LATINA ADOLESCENT SUICIDE: EXAMINING THE EFFECTS OF CULTURAL STATUS AND PARENTAL, PEER AND TEACHER SUPPORTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By
Susan M. De Luca, MSW
Social Work Graduate Program
The Ohio State University
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Dissertation Committee:
Keith L. Warren, MSW, Ph.D., Advisor
Thomas K. Gregoire, MSW, Ph.D.
Lisa Raiz, MSW, Ph.D.
Ernesto R. Escoto, PhD
This study utilized data from the National Longitudinal Study of Adolescent Health (Add Health) (Waves I and II) to examine variations in Latina adolescents’ level of suicide proclivity as predicted by friendship networks, family support, cultural status and behavioral health (Harris, Mullan, Halpern, Entzel, Tabor, Bearman & Udry, 2008). By examining these correlates of suicide, this study concentrated on two specific objectives set forth by Healthy People 2010: reducing the number of adolescents who experience suicide and reducing the number of future adults who ideate or attempt suicide (Centers for Disease Control [CDC], 2001). Add Health’s stratified cluster design and over-sampling obtained an appropriate number of Latinas (1,618) in the sample. The data include network-level variables to distinguish particular peer group factors that predict suicide. Measures used in this study explored the extent to which cultural status, self-reported parental support, friendship characteristics (reciprocity and suicidal friends) and behavioral health status (depression and substance use) were linked to suicide proclivity (ideations and attempts).

Logistic and negative binomial regression analyses were used to observe any predictive or mediating relationships the types of friendships and familial supports had with suicide proclivity. The goal was to ascertain the way in which the cultural status of the Latinas, the type of friends they reported and the level of social support they received
from their parents and teachers determined their incidence of suicidal ideation and 
avttempts. Determining the extent to which these factors help account for variation in
suicidal thoughts and behaviors will aid in proposing effective strategies for prevention.
Empirically-based suicide prevention programs geared specifically for Latinas are
important given that these females have higher suicide attempt rates when compared to
African American and White teens (Centers for Disease Control [CDC], 2008). Although
the U.S Bureau of the Census does not provide information explicitly regarding Latina
adolescents, the Latino population continuing to grow in the U.S. Almost half (48%) of
the Latino population comprised of children, preventing suicide among Latina
adolescents is essential (CDC, 2006).
Dedicated to Rosina & Antonio Arena
for teaching me the importance of culture
and
Anna & Joseph De Luca,
for their guidance, love and support
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DISCLAIMER

This document includes data from the National Longitudinal Study of Adolescent Health which was developed under contract with the Carolina Population Center at the University of North Carolina at Chapel Hill. The information and opinions expressed herein reflect solely the position of the author.
VITA

August 28, 1973 ............................................. Born – Parma, OH

2001 ........................................................................ Master’s of Social Work,

                                             The University of Michigan, Ann Arbor, MI

1997 ........................................................................ Bachelor’s of Arts,

                                                Kent State University, Kent, OH

2004- Present .................................................... Teaching Assistant

                                             Research Assistant

                                             The Ohio State University, Columbus, OH

PUBLICATIONS


FIELDS OF STUDY

Major Field: Social Work
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INTRODUCTION

Suicide continues to be the third-leading cause of death among 10-24 year olds in the United States (Substance Abuse and Mental Health Services Administration [SAMHSA], 2006). Adolescent suicide represents 12.3% of all deaths among 15-24 year olds and accounted for 11 deaths each day within this age group (American Association of Suicidology [AAS], 2004). Among 10-14 year olds, death rates by suicide have been estimated at 1.7/100,000 (SAMHSA, 2006b). Suicide is associated with a variety of risk factors in a child’s life including interpersonal issues such as family conflict, a mental health condition and/or drug use (Olvera, 2001).

Latina adolescents have the highest rates of hopelessness, suicidal ideations, plans, attempts and injuries sustained from an attempt when compared to their peers regardless of gender and race/ethnicity (CDC, 2008). These females strive to simultaneously navigate between their native Latin American and new American cultures but eventually acculturate (Vega, Zimmerman, Gil & Warheit, 1994). The literature is divided on the effects of acculturation and the risk of suicide among Latinos and Latinas. While it is thought that adopting new cultural norms and traditions can result in feelings of despair, frustration and isolation, and eventually leading to suicide proclivity (Zayas, 1987; Vega et al, 1994; Turner, Kaplan, Zayas & Ross, 2002) others have found that
acculturation is a protective factor against suicide (Hines & Caetano, 1998; Marin, Gomez, Tschann, Gregorich, 1997).

This dissertation explored the variables associated with Latina adolescents and their high rates and increased risk of suicidal ideations and attempts. In particular, the dissertation looked at how their choices in social supports translated to their incidence of suicide. Data from the National Longitudinal Study of Adolescent Health (Add Health) was analyzed. The data are compiled from a nationally representative school-based questionnaire of adolescents who attended U.S middle and high schools in 1994 through 1996. In-home questionnaires were also given to a proportion of students who completed the in-school survey where more sensitive information, such as suicidality and drug use, were addressed.

Dissertation Overview

This dissertation is divided into five chapters. The first chapter is an introduction to the study and its relevance to the field. The second chapter provides a review of the existing literature on adolescent suicide with an emphasis on Latinas. The third chapter explains the research methods. The fourth chapter presents the results of the analyses. The final chapter offers a discussion of the implications for social work practice and future directions for research.

Rationale for the Study

Latinas are disproportionately at risk for suicide attempts in the United States. Latinos constitute approximately 15% of the total U.S. population (Census, 2008) but represent disproportionally higher rates of maladaptive functioning compared to their
peers. Latina adolescents reported feeling sad or hopeless in the past year (42%), had thoughts of attempting suicide (21%), made a plan (15%) or attempted (14%). These rates were higher than their African American and White counterparts. Of those Latina teens who had attempted in the past year, one out of 25 injured themselves severely enough to seek medical care, twice the rate of White and African American females (CDC, 2008).

One factor related to a Latina’s high rate of suicidal thoughts and actions is how she transitions from her native culture to mainstream U.S. culture (Trautman, 1961a; 1961b; Zayas, 1987; Turner, Kaplan, Zayas & Ross, 2002). A Latina’s ability to acculturate, but also the emotional support she receives from her family members, has been found to be critical to her mental health status. Given that many Latinos do not fully acculturate until the second or third generation (Fishman, 1966; Veltman, 1983), there could be noticeable differences in potential suicidal risk factors contingent upon their cohort and cultural status (Pena, Wyman, Brown, Matthieu, Olivares, Hartel & Zayas, 2008).

More research is needed to effectively prevent Latina adolescent suicide. Latino males and females under the age of 18 accounted for 26% of all Latino suicides (CDC, 2006). The Latino population is projected to increase in the United States for the next fifty years (Census, 2002). Therefore, deciphering the suicidal risk factors among young Latinas will continue to be a public health concern.
Latino Demographics

Latinos are the largest racial/ethnic minority group in the United States and they are projected to comprise 24% of the U.S population and over 31% of all children by 2050 (Census, 2002). In 2007 alone, 1.4 million Latinos arrived in the United States from the Caribbean, Central and South America (Census, 2008). Latino children are the fastest-growing portion of the U.S. population and accounted for over 48% of all Latinos. In 2008, the median age of Latinos was 27.6 and 24% for those under 18 years old (Census, 2008). Of the 12.1 million Latino children (age 18 and younger) included in the 2000 census, more than half (6.7 million) had foreign-born parents (Census, 2004). Over half of U.S. foreign-born children in the U.S. (54%) were of Latino origin (Census, 2004). The Latino population has increased significantly since the 2000 Census report. Last year the Latino youth population totaled 15.3 million (roughly 1 out of 3 children under the age of 18 are Latino) (Census, 2008). Suicide is rare in pre-adolescence but the risk tends to increase dramatically with age (Jellinek & Snyder, 1998). Seeing how these youth comprise such a large and growing portion of the overall U.S. population, it is vital to fully understand and prevent Latina suicide.

Beyond the public health concerns of suicide, there are also economic factors that result from this phenomenon. Although economists have not specifically examined the financial costs of suicide with regard to adolescents, in general suicide expenditures in the U.S. reach $111.3 billion each year in terms of medical care, mental health services and loss of work (Leone, n.d). Of that amount, $3.7 billion were incurred by medical expenses and $80.2 billion estimated lost concerning the quality of life for these
individuals (Leone, n.d). Therefore, preventing suicide is not only a health issue but an economical threat to the country.

Estimating the economic cost of suicide is difficult. The human costs are just as daunting. According the SAMHSA (n.d) from 1952-1995 suicide adolescents nearly tripled. To understand the magnitude of suicide, more adolescents “die from suicide more than cancer, heart disease, AIDS, birth defects, stroke, pneumonia and influenza and chronic lung disease combined” (SAMHSA, n.d., para. 12).

Summary

Latina adolescent suicide is a multi-faceted issue for mental health, medical, educational and other systems serving teens. Antecedents associated with Latina suicide include factors linked with one’s cultural status, emotional health and substance abuse in addition to securing social and emotional support. These determinants present many challenges to those offering prevention services.

The study will focus on the following areas:

- Does a Latina’s cultural status matter in terms of her likelihood to ideate or attempt suicide?
- Does a Latina’s behavioral status increase or decrease her risk of suicide proclivity?
- Does a Latina’s social support from her parents, peers or teachers raise or lessen her propensity for suicidal thoughts or attempts?

The social work profession has a long history of serving high-risk populations. A current trend in the field is emphasizing empirically-based, culturally competent mental
health services (Hoagwood, Burns, Kiser, Ringeisen & Schoenwald, 2001). The goal of this dissertation is to provide policy makers with empirical evidence to create culturally competent prevention efforts for Latina adolescents.
CHAPTER 2:

LITERATURE REVIEW

This chapter will concentrate on the risk and protective factors related to adolescent suicide with a focus on Latinas. Each section will deal with a particular variable in the conceptual model for the study. This study adds to the field of suicidology by investigating the applicability of attachment theory to suicidal thoughts and behaviors in terms of friendship networks and adult supports.

Introduction to the topic

Adolescent suicide. Adolescents who contemplate or attempt suicide may have numerous and multifaceted problems, including issues with mental health, substance abuse and poor social supports. Although rates of suicide have decreased for most age groups in the United States, in the past 60 years suicide rates doubled for females ages 15-24 (AAS, 2004). Substance abuse and mental health problems among youth contributed to the increased suicide rates (Shaffer, Gould, Fisher, Trautment, Moreau, Kleinman, & Flory, 1996; Birckmayer & Hemenway, 1999).

Adolescents who report stronger support systems tend to have lower attempt rates. Social isolation, typically associated with depression and hopelessness, decreases vital social support and increases risky behaviors related to suicide. Females attempt suicide
more than males and this finding has been linked to females’ needs for more emotional supports in their relationships than boys (AAS, 2006).

**Suicide Among Racial/Ethnic Minorities.** Racial/ethnic minority females are three times more likely to attempt suicide than minority boys (Groves, Stanley & Sher, 2007). Although some demographic groups appear to have a higher incidence of suicide (such as adolescents), there are subgroups within this population that have even more disproportionate rates of suicide. Latina suicide rates, ideations, plans and attempts, consistently rank highest among adolescents (CDC, 2005; 2008). Latina adolescents are especially vulnerable to suicidal thoughts and behaviors. Robles (1995) found that in a Florida school system, Latinas accounted for 35% of the district’s suicide attempts but constituted only 22% of the school population. In one Bronx hospital, more than 25% of the patients admitted were Latina adolescents recovering from a recent suicide attempt (Razin, O’Dowd, Nathan, Rodriguez, Goldfield, Martin, Goulet, Scheftel, Mezan & Mosca, 1991). Ng (1996) reported that suicide attempts counted for 66% of Latina adolescent hospitalizations. Research involving over 3,000 urban teens reported that being Latina was a powerful indicator for suicide attempts (Garafolo, Wolf, Wissow, Woods & Goodman, 1999). In the literature, Latina adolescents have consistently been found to have been depressed, ideated, made a suicide plan, attempted suicide and sustained an injury from an attempt more than their African American, Asian American and Caucasian peers (CDC, 2008).
John Bowlby and Mary Ainsworth developed the concept of attachment theory, which guides this study (Ainsworth & Bowlby, 1991). This theory draws from a number of disciplines including developmental psychology and psychoanalysis. Bowlby believed that the types of bonds children had to their attachment figure, typically their mother, can positively or negatively affect their mental health. An attachment figure can meet a variety of needs including support, protection, and care. By having a person a child feels safe and secure with, the child can discover his or her environment, which is essential to healthy development. Children who do not have such an attachment figure can potentially deal with various pathogenic conditions (Bowlby, 1969). Bowlby contended that in order for a child to be healthy “the young child should experience a warm, intimate, and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment” (Bowlby, 1951, p. 13).

Some have argued that Bowlby and Ainsworth discounted the importance of other adults and family members and supported a traditional view of women, in a child’s life (Chodorow, 1978; Johnson, 1988; Marris, 1982). While mothers are typically thought of as primary caregivers, there is evidence that children can bond with a variety of individuals including fathers, grandparents and siblings (Schaffer & Emerson, 1964). Somewhat overlooked, Bowlby also stressed the importance of social networks in the progression of the mother-child connection. Other studies have supported the view of social networks as attachment figures (Belsky & Isabella, 1988; Belsky, Rovine, & Taylor, 1984). The aforementioned studies found that social networks were found to be
beneficial if they were consistent, quality relationships while number of contacts did not appear to matter to a person’s mental health. Studies that include teens such as Perez-Smith, Spirito and Boergers’s (2002) work, found that teens who reported tenuous social networks also had higher levels of hopelessness, even when depression was controlled. Another study examined teen’s peer networks and risk of suicide (Brent, Perper, Moritz, Allman, Schweers, Roth et al., 1993). Brent and colleagues studied 26 suicide victim’s social network and interviewed 146 teens 7 months after their friend’s death. These participants’ level of depression, post-traumatic stress disorder and suicidal ideations were assessed. The new-onset disorders including ideation occurred within one month of their friend’s death.

The break of secure and continuous relationships in a child’s life can have deleterious effects depending on how the child reacts to these changes. Three stages of separation were classified by Robertson and Bowlby (1952): protest (a result of separation anxiety), despair (associated with grief and bereavement), and detachment (linked to defense mechanisms). Bowlby argued that infants and children are subjected to separation anxiety. He believed that when a secure figure it not available, a child might find others for their attachment needs. He continued that if a child had too many substitutes of attachment-like figures, he or she may never fully learn how to develop strong relationships with others. Without consistent figures in a child’s life, he or she lacks the ability to know and have faith in predictable outcomes. This lack of guidance increases their anxiety levels, rates of depression and lack of worth.
When caregivers respond positively, they model appropriate behaviors of social interaction (Schaffer & Emerson, 1964). This repetitive interchange provides a safe environment for a child to continually return to when reassurance is needed (Ainsworth, 1967; Schaffer & Emerson, 1964). If this person provides the child with comfort and security, the child creates a working archetype of self worth. If this does not occur, the child begins to view him or herself as undervalued and useless. The type of person the child envisions as part of his or her identity has long-lasting effects.

Researchers have found that adults’ level of attachment can be predicted from their childhood (Hazan and Shaver, 1987; Fraley, 2002; George, Kaplan, & Main, 1984). The researchers asked adults about their own childhood attachments with their parents and how it affected their development (George, Kaplan & Main, 1984). Their research was consistent with Bowlby and Ainsworth’s findings. They discovered adults also had three levels of attachment (secure, ambivalent and avoidant) patterns. Young adults were also studied in terms of attachment, with similar results (Kobak & Sceery, 1988). Therefore, the types of bonds children have, and the effects these bonds created with their caregivers, appear to continue into their adult years.

Individuals who thought of killing themselves came from families with high generational conflict (Joffe, Offord & Boyle, 1988). Females were especially at risk for ideations if they felt devalued by their family. Children who came from families who moved often also reported more suicidal thoughts than those who lived in a more stable home environment (Potter, Kresnow & Powell, 2001).
Suicide and Attachment Theory. Attachment Theory (Bowlby, 1980) contends that a lack of connection to others, especially parental figures, can result in issues of rejection and separation. A child who experiences feelings of separation can trigger a suicide attempt in an effort to obtain attachment (Zimmerman, 1991; Zimmerman & Zayas, 1995; Debold et al., 1993). For example, attachment theory (Bowlby, 1980) contends that the potential separation from their parent, whether physical or emotional, signifies a major break in attachment. Fear of abandonment can trigger an attempt in hopes that the bond will be secured once again (Lyon, Benoit, O'Donnell, Getson, Silber & Walsh, 2000).

A disturbance in the parent child relationship has been found to increase an adolescent’s risk for suicide attempts (Sabbath, 1969). Lack of attention or mutuality can decrease the parental bond. If a child is in competition for their parents’ attention, a parent might become resentful of their child. This can continue until the parent has an unconscious or conscious desire to rid themselves of their child. Failure to nurture or provide consistent nurturing increased the risk of suicide attempts (Lyon et al, 2000). In fact, Lyon et al, (2000) found that neglect more than physical or sexual abuse distinguished those who had attempted suicide from those who had not attempted.

In a study focusing on the differences in bonding between mother and bonding to father, significant relationships relating to the child’s self-esteem, depression and suicidal attempts were found (McGarvey, Kryzhanovskaya, Koopman, Waite & Canterbury, 1998). Parents who were not affectionate had the highest rates of stress, while those with most favorable bonding styles had the least distress. Fearful or preoccupied attachments
increased the likelihood of suicidal ideations (Lessard & Moretti, 1998). Children who had these weak bonds with their parents used more lethal means during their attempt.

This dissertation observed different forms of parental support to ascertain its applicability to Latinas. It also examined if self-reported support from peer networks played a role in suicide. A child who does not feel connected to important figures in her life might feel isolated from others, thus increasing the propensity for suicide. Parents or other attachment figures who fail to care for their children not only reported more neglect but also a mental health diagnosis (Gilbert, 1989).

Researchers have identified variables at various levels of analysis including individual (Turner et al, 2002; Razin, O’Dowd, Nathan, Goldfield, Martin, Goulet, Scheftel, Mezan & Mosca, 1991), family (Zayas, 2006; Institutes of Medicine, [IOM], 2002; Zayas, 2000; Hovey & King, 1996; Guiao & Esparza, 1995; Zayas, 1987), neighborhood (Perez-Smith, Spirito & Boergers, 2002) and school (Turner et al, 2006; Moskos, Olson, Halbern, Keller & Gray, 2005) contexts as predictors of adolescent suicide. These factors have consistently been shown to predict increased risk of suicide for all Latinas: acculturation status, age, sparse social networks and supports, drug use and mental health diagnosis (Zayas, 2006; Turner et al, 2002; Zayas, 1987)

*Suicide Proclivity*

*Suicidal Ideations.* Suicidal ideation is defined as a person’s serious consideration to take his or her own life (De Wilde, 2000). The CDC (2008) recently found in the general population that roughly 14% of adolescents questioned considered a suicide attempt in the past year. Females (19%) more than boys (10%) reported a
previous suicidal ideation in the last 12 months. Individuals who thought of killing themselves came from families with high generational conflict (Joffe, Offord & Boyle, 1988). Family conflict has also been found to increase suicidality among Latina adolescents (Zayas et al, 2000). Females were especially at risk for ideations if they felt devalued by their family. Children who came from families who moved often also reported more suicidal thoughts than those who lived in a more stable home environment (Potter, Kresnow & Powell, 2001). Lifetime rates of ideation varied from 2% to 63%, with a median value of 20%, and more common in females than males (Beautrais, 2002). Suicidal thoughts increased during adolescence. In one study, females who were 15 years old reported 3.5 times as many ideations as boys of the same age (Fergusson, Woodward & Horwood, 2000). Therefore according to the literature, conflicted interpersonal relationships, gender, emotional supports, behavioral health status and a Latina’s cultural status predict suicidal ideations.

**Suicide Attempts.** A suicidal ideation always precedes an attempt, so many of the risk factors associated with a suicidal ideation mirror those for suicide attempts. The following is a discussion of suicide attempt data regarding the general population. The National Institutes of Mental Health (NIMH; 2003) reported that between 30-40% of those who died by suicide made at least one previous attempt. Those who attempted suicide were 6-8 times more likely to try again compared to those who never attempted (Pfeffer, Klerman, Hurt & Kakuma, 1993; Lewinsohn, Rohde, & Seeley, 1994). The probability of another attempt in the same year increased 100-fold compared to previous years (National Mental Health Association, 2006). The rates of teens reattempting ranged
from 6-15% per year (Brent, 1993). The greatest threat occurs within the first 3 months of the initial attempt. Since mortality from suicide increases steadily through the teen years, identifying at-risk children can prevent future injuries and possible death (CDC, 1999; Hoyert, Kochanek & Murphy, 1999).

**Cultural Status**

The debate continues on how best to define and measure cultural status. It is important to take into account differences that exist among Latinos pertaining to their individual and parents’ place of birth and language preference when examining critical behavioral health issues such as suicide. Cultural status is a controversial concept that has been defined in many ways. The point of contention occurs as to what defines one’s cultural status—a person’s place of birth or language use or a person’s values, beliefs, or traditions or a combination of the two. The term refers to one’s language, place of birth, citizenship, and strict family structure but has also included aspects of cultural values and traditions (Rogler, Cortes & Malgady, 1991; Zimmerman & Zayas, 1995; Tortolero & Roberts, 2001). Efforts to measure this concept are equally diverse, including various combinations of objective and subjective criteria. Researchers agree that variation in the cultural status of Latinos is an important antecedent to a range of psychosocial and behavioral outcomes including suicide (Blake, Ledsky, Goodenow & O’Donnell, 2001; Ebin, Sneed, Morisky, Rotheram-Borus, Magnusson & Malotte, 2001; Marin & Flores, 1994).

**Cultural Status and Suicide.** While Latina migrants tend to have lower rates of suicidal thoughts and behaviors, subsequent generations tend to be more at-risk (Pena et
al, 2008). One possible reason for this increase is that foreign-born Latinos engage in more health-promoting behaviors (Ebin, Sneed, Morisky, Rotheram-Borus, Magnusson, Malotte, 2001; Whaley & Francis, 2006; Unger, Ritt-Olson, Soto, Baezconde-Garbanati, 2007). These behaviors focus on the biopsychosocial aspects of a healthy lifestyle including spirituality, family rituals, supportive emotional connections with relatives and extended families. Collectivist homes with strong emotional bonds impact Latinos’ mental health, including suicidal ideations and attempts, depending on one’s level of acculturation (Hovey, 1996; 1998; 2000).

**Latina’s Cultural Status and Suicide.** The longer a Latina resides in the U.S. the higher her risk of suicide (Zayas, 1987, Sorenson & Golding, 1988; Swanson, Linskey, Quintero-Salinas, Pumariega, & Holzer, 1992; Vega, Gil, Warheit, Apospori, & Zimmerman, 1993; Zimmerman & Zayas, 1995; Vega, Kolody, Aguilar-Gaxiola, Alderete, Catalano & Caraveo-Anduaga, 1998; Turner et al, 2006). Latina adolescents born in the United States are at a higher risk of suicide attempts than Latina immigrants (Zayas, Kaplan, Turner, Romano & Gonzalez-Ramos, 2000; SAMHSA, 2003; Zayas, Lester, Cabassa & Fortuna, 2005). This dissertation posits that the link between immigration status and suicidality suggests that Latina adolescent suicide may stem from different dynamics than suicide among other teens.

**Parents’ Place of Birth.** Children of immigrant parents face acculturative and migratory stressors increasing their risk for a variety of mental health conditions (Szapocznik & Truss, 1978; Mindel, 1980; Landau, Griffiths and Mason, 1981; Vega et al., 1994; Boothby, 1994; Jablensky, 1994; Karno, 1994). Children’s mental health is
positively related to their parents’ mental health, especially their mother’s (Turner et al, 2006). The immigration experience can be filled with extreme anxiety. If families are immigrating illegally, the stress can be even worse. For example, due to traveling through difficult terrain, warlords, and border patrols, the level of uncertainty and safety can be debilitating to those crossing the U.S. border. Many Central American immigrants who fled from war-torn areas have witnessed various forms of violence including murders and rape (Cervantes, Salgado de Snyder, & Padilla, 1989). Salvadoran immigrants were found to suffer from Post-traumatic Stress Disorder (PTSD) at significantly higher rates within 5 years of their arrival into the U.S. (Plante, Manuel, Menendez, and Marcotte, 1995). Instability, stress, and grief over the sudden loss of family and friends from their native country appear to occur after moving to a new country (Cervantes, Salgado de Snyder & Padilla, 1989; Irwin, 1991). Therefore immigrant parents might have a more difficult time dealing with acculturation, such as language acquisition, and their children might also be adversely affected by this transition.

When acculturating parents have poor coping skills, they can become less effective in caring for their children (Zayas & Pilat, 2008). In addition to childrearing responsibilities, these parents also must deal with their own separation from their native family members and create new support groups in the U.S. Building networks of social support was the most common response regarding stress by new immigrants (Mindel, 1980; Landau, Griffiths and Mason, 1981; Caplan, 2007). Healthy adjustment to a new country is related to the immigrant’s social relationships (Vega, Kolody & Valle, 1987).
Depression occurred when the individual believed moving to the U.S was a mistake and experienced clashes between native and mainstream cultures (Vega, Kolody & Valle, 1987).

New immigrants face mental and emotional strains due to transitioning to a new culture but family can help with this stress (Choi, Meining, J. & Roberts, 2006; Census, 2006a; 2006b; Bureau of Labor Statistics and Bureau of the Census, 2006). Selective immigration, in which countries only allow certain immigrants based on skill level, and a resilient family structure guarded individuals from depression (Delgado, 1995). The longer a Latino immigrant resides in the U.S. and integrates however the more likely these mental health protective factors will diminish (Vega, Kolody & Valle, 1987; Abraido-Lanza, 1999). For example, Mexican-born immigrants have repeatedly reported lower rates of mental illness compared to Mexican-Americans (Burnam, Hough, Karno, Escobar & Telles, 1987; Escobar, Hoyos & Gara, 2000; Tortolero & Roberts, 2001; Vega, Sribney, Aguilar-Gaxiola & Kolody, 2004).

It is projected that one out of every five Americans will receive a diagnosis of depression in the U.S in their lifetime (US Department of Health and Human Services [DHHS], 2000; Caplan, 2007). Latinos born in the U.S were at an increased risk of depression, drug dependence and abuse when compared to native-born Latinos (Burnam, Hough, Karno, Escobar & Telles, 1987; Escobar, Hoyos & Gara, 2000). Given that depression can be debilitating, rendering a person incapable of performing routine responsibilities, parental duties can easily be pushed aside.
Child’s Place of Birth. Although minority adolescents are prone to engaging in dangerous behaviors (CDC, 2008), Latino children face the additional risk factors of language proficiency and fewer social supports (Rogler, Malgady & Rodriguez, 1989). Family is important to a Latino child’s functioning and a considerable amount of their emotional support (Falicov, 1996). The longer Latino immigrants, adults or children, reside in the US, the more the supportive function of the family structure weakens. For example, the traditional Latino family incorporates a collectivist structure which is different than the majority’s value of a more individualistic family structure. As the immigrant acculturates, the need to adopt more mainstream values can reduce the collectivist paradigm commonly found in Latin culture (MCHB, 1999; Delgado, 1995). When this happens, the extended family is expected to care for the children but networks might decrease in availability upon moving to a new country. Immigrant parents might choose an adult they are less familiar with for child care possibly exposing them to individuals engaged in risky behaviors (Garcia-Preto, 1996).

English Proficiency in Home. According to the U.S Census Bureau (2004a), 9.2 million Latino children spoke a language other than English in their home. Of the 12.1 million Latino children in the U.S, almost half (5.8 million) conversed in English “less than very well” (Census, 1999, p. 53). Over three-fourths (78%) of Latinos age 5 and older spoke Spanish in their home to maintain cultural ties and communicate with older, immigrant family members (Census, 2008).

Children’s English proficiency level impacts not only their educational attainment but also the quantity, quality and characteristics of their social networks. A Latino’s lack
of English skills can predict stress, depression and suicidal ideation (Hovey, 2000). Young Latinas typically learn English more quickly than their older family members partially due to their involvement in English as a Second Language (ESL) classes at school. Due to exposure to English, opportunities to associate with a diverse group of people increase. The heterogeneity of her interpersonal contacts could be very different than the heterogeneity of her family members’ contacts. Since a child’s primary language with her friends might be English but Spanish with her family, there might be a disconnect between family and friends. Consequently, her family might not be able to monitor her peer groups as well as parents who speak English can (Allen, Elliot, Fuligni, Morales, Hambarsoomian, & Schuster, 2008). Alternatively, her friends might find her traditional culture and family difficult to understand and appreciate. Dissonance between her friends and family might occur. This tension might increase her sense of hopelessness due to the pressure of having to ultimately reject one important support group for the other.

Behavioral Health Status

attempts and substance abuse increase one’s risk of future suicide attempts (Shaffer & Gould, 1987; Brent, Perper, Moritz, Allman, Friend, Roth, Schweers, Balach, Baugher, 1993).

Gould and colleagues (1998) wanted to ascertain how specific diagnoses impacted suicidal ideation and attempts. Their study investigated 1,285 randomly-selected children ranging from 9-17 years of age. Forty-two of the participants had attempted suicide while 67 had a history of ideations. Having a mood, anxiety and/or drug use disorder increased one’s risk of ideations and attempts after controlling for demographic characteristics. Children with a mood or anxiety disorder exhibited three times more suicidal behaviors compared to those without a diagnosis.

**Depression.** During adolescence, the incidence of depression and suicide appears to peak (SAMHSA, 2000). Between 10-15% of children suffer one or more symptoms of depression and roughly 5% of 9-17 year olds receive a diagnosis of major depressive disorder (Smucker, Craighead, Craighead & Green, 1986; Shaffer et al, 1996). Depression increases a female’s incidence of suicide 12-fold and a previous suicide attempt can raise their risk 3-fold (Shaffer et al., 1996). After age 15, depression rates double for females when compared to males (Weissman & Klerman, 1977; McGee, Feehan, Williams, Partridge, Silva & Kelly, 1990; Linehan, Heard & Armstrong 1993). In 2004, nearly 3.5 million youth suffered at least one major depressive episode (MDE) in their lives (SAMHSA, 2006b) and 7% or 1.8 million teens with a MDE ideated. Of that group, 712,000 teens attempted suicide during their depressive episode (SAMHSA,
For those diagnosed with MDE who also engaged in alcohol or drug abuse, the likelihood of a suicide attempt or ideation rose (Kessler et al, 2005).

**Depression and Culture.** Culture affects the way individuals define and process mental health issues including suicide (Giddens, 1964). Although linked with pathology, suicide can be a response to acculturative stress (Institute of Medicine [IOM], 2002). Given the rates of suicide among young Latinas, acculturation models need to include the constructs of depression and suicidality (Hovey & King, 1997). These additional antecedents take into account how change in cultural status can result in the disruption of social and family support networks.

Acculturation, or adopting mainstream values, beliefs or traditions consistently appears to elevate the risk of depression and suicidal risk among Latinos (Swanson, Linskey, Quintero-Salinas, Pumariega & Holzer, 1992; Vega, Gil, Zimmerman & Warheit, 1993; Hovey, 1996; Hovey & King, 1997; Rasmussen, Negy, Calrlson & Burns, 1997; Hovey, 1998; 2000; Oquendo, Lizardi, Greenwald, Weissman & Mann, 2004). For example, Mexican-American adolescents had 1.8 times the ideations as European-American children (Tortolero & Roberts, 2001). High levels of familial conflict and negative beliefs about the future predicted stress. Among Latina adolescents, acculturation status and family problems were found to be risk factors for depression and suicidal ideations (Olvera, 2001; Roberts & Chen, 2005).

**Substance Use.** Substance use raises one’s propensity for risky behaviors. Several studies indicate the long-term affects of illicit drug use including mental illness and suicidal proclivity (Greenblat, 1998; Lynskey, 2004; Duberstein, Conwell & Caine,
A 16 year examination of individuals with no depressive symptoms at baseline, who then began using substances, reported escalated rates of depression. The frequency of depression increased four times from the initial to the follow-up interview (Bovasso, 2001). Fergusson’s (2002) work, spanning 21 years, demonstrated that habitual marijuana use was linked with depression, suicidal ideations and attempts. Brook (2002) also found that, over a 14 year period, illicit drug use predicted a future diagnosis of major depressive disorder which is closely linked with suicidal thoughts and behaviors.

**Substance Abuse and Suicide.** Individuals with a mental health diagnosis who abuse substances showed a higher propensity for suicide compared to those without a diagnosis or drug use (AAS, 2007; Borowsky, Ireland & Resnick, 2001, American Psychiatric Association, 2005). Roughly 50% of those with a mental health condition who committed suicide were found to be intoxicated at the time of their death (SAMHSA, 2006a; American Psychiatric Association, 2005). Children using alcohol or other drugs at the time of suicide attempt also required longer hospital stays (SAMHSA, 2006a).

Adolescents might self-medicate with alcohol and other drugs while others might communicate their stress through suicide (APA, 2005). Alcohol, readily available to many adolescents, is the most frequently used drug during the time of a suicide completion. Roughly 50% of the adolescents who committed suicide under the influence of substances were found to be intoxicated at their moment of death while 66% had at least a trace of alcohol in their system (SAMHSA, 2006a).
Latinos and Substance Use. Distinct gender differences between Latino and Latina adolescents include their level of drug use. Latino males typically use inhalants, alcohol, marijuana and PCP while Latinas typically use tranquilizers and heroin (Hunsaker, 1985). Acculturated Latino youth were nearly 13 times as likely to report using illegal drugs compared to less-acculturated Latinos (National Drug Control Policy, 2007). A Department of Health and Human Services report on rates of Latino substance use indicates that Latinos begin using drugs earlier than either European-Americans or African-Americans:

- rates of crack and ecstasy use in the 12th grade, and their level of heroin use is equivalent to that of whites. But in the 8th grade they tend to come out highest of the three racial/ethnic groups on nearly all classes of drugs, including alcohol (amphetamines being the major exception (Department of Health and Human Services [DHHS], 2001, p. 9).

The relationship between suicide and substance use has been studied among Latino teens. Queralt (1993a) studied 14 Latino students who completed suicide. Autopsy records found that 25% of them had alcohol and 15% had other drugs in their system (Queralt, 1993a). Given Latinos’ use of illicit substances, how these rates increase with age, and that the rates are higher than that for other adolescents until 12th grade, understanding the link between drug use and this group is essential.

Social Supports

Individuals with close relationships handle stress more effectively and show gains in physical and mental health compared to those who lack social contacts (IOM, 2001).
Social supports yield various protective factors for depression and they can decrease the acuteness of a mood disorder in high risk groups such as immigrants (Shen & Takeuchi, 2001). These networks guard against mental health issues via emotional support (O’Grady and Metz, 1987; Vance et al, 1998) and can moderate suicidal ideation and attempts with different racial/ethnic groups (Borowsky et al, 1999; Kaslow et al, 1998; Kotler et al, 2001; Nisbet, 1996; Rubenstein et al, 1989; Thompson et al, 2000) specifically with Latinos (Hovey, 1999). Completed suicides increased when individuals reported fewer opportunities for family or peer emotional support (Allebeck et al, 1988; Drake et al, 1986). A study focusing on adolescents found that half of the variance in suicidal risk related to one’s perceived level of social support (D’Attilio et al, 1992). As a result, efforts should include increasing adolescents’ social supports in their suicide prevention programs (Borowsky et al, 1999; Vance et al, 1998).

**Social Supports and Cultural Status.** Adolescents who reported more friends were less likely to attempt suicide. This finding reflects the idea that decreased support systems affect one’s mental health (O’Donnell, Stueve, Wardlaw and O’Donnell, 2003, Bearman & Moody, 2004; AAS, 2006). Opportunities to obtain these interpersonal contacts can be difficult for immigrants, especially those outside of their ethnic enclaves (Oetting, 1993). When immigrants arrive in the U.S., they can feel perpetually displaced and isolated due to the lack of cultural reinforcement from other Latinos. In fact, one’s nativity may be a less significant risk factor for psychiatric morbidity than originally thought and actually how one integrates into the US might be more important (Alegria,
Relationships can buffer the incidence of maladaptive behaviors (Griffith, 1984). A study of Caucasian and Mexican American adults indicated that a Latino’s cultural status impacted social supports. Mexican Americans who spoke English had significantly more social networking opportunities, cumulative contacts and reciprocity when compared to Spanish-speaking Mexican Americans. Latinos who were proficient in English had more friends resulting in more opportunities for emotional support.

Although English proficiency increased social networks in Griffith’s (1984) study among adult Latinos, adolescent friendships are different. Most of the Mexican Americans in the study were married and reported fewer friends than the non-Latino adults in the study. Marriage tends to change friendships in that the married partner is typically the focus of one’s social networks (Milardo, 1982). The partner also replaces other friends resulting in fewer but more intimate relationships compared to young, single adults. The adults in the study also learned the social nuances of making friends in the dominant culture, where young Latinas might not be as sophisticated in their social skills. Therefore, it is difficult to generalize from these results to Latina adolescents. This study will examine if the practice of speaking English in the home, among other cultural factors, protects Latina teens as it appeared to protect Latino adults.

Little research exists on how social networks impact suicide among youth, especially young Latinas (Bearman & Moody, 2004). Bearman and Moody’s study found that having a friend who had died from suicide increased the odds that an
adolescent would ideate or attempt suicide themselves. Female adolescents with few friends, or did not have mutual friends in their social network, reported more ideations. The authors concluded friendship networks impacted suicide rates. While having a larger network of friends might be associated with reduced risk of suicidal thoughts and behaviors among Latina adolescents, such friendships might also pose unique challenges. In particular, the composition and complexity of their friendship networks might be as important, or more important, than the number of friends in their network per se.

Social support appears to buffer the adverse effects of acculturation and suicide among Latinos, although research has not examined this with Latina adolescents (Hovey, 2000). A female who primarily speaks Spanish might have fewer friends, but more emotional support from her family increasing her protective factors. A female who aligns more with the mainstream culture might have more individuals in her friendship network, but these friends could pull her to risky behaviors (Prinstein, Boergers & Spirito, 2001). This could be partially due to her parents’ lack of knowledge of U.S. customs and culture and ability to monitor their children effectively due to their limited English proficiency. Ultimately, these networks can become a risk factor in terms of the composition and characteristics of their friendship group. Understanding the specific factors associated with Latina adolescents such as social supports and mental health is essential to prevent suicide among this group (Hovey, 1999).

*Latinas and Adult Social Supports.* O’Donnell, Stueve, Wardlaw and O’Donnell (2003) studied 879 urban adolescents’ reported levels of social support and their relationship with suicidal ideations and attempts. Over one-quarter (28%) of the Latinos
in the sample reported an ideation and 17% had attempted suicide. The attempt and ideation rates were higher than the African American and White participants. Half of the participants who attempted suicide spoke with an adult about their problems. Those who attempted stated they would not go to an adult for help in the future. Therefore we suggest linking children, especially those with a history of suicide attempts, with an adult mentor might not prevent an attempt.

Traditional Latino culture stresses respect or respeto for elders, whether it is one’s parent, teacher, extended family or neighbors. This practice might encourage Latino adolescents to value an adult’s advice (Trepper, Nelson, McCollum, McAvoy, 1997). If a Latina has close bonds to her parents or older siblings, she might feel more comfortable speaking to them than someone outside of her family. A Latina’s respect for her elders might encourage her to believe their opinions are more valuable than those of her peers. Therefore, adult social supports might be more important to Latina adolescents than to her peers.

Teacher Support. A Latina’s perceptions of her acceptance at school affect her impression of available social supports. Connections to teachers and classmates are important to consider since children are typically in school more often than at home each day. Latinas who felt unaccepted by their peers and faculty reported less attachment to their schools (Turner et al, 2006). This was true, for instance, if Latinas believed their mothers were not welcome in their school due to their limited English ability. If a Latina does not feel connected to her school community, she might become increasingly isolated and less likely to seek support in times of distress.
Friends Support. Gender differences occur in the type of friendships boys and females initiate. Female routinely engage in close relationships involving one or two people in a primary support group that is also loosely associated with a larger group (Savin-Williams, 1980). Young females also experience heightened pressure of social involvement than boys (Brown, 1982). Therefore, if a female is having difficulty making friends, the effects prove more detrimental for her than for a boy in terms of her ability to share secrets and personal concerns (Diamond & Muntz, 1967; Bigelow & LaGaipa, 1980, Blyth & Foster-Clark, 1987). Higher levels of intimacy were reported more often in same gender friendship networks than with mixed gender groups (Sharbany, Gershoni & Hofman, 1981; Hunter & Youniss, 1982; Reis, Senchak & Solomon, 1985).

Gender-based suicide rates could be attributed to how females are socialized to value their friendships. This can result in females’ heightened vulnerability to a relationship loss compared to boys (Allgood-Merten, Lewinsohn & Hops, 1990). Tenuous connections or the termination of a relationship can lead to isolation and feelings of hopelessness. Isolated teen females or those with weak friendship networks are at a higher risk of suicidal ideation (Bearman & Moody, 2004). These feelings of loss threatened females more than males given the intensity of the emotional exchange females tend to have with their friends compared to boys.

Connections to others have also been examined in racial and ethnic samples. A convenience sample of 95 Latino immigrants perceived depression as an issue with interpersonal and social factors (Cabassa, Lester & Zayas, 2007). These immigrants reported that “Depression represented ‘being in a Labyrinth’ of interpersonal problems
and economic strains, and lacking the emotional support system to help them cope with these difficulties in their everyday life” (p. 12). *Sin apoyo* (lack of support) refers to not experiencing strong connections to individuals, feelings of isolation and little emotional support to deal with one’s problems. Lacking close and committed relationships positively added to one’s propensity for depression, especially in females. Furthermore, if individuals did not believe they could trust or confide in their friends, depression rates further increased. Isolation and interpersonal conflicts can also lead to the breakdown of the cultural norm of *personalismo*, where relationships are considered imperative to effective functioning. Therefore, Latinas lacking social supports could have a higher risk of suicidal ideation and attempts compared to those with access to friends.

*Reciprocated Friendships.* Reciprocity occurs when individuals agree upon the level of commitment they have to one another (Youniss, 1980). For example, if a child states that “X” is their best friend, “X” would nominate that child as their best friend. Children with many friend nominations had longer-lasting relationships than those with fewer nominations. Adolescents with higher reciprocity scores also ranked higher on social competency (Asher, 1983).

Friendship mutuality can affect suicidality. Bearman and Moody (2004) discuss the distinction between transitive and intransitive relationships. Intransitive friendship networks occur when a person’s friends are friends with each other but do not nominate one another as a member of their respective network. Those who belong in intransitive networks typically maintain weak connections with others and are more prone to engage in risky behaviors including suicide.
Individuals possessing close relationships with others have more opportunities to self-disclose personal information in a safe place with minimal judgment (Vaux, 1985). These friends also provide consistent companionship during difficult events. These intimate bonds also allow teens to share coping mechanisms that could protect them from unhealthy responses to stress. For example, African American adolescents in low-income families who were involved in reciprocated friendships had higher rates of self-competence (Cauce, 1986). Reciprocated relationships tend to endure longer than casual acquaintances and can become a consistent source of support.

Durkheim (1951) studied the phenomenon of suicide by observing an individual’s risk in relation to their level of social integration. He found that those who had died from suicide had very few, if any, social ties to others. This lack of social connection creates an inadequate support system for individuals (Lin, Simeone, Ensel & Kuo, 1979). As a Latina transitions from her traditional ethnic norms to U.S. culture, she might have difficulty understanding the social differences in terms of social cues. Friendships are unique due to the manner in which they benefit one’s personality development. These interactions are distinctively different than those found in the parent-child relationship (Sullivan, 1953). Friends depend upon each other for advice and validation (Smollar & Youniss, 1983; Selman & Shultz, 1990). Peer interaction enables adolescents to share and clarify their feelings and thoughts (Smollar & Youniss, 1983; Selman & Shultz, 1990). As friendship becomes an “interactive phenomenon” throughout a child’s life, understanding which types of friendship networks are more prone to suicide proclivity is imperative (Youniss & Haynie, 1992, p. 61).
Networks also provide social integration. Popular children interact with more individuals and this gives them more opportunities for interpersonal contact. Teens rejected by their peers exhibited higher rates of inappropriate behavior such as being physically and verbally aggressive compared to well-liked individuals (Coie & Kupersmidt, 1983; Dodge, 1983; Rubin, 1983; Reisman, 1985; Ginsberg, Gottman & Parker, 1986). Teens also spend more time with their peers (Larson, 1983) and their acceptance is critical to a child’s mental health (O’Brien & Bierman, 1988). As a child matures, friends become more influential in terms of their impressions and decision making (Douvan & Adelson, 1966).

Although other racial and ethnic minorities encounter majority-minority issues, the rates of suicide among Latina adolescents are far higher when compared to other groups. Factors such as family dissonance and lack of mutuality have been theorized as possible sources of strain for Latina adolescents (Trautman, 1961a; 1961b, Zayas, 1987; Queralt, 1993a; 1993b, O’Donnell, O’Donnell, Wardlaw & Stueve, 2004; Turner, Kaplan, Zayas & Ross, 2002). As a child acculturates, her friends might play a more important role in her likelihood to ideate and attempt suicide.

*Frequency of Friend Contacts.* When a person’s group of friends are not accessible, negative health effects including depression can occur. Close friendships involve more frequent contact. Suicide prevention programs now target friends as gatekeepers due to their ability to observe changes in their peer’s behavior and mood (Moskos, Olson, Halbern, Keller & Gray, 2005). Since teens arguably spend more time
with their friends than family (Larson, 1983), especially during school, they can offer emotional support more so than perhaps their family members.

Building from the results of a 2000 study (Zayas et al, 2000); Turner and colleagues (2006) examined how community factors affected the attempt rates of Latinas. Females who participated in after-school activities reported more often to think optimistically about their future and had supportive relationships with their mothers. These females shared feelings more comfortably and were supported in school due to their involvement with adults. These mentoring relationships enhanced Latinas’ resiliency and motivation in school and beyond. For less acculturated Latinas, especially first-generation with household responsibilities, options for garnering these social supports in school were limited (Zayas, 1987, Razin et al, 1991, Zayas et al, 2000). Therefore, Latinas might have fewer opportunities to create and maintain social contacts compared to their peers. Since a lack of social connection is a risk factor for suicide, children not allowed to attend after-school programs and make friends could be more at risk for suicidal thoughts and behaviors. These studies indicate that acculturation does play a role in how Latinas access their peer supports, but the results are not definitive how acculturation protects or increases their likelihood of suicide proclivity. Our study takes their research farther by examining the types of friendships these Latinas have and how that may play a more active role in their risk for ideations and attempts.

Adult mentorship increases in importance as a Latina acculturates due to her mother’s lack of ability to provide guidance from her own past experiences (Zayas et al, 2000). Zayas and colleagues (2000, p.58) stated that an “effective mentor” is dependable,
encouraging and a positive role model (Rhodes, Contreras & Mandelsdorf, 1994). As a Latina continues to turn to people from the majority culture, tension might swell at home. As a result, a Latina might attempt to find guidance from individuals at their school. Females with a consistent level of stress from their mothers can become less resilient and less able to handle problems (Werner & Smith, 1992; Debold, Wilson, & Malave, 1993).

Suicidal Friends

Friends have a noticeable impact on suicide as evidenced by suicide clusters. Adolescents appear to be most at-risk for suicide contagion compared to other age groups, although this is a low-base rate phenomenon (Gould, Wallenstein, Kleinman, 1990). There is some evidence indicating peers’ risk behaviors are causal (Kandel, 1978; Keenan, Loeber, Zhang, Stouthamer-Loeber & Van Kammen, 1995), overtly influencing the adolescent to exhibit such behaviors (Bandura, 1973). Teens tend to self-select into a cluster of friends predisposed to suicidal thoughts and behaviors (Joiner, 2002). When a member of a friendship network attempted or completed a suicide, the remaining peers were more likely to mimic those same behaviors. These friends also share modalities or methods of how to attempt suicide (Joiner, 2002).

Therefore, the types of friends one socializes with appear to influence one’s likelihood of suicide (Jellinek & Snyder, 1998). Bearman and Moody (2004) studied the connection between friendship, suicidal ideation and attempts. Teens with a friend who had a suicidal history were more likely to ideate or attempt themselves. Those with fewer social networking opportunities or who had weak friendship networks were also more likely to ideate (Roberts & Chen, 1995, Bearman & Moody, 2004).
Traditional Latino families utilize an authoritative approach to parenting (Turner et al, 2002). Households are organized by a hierarchical system with regard to age and gender, where males and elders hold the most respect. The husband makes most of the family decisions, at times with little or no consultation from his wife (Garrison, Roy & Azar, 1999). This restrictive environment can hinder some children’s ability to cope with problems and decrease a female’s self esteem (Dornbusch, Ritter, Leiderman, Roberts & Fraleigh, 1987). When teenage daughters challenge the prescribed gender roles supported by their parents, the family structure can be threatened. The turmoil that ensues from Latinas confronting these expectations leads to depression and an increase in suicidal risk. Zayas and colleagues (2000) found that Latinas who attempted suicide came from homes with higher generational conflict compared to households without a reported attempt.

Latino families can also follow a more authoritarian approach to rearing their children. Arzubiaga, Ceja & Artiles, 2000). While authoritative parents are both demanding and responsive, an authoritarian style is best described by a demanding yet responsive approach to behavior modification. Parents do monitor their children and provide their children with clear standards for the actions. These parents are assertive but not intrusive or restrictive. The goal of raising individuals in this supportive environment is that children become self-regulated, assertive and cooperative to those in-and-out of the family unit. Although much of the research focuses on more stringent parenting styles such as the authoritative approach, some studies have also found that the authoritarian
style to parenting decreases a child’s likelihood of suicidal ideation (Martin & Waite, 1994). The authoritarian style indicated the child had more effective coping skills, higher self esteem and was more comfortable talking to their parents in times of crisis.

As a Latina individuates from her family her rate of suicide attempts increase (Turner et al, 2002; Razin, O’Dowd, Nathan, Goldfield, Martin, Goulet, Scheftel, Mezan & Mosca, 1991). Individuation occurs when a child separates themselves from their parents which can cause familial strain. This process can create tension between generations which has been found to increase a Latina’s risk of suicide (Zayas et al, 2000). In one study, Latina adolescents believed attempting simultaneously protected and relieved their mother from the stress they created by disrupting the family unit (Zimmerman, 1991; Zimmerman& Zayas, 1995; Debold et al., 1993). Given the collectivist characteristics of Latino families, namely the importance of the family unit over the individual, a daughter might rationalize that her death would help the family function more efficiently.

If a Latina senses tension between her family’s Latino culture and her friends’ U.S. culture, the strength and quality of her relationship with her relatives, especially with her mother, can weaken. This dissonance especially occurs when a Latina seeks alternative forms of support and acceptance. This pull between cultures can intensify with peer pressure. For example if familial expectations include returning home after school to care for her family, her ability to go out with friends can be affected. If a Latina decides to forgo these responsibilities, her family might be adversely affected. As a result, feelings of shame due to relinquishing her Latino culture for acceptance by the
majority can arise (Brindis, Wolfe, McCarter, Ball & Starbuck-Morales, 1995; Hovey & King, 1996).

Family Support. Latina teens experience guilt for feeling the need to choose between their family and peer group (Hovey & King, 1996). Such a choice contradicts the Latino cultural norm of collectivismo. The foundation of a collectivist home places the group higher than the individual. The strong bond between family members creates a high level of emotional connectedness (Delgado, 1995). Incongruity ensues between the cooperative focus in the family compared to the predominantly individualistic U.S. culture. This difference can challenge new immigrants to comprehend and assimilate, especially among adolescents.

Family structure can offer protection from suicide (Institutes of Medicine, [IOM], 2002). Those living alone, for example, indicate an increased likelihood for suicide (Allebeck et al, 1988; Drake et al, 1986). A child’s perception of his or her family’s connectedness also protects him or her from suicide (Borowsky et al, 2001; Resnick et al, 1997) especially among Latino teens (Guiao & Esparza, 1995). Often regarded as the unused resource by clinicians and researchers, nuclear and extended families not only provide support for Latinos, but an opportunity for cultural exchange (Maternal and Child Health Bureau [MCHB], 1999; Espinosa, 1998). The collectivist structure of Latino culture serves as a protective factor from risky behaviors and physical disease (MCHB, 1999).

Latino families average 3.5 people per household compared to 2.6 members in all other American households (MCHB, 1999). The greater number of individuals in the
home can provide more opportunities for support. Although a larger number of family members to turn to can protect one from suicide, controlled studies indicate that a low level of communication between parents and children acts as a significant risk factor for suicide (Gould, Fisher, Parides, Flory & Shaffer, 1996).

Latina adolescents with immigrant parents experience pressure to adopt adult roles before they are mature enough to assume those responsibilities (Zayas, 2000). These females turn into substitute mothers resulting in a loss of identity compared to their peers (Zayas, 2006; 1987). Due to many Latinas feeling culturally sandwiched between two cultures, feelings of hopelessness arise (Smokowksi, Buchanan & Bacallao, 2009). Incorporating native and mainstream traditions and values can be simultaneously stressful and liberating. With increasing tensions between relatives and young Latinas, family support will likely decrease (Zayas, 2006; Zimmerman & Zayas, 1995).

When a Latina daughter tries to individuate, the level of emotional support from her mother might decrease. Mutuality has been defined as thoughts and communication where support and emotions were shared in a safe and secure environment (Genero, Miller, Surrey & Baldwin, 1992; Jordan, 1998). Mothers who showed more interest and empathy in their children’s lives appeared to foster decreased depressive symptoms and ultimately suicide with their daughters (Turner et al, 2006; Medina & Luna, 2006).

Teen females strive to be connected and validated by their mothers. As Latina mothers typically do not work outside the home, their likelihood of confronting their daughters on issues increase as does the strain in the relationship (Zayas et al, 2000; Zimmerman & Zayas, 1995). The family structure does appear to change with each
generation as evidenced by increased rates of single motherhood in second and third
generation Latinas (Census, 2000). Regardless of the household composition, the strain
typically resulted from the Latina daughter’s desire for independence. Latino parents
viewed her desire for individuation as self-destructive to the family unit and feared drug
use and sexual activity among other concerns (Zayas, 2006; Zimmerman & Zayas, 1995).

Overall, associations between Latina suicide and connections with family are
apparent in the literature (Zayas, 1987, Queralt, 1993a; 1993b, O’Donnell, O’Donnell,
Rican women with a history of suicide living in New York City. Moving to a new
geographic location made these Latinas more susceptible to suicide. The women had no
mental health diagnoses or symptoms but relationship conflicts were found to precede
their attempt. These clashes typically happened with their mothers or spouses, arguably
the main support system in their lives. Controlling for mental health status is important,
but it appears the types of social supports Latinas have in their lives impacted their
suicide rates (Zayas & Dyche, 1995; Zayas et al, 2005).

Summary

The literature suggests a Latina’s risk for suicide is associated with her cultural
status. The longer a Latina resides in the U.S, the higher her rates of depression and
suicidal thoughts and behaviors. In addition, third generation Latinas are more likely to
ideate and attempt suicide when compared to immigrant children. These rates of suicide
are attributed to the higher incidence of depression among Latinos born in the U.S
compared to those born in their country of origin. One’s cultural status can affect the
quality and quantity of accessible social contacts. These relationships support an individual in times of distress. Individuals lacking social networks and supports could be more susceptible to suicide.

This dissertation addresses a missing piece of the literature—how a Latina’s friends and adults outside her family act as a protective factor for suicidal ideations and attempts. The study is the only known examination of the characteristics of a Latina’s friendship network regarding suicide proclivity. This investigation could be a critical addition to the research of Latina adolescent suicide and their heightened risk compared to other teens.

Arguably, friends influence teens at times more than their families. In this study, I will focus on Latinas’ parents, friendship networks and suicide rates. Primarily, I will analyze the quality of these friendships and whether particular constellations of friends protect Latinas from suicide or actually increase risk. The project will expand suicide theories and test the mechanisms connecting race/ethnicity, family and peer support to suicidality among Latina adolescents.

The study utilizes a nationally representative data set which includes generational status of the child and extensive data on family and friendship networks. These meso-level variables could be critical to suicide prevention among Latinas. Latinas are different from most teens in that they are navigating between two cultures (family and friends) from varying acculturation levels. Acculturation alters these networks and imposes strains on families. As a result, friendships are essential to provide necessary support. But, as Latinas acculturates and learn European-American social norms and mores, they may create new and unfamiliar ties with her friends that are possibly unreciprocated.
Suicide is a public health crisis (U.S. Public Health Service, 1999, IOM, 2002, Suicide Prevention Resource Center, 2005, World Health Organization, 2008). The U.S. Latino population is young and Latinas in particular are at risk for suicidal behaviors. There appears to be a strong link between a Latina’s acculturation level and suicidality, but the literature is limited in terms of an explanation. Currently empirical research has determined those at the highest risk of ideation and attempts are females, have weak interpersonal relationships, suffer from substance abuse and/or depression and are acculturating to the U.S. Current research limits our understanding of the specific reasons why Latinas attempt at such high rates. Since acculturation is linked to a person’s social networks, examining a teen’s friendship network is vital to prevent Latina adolescent suicide.
CHAPTER 3:

METHODS

By examining the types of relationships Latinas choose, researchers can enhance current strategies to reduce the high rates of suicide among adolescents. If specific risk and protective factors can be identified in children transitioning to the U.S., culturally competent prevention efforts can be instituted. As a result, this dissertation will advance our understanding of the specific factors associated with suicide with young Latinas.

Description of the Add Health Dataset

The data used in the study were from the National Longitudinal Study of Adolescent Health (Add Health). Add Health is a nationally representative study of various health-related behaviors of adolescents in the United States. Add Health data files contained names, personal identifiers, or geocode information. The total number of respondents in Wave I, in-home interviews was 20,745. A select number of variables were also taken from the in-school questionnaire and the network questionnaire. A subsample was created solely of Latina (females of Hispanic/Latino decent) that totaled 1,618 participants. The in-school and social network questionnaires, along with a discussion of the data collection, are described later in this chapter.

*Complex Survey Design.* Add Health incorporated a stratified cluster design and also over-sampled to incorporate a complex design. The complex design incorporates
disproportionate sampling as a result of the probability proportionate to the size sampling method. If this is not addressed during analysis, it may result in biased parameter and variance estimates (Chantala, 2001; Chantala & Tabor, 1999). Conducting any analysis without addressing the homogeneity from the dependent observations and the over-sampling of specific groups, such as disabled children and various ethnic groups, these biased results could lead to incorrectly rejecting a model when not appropriate (Stapleton, 2006). The complex design can hinder the ability to make conclusions about the population it is attempting to characterize. The grand sample weight accounts for the disproportionate sampling while the strata and cluster variables guarantee accurate variance estimates (Stapleton, 2006). To ensure that the results depicted the population, STATA 10.0 (StataCorp, 2007) was used because of its ability to take into account the weights, primary sampling units (PSU) and strata variables in Add Health (Chantala, 2001). Weights were created for each wave of data while the PSU and strata variables were consistent no matter which wave was used. The PSU signified which school the respondent attended and the strata variable indicated which geographic region the respondent resided in at the time they answered the questionnaire (Chantala & Tabor, 1999). Any case that had a missing sample weight (grand sample weight for Wave 1) was eliminated from the working dataset by this researcher which was advised by Add Health (Chantala & Tabor, 1999).

Add Health was particularly well-suited for this study due to data collected on Latinas’ and their parents’ places of birth, primary language spoken at home and peer
social networks. Information on race and ethnicity, suicidal proclivity (ideations and attempts) and a wide range of background characteristics were also available.

Data Collection. Add Health utilized a school-based stratified random cluster sample of all high schools in the United States. An eligible school included an 11th grade with an enrollment of 30 students or more. Feeder schools that sent graduates to an identified high school and included a 7th grade were recruited as well. Schools were stratified into 80 clusters based on geographic region (Northeast, South, Midwest and West), metropolitan status (urban, rural, suburban), population of school (125 or less, 125-350, 351-775, and 776 and more students), type of school (public, private, parochial), percent Caucasian (0, 1-66, 67-93, 94-100), percent African American (0, 1-6, 7-33, 34-100), grade span (K-12, 7-12, 9-12, 10-12), curriculum (general, vocational/technical, alternative and special education). A total of 146 schools were recruited.

The manner in which data is gathered can result in measurement error. This can happen in many stages of the collection process including how the interviewer asks a question, how the participant answers a particular question or data management. Some measurement error issues were alleviated by training Add Health researchers on a number of interviewer-related errors. In addition questionnaires were answered either as questionnaires or through a hand-held device for more sensitive information. If the surveys were done via in-person interviews, there is the potential for different responses (Safir, Scheuren & Wang, 2000).
The initial phase of Wave I data collection occurred in 1994-1995 through in-school questionnaires administered to a nationally representative sample of 7-12\textsuperscript{th} grade students. The second phase of Wave I included follow-up interviews in their respective homes (27,000) from a core sample of each school plus special over samples. Non-response is a potential problem in data analysis. The greater the response rate, the more comfortable one can feel about the results. There was an overall 79\% response rate for Wave I data.

Add Health researchers conducted analyses on Wave I to ascertain any predictors of non-response in the dataset. Four predictors were found: contactability, unwillingness, inability and participation. If a participant’s family’s income was above the poverty level for the time (1995), the teen felt safe in their neighborhood, not smoked in the past 30 days or had good grades, they were more likely to complete the in-home questionnaire. Respondents who appeared more unwilling to participate in the in-home interview had smoked cigarettes in the past month, whose parents did not volunteer for the PTA or who had a high school diploma or less. Inability was found in participants who lived in rural areas or smoked cigarettes in the past month. Finally those who were more likely to participate included racial/ethnic minorities, had parents who went to college or volunteered with the PTA. None of these measures or traits were included in the models tested (Kalsbeek, Yang & Agans, 2002).

Social network data were also available in the Add Health dataset. Social network data are similar to other forms of data in terms analysis, but have distinct differences in the types of information that can be generated from the ties an individual
has with others (Biegel, McCardle and Mendelson, 1985). The major difference in social network data compared to conventional data is the focus. Social network data concentrates on individual and the relationships they have with others while conventional data still focuses on their unique attributes instead of relationship ties. Data were collected on all students in each participating school in order to observe individual and school-level networks. This design allowed one to look at the structure of each adolescent’s extended friendship network and describe the overall social structure of the child’s school. Friendship network data were available in the in-school questionnaire. Each participant was asked to nominate up to five female and five male friends from the roster of all students in that child’s school and sister school. A sister school is defined as a school in the same community as the individual’s school.

Not all students’ names were listed due to errors on the rosters. In addition, not all students whose names were listed on the rosters finished their questionnaire due to being absent or not agreeing to participate in the study. If the ego’s school contained grades 7-12, there was no sister school. An ego is an actual social network with its own data and social connections (Biegel, McCardle and Mendelson, 1985). When friends were designated, the respondent recorded their friend’s identification number on the questionnaire. If the friend was not on the list, the respondent reported if the friend went to their own school, sister school of did not attend either institution. Network measures were computed for schools in which more than 50 percent of the student body completed the questionnaire. The vast majority of friendship nominations were with other students enrolled in the same school. Roughly 15% of all respondents’ friends did not attend their
own or their sister school and 8% of the nominations were children not on the school rosters.

Measures

Cultural Status: The measure of cultural status consisted of four separate questions: mother’s, father’s and child’s place of birth (“were you born in the U.S.?“), and language preference (“language usually spoken at home-Spanish/English/Other”). All four variables were dichotomous with the responses “yes” coded as 1 and “no” coded as 0. These codes were the affirmative of their label. Therefore the interpretation of the variable “born in the United States” would have a value of “1” if the child was born in the US and a “0” if they were born outside the US.

These concepts have been used frequently in Latino research and are typically the basis of acculturation/cultural status measures (Cervantes & Castro, 1985; Zayas, 1987; Rogler, Cortes & Malgady, 1991; Swanson, Linskey, Quintero Salinas, Pumariega & Holzer, 1992; Vega, Gil, Warheit, Apospori & Zimmerman, 1993; Zimmerman & Zayas, 1995; Zayas & Dyche, 1995; Zayas, Kaplan, Turner, Romano & Gonzalez-Ramos, 2000).

Social Support: Measures of social support consisted of three family indexes (mother support, father support and parent support, one teacher support question and two variables associated with friend support).

Family Support: The family index included 6 separate questions based on Haynie et al’s (2006) study on adolescent mobility and Kid et al’s (2006) study on parent, peer, and school social relations. These parental measures were also created from similar questions used in Turner et al’s (2002) study on parent-child support examining Latino
families and Borowsky et al’s (2001) study on adolescent suicide attempts and their
closeness to both parents. Latino mothers and fathers have different roles and
relationships with their daughters. As a result, mothers, fathers and the parental unit were
examined separately to ascertain any differences. For example, Turner et al’s (2002)
study focused on mother-daughter mutuality and how it protected Latina’s from an
attempt. Although the literature has not focused on the father’s role as a protective
factor, the measure was included to understand if mutuality was present among these
fathers and daughters. The questions in these measures include:

1) How close do you feel towards your mother? 2) How much do you think she cares
   about you? 3) How close do you feel towards your father? 4) How much do you think
   he cares about you? 5) Most of the time your mother is warm and loving towards you. 6)
   Most of the time your father is warm and loving towards you. The respondents had the
   option of answering: 1-not at all; 2-very little; 3- somewhat; 4-quite a bit; 5-very much.

Mother and father support indexes respectively had a minimum value of 0 and maximum
value of 15. A lower value would indicate less support from their mother or father, while
a higher value would infer more support.

The parent support index included all six questions regarding mother and father
support described above into one variable. Family (mother, father and parental support)
indexes were created from the previously mentioned variables.

Latinas were asked one question on how much their parents care about them.
“Parents care” was measured by the question, “How much do you feel that your parents
care about you?” The respondents had the option of answering: 1-not at all; 2-very little;
3- somewhat; 4-quite a bit; 5-very much to the question. The variable had a minimum value of 0 and maximum value of 5. A higher value indicates more support while a lower score indicates lower support.

*Teacher Support:* Teacher support was measured by the question, “How much do you feel that your teachers care about you?” The respondents had the option of answering: 1-not at all; 2-very little; 3- somewhat; 4-quite a bit; 5-very much to the question. The variable had a minimum value of 0 and maximum value of 5. The teacher support variable has also specifically been used as a measure of bonding for adolescent suicide attempters (Crosnoe, Johnson & Elder, Jr., 2004).

*Peer Support:* Three variables were associated with friend support: “how much do feel that your friends care about you?”, “during the past week, how many times did you just hang out with your friends?” and “I feel socially accepted” “How much do you feel your friends care about you” was coded as follows: 1-not at all; 2-very little; 3- somewhat; 4-quite a bit; 5-very much. “How many times did you hang out with your friends was coded 0-3 (0=not at all, 1=1-2 times, 2=3-4 times and 3=5+ times). These measures have been used in Kid et al (2006) and were adapted from Crosnoe, Johnson & Elder (2004) regarding their study on adolescent who attempted suicide. The social acceptance variable “you feel socially accepted” was coded 1 (strongly agree) to 5 (strongly disagree). A higher score indicated stronger feelings of peer support.

*Suicidal Friends:* Latinas were asked “Have any of your friends tried to kill themselves in the past 12 months?” This variable is coded 0/1. A respondent who had a friend who attempted suicide in the past year would have a value of one. This measure
was also used in Feigelman & Gorman’s (2008) study assessing the effects of peer suicide on youth suicide. Russel and Joyner (2001) used the same measure when examining adolescent suicide using Add Health data.

*Reciprocated Friendships:* This variable was found in the network questionnaire. Respondents were asked to nominate their best female friend. In turn, two variables were created. The first variable specified if the best friend nominated the respondent as her friend. The second reciprocity variable showed if the best friend nominated the respondent as her best friend as well. The lower the number of identified friends who nominated the respondent as a friend, the lower the reciprocity in one’s friendship network. Reciprocity was coded 0=no reciprocity and 1=reciprocity between said-friend. Bearman and Moody (2004) used the Add Health social network variables extensively in their study on adolescents’ likelihood of suicidality. The authors did not report any specific findings respective to Latinas.

*Behavioral Health Status:* The depression index included 19 of the 20 measures found in the CES-D. The depression index ranged from 0-19. Four items assessed positive indicators and were reverse coded before the scores were calculated. The depression index is based on a self-report scale used to assess depressive symptoms. The CES-D is based on other, longer scales that have successfully measured depression. The present scale was tested in both in-home and clinical environments and found to have high internal consistency and test-retest reliability. Validity was determined through correlations of other similar measures and by its connection with other measures which support its construct validity. Use with various demographic groups has also been found
to be reliable and valid. This scale is widely accepted and used in most clinical settings in
the United States and has been a valuable tool in epidemiological studies (Radloff, 1977).
The 19 variables found in Add Health have also been used with success in with studies
focusing on adolescent depression and substance use (Shrier, Harris, Sternberg, &
Beardslee, 2001) in addition to adolescent suicide (Hallfors, Waller, Ford, Halpern,,
Brodish & Iritani, 2004).

Substance abuse/use index was based on a similar study using Add Health data
found in Pena et al’s (2008) study of Latina’s suicidal propensity due to substance use. I
did diverge slightly from Pena’s measures though. The two outcome variables (ideations
and attempts) were both asked in the timeframe of the past year. I believed that using
substance abuse measures that accounted for use in the past 30 days would be limiting
given that the outcome measure’s timeframe was the past 12 months. I did ask the same
questions as Pena and others (Granillo, Jones-Rodriguez and Carvaial, 2005) who studied
Latina adolescent drug use. As a result, I used the 12 month timeframe for alcohol use
and lifetime use for illicit drugs (illicit drug use was asked for the past 30 days and
lifetime only).

The measure included information on the respondents’ alcohol consumption in
the past 12 months, as well as use of illegal drugs (LSD, PCP, ecstasy, mushrooms,
speed, ice, heroin, or pills without a doctor’s prescription) all in one question while
cocaine, inhalant and marijuana use were all asked separately. Participants were
instructed to give the number of times that used any illicit drug in their lifetime.
Responses to number of times an illicit substance was used ranged from 0 to 950 times.
Alcohol consumption was also included in the suicide index by “how many days did you drink alcohol in the past 12 months”. Respondents were not asked lifetime use of alcohol. Pena et al 2008 used this as their measure of alcohol use as well. The alcohol use variable was coded 6 (every day or almost every day) to 1 (1 or 2 days in the past 12 months). The higher value found in the depression index, the more symptoms the participant reported. The higher value in the substance abuse index, the higher the level of drug use the Latina reported.

**Suicidal Proclivity:** Suicidal proclivity was measured using two observed variables, ideation and attempts. Ideation was measured by “During the past 12 months, did you ever seriously think about committing suicide?” with possible responses of “yes” or “no”. If a participant had ideated suicide in the past year, the value would be one. Both the ideation and attempt measures have been used extensively in the literature using Add Health data (Borowsky et al, 2001; Bearman and Moody, 2004; Haynie, South & Bose, 2006; Silenzio, Pena, Duberstein, Cerel & Know, 2007). Attempts were measured by “During the past 12 months, how many times did you actually attempt?” with possible responses of: 0= never; 1 time, 2-3 times, 4-5 times, 6+ times. Therefore, the higher the value the more suicide attempts the participant experienced in the past year.

**Hypotheses Tested**

*Cultural Status.* As a Latina’s cultural status aligns more with the majority culture (speaks English in the home, she and/or her parents were born in the U.S) her risk of suicide ideations and attempts increase.
Family Support. Latinas reporting that their mother or father do not care or support them will have a higher propensity of suicide proclivity than those Latinas sharing their parents do care.

Teacher Support. Adult supports outside of their family can also be linked to suicide. A Latina who believes that her teachers do not care about her will be more likely to ideate or attempt suicide.

Friends Care. Latinas who believe that their friends care about them will be less likely to report any ideations or attempts in the past year.

Social Acceptance. Latinas who report their peers at school do not favorably recognize them will be more prone to attempt and ideate compared to those who are accepted by their peers.

Reciprocity. Latinas who engage in friendships that are not mutually reported will have an increased probability of ideations and attempts. Networks that are self-perceived as strong, but not reciprocated, will have tenuous bonds. These weak connections increase one’s risk of suicide.

Suicidal Friends. Latinas with friends who previously attempted suicide will have a higher likelihood of ideating or attempting themselves.

Depression. Latinas who exhibit biological, emotive or physical characteristics associated with depression will have an increased risk of suicidal thoughts or behaviors. Latinas who report more thoughts and behaviors associated with a depression diagnosis will have a higher risk of suicide proclivity compared to those with minimal or no symptoms.
Substance Use. Latinas who use alcohol, marijuana, cocaine, inhalants or other illicit drugs are at a higher risk of suicide proclivity. Like depression, the more drugs one uses or the higher the number of times one has used substances, their likelihood of suicide ideations and attempts increases.

Summary of Hypotheses

The study worked from the hypothesis that suicide proclivity (ideations or attempts) is affected by a Latina’s self-reported level of social supports (parents, peers and teachers). Furthermore, it is the types and characteristics of their friendship networks that will forecast which peer groups would be most susceptible to suicide ideations and attempts. The core hypothesis is that there are various forms of support in a Latina’s social network and these connections will protect them from suicide proclivity.

A Latina’s cultural status (place of birth of child and parent and household language preference) will affect her suicide proclivity. For example, a Latina who primarily speaks Spanish in the home will then be forced to negotiate a more complicated set of cultural barriers outside of the home. This could lead to added pressure to create and maintain social supports outside of the home. Cultural status is known to be related to depression and substance abuse, and these in turn, are known to be related to suicide (Cervantes & Castro, 1985; Zayas, 1987; Rogler, Cortes & Malgady, 1991; Swanson, Linskey, Quintero Salinas, Pumariega & Holzer, 1992; Vega, Gil, Warheit, Apospori & Zimmerman, 1993; Zimmerman & Zayas, 1995; Zayas & Dyche, 1995; Zayas, Kaplan, Turner, Romano & Gonzalez-Ramos, 2000).
Analytic Strategy

*Preparation of Data*

Data was recoded and/or transformed in SPSS 17.0. A working data file was then created where data errors were eliminated. All descriptive analysis was conducted in SPSS as well. STATA 10.0 is not compatible with normality tests involving survey data (W. Eddings, personal communication, August 6, 2009). Multiple imputation, logistic and negative binomial regressions were carried out in STATA 10.0 due to the software’s ability to accommodate complex sample designs.

*Descriptive Statistics*

Prior to model testing descriptive analyses were conducted on all variables including means and ranges. Univariate and bivariate correlations will be presented in Chapter 4. These introductory analyses enable the reader to have a basic understanding of the data and were later utilized to interpret the results used in model testing.

*Negative Binomial Regression*

A series of regression models were conducted. Issues associated with using dichotomous variables in OLS regression are the same as using count data (Cohen, Cohen, West & Aiken, 2002). First, residuals would not be normally distributed, heteroscedastic and result in biased predictions. Scores would also not be interpretable if scores would be less than zero. The regression coefficients could also be biased and variable because they would not become more accurate by increasing the sample size (Long, 1997). Finally, the standard errors will increase the t-tests for the coefficients and overestimate the significance of the coefficient as well (Gardner, Mulvey & Shaw, 1995).
Given that the dependent variable represented a count of suicidal attempts, a sequence of negative binomial models was estimated.

Negative binomial is an extension of the poisson regression (Hilbe, 2007; Long, 1997; Cameron & Trivedi, 1998). Many of the assumptions of the poisson are essentially the same as the negative binomial regression. One important deviation from poisson is that the negative binomial regression assumes that the mean and variance are not equal (Hilbe, 2007). Negative binomial regression calculates count models when the poisson estimation is deemed unsuitable as a result of overdispersion. Overdispersion occurs when the variance is greater than the mean. Using a poisson regression would be incorrect in this study because the standard errors for the poisson regression are biased in the presence of overdispersion.

Detection of overdispersion can be done a number of ways such as dividing the deviance and Pearson chi-square by the degrees of freedom. If the variance exceeds the mean, essentially that the values are greater than 1, there is overdispersion and values less than 1 suggest underdispersion, where the variance is less than the mean. If there is an indication of underdispersion or overdispersion there is inadequate fit of the poisson model (Cameron & Trivedi, 1998). I first observed the histograms of suicide attempts variable to make a visual interpretation of the distribution. The variable did not indicate a normal distribution due to its high kurtosis value, difference in variance and means made it clear that multiple regression and poisson regression techniques were not appropriate for our hypothesized models.
The development of the model included a variety of steps through forward selection. The forward selection process began with the constant-only model and then each variable was entered one at a time. First, all four cultural status variables were regressed on the variable of ideation to detect any possible connections between culture and the outcome variable. Afterwards the measures representing age, depression, substance use, suicidal friends, parental supports and then a variety of peer supports and contacts from their network were included. Variables that were entered but did not reach statistical significance were not included in subsequent models.

As with any regression technique, outliers can bias the results by shifting the regression line and providing incorrect regression coefficients. Residual analysis can allow the researcher to ascertain if outliers are present in the data and if the results potentially created a Type I error. After the final models were decided upon, the residuals of each negative binomial regression were examined. Examining the residuals allows detection of outliers in addition to the confirmation of a linear relationship. The residuals were plotted against each of the independent continuous variables to test for any possible non-linear relationship among the variables (Hilbe, 2007).

Logistic Regression

With a dichotomous outcome variable such as suicidal ideations, logistic regression was used in this dissertation. The argument for using logistic regression instead of OLS regression is the same as my argument for employing negative binomial regression to count variables (Cohen, Cohen, West & Aiken, 2002). First, residuals would not be normally distributed, heteroscedastic and result in biased predictions if a
dichotomous variable was used in an OLS regression. The dependent variable also does not need to have the same variances within categories. In addition to not assuming a normal distribution, logistic regression does not assume error terms are normally distributed. Perfect or high multicollinearity is not allowable due to the inflation of standard errors (Hosmer & Lemeshow, 2000). Given that dichotomous variables have either a value of zero or one, no scores could be negative. The regression coefficients could also be biased and variable because they would not become more accurate by increasing the sample size (Long, 1997). Finally, the standard errors will increase the t-tests for the coefficients and overestimate the significance of the coefficient as well (Gardner, Mulvey & Shaw, 1995).

Given that the dependent variable represented whether or not a Latina ideated suicide or not, a sequence of logistic models was estimated. By converting the dependent variable into a logit variable, logistic regression calculates the odds that an event might happen (Hosmer & Lemeshow, 2000). Logistic regression is a popular statistical technique because it does not require that a linear relationship exists between the dependent and independent variables. Logistic regression does assume independence among observations and that the variables have a linear relationship with the dependent variable (Hosmer & Lemeshow, 2000). However, it is quite robust to departures from linearity.

The process of creating a full model was identical to those implemented in the negative binomial regressions. Forward selection included all four cultural status variables, followed by age, depression index, substance use index, suicidal friends,
parental supports and then a variety of peer supports and contacts from their network. Again the cutoff level was reached when variables included in the model reported a significance of $p<.05$.

In the final model, statistically significant variables were reported in addition to their odds ratios. For continuous variables such as the depression index, this ratio indicated the odds change for each unit change in the independent variable. An odds ratio lower than 1 represented a decrease in the odds of the event happening while a value higher than 1 signified an increase in the odds of the event occurring. A ratio of 1 suggested that the independent variable had no effect. The odds ratios of dichotomous independent variables were interpreted a bit differently. The difference is that for dichotomous independent variables there is only one value at which the odds change. For example, the variable “suicidal friends” was coded 0=no suicidal friends, 1=friends who have attempted suicide. The value of 0 represented the reference category. Therefore, an odds ratio $>1$ indicated those with suicidal friends were more likely to ideate suicide where an odds ratio $<1$ suggested Latinas with suicidal friends were less likely to ideate.

Residuals were also observed with the logistic models. The standardized residuals were plotted against independent variables in the model and identified any outliers. Again, this procedure allowed one to understand any variation between the observed and expected probabilities. Residuals that were two standard deviations from the mean indicated that the model was not properly identified (Hosmer & Lemeshow, 2000).
As with any regression technique, outliers can affect the results dramatically. Therefore standardized residuals need to be analyzed as necessary. Large samples are important when using logistic regression due to maximum likelihood estimations (MLE). MLE depends on large samples to maintain the reliability of the estimates. If one is using a small sample for analysis, high standard errors are likely (Hosmer & Lemeshow, 2000; Cameron & Trivedi, 1998).

Other Statistical Considerations. Multicollinearity can be a concern when using either negative binomial or logistic regression and was tested by using bivariate correlations (Weston & Gore, 2006). Correlations higher than r=.85 will identify possible issues (Kline, 2005). If variables are highly correlated, the redundant variable can be removed (Weston & Gore, 2006).

Normality was tested by looking at the distribution of every measured variable. While normality of predictors is not a requirement in negative binomial regression, understanding the distribution can help one understand how the covariates might affect the outcome variables. Missing data can be an issue with longitudinal research and also with questions related to mental health and suicide proclivity (Allison, 2001). For variables with more than 20% of missing data, multiple imputation (MI) was utilized. For data with a large number of missing cases (>40%), these variables were removed.

Multiple imputation is a Monte Carlo technique that replaces missing data through simulation. This has become an increasingly common practice in the field of epidemiology which typically use large datasets or in studies with high percentages of missing values. Rubin (1987) contended that 50% missing data, five imputations will
suffice. Due to its efficiency, generality and the high number of missing values found in the dataset, MI was used instead of listwise deletion.

**Estimation of Full Model.** The model was tested by entering each variable separately until all variables were included, representing the full model. Once accomplished, the social support and network relationships of primary interest were tested within the initial model’s framework. The sample size was large (1,618 Latinas) and had sufficient statistical power to detect a moderate effect at a probability of .80 (Cameron & Trivedi, 1998; Shumacker & Lomax, 2004).

**Model Fit & Interpretation.** Variables that were not statistically significant at the p<.05 level were eliminated as well as those with high FMI (fraction of missing information). The FMI is the proportion of the between- to within-imputation variance of the estimated coefficient and its degrees of freedom, ranging from 0 to 1 (Royston, Carlin & White, in press). Although Royston, Carlin and White do not specify specific cutoff levels for a high FMI value, they conclude in their article that a large FMI (i.e. higher percentage of missing information) should be used with caution in terms of interpretation and inclusion in a model. Finally, alternative models were tested. If the p-value or slope changed significantly then the less restrictive alternative model was determined as the best-fitting model.
CHAPTER 4

RESULTS

Chapter four consists of three sections: univariate and bivariate analyses and model testing using negative binomial and logistic regressions. Univariate analyses included the mean, median, proportion estimates for each variable to illustrate the attributes of the sample used. The next section incorporates a series of regressions used to ascertain the relationships between the dependent and independent variables. The final section tests the study’s hypotheses using logistic and negative binomial regressions. Covariates including cultural status and behavioral health status (depression and substance use), self-reported social supports (adult and peer) were included. For the logistic regressions, odds ratios were reported to help in the interpretation of the results. The effect size of the negative binomial regressions was reported using the incidence risk ratio (IRR).

This dissertation addressed how a Latina’s parents, friends and adults outside her family affect her propensity of suicidal ideations and attempts. The study specifically examined a Latina’s friendship network regarding suicide proclivity. I also included several cultural status measures to ascertain if language use and place of birth mattered in terms of suicidal risk.
Given the complex sample design of the Add Health dataset, stratification and cluster variables in addition to grand sample weights were included in all regression models presented and during the imputation process. Missing values were imputed to allow for more precise inferences to the larger population the data was meant to characterize. Cases that were missing weight stratification and cluster variables were removed (Chantala & Tabor, 1999).

Univariate Analyses

_Cultural Status._ Cultural status represented a respondent’s level of English proficiency in the home and whether the adolescent or either of her parents was born in the United States. Each of the cultural status variables (English speaking, Born in the U.S., Father born in the U.S., Mother born in the U.S.) were coded 0/1. The minimum value was 0 and maximum value of 1. Almost half, 46% of the Latinas in the study came from homes that spoke primarily English. The majority of Latinas were born in the United States (62%). Very few mothers (4%) and fathers (15%) were born in the United States.

_Family Support._ (Table 1). The mother support index included 3 questions pertaining to mother-daughter mutuality and had a range of values of from 0-5. The mother support index had a mean of 2.0 and median of 2.2. The average of 2.0 on the mother support index indicated that Latinas agree “somewhat” that their mothers were supportive to them. The father support index ranged from 0-5, with a mean of 1.35 and a median of 1.8. The mean score of 1.35 suggested that Latinas that felt that their fathers were supportive “very little”.
Latinas were asked one question concerning their perception of the level of parental care toward them. The variable was coded on a Likert scale of 0-5. The average score was 4.77 and a median of 5.00. The mean score reflected the degree of self-perceived care Latinas received from their parents. A value of 4.77 reflected, by the recoding of this variable, Latinas believed their parents “cared quite a bit” about them.

Table 1. Descriptive Statistics of Perceived Continuous & Count Family Support Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother Support</td>
<td>2.00</td>
<td>2.20</td>
</tr>
<tr>
<td>Father Support</td>
<td>1.35</td>
<td>1.80</td>
</tr>
<tr>
<td>Parents Care</td>
<td>4.77</td>
<td>5.00</td>
</tr>
</tbody>
</table>

School Supports. (Table 2). School supports documented connections Latinas stated they had with their teachers and peers at school. “Teachers care” had a range of values from 1-5. The mean value was 3.46 and a median of 3.00. The average meant that Latinas believed their teachers cared “somewhat” about them.

“Friends care” had a minimum score of 0 and maximum value of 6. The average for friends who care about them was 4.26. A mean of 4.26 suggested that the average Latina reported their friends cared “quite a bit” for them.
Table 2. Descriptive Statistics of Count School Support Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers Care</td>
<td>3.46</td>
<td>3.00</td>
</tr>
<tr>
<td>Friends Care</td>
<td>4.26</td>
<td>4.00</td>
</tr>
</tbody>
</table>

*Suicidal Friends.* Each Latina was questioned if she had or did not have a friend who had attempted suicide in the past year. The dichotomous variable indicated that 22% of the Latinas questioned had a suicidal friend.

*Frequency of Contact.* (Table 3). Latinas were asked how often they “hung out with their friends” in the past week. The range of possible scores was 0-3 with an average rate of 1.78 in-person contacts per week, a median of 2.00. A 1.78 mean indicated that the average Latina hung out with her friends 1-2 times per week.

Table 3. Descriptive Statistics of Frequency of Contact

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hung Out With Friends This Week</td>
<td>1.78</td>
<td>2.00</td>
</tr>
</tbody>
</table>

*Behavioral Health.* (Table 4). Latinas answered questions pertaining to the psycho/social/behavioral aspects of their lives related to depression as determined by CES-D measurement tool. Nineteen questions were compiled into an index that had a minimum score of 0 and a maximum score of 19. The mean for the depression index was 3.03, with a median of 2.81.
The respondents were asked about their use of alcohol and illicit drugs in their lifetime (past year for alcohol use). I created a substance abuse/use index included based on the respondents’ alcohol consumption in the past 12 months, as well as use of illegal drugs (LSD, PCP, ecstasy, mushrooms, speed, ice, heroin, or pills without a doctor’s prescription) all in one question while cocaine, inhalant and marijuana use were all asked separately. Participants were instructed to give the number of times used in their lifetime. The substance abuse index resulted in responses of 0 times of use to 1020 times of use. The average number of times of use was 8.22 for any drugs, with a median of .200.

Examining each substance abuse variable allows one to understand the distribution better and marijuana use (mean of 5.27, median of .000) appeared to be the most common form of illicit drug used in a Latina’s lifetime. Latinas reported they had used alcohol an average of 1.63 times in the past year with a median of 1.00.

Table 4. Descriptive Statistics of Continuous Behavioral Health Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression Index</td>
<td>3.03</td>
<td>2.81</td>
</tr>
<tr>
<td>Substance Abuse Index</td>
<td>8.22</td>
<td>.200</td>
</tr>
<tr>
<td>Marijuana Lifetime</td>
<td>5.27</td>
<td>.000</td>
</tr>
<tr>
<td>Alcohol Past 12 Months</td>
<td>1.63</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Reciprocity. Two variables examined a Latina’s reciprocity of her friendships. Both variables were dichotomous and measured if a Latina’s best friend reported her as a
friend and if the best friend stated she was also her best friend. A Latina’s best female friend reporting her as a friend resulted in 68% of the friendship relationships reciprocated. Only 39% of those whom participants reported as best friend reciprocated.

Social Acceptance. (Table 5). Latinas reported quite strongly on feeling socially accepted by their peers. With a range of possible scores of 1-5, Latinas averaged a score of 3.96 and a median score of 4.00. A 3.96 mean indicated a neutral response to the question.

Table 5. Descriptive Statistics of Social Acceptance Variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feel Socially Accepted by Peers</td>
<td>3.96</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Suicide Ideations and Attempts (Table 6). The ideation variable was coded 0/1 while attempts ranged from 0-6 points. Roughly 17% of the Latinas in the study reported an ideation in the past year. The number of Latinas who reported an attempt in the past year averaged .091 and a median of .000. Due to suicide attempts being a low base rate phenomenon, with 93 Latinas reporting an attempt in the past year, the mean of .091 does not provide much information.

Table 6. Descriptive Statistics of Suicidal Ideations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide Attempts</td>
<td>.091</td>
<td>.000</td>
</tr>
</tbody>
</table>
Proportion estimates were reported only for continuous and ordinal variables since the means of dichotomous variables were equal to their estimated population proportion.

*Substance Use.* The most common drug used by the Latinas in the past year was alcohol (58%) in the past year. Latinas reported their lifetime illicit drug use. Almost one-third (30%) of the Latinas reported marijuana use. Inhalants and cocaine were asked separately. Inhalants were used by 6% of the Latinas in the study while 5% stated they had used cocaine at least once in their life. Nine percent of the sample used “other drugs” (LSD, PCP, ecstasy, mushrooms, speed, ice heroin or pills).

*Suicide Attempts* Most Latinas (94%) reported never attempting suicide. Of the 6% who stated they attempted suicide in the past year, 3.5% attempted once, 1.5% had attempted 2-3 times, .5% reported 4-5 attempts and .3% reported attempting 6 or more times in the past 12 months. Therefore, in this sample roughly 6% of the Latinas had attempted suicide at least once in the past year.

*Teachers Care.* Latinas were asked how much they believed their teachers cared for them. Four percent reported their teachers did not care at all for them, 12% stated their teachers cared very little, while 34% shared their teachers cared somewhat. About one-third (31%) of Latinas indicated their teachers cared quite a bit for them, while 18% indicated that their teachers cared very much for them.

*Friends Care.* Respondents were questioned about their perceptions of how much their friends care for them. Few Latinas (.7%) felt that their friends did not care for them
at all; three percent shared their friends cared very little, while 13% believed their friends cared somewhat for them. Over one-third (34%) of the Latinas in the study stated their friends cared quite a bit for them and 49% answered that their friends cared very much for them.

Parents Care. The vast majority of Latinas (85%) reported that their parents care for them very much; followed by 7% stating their parents cared quite a bit. Far fewer (4%) of the Latinas indicated their parents cared somewhat for them, followed by 1% feeling parent cared very little and .5% stated parents did not care at all.

Hang out with Friends. The majority of Latinas (60%) spent time with their friends at least 3 times in the past week (27% reported 3-4 times and 33% reported 5 or more times). One-quarter (25%) of the Latinas stated they hung out with their friends 1-2 times in the past week, while 15% did not spend any time with their friends.
Table 7. Proportion Estimates of Count Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Use Index</td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td>30</td>
</tr>
<tr>
<td>Other Drugs</td>
<td>9</td>
</tr>
<tr>
<td>Inhalants</td>
<td>6</td>
</tr>
<tr>
<td>Cocaine</td>
<td>5</td>
</tr>
<tr>
<td>Suicide Attempts</td>
<td></td>
</tr>
<tr>
<td>Never Attempted</td>
<td>94</td>
</tr>
<tr>
<td>Attempted Once</td>
<td>3.5</td>
</tr>
<tr>
<td>Attempted 2-3 Times</td>
<td>1.5</td>
</tr>
<tr>
<td>Attempted 4-5 Times</td>
<td>0.5</td>
</tr>
<tr>
<td>Attempted 6 or More Times</td>
<td>0.3</td>
</tr>
<tr>
<td>Teachers Care</td>
<td></td>
</tr>
<tr>
<td>Didn’t Care At All</td>
<td>4</td>
</tr>
<tr>
<td>Cared Very Little</td>
<td>12</td>
</tr>
<tr>
<td>Cared Somewhat</td>
<td>34</td>
</tr>
<tr>
<td>Cared Quite a Bit</td>
<td>31</td>
</tr>
<tr>
<td>Cared Very Much</td>
<td>18</td>
</tr>
<tr>
<td>Friends Care</td>
<td></td>
</tr>
<tr>
<td>Didn’t Care At All</td>
<td>0.7</td>
</tr>
<tr>
<td>Cared Very Little</td>
<td>0.3</td>
</tr>
<tr>
<td>Cared Somewhat</td>
<td>13</td>
</tr>
<tr>
<td>Cared Quite a Bit</td>
<td>33</td>
</tr>
<tr>
<td>Cared Very Much</td>
<td>49</td>
</tr>
<tr>
<td>Parents Care</td>
<td></td>
</tr>
<tr>
<td>Didn’t Care At All</td>
<td>0.5</td>
</tr>
<tr>
<td>Cared Very Little</td>
<td>1</td>
</tr>
<tr>
<td>Cared Somewhat</td>
<td>4</td>
</tr>
<tr>
<td>Cared Quite a Bit</td>
<td>7</td>
</tr>
<tr>
<td>Cared Very Much</td>
<td>85</td>
</tr>
<tr>
<td>Hang Out with Friends (past week)</td>
<td></td>
</tr>
<tr>
<td>0 Times</td>
<td>15</td>
</tr>
<tr>
<td>1-2 Times</td>
<td>25</td>
</tr>
<tr>
<td>3-4 Times</td>
<td>27</td>
</tr>
<tr>
<td>5 or More Times</td>
<td>33</td>
</tr>
</tbody>
</table>

Latina Suicidal Attempts and Social Supports

Negative binomial regressions were performed using the covariates previously described, and using suicide attempts as the outcome variable. It was decided to use the English speaking variable in the model for two primary reasons. First, the variable was
the only one of the cultural status variables (mom, father and child born in the U.S and English spoken in the home) that was a statistically significant predictor of attempts when modeled without any covariates. Secondly, English speaking approached statistical significance (p=.051) when modeled with depression and attempts.

Model Development

Using forward selection procedures, I entered each variable to the model in the following manner based upon the literature for both outcome variables (suicidal ideations and attempts):

Forward Selection Model 1

1) English
2) Depression
3) Mother Support
4) Father Support
5) Teacher Support
6) Suicidal Friends
7) Substance Abuse
8) Other peer supports (socially accepted, friends care, “hanging out with friends”, reciprocity).
I also created a second model structure to test if the combined parental unit showed any relationship with suicide proclivity:

Forward Selection Model 2

1) English
2) Depression
3) Parents Care
4) Teacher Support
5) Suicidal Friends
6) Substance Abuse
7) Other peer supports (socially accepted, friends care, “hung out with friends”, reciprocity).

Forward selection is a useful tool in exploratory research for two reasons. First this method allows for systematic investigation with a number of variables. Second, even slight changes can be observed when variables fall below statistical significance when other variables are entered.

For each model discussed, a variety of test statistics were reported including the confidence levels. The 95% confidence interval is indicated for all models described in this study. The confidence interval represents what the values would be if the regressions were repeated on multiple samples. The range of values presented would include the true population parameter 95% of the time (Cox, 1974).

This first model used the previously-mentioned forward selection procedure that included mother and father support. English spoken in the home (English speaking) was
entered first, followed by being depressed (Table 8). English speaking was statistically significant at the .10 level (b=.887, t=1.98, p=.051) and depression (b=.134, t=6.76, p≤.001). Next, the measure of mother support was entered and was also found to be statistically significant at the .10 level (b=-.070, t=-1.96, p=.053) (Table 9). English speaking (b=.929, t=2.06, p=.042) and depression (b=.130, t=6.81, p≤.001) continued to be statistically significant. Father support was then entered into the existing model (Table 10). English speaking (b=.912, t=2.00, p=.049) and depression (b=.127, t=-1.73, p≤.001) were significant while father support was not (b=-.036, t=-.92, p=.360) and mother support continued to be significant at the .10 level (b=-.067, t=-1.73, p=.086).

Table 8

Summary of Negative Binomial Regression Analysis for Variables Predicting Cultural Status (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.887</td>
<td>.448</td>
<td>1.98</td>
<td>.051</td>
<td>-.002-1.77</td>
</tr>
<tr>
<td>Depression</td>
<td>.134</td>
<td>.019</td>
<td>6.76</td>
<td>≤.001</td>
<td>.094-.173</td>
</tr>
</tbody>
</table>
Table 9

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status and Family Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig. (p)</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.929</td>
<td>.452</td>
<td>2.06</td>
<td>.042</td>
<td>.033 - 1.826</td>
</tr>
<tr>
<td>Depression</td>
<td>.130</td>
<td>.019</td>
<td>6.81</td>
<td>≤.001</td>
<td>.092 - .168</td>
</tr>
<tr>
<td>Mom Support</td>
<td>-.070</td>
<td>.036</td>
<td>-1.96</td>
<td>.053</td>
<td>-.141 - .001</td>
</tr>
</tbody>
</table>

Table 10

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status and Family Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig. (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.912</td>
<td>.457</td>
<td>2.00</td>
<td>.049</td>
<td>.004 - 1.819</td>
</tr>
<tr>
<td>Depression</td>
<td>.127</td>
<td>.019</td>
<td>6.43</td>
<td>≤.001</td>
<td>.088 - .167</td>
</tr>
<tr>
<td>Mother Support</td>
<td>-.067</td>
<td>.039</td>
<td>-1.73</td>
<td>.086</td>
<td>-.145 - .009</td>
</tr>
<tr>
<td>Father Support</td>
<td>-.036</td>
<td>.039</td>
<td>-.92</td>
<td>.360</td>
<td>-.114 - .042</td>
</tr>
</tbody>
</table>

When father support was added to the existing model of mother support, depression and speaking English in the home, father support (b=-.036, t=.360) had a p-value of .360 and
was eliminated from the model. Mother support (b=-.067, t=-1.73, p=.086) remained non-significant at the p<.05 level, but English speaking (b=.912 t=2.00 p=.049) and depression (b=.127 t=6.43 p≤.001) were significant. Next the measure of teacher support was entered into the model and found to be statistically significant (p=.016) (Table 11). The English speaking variable’s (b=.951, t=1.83, p=.070) significance level did increase from the previous model. Mother support (b=-.066, t=-1.74, p=.085) remained not significant, but was also kept in the model. Depression (b=.122, t=6.08) continued to be significant (p≤.001) and teacher support (b=-.285, t=2.45, p=.016) was significant.

Table 11

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status and Family and Teacher Support

(n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig. (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.951</td>
<td>.464</td>
<td>1.83</td>
<td>≤.070</td>
<td>-.070-1.772</td>
</tr>
<tr>
<td>Depression</td>
<td>.122</td>
<td>.020</td>
<td>6.08</td>
<td>≤.001</td>
<td>.081-.161</td>
</tr>
<tr>
<td>Mom Support</td>
<td>-.066</td>
<td>.038</td>
<td>-1.74</td>
<td>.085</td>
<td>-.140-.009</td>
</tr>
<tr>
<td>Teachers Care</td>
<td>-.285</td>
<td>.116</td>
<td>-2.45</td>
<td>.016</td>
<td>-.515-.054</td>
</tr>
</tbody>
</table>

Suicidal friends was entered next in the model (Table 12) and found to be significant (b=-.271, t=-2.25, p=.003) along with teacher support (p=.027) and being depressed b=.115, t=5.72, p≤.001). English spoken in the home rose above the .10 level of significance.
(b=.633, t=1.44, p=.154) while mother’s support remained below .10 but above .05 (b=-.073, t=-1.80, p=.075).

Table 12

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status and Family and Teacher Support

(n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.633</td>
<td>.440</td>
<td>1.44</td>
<td>.154</td>
<td>-.241 - 1.50</td>
</tr>
<tr>
<td>Depression</td>
<td>.115</td>
<td>.020</td>
<td>5.72</td>
<td>≤.001</td>
<td>.075 - .154</td>
</tr>
<tr>
<td>Mother Support</td>
<td>-.073</td>
<td>.041</td>
<td>-1.80</td>
<td>.075</td>
<td>-.155 - .007</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>-.271</td>
<td>.120</td>
<td>-2.25</td>
<td>.027</td>
<td>-.510 - -.031</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>1.02</td>
<td>.334</td>
<td>3.07</td>
<td>.003</td>
<td>.361 - 1.68</td>
</tr>
</tbody>
</table>

Other Measures Entered-Model 1-Attempts

Various peer support variable were also entered into the existing model that failed to attain statistical significance. Substance abuse (b=.007, t=1.86, p=.810), being socially accepted (b=.286, t=1.21, p=.299), friends care (b=107, t=.63, p=.533), hung out with friends (b=.097, t=.60, p=.549), best friend reciprocates as a friend (b=.097, t=.60, p=.549), best friend reciprocates as a best friend (b=1.06, t=1.64, p=.163) were all non-significant.
Excluding all measures that were not statistically significant at the $p \leq .05$ level, the final model included depression ($b=.111$, $t=5.73$, $p \leq .001$), teacher support ($b=-.311$, $t=-2.68$, $p=.009$) and suicidal friends ($b=1.13$, $t=3.23$, $p=.002$) (Table 13). The effect size measured by the incidence rate ratio indicated that for every point in the depression scale a Latina reports, her likelihood of attempts increases by 11%, for even level of support a Latina reports her teachers care for her likelihood of attempts decreases by 26%, and if a Latina reports she had a suicidal friend, her likelihood of attempting increased by 209%.

Table 13

**Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Teacher Supports and Suicidal Friends (n = 1,618) Controlling for Depression**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>.111</td>
<td>.019</td>
<td>5.73</td>
<td>$\leq .001$</td>
<td>.072 - .150</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>-.311</td>
<td>.116</td>
<td>-2.68</td>
<td>.009</td>
<td>-.541 - -.080</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>1.13</td>
<td>.352</td>
<td>3.23</td>
<td>.002</td>
<td>.440 - 1.83</td>
</tr>
</tbody>
</table>

The second model also used the forward selection procedure and included the measure “parents care”. English spoken in the home and depression were previously entered (see Table 8). The first variables entered were English spoken in the home, depression and now parents care (Table 14). All measures were statistically significant, depression
(b=.125, t= 6.10, p≤.001), English speaking (b=.899, t= 2.33, p=.022) and parents caring (b=-.548, t= -3.34, p≤.001).

Table 14

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status and Parental Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.899</td>
<td>.386</td>
<td>2.33</td>
<td>.022</td>
<td>.133-  1.665</td>
</tr>
<tr>
<td>Depression</td>
<td>.125</td>
<td>.020</td>
<td>6.10</td>
<td>≤.001</td>
<td>.084-  .165</td>
</tr>
<tr>
<td>Parents Care</td>
<td>-.548</td>
<td>.166</td>
<td>-3.34</td>
<td>≤.001</td>
<td>-.875-.222</td>
</tr>
</tbody>
</table>

Next, the teachers care measure was entered into the model (Table 15). English speaking (b=.827, t=2.08, p=.040), depression (b=.117, t= 5.53, p≤.001, parents care (b=.500, t= -3.04, p=.003) and teachers care (b=-.236, t= -2.22, p=.029) were all found to be statistically significant.
Table 15

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status, Parental and Teacher Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.827</td>
<td>.397</td>
<td>2.08</td>
<td>.040</td>
<td>.039- 1.615</td>
</tr>
<tr>
<td>Depression</td>
<td>.117</td>
<td>.021</td>
<td>5.53</td>
<td>≤.001</td>
<td>.075- .159</td>
</tr>
<tr>
<td>Parents Care</td>
<td>-.500</td>
<td>.164</td>
<td>-3.04</td>
<td>.003</td>
<td>-.828 -.173</td>
</tr>
<tr>
<td>Teachers Care</td>
<td>-.236</td>
<td>.106</td>
<td>-2.22</td>
<td>.029</td>
<td>-.447 -.025</td>
</tr>
</tbody>
</table>

Having a suicidal friend was then entered into the model (Table 16). English speaking (b=.572, t=1.48, p=.141) is no longer significant, while the remaining variables, depression (b=.110, t=5.34, p ≤.001), parents care (b=-.524, t=-2.82, p=.006), teachers care (b=-.231, t= -2.21, p=.030) and having a suicidal friend (b=1.07, t= 3.58, p=.001) were all found to be statistically significant.
Table 16

Summary of Negative Binomial Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status, Parental and Teacher Support and Friendship Characteristics (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>.572</td>
<td>.385</td>
<td>1.48</td>
<td>.141</td>
<td>-.193 - 1.33</td>
</tr>
<tr>
<td>Depression</td>
<td>.110</td>
<td>.020</td>
<td>5.34</td>
<td>≤.001</td>
<td>.069 - .151</td>
</tr>
<tr>
<td>Parents Care</td>
<td>-.524</td>
<td>.185</td>
<td>-2.83</td>
<td>.006</td>
<td>-.893 - -.156</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>-.231</td>
<td>.104</td>
<td>-2.21</td>
<td>.030</td>
<td>-.439 - -.023</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>1.07</td>
<td>.298</td>
<td>3.58</td>
<td>.001</td>
<td>.477 - 1.66</td>
</tr>
</tbody>
</table>

Other Measures Entered-Model 2-Attempts

Various peer support variable were also entered into the existing model that failed to attain statistical significance. Substance abuse (b=.004, t=1.00, p=.330), being socially accepted (b=.265, t=1.25, p=.215), friends care (b=.051, t=.29, p=.773), hanging out with friends (b=.081, t=.52, p=.608), best friend reciprocates as a friend (b=.161, t=.26,
p=.806) and best friend reciprocates as a best friend (b=.770, t=-.82, p=.432) were not statistically significant.

The final model included all statistically significant measures (Table 17). Being depressed (b=.104, t=5.43, p≤.001), having a parent who is caring (b=-.532, t=-3.19, p=.002), having a teacher who is caring (b=-.263, t=-2.36, p=.020) or having a suicidal friend (b=1.21, t=3.88, p=.001) were related to suicide attempts. The effect size measured by the incidence rate ratio indicated that for every point in the depression scale a Latina reports, her likelihood of attempts increases by 10%, a Latina’s likelihood of an attempt decrease 41% for every level she reports her parents care for her and 23% decrease for every level she reports her teachers care for her. If a Latina reports she had a suicidal friend, her likelihood of attempting increased by 235%.

Table 17

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>.104</td>
<td>.019</td>
<td>5.43</td>
<td>≤.001</td>
<td>.066-.143</td>
</tr>
<tr>
<td>Parents Care</td>
<td>-.532</td>
<td>.166</td>
<td>-3.19</td>
<td>.002</td>
<td>-862--.201</td>
</tr>
<tr>
<td>Teachers Care</td>
<td>-.263</td>
<td>.111</td>
<td>-2.36</td>
<td>.020</td>
<td>-.484-.042</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>1.21</td>
<td>.312</td>
<td>3.88</td>
<td>≤.001</td>
<td>.591-1.83</td>
</tr>
</tbody>
</table>
Summary of Negative Binomial Regressions

In the two models there was an apparent theme: adult support protected Latinas from attempts and friend support did not. Although having suicidal friends correlated with an increase in suicide attempts, having friends to count on or having strong bonds with peers, did not have an affect on attempts. While their mother’s and father’s mutuality independently did not protect these Latinas from attempts, knowing that their parents collectively cared did decrease their chances of attempting. Teachers who cared about their Latina students also decreased the chance they she might attempt suicide. While depression played a role in whether or not a Latina attempted, her use of substances was not associated with an attempt.

Latina Suicidal Ideations and Social Supports

Logistic regressions were used for models with the dichotomous outcome variable of suicidal ideations. Again, English spoken primarily in the home was used as a predictor of suicidal ideations (Table 18). English and depression were then included in the initial model for forward selection. Depression (Odds ratio= 1.14, t=8.25, p<.001) was significant while English speaking was significant at the .10 level (Odds ratio=1.56, t=1.67, p=.098).
Table 18

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Attempts by Cultural Status (n = 1,618) Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.56</td>
<td>.417</td>
<td>1.67</td>
<td>.098</td>
<td>.918 - 2.656</td>
</tr>
<tr>
<td>Depression</td>
<td>1.14</td>
<td>.018</td>
<td>8.25</td>
<td>≤.001</td>
<td>1.105 - 1.177</td>
</tr>
</tbody>
</table>

Mother support was then entered into the model (Table 19). English speaking in the home remained significant at the .10 level (Odds ratio=1.62, t= 1.88, p=.062) while mother support (Odds ratio=.962, t=-.97p=.336) was non-significant and being depressed (Odds ratio=1.13, t= 8.11, p≤.001) was significant.

Table 19

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status and Parental Support (n = 1,618) Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.62</td>
<td>.415</td>
<td>1.88</td>
<td>.062</td>
<td>.974 - 2.694</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>8.11</td>
<td>≤.001</td>
<td>1.103 - 1.177</td>
</tr>
<tr>
<td>Mother Support</td>
<td>.962</td>
<td>.038</td>
<td>-.97</td>
<td>.336</td>
<td>.889 – 1.041</td>
</tr>
</tbody>
</table>
Father support was then entered into the model (Table 20). English speaking in the home (Odds ratio=1.59, t= 1.76, p=.082) and mother support (Odds ratio=.967, t= -.83, p=.408) were both found to be non-significant. Since mother support had very high p-values in the current and last model, it was eliminated from future models. Being depressed (Odds ratio= 1.13, t= 7.81, p\leq 0.01) and father support (Odds ratio=.948, t= -3.08, p=.003) were related to suicidal ideations.

**Table 20**

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status and Parental Support (n = 1,618) Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.59</td>
<td>.419</td>
<td>1.76</td>
<td>.082</td>
<td>0.941 - 2.685</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>7.81</td>
<td>\leq .001</td>
<td>1.098 - 1.171</td>
</tr>
<tr>
<td>Mother Support</td>
<td>.967</td>
<td>.037</td>
<td>-.83</td>
<td>.408</td>
<td>.895 - 1.046</td>
</tr>
<tr>
<td>Father Support</td>
<td>.948</td>
<td>.016</td>
<td>-3.08</td>
<td>.003</td>
<td>.916 - .981</td>
</tr>
</tbody>
</table>

Father support was then entered into the model again (Table 21). English speaking in the home (Odds ratio=1.57, t= 1.69, p=.094) continued to be significant at the .10 level. Being depressed (Odds ratio=1.15, t= 7.85, p\leq 0.001) and having a supportive father (Odds ratio=1.57, t=-1.69, p=.003) were both significant.
Table 21

Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status, Parental Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.57</td>
<td>.423</td>
<td>1.69</td>
<td>.094</td>
<td>.924508 – 2.68433</td>
</tr>
<tr>
<td>Depression</td>
<td>1.15</td>
<td>.020</td>
<td>7.85</td>
<td>≤.001</td>
<td>1.089 - 1.179</td>
</tr>
<tr>
<td>Father Support</td>
<td>.947</td>
<td>.016</td>
<td>-3.05</td>
<td>.003</td>
<td>.914 - .981</td>
</tr>
</tbody>
</table>

Teacher support was then entered into the model again (Table 22). English speaking in the home (Odds ratio= 1.52, t= 1.60, p=.113) and having a teacher care (Odds ratio= .921, t= -.89, p=.347) were found to be non-significant. Being depressed (Odds ratio=1.134, t= 7.74, p≤.001) and having a supportive father (Odds ratio= .949, t= -3.00, p=.003) were related to suicidal ideations.

Table 22

Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status, Parental and Teacher Support (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.52</td>
<td>.406</td>
<td>1.60</td>
<td>.113</td>
<td>.902 – 2.59</td>
</tr>
<tr>
<td>Depression</td>
<td>1.134</td>
<td>.018</td>
<td>7.74</td>
<td>≤.001</td>
<td>1.097 - 1.170</td>
</tr>
<tr>
<td>Father Support</td>
<td>.949</td>
<td>.016</td>
<td>-3.00</td>
<td>.003</td>
<td>.916 - .982</td>
</tr>
<tr>
<td>Teachers Care</td>
<td>.921</td>
<td>.084</td>
<td>-.89</td>
<td>.374</td>
<td>.767 - 1.105</td>
</tr>
</tbody>
</table>
Suicidal friends was then entered into the model again (Table 23) English speaking in the home (Odds ratio=1.44, t= 1.34, p= .182) was found to be non-significant. Being depressed (Odds ratio= 1.13, t= 7.69, p≤.001) and having a supportive father (Odds ratio=.948, t= -.292, p=.005) and having a suicidal friend (Odds ratio= 2.09, t=3.22, p=.002) were related to suicidal ideations.

**Table 23**

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status, Parental Support and Friendship Characteristics (n = 1,618)*

*Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.44</td>
<td>.397</td>
<td>1.34</td>
<td>.182</td>
<td>.838 -  2.494</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>7.69</td>
<td>≤.001</td>
<td>1.095 -  1.167</td>
</tr>
<tr>
<td>Father Support</td>
<td>.948</td>
<td>.017</td>
<td>-2.91</td>
<td>.005</td>
<td>. 914 -  .983</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>2.09</td>
<td>.483</td>
<td>3.22</td>
<td>.002</td>
<td>1.329 - 3.314</td>
</tr>
</tbody>
</table>

*Other Measures Entered-Model 1-Ideations*

Various peer support variable were also entered into the existing model that fell below significance. Being socially accepted (Odds ratio=1.07, t=.41, p=.685) friends care (Odds ratio=1.12, t= 1.17, p=.245) hung out with friends (Odds ratio=1.12, t= 1.27, p=.207) substance abuse (Odds ratio=1.00, t= 1.21, p=.243) best friend reciprocates as friend (Odds ratio=.801, t= -.75, p=.581) best friend reciprocates as best friend (Odds ratio=.777, t= -.58, p=.581) were not statistically significant.
The final model included three variables, depression, father support and suicidal friends (Table 24). Being depressed (Odds ratio=1.12, t=7.35, p≤.001) and having a supportive father (Odds ratio=.947, t=-2.98, p=.004) and having a suicidal friend (Odds ratio=2.20, t=3.36, p=.001) were all related to suicidal ideations. The effect size is measured by the odds ratio. There was a 12% increase in ideations if the Latina reported depression, a 6% decrease if she reported that her father was supportive and a 120% increase if she had a suicidal friend.

The model’s fit was ascertained via the Hosmer-Lemenshow test in STATA 10.0. The statistic did not approach significance (p=.333) therefore, the model appears to fit quite well. This test is typically used with caution due to its dependency upon sample size. For small samples, the test has a tendency to indicate good model fit incorrectly and for larger samples, even if the model actually fits, the test may indicate failure. Given that the test’s result was non-significant, it is fair to say that the model fits well given the large sample size (Hosmer & Lemenshow, 2000).
Table 24

Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Parental Support and Friendship Characteristics (n = 1,618) Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>1.126</td>
<td>.018</td>
<td>7.35</td>
<td>≤.001</td>
<td>1.095 - 1.160</td>
</tr>
<tr>
<td>Father Support</td>
<td>.947</td>
<td>.017</td>
<td>-2.98</td>
<td>.004</td>
<td>.913 - .982</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>2.20</td>
<td>.516</td>
<td>3.36</td>
<td>.001</td>
<td>1.381 - 3.505</td>
</tr>
</tbody>
</table>

The second model of predictors of ideations was constructed in the same fashion as the previous three models. First English, depression and parents care were included in the initial model (Table 25) English speaking in the home (Odds ratio=1.59, t=1.76, p=.081) was found to be significant at the .10 level. Being depressed (Odds ratio=1.13, t=7.64, p≤.001) and having parents care (Odds ratio=.730, t= -2.51, p=.014) were statistically significant.
Table 25

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status and Parental Support (n = 1,618) Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.59</td>
<td>.419</td>
<td>1.76</td>
<td>.081</td>
<td>.943 – 2.685</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>7.64</td>
<td>≤.001</td>
<td>1.098 - 1.173</td>
</tr>
<tr>
<td>Parents Care</td>
<td>.730</td>
<td>.091</td>
<td>-2.51</td>
<td>.014</td>
<td>.569 –.936</td>
</tr>
</tbody>
</table>

Teachers care was then entered into the model (Table 26). English speaking in the home (Odds ratio=1.54, t=1.68, p=.095) maintained significance at the .10 level while having a teacher care (Odds ratio=.928, t=-.77, p=.441) was found to be non-significant. Being depressed (Odds ratio=1.13, t=7.59, p≤.001) and having parents care (Odds ratio=.743, t=-2.23, p=.029) were significantly related to suicidal ideations.

Table 26

*Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status, Parental and Teacher Support (n = 1,618) Controlling for Depression*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.54</td>
<td>.402</td>
<td>1.68</td>
<td>.095</td>
<td>.924 - 2.594</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>7.59</td>
<td>≤.001</td>
<td>1.097 -1.171</td>
</tr>
<tr>
<td>Parents Care</td>
<td>.743</td>
<td>.098</td>
<td>-2.23</td>
<td>.029</td>
<td>.570 – .968</td>
</tr>
<tr>
<td>Teachers Care</td>
<td>.928</td>
<td>.088</td>
<td>-.77</td>
<td>.441</td>
<td>.767 – 1.123</td>
</tr>
</tbody>
</table>
Suicidal friends was then entered into the model (Table 27) English speaking in the home (Odds ratio=1.43, t=1.34, p=.183) was found to be non-significant. Being depressed (Odds ratio=1.13, t=7.75, p≤.001), having a suicidal friend (Odds ratio=2.16, t= 3.49, p≤.001) and having parents care (Odds ratio=.722, t=-2.64, p=.010) were related to suicidal ideations.

Table 27

Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Cultural Status and Parental Support and Friendship Characteristics (n = 1,618)

Controlling for Depression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Speaking</td>
<td>1.43</td>
<td>.389</td>
<td>1.34</td>
<td>.183</td>
<td>.840 – 2.460</td>
</tr>
<tr>
<td>Depression</td>
<td>1.13</td>
<td>.018</td>
<td>7.75</td>
<td>≤.001</td>
<td>1.097 – 1.166</td>
</tr>
<tr>
<td>Parents Care</td>
<td>.722</td>
<td>.088</td>
<td>-2.64</td>
<td>.010</td>
<td>.565 – .922</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>2.16</td>
<td>.479</td>
<td>3.49</td>
<td>.001</td>
<td>1.396 – 3.359</td>
</tr>
</tbody>
</table>

Other Measures Entered-Model 2- Ideations

Various peer support variable were also entered into the existing model that fell below significance. Social acceptance (Odds ratio=1.08, t=-.48, p=.634), friends care (Odds ratio=1.16, t=1.53, p=.130), hung out with friends (Odds ratio=1.61, t=1.12, p=.130), substance abuse (Odds ratio=1.00, t= 1.39, p=.178), best friend reciprocates as friend (Odds ratio=.709, t=-.80p=.455), best friend reciprocates as best friend (Odds ratio=.775, t=-.80 p=.444) were not statistically significant. The final model included
only measures statistically significant at the p < .05 level (Table 28). Being depressed (p ≤ .001), having a suicidal friend (p ≤ .001) and having parents care (p = .012) were related to suicidal ideations. Odds ratios indicate that there is a 12% increase in suicidal ideations if the Latina is depressed), a 28% decrease in the likelihood of ideations if her parents care for her and a 127% increase in the likelihood of an ideation if she has a suicidal friend.

Table 28

**Summary of Logistic Regression Analysis for Variables Predicting Suicidal Ideations by Parental Support and Suicidal Friends (n = 1,618) Controlling for Depression**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds Ratio</th>
<th>SE</th>
<th>t</th>
<th>Sig (p)</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>1.12</td>
<td>.018</td>
<td>7.24</td>
<td>≤ .001</td>
<td>1.089 - 1.163</td>
</tr>
<tr>
<td>Parents Care</td>
<td>.721</td>
<td>.091</td>
<td>-2.56</td>
<td>.012</td>
<td>.560 -.930</td>
</tr>
<tr>
<td>Suicidal Friends</td>
<td>2.27</td>
<td>.517</td>
<td>3.61</td>
<td>≤ .001</td>
<td>1.448 - 3.575</td>
</tr>
</tbody>
</table>

The model’s fit was ascertained via the Hosmer-Lemenshow test in STATA 10.0. The statistic was not significant (p = .946) therefore, the model appears to fit quite well.

Summary of Logistic Regressions:

Model 1

- Latinas who report depressive symptoms are 12% more likely to ideate.
- If a Latina has a suicidal friend she has a 120% increase in the likelihood of an ideation than one who does not have a suicidal friend.
• Latinas who reported that her father was supportive were 6% less likely to ideate suicide.

Model 2
• Latinas who report depressive symptoms are 12% more likely to ideate.
• If a Latina has a suicidal friend she has a 120% increase in the likelihood of an ideation than one who does not have a suicidal friend.
• Latinas who reported that their parents are care were 6% less likely to ideate suicide.

Results Summary

Chapter four consisted of univariate and model testing procedures using Add Health data. Variables with missing values were imputed, resulting in five datasets. Weights were included in the analysis to provide a more precise generalization to the population represented.

Negative binomial and logistic regressions were utilized for hypothesis testing. Forward entry analysis was conducted in both regression types indicating the strength of specific predictors of suicide proclivity. Models were then depicted in various tables indicating statistically significant results.

Hypotheses tested

Cultural Status. As a Latina’s cultural status aligns more with the majority culture (speaks English in the home, she and/or her parents were born in the U.S) her risk of suicide ideations and attempts increase.

It was anticipated that a Latina’s cultural status would increase the incidence of suicide attempts based upon the literature. Although birth place was not found to be
significant in any of the models discussed, English spoken in the home was found to be a risk factor for suicide attempts but not ideations in this sample of Latinas in initial models. Once “suicidal friends” was entered into both ideation and attempt models, English spoken in the home fell below significance at the .10 level.

*Family Support.* Latinas reporting that their parents cared for them were less likely to attempt or ideate suicide.

Although mother support was not found to be significant in any models, a father’s support was found to be a protective factor in a Latina’s propensity for suicidal thoughts.

Latinas who reported that their parents cared for them had a significant decrease in suicidal ideations and attempts.

*Teacher Support.* Adult supports outside of their family can also be linked to suicide. A Latina who believed that her teachers do not care about her was found to be more likely to attempt suicide. Teacher support was not found to be a factor for Latina suicidal ideations.

*Friends Care.* Although Latinas reported that they believed their friends cared about them very much, the measure of “friends care” was not significant with regard to ideations or attempts.

*Social Acceptance.* Social acceptance was not found to be a protective factor for suicide proclivity.

*Reciprocity.* A Latina’s level of reciprocity either from her friends or her best friends was not found to be a significant factor in suicide proclivity.
Suicidal Friends. Having a friend who had attempted suicide in the past year was found to be a risk factor for a Latina in terms of suicide attempts and ideations.

Depression. Depression was found to increase a Latina’s risk of suicidal ideations and attempts.

Substance Use. Substance use was not found to be a significant factor for Latina’s suicidal risk.

The following chapter will include the theoretical and clinical applications of the research findings including implications for practice and also the strengths and weaknesses of the study.
CHAPTER 5

DISCUSSION

The final chapter will be divided into five sections. The first section will examine the descriptive statistics of the sample related to the suicidal risk outcomes including familial, peer and school support. The second section will summarize the results from the negative binomial and logistic regression models. The third section will include practice implications associated with each significant model. The fourth section will discuss the strengths and limitations for the dissertation. Policy and research implications will be discussed in the final section.

Suicidal Ideations and Attempts

A similar longitudinal study’s results for the same time period, the Youth Risk and Behavior Surveillance System (YRBSS), will be used as a comparison for this dissertation. The YRBSS was conducted in 1995 and involved complex sample methodologies similar to the Add Health dataset. Although most Latinas (94%) in the sample never attempted suicide in the past year, 17% reported an ideation and 6% reported at least one attempt in the past 12 months. This rate of attempts is far less than the YRBSS (1995) reported. Their survey found that 31% of Latinas had ideated in the past year and 21% had attempted in the past year. This study did not support the findings
of the YRBSS (1995) study. The results from this dissertation could be due to the large number of Latinas who came from immigrant households.

Cultural Status

The percentage of Latinas born in the United States in this sample was indicative of most young Latinos. More than half (61%) were born in the U.S. The US census (2001) reported at the time the questionnaire was completed (1994-1996), that 60% of Latinas were born in the U.S. Noting Zayas’ (1987; 2008) and other studies (Vega et al, 1993; Hovey, 1996; 1998; 2000) involving acculturating Latina adolescent’s propensity for attempts and ideations, having a higher proportion of US-born Latinas could have biased the results. An interesting finding is that only 47% of these Latinas stated they spoke English in the home predominately. Therefore, these females might be living in more traditional homes due to having immigrant parents since the number of Latinas having immigrant parents was very common (mother born in the US 4%, father 15%). Again, by comparing U.S. Census reports when the questionnaire was disseminated, the numbers of immigrant Latino parents with children who are foreign-born were quite similar to our findings. The U.S. Census Current Population Survey (1998) found that 85% of families consisting of at least one immigrant parent had at least one child who was born in the U.S.

Family Support

Latinas in the sample generally felt cared and supported for by their parents. When looking at their mothers and fathers separately, Latinas reported they had less support from their father (very little) than their mother (somewhat). This finding was
surprising given that the literature has stressed the importance of mother-daughter mutuality and family support in general (Turner et al, 2002). This may be because they anticipated more support from their mothers due to social expectations. Therefore a Latina expects her mother to be supportive and assumes to receive less support from her father. As a result, if her father is slightly supportive, she might weigh that more heavily than her mother’s level of support. These measures were collected for biological fathers and not necessarily a father figure who currently lives in the home.

Latinas were asked one specific question about parental caretaking. The average Latina reported that parents care quite a bit about them. The responses signified that parents do play an active role in their children’s lives which supports the literature review findings (Turner et al, 2004; Borowsky et al, 2001; Zayas et al, 2000; Delgado, 1995). This dissertation found strong bonds between parents and Latinas given that the majority (86%) stated that their parents cared very much for them. Therefore, Latinas in this study might have seen the global sense of parental care as more important than mother/father-mutuality.

School Support

Latinas reported that they generally believed their friends cared (82%) and teachers cared (48%) at least quite a bit for them. This is important since children spend most of their time at school (U.S. Department of Education, 2000). Given that Latinas also feel very cared for at home, one might suppose that Latinas in this study appear to be supported both at home at school. In terms of peer relations at school, the average Latina
reported having problems at school “a few times” with 60% reporting few or no problems at school.

However, Latinas had problems with their peers at school. Almost half (46%) either agreed or strongly agreed that they did not feel close to people at school. As a result, Latinas might believe they are cared for by their peers, but they do not have close bonds with them. If a Latina does not feel close to her peers, the likelihood of her turning to them during a crisis is doubtful. This finding could potentially affect school suicide prevention programs that are common among adolescents. Latinas who might believe that their friends care about them could be helpful to the group dynamic, but if they do not feel close to their peers any self-disclosure of suicidal thoughts might be difficult for a facilitator to obtain.

Due to the findings that elders matter, a possible therapeutic intervention, such as Multisystemic Therapy (MST), could be used in suicide prevention. A feature of MST is to incorporate the family unit and other systems in the child’s life into the therapeutic process. Although having a child’s teacher physically present in the sessions could prove difficult, other alternatives such as providing classroom progress notes could provide parent and clinician important information. Likewise, teachers could receive clinical notes from the therapist advising current issues to work on in the classroom. Since having a teacher care decreased the likelihood of Latina suicide, including teachers could be an important factor to consider. Creating a continual stream of information might be important for a child dealing with suicidal thoughts or behaviors whose behavior can spiral quickly. If the child has immigrant parents, they might not know what specific
mood or behavioral changes to observe in their child. This process would also educate each parent on the warning signs of suicide.

Suicidal Friends

Latinas reported they had a friend who attempted suicide in the past year (22%). These findings were similar to those of the Bearman and Moody (2004) study on adolescent friends and suicidal risk. Latinas are not any different than other adolescents, having a suicidal friend increases your risk of suicide proclivity. The percentage of suicidal ideations and attempts presented previously sheds some light on this finding. Latinas in this study reported they had ideated (17%) and attempted (6%). It is not surprising that almost one-quarter of the respondents had a suicidal friend given the high rate of ideations. This is an interesting finding since these Latinas, coming from predominately immigrant households, most likely did not learn suicidal coping behaviors from their parents. Since suicide is a rare phenomenon in countries such as Mexico, these females are likely learning these coping skills elsewhere. Understanding the type of friends Latinas associate with is crucial. Due to the higher rates of suicidal contagion, among adolescents, having friends who are at more risk for suicidal thoughts and behaviors increases one’s risk of suicide proclivity. Research on suicidal clusters posits that children tend to mimic their friend’s coping skills and this could be reflected in suicide rates (Gould, Wallenstein, Kleinman, 1990, Joiner, 2002).

Frequency of Contact

Since isolation is a risk factor for suicide proclivity, understanding the number of contacts Latinas experience can help ascertain their risk. Somewhat surprising was that
85% of the Latinas who responded said they hung out with their friends outside of school time. Since most of the Latinas come from immigrant households, females typically are assigned household chores which tend to take them away from socializing with their peers outside of school. The sample appeared to be well connected to their friends out of the school environment which could indicate a possible protective factor for suicide. Therefore, the quality and maybe not the quantity of contacts could be a factor in suicidal risk.

Depression

Latinas in this study had a mean depression score of 3.03. This score is difficult to interpret since one of the questions from the CES-D was omitted from the questionnaire. Further, the CES-D is scored from 0-3 for each question while the Add Health questionnaire provided yes/no answer options. Therefore interpreting the mean is difficult. In any case, the more depressed a Latina was, the more likely she was to attempt and ideate suicide. Having clinicians and other adults in their lives identify depressed Latinas and assessing their risk of suicide is critical. Some individuals might be reluctant to ask a Latina if she has thought of suicide. If clinicians and teachers are not aware of their own biases with suicide one can not provide an emotionally safe environment for their client to express their thoughts. Intensive training needs to be implemented in school systems, especially those in Latino neighborhoods, since the rates of suicide among Latinas is so high.
Substance Use

Alcohol was the most common drug of choice (1.63 times in the past year), which is not surprising given its accessibility. Marijuana (average number of times used in lifetime was 5.27) was the most used illicit drug, which is similar to SAMHSA reports in 1995 (2008). The standard deviation was quite high in this study (23.46) which is not surprising given that most teens never use illicit drugs. This finding also indicates that those Latinas, who do use substances, use them quite frequently. Of those Latinas stating they had used an illicit substance, 30% used marijuana, 9% used other drugs, 6% inhalants and 5% used cocaine.

Information from the YRBSS 1996 report was collected in 1995. Although some of their survey questions were different, their findings can shed some light on drug use among Latinas in the mid-1990s. First, Latinas were asked about their past-month’s use of alcohol. Over half (52%) answered they had at least one drink in the past 30 days. No definitive results were supplied regarding Latinas’ use of marijuana in their report and also through the Center for Substance Abuse Treatment (2002). CSAT found that in 1995 Latinos (both boys and females) had the highest rate of marijuana use (31%) compared to White and African-American teens. The YRBSS discovered that Latinas (11.6%) reported in 1995 that they had used cocaine in their lifetime. This was more than double what was found with the Latinas in this study. The YRBSS’s report solely stated results of Latino use of inhalants and other illicit drugs (LSD, PCP, ecstasy, mushrooms, speed, ice and heroin) and did not report specific to females and boys’ usage. The
YRBSS found that in 1995, 23% of Latino adolescents used inhalants and 18% used other illicit drugs.

Again, educators can take the lead in their current prevention programs by simply addressing how substance use and suicide are often related. School-based drug prevention programs should focus on the relationship between depression, substance use and suicide. Many children have been under the influence of drugs at the time of their death resulting from a suicide attempt (Queralt, 1994).

Reciprocity

Latinas’ impressions of their relationships with peers were mixed. Latinas had a relatively high reciprocity rate among their friends (68%) but did not have a true sense of who their best friends were in their respective schools (39%). This is a meaningful finding because although previously the respondents stated they knew friends cared for them, they also had problems feeling close or connected to people at school. This finding could support their responses of feeling cared for but not feeling close to them given the lack of reciprocity in their peer relationships. These results also take the quality of these Latinas’ peer relationships into question. The females in this dissertation had a less than 50% chance of reciprocation as best friends from their best friends. Further research regarding the reciprocity of African American, White females and Latino males would help put these results into better perspective regarding suicide proclivity.

Social Acceptance

Although Latinas reported they felt cared for by friends, they did not feel close to their peers and had little reciprocity with their best friends. Latinas in the sample stated
they neither agreed nor disagreed if they felt socially accepted at their school. Latinas who do not have strong connections to their peers might believe the reason their friendships are not strong is due to their lack of acceptance. It is not clear if a Latina’s acceptance from her peers, the reciprocity of her relationships or the closeness she internalizes from her friends might be derived from her cultural status or not, but further inquiry is necessary to understand how they relate to suicide proclivity.

Latina Adolescents and Suicide Attempts

Three negative binomial models indicated that adult support, whether from their family or teachers, shielded Latinas from suicide attempts. Given that traditional Latino culture stresses respect for elders, this finding was not surprising in terms of parent support. A somewhat unexpected result was that teachers also had an impact on suicide attempts. Again, since one could assume Latinas in this study came from traditional immigrant families, individuals outside of the family unit might not matter in terms of support. Although this study did not examine if these Latinas were sharing any type of emotional concerns or problems with their teachers, one might suppose that if they did have problems they might turn to someone they believed cared for them, including their teachers.

A point to stress is that the findings differ in some aspects from previous studies. Turner and colleagues (2004) discovered that the ability to feel close to their mothers and confide in them protected Latina adolescents from suicide. We did not find any connection between a Latina’s perceived level of maternal support guarding against suicide attempts. We did find that if their parents cared for them, Latinas were less likely
to attempt suicide. These findings are important for future suicide prevention curricula. Including parents and their teachers in suicide prevention programs might be more effective for Latinas than traditional school-based initiatives traditionally facilitated by a trained clinician or guest speaker. Teachers might be an un-tapped resource in suicide prevention in new and exciting ways. For example, a teacher could help the marginalized adolescent in the classroom by providing support in the classroom with short “check-ins” daily to monitor any changes in mood but also allow the teen to know her teacher cares. Since this measure correlated highly with Latina adolescents this could be a critical piece of school-based suicide prevention.

Role conflict can also be a factor with the Latinas in the study. Therefore, a mother’s sole support might not be a protective factor. Latinas with immigrant parents typically adopt the role of a cultural broker, mediating the relationship between their family and teachers. As a result, these Latinas have a different relationship with not only their parents but with their teachers. By brokering these adult relationships, her view of peer relationships might not actually be with those her age, but with those outside her household including her teachers. Therefore having friends who care or are supportive might not matter to Latinas from immigrant homes, or even materialize, when compared to the relationships she has with their teachers.

Although the literature review stipulated that adolescents tend to turn to friends when they were contemplating suicide, this might not be the case for Latinas. A variety of friendship variables were included in the models to ascertain any level of risk for suicide attempts. Given that a majority of these Latinas came from immigrant families,
one might assume that family connections were very strong for these females. Therefore, influences from their peers might not be as important as they might be for second or third generation females. For Latinas in immigrant families, her peer support might come from family members her age. For example, maybe a better predictor of peer support for Latina adolescents in immigrant households would include their cousins rather than children at school or in their neighborhood.

The emphasis on peer-mentored suicide prevention groups might be a less effective tool for Latinas coming from immigrant households than for other adolescents. Peer support should still be considered important with regard to Latinas and suicidal risk, but adults appear to matter more with girls from immigrant households. Although these girls report feeling cared for by their friends, they do not appear to protect them from suicide proclivity.

The presence of a suicidal friend increased one’s risk of suicide attempts and ideations remained consistent with the literature. Friends do appear to matter, but it is the type of friends Latina adolescents choose that makes an apparent difference. Physical or emotional connections per se did not alter either the likelihood of suicidal ideations or the number of attempts. Having a suicidal friend was a significant factor. Therefore, awareness of a child’s friends could become an early suicide prevention tool for parents, teachers and clinicians. For instance, alerting parents to their child’s friend’s attempt could help benefit a Latina. Providing documentation of this in Spanish and English would be imperative. Given that many of the children in the study came from immigrant
homes, where suicide is less common in their homeland, having school or parent-teacher meetings on the topic could make parents aware of this phenomenon.

In addition to providing suicide prevention information in Spanish, material should also be disseminated in a variety of non-traditional locations in the community. For example, continuing to post suicide hotline numbers in schools and clinics is important, but also providing information in other settings such as neighborhood restaurants or in places of worship. Since Latino immigrants are less likely to obtain traditional mental health services, bringing prevention information to areas where they might frequent could increase awareness to Latino parents and elders.

The suicidal friends measure was statistically significant in all suicidal ideation and attempt models presented. Furthermore, suicidal friends continually eroded the detrimental effects that speaking English in the home had for suicide attempts. This finding can also shed some light on the types of friends one has as they increase their language use in the home. For example, as a Latina increasingly uses more English with her household members, her social network might change. A Latina, whose family is not as dependent on their daughter’s English ability, might be able to increase her social network. This potentially larger network might not provide emotional supports but actually allow her to make friends with a more diverse and potentially riskier friendship network.

Latina Adolescents and Suicidal Ideations

Although speaking predominately English in the home was not significantly related to ideations, other variables protected Latinas from suicide proclivity. Lack of
self-perceived father support was found to increase a Latina’s risk of ideations. This finding has not been previously found in the literature. In fact, father support has been included in past models without much success. Past research concluded that the father typically was not in the home enough to make an effect on their child’s mental health status or that childrearing was seen as more of a mother’s responsibility in a traditional Latino household. Therefore, a father’s level of emotional support sheds new light on the needs of young Latinas and suicidal risk. It should be noted that this related to their biological father and not necessarily the male figure living in the child’s home.

The mother-daughter relationship might also be different for these Latinas compared to those in more acculturated households. Young Latinas are exposed to American viewpoints about women’s roles in school or in the media. Daughters might become frustrated by their immigrant mother’s continued practice of traditional gender roles in the home. These feelings might make her align more with her father, who has a higher likelihood of working outside the home and adopting more mainstream characteristics than the mother. The young Latina might have more contact with her mother as well while in the home. With this increased interaction, the daughter might see her mother as more of the disciplinarian while her father might appear to be more loving and nurturing. Therefore, a father’s support might be interpreted differently than the support of their mother.

In both the negative binomial and logistic regressions, Latinas who were depressed were more likely to ideate or attempt suicide. The odds ratios give a more precise idea of how likely Latina adolescents were to ideate. Latinas who were depressed
were more likely to ideate. This was consistent with Bearman and Moody’s (2004) study on adolescents (OR=1.45). The more depressed an adolescent was, the more likely she was to ideate suicide. Latinas who had suicidal friends were twice as likely to ideate compared to Latinas who did not have a friend who attempted. Given the high risk of suicide contagion among adolescents, parents and teachers should be keenly aware of Latina’s friendship network. More attention should be focused on the impact their father’s support had on these females (6% reduction in suicidal ideations).

Suicidal friends was statistically significant in all suicidal ideation and attempt models presented and continually eroded the detrimental effects that speaking English in the home had for suicide attempts. This finding can also shed some light on the types of friends one has as they increase their language use in the home. For example, as a Latina increasingly uses more English with her household members, her social network might change. A Latina, whose family is not as dependent on their daughter’s English ability, might be able to increase her social network. This potentially larger network might not provide emotional supports but actually allow her to make friends with a more diverse and potentially riskier friendship network.

A father’s support functioning as a protective factor for his Latina daughter’s suicidal ideations has not been supported in the literature. While researchers have focused on the mother-daughter relationship with Latinas, more attention needs to be given to a father’s role regarding his daughter’s mental health. In addition, incorporating the father in family therapy sessions is imperative. Furthermore, psychoeducational
programs need to include curriculums focusing on the Latino father and his role in protecting his daughter from suicidal ideations.

Limitations

One limitation of this dissertation, often associated with self-report questionnaires, is the risk of social desirability bias. This can affect the outcomes of the study. For example, due to the stigma of mental health diagnoses and suicide in general, respondents might have minimized their actual occurrence in their lives. The statistical methods accommodated for this weakness somewhat by utilizing earphones for sensitive questions and then entering their answers in provided computers.

Children who were not in school the day the questionnaire was distributed, or who had dropped-out of school, did not have their own unique experiences represented in this study. These children arguably would be without the positive emotional supports of their teachers, likely making them more susceptible to suicidal thought and behaviors.

The models themselves were limited in terms of missing data. Although multiple imputation was utilized, the software still had some difficulty in assigning values to some variables namely the peer, friendship network and substance use variables. As a result, I was not able to make inferences to the population on important peer supports and risk factors such as substance use.

The Add Health dataset also had a limited number of cultural status variables. Although the place of birth of a Latina and her parents, along with English spoken in the home, can provide some insight into the level of acculturation of an individual, there are
other qualitative measures that would have provided a more conclusive depiction of the construct of acculturation.

The data was also collected over 10 years ago. The Latino population has changed in terms of acceptance and perception by the majority in recent years. Therefore, changes in cultural status and suicidal behavior patterns over the past decade could potentially limit the validity of the results to present-day Latinas.

The sample used for this study was not representative of the population. Although 62% of the sample was born in the United States, only 4% of mothers and 14% of fathers were born in the U.S. Therefore, the sample was essentially a study of mostly immigrant families. In addition, only 6% of the Latinas in the study had reported an attempt in the past 12 months. Latinas questioned in other national studies, such as the YRBSS, reported they (21%) had attempted suicide in the same year the Add Health data was collected.

Strengths

The dissertation also had a number of strengths due to methodological and statistical considerations. The Add Health dataset incorporated a nationally representative sample of adolescents. The inclusion of weighted analysis, logistic and negative binomial regressions improved the precision of the results.

The study was also unique in a number of ways. First, this dissertation examined not only a Latina’s cultural status and familial supports, but also a variety of peer supports. Friendship networks are seldom studied among Latinas and their suicidal proclivity. This study is the first of its kind to observe possible protective factors
associated with a Latina’s peer group along with cultural status and risk of suicide.

Finally, the study’s results were compared to a similar school-based sample, the Youth Risk Behavior Surveillance System when possible.

Policy and Research Implications

Policy Implications

Latinas continue to have incredibly high rates of suicide yet Latina-focused prevention programs are rare. Since the rates have not decreased, mental health professionals, teachers and parents all need to play an active role in developing new, culturally competent prevention tools. Although research has indicated for over 60 years that the Latina suicide experience is different when compared to other females, those in direct service and policy arenas have been slow to act, especially in areas where the Latino population rate is high.

Using past research can help individuals recognize and empower Latino families, immigrant and non-immigrant, and acknowledge the unique factors associated with Latina adolescent suicide. The study concluded that adult supports mattered to these Latinas. Therefore, creating programs that focus on reinforcing family bonds and enhancing parental, especially father, communication with young Latinas can make a difference with her coping mechanisms. One option for clinicians is to utilize family-centered therapies in order to work with the entire family unit. The collectivist nature of traditional Latino families could potentially benefit from dealing with the family unit as opposed to the child dealing with suicidal tendencies. Given the projected increase in the
Latino population in the next 40 years, finding effective suicide prevention programs through mental health, local, state and federal levels is imperative.

*Research Implications*

Additional research is necessary to understand why adult supports, especially with those outside the family unit, protect Latinas from suicidal thoughts and behaviors. Future research directions should include the following questions: How do interventions utilizing the cultural and familial dynamics introduced in this study enhance prevention efforts for Latina teens? Does incorporating these suggested factors enrich the parent-child relationship and drive down suicidal ideations and attempts with Latina adolescents? Do specific types of friends, such as peers who have used illicit substances, increase one’s risk of suicide proclivity and not their own personal usage?

**Conclusion**

This chapter assessed significant determinants and found that Latinas who have adult supports fair better in terms of suicide proclivity. Theoretical implications for Attachment Theory were considered together with significant findings of how social supports have a fundamental influence on a Latina adolescent’s ideations and attempts in this sample. Subsequent sections discussed the strengths and limitations of this dissertation, in particular methodological techniques used and the novel approach to including peer networks. Finally policy and research implications and were suggested such as the creation of interventions that cater to Latino communities in addition to the incorporation of adult supports.
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