contribute to thwarted belongingness and perceived burdensomeness in the IPTS model.

Further, factor analytic and psychometric validation work on the INQ-15 with a national sample of Latino/a American college students is likely necessary to increase the validity of the measure, and the IPTS model it represents, in any future research with Latino/a populations. With this, future research could better clarify and expand upon the usefulness of including culture-based variables as explanatory constructs within the IPTS model.

Similar to indications by Van Orden et al. (2008a), my study emphasizes the need for, and benefit of, theory driven research on the proximal factors involved with suicidal behavior, specifically in Latino/a American college students, so that investigators can more accurately and comprehensively detect and intervene in cases of suicidal behavior and possibly prevent suicide.

Implications for Clinical Practice

Suicide assessment, prevention, and clinical intervention are not tailored to the racially diverse individual. Culture-based factors, and how they interact with diverse persons' endorsement of suicidal desire and behavior, must be attended to by clinicians when applying any theory concerning suicidal behavior. The IPTS performed adequately in its ability to explain suicidal risk in samples of color, particularly through the construct of perceived burdensomeness. Within my study, perceived burdensomeness appears to be useful in explaining variance in Latino/a American college student suicidal risk. Use of the INQ-15, particularly the perceived burdensomeness subscale, in combination with an understanding of Latino/a college student clients' levels of enculturation, could possibly be used as a screening assessment to help improve clinicians' awareness of Latino/a students' suicidal risk or desire. Understanding clients' attitudes about their perceptions of burdensomeness to their families or to society might inform clinicians of possible heightened suicidal risk for these clients or form the basis of potential intervention targets.

Although research to date has found mixed results regarding the IPTS model, the constructs hypothesized by Joiner may be helpful as a conceptual guide for clinical practice with Latino/a American college students who may be at risk for suicide. My finding that perceived burdensomeness is a stronger predictor of suicidal risk than thwarted belongingness suggests the importance of clinicians attending to clients' messages of perceived burdensomeness even when they are not simultaneously endorsing thwarted belongingness, as both constructs may not be necessary to indicate suicidal desire. Moreover, my results suggest that bicultural Latino/a populations, with higher levels of enculturation, may experience less acculturative stress but simultaneously experience a greater impact of perceived burdensomeness as far as suicidal risk.

This finding emphasizes the need for university clinicians to realize that bicultural Latino/a students, despite identification with the majority culture and seemingly little acculturative stress, may still be at risk for suicidal thoughts and behavior.

Conclusions

In short, in its current state, the IPTS may provide a rough theoretical basis from which researchers and clinicians can begin to conceptualize and assess the suicidal desire of their Latino/a American college students. Given their unique experience and cultural background, Latino/a college students can be strongly affected by messages of thwarted belongingness or perceived burdensomeness, received either from an unaccepting majority culture or from the conflicting nature of adherence to their indigenous values and the cultural expectations associated with acculturating to the majority culture society. Further work is necessary to enhance the validity and applicability of the IPTS to the Latino/a college student population, including revision of the IPTS model and further validation of the INQ-15. Given the general atheoretical approach to research surrounding suicidal behavior to date, such revisions are necessary to increase the chance of producing a truly cross-culturally valid model to assess suicidal behavior.

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APPENDIX A. EMAIL INVITATION TO PARTICIPATE

Subject: Request for Latino/a College Students to Participate in Research Study.

Hello!

My name is Kelsey Engel and I am a doctoral student in Counseling Psychology at Iowa State University. I am conducting a study, under the guidance of Dr. Loreto Prieto, to better understand how cultural factors may affect Latino/a students' views on suicidal behavior. We hope that this study may advance our knowledge on how to support and protect Latino/a college students.

You will have *full and complete* anonymity if you participate in this study.

You **must** meet the following criteria to participate in this study:

1. Must self-identify as Latino/a or Hispanic
2. Must be 18 years of age or older
3. Must currently be registered for classes at Iowa State.

My study has been approved by the Iowa State University Institutional Research Board (IRB) and all human subjects' rights will be observed.

This survey will take no more than 30 minutes to complete. If you are interested in participating in this research study, please click the following link:

(Qualtrics link here)

If you have any questions about the materials or the study, please feel free to contact me at kengel3@iastate.edu (218-850-0393) or my advisor, Dr. Loreto Prieto, at lprieto@iastate.edu (515-294-2455). If you have questions about your rights as research participants please email or call the Iowa State University Institutional Review Board (IRB@iastate.edu; 515-294-4566).

Thank you!

Kelsey Engel, B.A.
Counseling Psychology Doctoral Student
Psychology Department
Iowa State University

APPENDIX B. FOLLOW UP EMAIL INVITATION TO PARTICIPATE

Subject: Follow-up Request for Latino/a College Students to Participate in Research Study

Hello!

A couple months ago, I sent an email to all Latinx students on the ISU campus to invite them to participate in my study. If you have already participated; thank you for your time! If you have not yet participated in the study, I hope you will read on and please consider participating!

To date, participation in this study has not been as high as needed, so I wanted to send this follow up through ISU Latinx student organizational leadership, as well as directly to Latinx students, to encourage more participation.

For those in Latinx student organizational leadership roles (Presidents and Faculty Advisors), if you are willing to do so, please forward this invitation to your ISU campus membership through any listservs or email lists you possess and encourage your members to take part in the study!

Hello!

My name is Kelsey Engel and I am a doctoral student in Counseling Psychology at Iowa State University. Last Spring and earlier this summer, I previously sent an email to all ISU Latinx students participate in a study I am conducting, under the guidance of Dr. Loreto Prieto, to better understand how cultural factors may affect Latino/a students' views on suicidal behavior. We hope that this study may advance our knowledge on how to support and protect Latino/a college students.

You will have *full and complete* anonymity if you participate in this study.

As an incentive, we are also offering to participants an opportunity to enter a drawing for three separate \$25.00 gift certificates to Amazon.com!

You **must** meet the following criteria to participate in this study:

1. Must self-identify as Latino/a or Hispanic
2. Must be 18 years of age or older
3. Must currently be registered for classes at Iowa State (Summer or Fall, 2017).
4. Must not currently be experiencing suicidal thoughts or feelings.

My study has been approved by the Iowa State University Institutional Research Board (IRB) and all human subjects' rights will be observed.

This survey will take no more than 30 minutes to complete. If you are interested in participating in this research study, please click the following link:

(Qualtrics link here)

If you have any questions about the materials or the study, please feel free to contact Kelsey at kengel3@iastate.edu (218-850-0393) or her advisor, Dr. Loreto Prieto, at lprieto@iastate.edu

([515-294-2455](tel:515-294-2455)). If you have questions about your rights as research participants please email or call the Iowa State University Institutional Review Board (IRB@iastate.edu; [515-294-4566](tel:515-294-4566)).

Thank you!

Kelsey Engel, B.A.
Counseling Psychology PhD Student
Psychology Department
Iowa State University

APPENDIX C. INFORMED CONSENT

Title of Study: Cultural Factors and Suicide Risk for Latino/a College Students

Investigators: Kelsey Engel, BA (PI); Loreto Prieto, PhD (Supervising Faculty Advisor)

This is a research study. Please take your time in deciding if you would like to participate.

Introduction

The purpose of this study is to better understand how cultural factors may affect Latino/a students' views on suicidal behavior. To participate in this study, you must self-identify as Latino/a or Hispanic, must be 18 years of age or older, and must currently be registered for classes at Iowa State (Fall 2017), *and must not be currently experiencing suicidal thoughts or feelings.*

Description of Procedures

If you decide to participate in this study you will be provided with access to research materials, via a link to an online Qualtrics survey, placed within the invitation to participate that has been emailed to you. Your responses to the survey will be confidential, no identifying information will be collected, no IP or other computer addresses will be obtained, and all data will be reported on only in group form. You will have *full and complete* anonymity in completing this study.

You will be asked to complete a series of items assessing your sense of belongingness; your sense of being a burden upon others as well as society; the level with which you identify with both your own native Latino/a culture as well as with the European American (White) majority culture; the level of stress you feel as a Latino/a living in the United States; the level which you identify with or feel loyalty to your family; your sense of hope; and, your past, current and future estimations of suicidal behavior (thinking about suicide and attempting suicide). This study directly deals with highly sensitive and personal issues.

The estimated amount of time required to complete this study is 30 minutes or less. Please be aware that you will not be able to save your responses and return to the survey at another time – therefore complete **all** research materials in one sitting.

Risks

There is a minimal risk of experiencing discomfort given that some of the questions you will be asked directly concern your past, present and future thoughts about suicidal behavior. Individuals who have a past history of thinking about or attempting suicide, or who are currently experiencing psychological or mental health difficulties, may have a greater chance of experiencing some discomfort when completing this survey.

*If you have a past history of thinking about or attempting suicide or are currently experiencing psychological or mental health difficulties, we recommend you do not participate in this research project. **If you are currently experiencing suicidal thoughts or feelings you are not eligible to participate in this study.***

If you do decide to participate, and you feel discomfort at any point while participating in this study, you may end your participation at any time without penalty or negative consequence. If you experience

discomfort during or after completing this study, you are strongly encouraged to seek mental health assistance. Listed below are resources that you can contact:

- Thielen Student Health Center (ISU: 515-294-5801)
- Student Counseling Services (ISU: 515-294-5056)
- Central Iowa Psychological Services (Ames: 515-233-1122, Des Moines: 515-222-1999)
- National Suicide Prevention Lifeline (1-800-273-8255)

Benefits

There will be no direct benefits to you by participating in this study. However, through this study we hope to learn more information that could help allied mental health professionals better understand certain cultural factors that may affect Latino/a college students views on suicidal behavior.

Costs and Compensation

You will not be compensated or have any costs from participating in this study, however, as an incentive, you will have the option of entering a drawing for one of three \$25.00 gift certificates to Amazon.com. If you are chosen as a winner, you will need to complete a form to receive payment. Please know that payments may be subject to tax withholding requirements, which vary depending upon whether you are a legal resident of the U.S. or another country. If required, taxes will be withheld from the payment you receive.

Participant Rights

Your participation in this study is completely voluntary. You may refuse to participate or end your participation at any time, without any penalty or negative consequences. You have the right to not answer any questions on the survey that you do not wish to answer (simply skip the questions).

Confidentiality

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, we will take the following measures: 1) no physical consent forms will be collected so there will be no way to match participants to their research data; 2) no joining of the online consent form you endorse will be made to the data records that we analyze; 3) any research materials (e.g., electronic data) will be kept on encrypted and password protected computers; 4) any archived research materials (e.g., electronic data) will be kept in a locked file cabinet in a locked lab of the supervising faculty member; and, 5) if the results from the study are published or presented, your personal identity will remain anonymous and all data will be described only in group form.

Questions or Problems

You are encouraged to ask questions at any time during this study.

- For further information about the study contact Kelsey Engel at kengel3@iastate.edu (218.850.0393) or Dr. Loreto Prieto at lprieto@iastate.edu (515.294.2455).

- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

PARTICIPANT SIGNATURE

By checking the “Yes, I agree to participate” box, I am confirming that I have read this informed consent form in its entirety and that I am at least 18 years of age, and that I am **not** currently experiencing suicidal thoughts or feelings. I am also confirming that I voluntarily agree to participate in this study and that I have been given the time to read the informed consent document and understand it. We advise that you print this informed consent document for your records or copy the contact information of the researchers for your reference. I also confirm and agree to the fact that, if I do create an electronic or physical copy of this informed consent document, I am fully and solely responsible for keeping any such materials safe and secure in order to keep private the fact I have participated in this research project.

By checking the “No, I do not agree to participate” box, you will immediately end your participation in this study.

Yes, I agree to participate.

No, I do not agree to participate.

APPENDIX D. DEMOGRAPHIC QUESTIONNAIRE

Instructions: Please answer the following demographic and history questions.

1) Sex M____ F____ Other (please identify) _____

2) Age _____

3) Latino/a Ethnicity

____ Mexican American

____ South American

____ Puerto Rican

____ Hispanic American (Spain)

____ Dominican

____ Central American

____ Cuban

____ Multiracial

____ Other (please specify)

5) Language preference at home: English ____ Spanish ____ Other ____

6) Language preference at college: English ____ Spanish ____ Other ____

6) Which of the following best describes you?

____ Not born in the USA and immigrated with your parents to the US as a child or an adult

____ Born in the USA but both of your parents were born in another country

____ Born in the USA and one or more of your parents were born in the USA

____ Born in the USA and one or more of your grandparents were born in the USA

____ Born in the USA and one or more of your great grandparents were born in the USA

____ Born in the USA and your parental lineage goes back farther than your great grandparents

____ International Student (Entered US for educational purposes; not a permanent US resident)

APPENDIX E. INTERPERSONAL NEEDS QUESTIONNAIRE (INQ-15)

The following questions ask you to think about yourself and other people. Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently. Use the rating scale to find the number that best matches how you feel and report that number. There are no right or wrong answers: we are interested in what you think and feel.

1	2	3	4	5	6	7
Not at all true for me			Somewhat true for me		Very true for true for me	

These days, the people in my life would be better off if I were gone.

These days, the people in my life would be happier without me.

These days, I think I am a burden on society.

These days, I think my death would be a relief to the people in my life.

These days, I think the people in my life wish they could be rid of me.

These days, I think I make things worse for the people in my life.

These days, other people care about me.

These days, I feel like I belong.

These days, I rarely interact with people who care about me.

These days, I am fortunate to have many caring and supportive friends.

These days, I feel disconnected from other people.

These days, I often feel like an outsider in social gatherings.

These days, I feel that there are people I can turn to in times of need.

These days, I am close to other people.

These days, I have at least one satisfying interaction every day.

APPENDIX F. SUICIDAL RISK QUESTIONNAIRE

For the following items, please respond to them as you have usually found yourself thinking and feeling. Be as honest and straightforward as you can in answering these questions.

During the past year, how would you rate your level of suicidal risk?

- I have never thought about killing myself.
- I have occasionally thought about killing myself.
- I have seriously thought about killing myself.
- I have tried killing myself once.
- I have tried killing myself more than once.

Currently, how would you rate your level of suicide risk?

- I never think about killing myself.
- I occasionally think about killing myself.
- I seriously think about killing myself.

As best as you can predict now, how would you rate your future level of suicide risk?

- I do not think I will ever think about killing myself.
- I might occasionally think about killing myself.
- I might seriously think about killing myself.
- I might try to kill myself.

APPENDIX G. BIDIMENSIONAL ACCULTURATION SCALE

For the following items, please respond to them as you think and feel in recent days. Be as honest and straightforward as you can in answering these questions.

1	2	3	4
Almost never	Sometimes	Often	Almost always

1. How often do you speak English?
2. How often do you speak in English with your friends?
3. How often do you think in English?
4. How often do you speak Spanish?
5. How often do you speak in Spanish with your friends?
6. How often do you think in Spanish?

1	2	3	4
Very poorly	Poorly	Well	Very well

7. How well do you speak English?
8. How well do you read in English?
9. How well do you understand television programs in English?
10. How well do you understand radio programs in English?
11. How well do you write in English?
12. How well do you understand music in English?
13. How well do you speak Spanish?
14. How well do you read in Spanish?
15. How well do you understand television programs in Spanish?
16. How well do you understand radio programs in Spanish?
17. How well do you write in Spanish?
18. How well do you understand music in Spanish?

1	2	3	4
Almost never	Sometimes	Often	Almost always

19. How often do you watch television programs in English?
20. How often do you listen to radio programs in English?
21. How often do you listen to music in English?
22. How often do you watch television programs in Spanish?
23. How often do you listen to radio programs in Spanish?
24. How often do you listen to music in Spanish?

APPENDIX H. SAFE-R ACCULTURATIVE STRESS SCALE

Below are a number of statements that might be seen as stressful. For each statement that you have experienced, report only one of the following numbers (1, 2, 3, 4, or 5), according to how stressful you find the situation. If the situation does not apply to you, report the number 0: 'Have not experienced'.

0 = HAVE NOT EXPERIENCED

1 = NOT AT ALL STRESSFUL

2 = SOMEWHAT STRESSFUL

3 = MODERATELY STRESSFUL

4 = VERY STRESSFUL

5 = EXTREMELY STRESSFUL

I feel uncomfortable when others make jokes about or put down people of my ethnic background.

I have more barriers to overcome than most people.

It bothers me that family members I am close to do not understand my new values.

Close Family Members and I have conflicting expectations about my future.

It is hard to express to my friends how I really feel.

My family does not want me to move away but I would like to.

It bothers me to think that so many people use drugs.

It bothers me that I cannot be with my family.

In looking for a good job, I sometimes feel that my ethnicity is a limitation.

I don't have any close friends.

Many people have stereotypes about my culture or ethnic group and treat me as if they are true.

I don't feel at home.

People think I am unsociable when in fact I have trouble communicating in English.

I often feel that people actively try to stop me from advancing.

It bothers me when people pressure me to assimilate.

I often feel ignored by people who are supposed to assist me.

Because I am different I do not get enough credit for the work I do.

It bothers me that I have an accent.

Loosening the ties with my country is difficult.

I often think about my cultural background.

Because of my ethnic background, I feel that others often exclude me from participating in their activities.

It is difficult for me to “show off” my family.

People look down upon me if I practice customs of my culture.

I have trouble understanding others when they speak.

APPENDIX I. IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

institutional Review Board

Office for Responsible Research
Vice President for Research
2420 Lincoln Way, Suite 202
Ames, Iowa 50014
515 294-4566

Date: 4/12/2017

To: Kelsey E Engel
W112 Lagomarcino

CC: Dr. Loreto Prieto
W218 Lagomarcino Hall

From: Office for Responsible Research

Title: Cultural Factors and Suicide Risk for Latino/a College Students

IRB ID:

Approval Date: 411212017

Date for Continuing Review: 4/3/2018

Submission Type: New

Review Type: Full Committee

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- Retain signed informed consent documents for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing changes to the study by submitting a Modification Form for Non-Exempt Research or Amendment for Personnel Changes form, as necessary.
- Immediately inform the IRB of (1) all serious or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.
- Stop all research activity if IRB approval lapses, unless continuation is necessary to prevent harm to research participants. Research activity can resume once IRB approval is reestablished.
- Complete a new continuing review form at least three to four weeks prior to the date for continuing review as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please be aware that IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. Approval from other entities may also be needed. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for

research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.). investigators must obtain permission from the institution(s) as required by their policies. IRB approval in no way implies or guarantees that permission from these other entities will be granted.

Upon completion of the project, please submit a Project Closure Form to the Office for Responsible Research, 202 Kingland, to officially close the project.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

INSTITUTIONAL REVIEW BOARD (IRB) Application for Approval of Research Involving Humans

Title of Project: Cultural Factors and Suicide Risk for Latino/a College Students

Principal Investigator (PI): Kelse E. En el		Degrees: B.A.																	
University ID: 605459879	Phone: 218.850.0393	Email Address: ken ye13@iastate.edu																	
Correspondence Address: WI 12 La omarcino Hall																			
Department: Ps cholo		College/Center/Institute: CLAS																	
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">PI Level: • O Tenured, Visiting Faculty/Scientist</td> <td style="width: 25%;">Senior Lecturer/Clinician</td> <td style="width: 25%;">Adjunct/Affiliate Faculty</td> <td style="width: 25%;">Collaborator Faculty</td> </tr> <tr> <td>Extension to Families/Youth Specialist</td> <td>Field Specialist III</td> <td>Lecturer/Clinician, w/Ph.D. or DVM</td> <td>Employee, P37 & above</td> </tr> <tr> <td></td> <td></td> <td>Postdoctoral Associate</td> <td>Graduate/under grad Student</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Other (specify)</td> </tr> </table>				PI Level: • O Tenured, Visiting Faculty/Scientist	Senior Lecturer/Clinician	Adjunct/Affiliate Faculty	Collaborator Faculty	Extension to Families/Youth Specialist	Field Specialist III	Lecturer/Clinician, w/Ph.D. or DVM	Employee, P37 & above			Postdoctoral Associate	Graduate/under grad Student				Other (specify)
PI Level: • O Tenured, Visiting Faculty/Scientist	Senior Lecturer/Clinician	Adjunct/Affiliate Faculty	Collaborator Faculty																
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		Postdoctoral Associate	Graduate/under grad Student																
			Other (specify)																
FOR STUDENT PROJECTS (Required when the principal investigator is a student)																			
Name of Major Professor/Supervising Faculty: Loreto R. Prieto, PhD																			
University ID: 745733989	Phone: 294-2455	Email Address: lprieto@iastate.edu																	
Campus Address: WI 12 La omarcino Hall		Department: Ps cholo																	
Type of Project check all that apply	Thesis/Dissertation	Class Project	Other (specify)																
Alternate Contact Person:		Email Address:																	
Correspondence Address:		Phone:																	

ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies. Misrepresentation of the research described in this or any other IRB application may constitute noncompliance with federal regulations and/or academic misconduct.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subjects are protected. I will report any problems to the IRB. See [Reporting Adverse Events and Unanticipated Problems](#) for details.
- I agree that modifications to the approved project will not take place without prior review and approval by the IRB.
- I agree that the research will not take place without the receipt of permission from any cooperating institutions when applicable. • I agree to obtain approval from other appropriate committees as needed for this project, such as the IACUC (if the research includes animals), the IBC (if the research involves biohazards), the Radiation Safety Committee (if the research involves x-rays or other radiation producing devices or procedures), etc., and to obtain background checks for staff when necessary.
- I understand that IRB approval of this project does not grant access to any facilities, materials, or data on which this research may depend. Such access must be granted by the unit with the relevant custodial authority.