ASSESSING SUICIDE RISK IN THE AMISH:
INVESTIGATING THE CULTURAL VALIDITY OF
THE INTERPERSONAL THEORY OF SUICIDE

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ASSESSING SUICIDE RISK IN THE AMISH:
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Dissertation

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ABSTRACT

The larger purpose of this study was to contribute to the body of research regarding suicide in the Amish and to examine the cultural validity of Joiner's Interpersonal Theory of Suicide. This was done by examining the validity of instruments designed to measure Joiner's main constructs of suicide desire (thwarted belongingness and perceived burdensomeness) and acquired capability with the Amish. Based on the underlying assumptions of the Interpersonal Theory of Suicide, there were four primary hypotheses. First, it was hypothesized that collectivism scores would be negatively related to depression and suicidal desire. Second, depression and suicidal desire, together and individually would account for a significant amount of the variance in suicidal behavior. Third, the relationship between depression and suicidal behaviors would be moderated by sex. Finally, acquired capability would partially mediate the relationship between suicidal desire and suicidal behavior.

A total of 129 Amish adults were solicited through a network sampling procedure and completed the research survey. The data were subjected to exploratory factor analysis and hierarchical multiple regression. The results of the study indicate that the rates of depression and suicide risk in the Amish are similar to the rates in the general population, though there may be qualitative differences in the Amish individuals’ experiences of depression and suicidal ideation and/or their willingness to report symptoms. Consistent with the primary hypotheses, collectivism was negatively related
to depression and suicide risk. Furthermore, suicidal desire was able to account for a significant amount of the variance in suicide risk, above and beyond depression and hopelessness. In addition, the relationship between depression and suicide risk was moderated by sex. Inconsistent with hypotheses, acquired capability was not found to mediate the relationship between suicidal desire and suicide risk. It was concluded that the Interpersonal Theory of Suicide may offer one way to conceptualize suicide risk in the Amish, though only parts of it appear culturally appropriate.
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CHAPTER I
STATEMENT OF THE PROBLEM

According to the American Association of Suicidology [AAS] (2010), suicide is the eleventh leading cause of death in the United States. It accounts for approximately 95 deaths a day, meaning that an individual dies by suicide every 15.2 minutes. Though these numbers are alarming when viewed in isolation, they do not account for non-fatal suicidal behaviors. In 2009 there were 374,486 nonfatal emergency department admissions of adults who had intentionally harmed themselves (CDC, 2010). Berman (2010) noted however, that the majority of persons who attempt suicide never reach medical care facilities. Thus, self-report data from community surveys suggest that the rate of nonfatal suicide attempts is much higher than that recorded by the National Vital Statistics Report. McIntosh (2007) estimated that between 864,950 and 1.1 million people attempt suicide in the United States each year. This number translates to an attempt every 38 seconds. Additionally, according to a recent SAMHSA (2009) study, nearly 8.3 million people contemplated suicide in 2008, and 2.3 million of those individuals reported having a plan for suicide. These alarming statistics underscore the fact that suicide is an important health issue facing the nation.

According to the current data regarding suicide in the United States, there has been an increase in suicide related research in recent years (e.g., Lizardi, & Gearing, 2010; Kuhlberg, Peña, & Zayas, 2010; Walker, Alabi, Roberts & Obasi, 2010; Meyer, Dietrich & Schwartz, S. 2008). Studies have focused on identifying risk factors
associated with suicide, protective factors, and constructing cohesive theories of suicidal behavior that account for both (e.g., Lizardi, & Gearing, 2010; Kuhlberg, Peña, & Zayas, 2010; Walker, Alabi, Roberts & Obasi, 2010). Though the research regarding the incidence of suicide in diverse cultures has also grown, the current status of suicide research in smaller cultural groups, such as the Amish, is still non-existent, and as such, details regarding suicide are still unknown.

There are various reasons the research regarding suicide in the Amish is scarce. Most notably, many researchers perceive the Amish as a closed, inaccessible population that is not open to outside influence (Hurst & McConnell, 2010). Though the Amish do prefer to remain separate from the larger society, the fact that research with this population does exist is testament to their openness to allowing researchers access to their communities, particularly if the research can improve the services and treatment available to their community members. A second reason that there is a dearth in the literature is because many assume that suicide is not a pressing issue in the Amish. The most recent data, collected in 1980, indicated that the rate of suicide in the Amish was approximately half that of the overall population. The data indicated a rate of 5.5 per 100,000 deaths, as compared to 12.5 in the larger, non-Amish population (Kraybill, Hostetter, & Shaw, 1986). This, however, is not necessarily the case. Though Kraybill and colleagues found the rate of suicide to be lower in the Amish population, other research has indicated that it could be equal to, or even higher than, the general population (Fuchs, Levinson, Stoddard, Mullet, & Jones, 1990). For example, Fuchs and colleagues found that in comparing the Amish to a representative sample of the general population, the Amish suffered more frequently from depression and anxiety. Amish women, in
particular, were significantly more likely to report symptoms of depression than their non-Amish peers. Additionally, the Amish, both men and women, were found to be more likely to report symptoms of anxiety than individuals in the general population. This is important to note because research indicates that depression and anxiety are significant risk factors for suicidal behavior (AAS, 2007; Berman, 2010)

Need for Research on Suicide in the Amish Population

Examining suicide in the Amish is important for a number of reasons. Foremost, research indicates that while the rate of suicide in the general population has remained relatively stable, it has fluctuated drastically in specific sub-groups over the past 30 years. For example, the rate of suicide in people ages 85 and older ranged between 15.6 - 20.9 per 100,000 between 1997 and 2007 (McIntosh, 2010). Given the changes witnessed in the rate of suicide in the past 30 years for different populations, it is important to discern whether suicide in the Amish has fluctuated, as well.

The second reason it is important to study suicide in the Amish is because it is increasingly important to understand suicide in the context of an individual's culture. Most researchers agree that culture is a central determinant of behavior, since societies instill in members specific rules that govern behavior (Leenars, 2008). According to Leenars, "Culture is a collective meaning: to allow people to know who they are, where they come from, and where they are going...even in suicide" (p. 16). Not only does each culture have certain beliefs and attitudes surrounding mental health and suicide, but every society is different in its experiences of environmental stressors and the types of coping mechanisms employed by its members. As such, culture plays an important role in influencing the thoughts and attitudes that individuals hold, including one's beliefs
surrounding mental health issues and treatment, as well as the feelings one holds towards suicide (Leach, 2006; Leenars).

Additionally, although suicide and suicidal behaviors may be conceptualized in the Amish culture differently than in the general population, the Amish still experience the same risk factors for suicide. Of the various risk factors associated with suicide, the most commonly identified is preexisting mental health diagnoses. Mental health diagnoses are correlated with increased suicidal ideation and suicide attempts (AAS, 2007). As Berman (2010) noted, "Mental disorders impair coping abilities and resilience, amplify distress, and decrease protections; their role in establishing suicidal vulnerability, therefore, is readily understandable" (p. 510). According to AAS, the most common psychiatric diagnosis associated with suicide is major depression (Berman). In fact, the AAS noted that the risk of suicide in people with major depression is nearly 20 times that of the general population and that about two-thirds of people who complete suicide are depressed at the time of their deaths. Additionally, individuals who had multiple episodes of depression are at greater risk for suicide than those who had one episode (AAS, 2007). With regard to suicidal ideation, according to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2006), 40% of clinically depressed patients over the age of 17 have contemplated suicide.

There are multiple other factors identified as increasing the risk for suicide. These factors include alcohol and other substance abuse disorders, feelings of hopelessness, impulsive and/or aggressive tendencies, a history of trauma or abuse, physical illness, a family history of suicide, and a previous suicide attempt (Suicide Prevention Resource Center [SPRC], 2001). Additional environmental and cultural factors have also been recognized as risks for suicide. These include job or financial loss, relational or social
loss, easy access to lethal means, lack of social support, feelings of isolation, barriers to accessing health care, stigma associated with help-seeking, and certain cultural and religious beliefs (SPRC, 2001). The number of factors identified underscores the complexity of suicide and suicidal behavior.

The final reason to study suicide in the Amish is related to strengthening the validity and reliability of psychological tests and measures in diverse populations. It is important for clinicians to understand culture in assessment and treatment; and the APA urges psychologists to utilize reliable and culturally valid instruments (APA, 2002). Most of the available suicide-related assessment instruments were developed and validated on European-American samples. Though the Amish are European-Americans, the drastic differences between their society and the general population make the generalizability of the findings an empirical question. Thus, it is not known whether the concepts underlying these instruments are applicable across cultures.

In summary, it is evident that additional research needs to be conducted to explore suicide in the Amish population. The data regarding suicide in the Amish is outdated; given the changes in the general population since the last known estimate, it is reasonable to assume that there have been changes in the Amish population, as well. In addition, the cultural mores and values are significantly different in the Amish. These disparities may mean that suicide may be understood and explained differently. In addition, the dissimilarities in the Amish culture as compared to the general population may impact the validity and reliability of suicide related measures, making their use with this population inadvisable.
Suicide in the Amish

As noted previously, the presence of a mental health diagnosis, particularly depression, is one of the most significant risk factors for suicide (AAS, 2007). The data regarding mental health issues in the Amish is inconsistent. Some research has indicated that the Amish are less likely than the general population to experience affective disorders (Miller et al., 2007), although other research and subjective accounts indicate that the prevalence of affective disorders in the Amish is comparable to the general population (Fuchs et al., 1990; Hurst & McConnell, 2010). Though the data regarding mental health disorders in the Amish are conflicting, what is known is that the mental health disorders the Amish do experience are similar in kind to those of the general population, with affective disorders being the most commonly reported diagnoses (Hostetler, 1993).

The AAS (2007) reported that the depression rate tends to be higher among rural populations than urban populations, and given this, it is likely that the rate may be higher among the Amish because of the similarities between them and other rural populations (AAS, 2007). Recent research indicates the rate of depression in rural America is higher than the rate of depression in urban areas. For example, Probst, Laditka, Moore, Harun, Powell, and Baxley (2006) found that a total of 2.6 million rural adults screened positive for depression, indicating that the rate of depression in this population is significantly higher than among urban populations (6.1% versus 5.2%, $p = .017$). In addition, although the difference was not statistically significant ($p > .05$), those who screened positive for depression were more likely than their urban counterparts to report that their symptoms interfered “a lot” with their life or activities (46.7% rural; 44.25% urban; $p = .41$). Furthermore, in 2007, Mental Health America (MHA) published a report on the rate of
depression in each state and the District of Columbia. It is important to note that six of the most sparsely populated states (according to the U.S. census) had rates of depression higher than the national average (MHA, 2007). In addition, seven of the most sparsely populated states had higher incidents of "serious psychological distress" than the national average (MHA, 2007).

Mental health diagnoses are not the only risk factor that the Amish may exhibit; the Amish are susceptible to other suicide risk factors as well. For example, though the Amish are less likely than the general population to demonstrate substance abuse and impulsive or aggressive tendencies because of their cultural beliefs, they are equally likely as the general public to experience physical illness and feelings of hopelessness (Kraybill, 2001). In addition, the Amish are just as prone to experience the loss of relationships to death, and are more likely to encounter barriers to needed and preventative medical and mental health treatment. For example, they tend to live farther away from treatment centers and have less access to convenient transportation.

Additionally, though many Amish communities have access to a community telephone, most Amish homes do not have their own phone line (Hurst & McConnell, 2010). Hurst and McConnell also noted that the stigma associated with seeking treatment outside of the community might be particularly salient in the Amish culture.

The close-knit nature of the Amish community implies a sense of unity and a strong support system. The Amish culture is based on the ideals of collectivism. Triandis (1995), defines collectivism as the need to preserve group accord above and beyond the interest of individuals and sub groups. Values such as interpersonal harmony and group unity are core components of the collectivistic belief system. Kim (1995) noted that from birth, people are integrated into strong, cohesive in-groups, which, throughout their lives,
continue to protect them in exchange for unquestioning loyalty. Collectivistic cultures are more likely to share both good and bad outcomes, and to feel they are a part of their in-group's life. Given this social structure, one might assume that the Amish are less susceptible to social isolation, loneliness, or alienation. However, some researchers have noted the presence of depression in Amish individuals who feel alienated from their community or have difficulty submitting to the authority of the church (Hurst & McConnell, 2010). This research suggests that although social isolation and lack of social support may be less common in the Amish given the ideals on which their culture is founded, it does not mean that Amish individuals are immune to these risk factors. In addition, the collectivistic social structure may actually increase the distress individuals experience if they do not feel connected to their community.

In summary, though the actual rate of suicide in the Amish is unknown, there is evidence to support the need for a more in-depth examination of the topic. The Amish experience many of the same indicators known to increase suicide risk, and some of those factors may in fact be more salient or powerful in an Amish population. The next part of this chapter provides an overview of one theory that may be useful in understanding suicidal ideation and suicidal behaviors in the Amish.

The Interpersonal Theory of Suicide

Thomas Joiner's (2005) theory of suicidal behavior provides a useful framework to explore the aforementioned risk factors. Joiner’s theory is based on three core concepts which account for many of the major risk indicators identified by previous research. The first construct he identified is "thwarted belongingness." This construct reflects a feeling of disconnection, detachment or isolation. Joiner noted that the need to belong involves frequent, pleasant, or positive interactions with significant others. These
interactions need to occur in the context of long-term, stable relationships; so when individuals feel lonely, disconnected from others, and experience a lack of social support, they are, according to Joiner, experiencing "thwarted belongingness" (Joiner; Van Orden et al., 2010).

The second concept Joiner (2005) identified is "perceived burdensomeness." He defined this construct as the perception that one is a burden to one’s family or significant others. Like thwarted belongingness, this construct includes two facets. The first is the belief that one is so flawed as to be a liability to others. The second facet is comprised of affectively laden cognitions of self-hatred. He noted that individuals who experience family conflict, unemployment, or physical or mental illness are at risk for feelings of perceived burdensomeness.

Joiner (2005) posited that thwarted belongingness and perceived burdensomeness together account for suicidal desire, but they do not account for suicidal behaviors. Figure 1 is a representation of how these two constructs interact to result in suicidal desire.

*Figure 1. Thwarted Belongingness and Perceived Burdensomeness*
To account for self-inflicted lethal intent, Joiner’s third construct must also be present. He identified this factor as "acquired capability." This consists of both a lowered fear of death and an increased physical pain tolerance. Acquired capability is gained through repeated practice and exposure to painful and fearful experiences. By habituating to these types of experiences, an individual is able to engage in increasingly painful, physically damaging, and lethal forms of self-harm (Joiner, 2005, 2009; Van Orden, et al., 2010). Joiner also cites the theory of opponent processes in support of this construct. The theory of opponent processes proposes that with habituation, “the effects of provocative stimuli diminish, and the opposite effect, or opponent process, becomes amplified and strengthened” (Joiner, 2005; p. 59). For example, when an individual attempts suicide or engages in self-harming behaviors regularly, the feelings typically associated with those behaviors diminish (i.e., fear), and the opposite emotion or effect is strengthened. In the case of attempted suicide, the fear of death or pain decreases and instead, the individual becomes fearless with regard to engaging in these behaviors in the future. This, in turn, increases the individual's acquired capability for suicide. When thwarted belongingness, perceived burdensomeness, and acquired capability are present, individuals are at the greatest risk for suicide. They not only possess suicidal desire, but they also have the intent and ability to die by lethal self-harm. Figure 2 is a representation of Joiner’s theory that illustrates how all three constructs interact to result in suicidal behaviors.
To measure the core constructs of his theory, Joiner and colleagues developed two instruments. These two measures are the Interpersonal Needs Questionnaire (INQ) and the Acquired Capability for Suicide Scale (ACCS; Van Orden Witte, Gordon, Bender, & Joiner; 2008). The INQ was designed to assess suicidal desire (i.e., thwarted belongingness and perceived burdensomeness), and the ACCS is used to measure levels of acquired capability for lethal self-harm. There is little research utilizing these instruments as of yet, however, the literature that is available indicates that both the INQ and the ACCS show promising initial psychometric properties (Van Orden et al., 2008; Van Orden et al., 2009).

Joiner’s Interpersonal Theory of Suicide offers the field of psychology a promising conceptual framework through which to explore suicidal ideation and intent. It offers psychologists a way to assess suicide and clarify the gap between suicidal desire and suicidal intent, and thus increases the likelihood of correctly identifying individuals capable of engaging in self-directed lethal behaviors.
The Interpersonal Theory of Suicide and the Amish

The Interpersonal Theory of Suicide may be particularly useful in exploring suicide in the Amish. The Amish promote interpersonal accord and commitment to Christ and community, which may serve as protective factors against suicide and depression by providing them with inherent social support and religious beliefs that do not support lethal self-harm. On the other hand, this belief system also implies conformity and a submission to the church. For individuals who struggle under the authority of the church, or who believe they are unable to contribute to the group. They may experience feelings of loneliness and alienation, leading to a sense of thwarted belongingness. Furthermore, they may experience a lack of self-worth, which may result in feelings of perceived burdensomeness. The presence of thwarted belongingness and perceived burdensomeness then implies that the individual is susceptible to suicidal ideation. With regard to acquired capability, the pacifist beliefs the Amish hold may impact their levels of acquired capability, since they are less likely to have experiences with violence. However, researchers have noted that the Amish are regularly exposed to farm equipment known to be dangerous, and researchers have also commented on their increased pain tolerance (Hurst & McConnell, 2010; Kraybill, 1990). Amish individuals may acquire the capability for suicide through these means, thus increasing their lethality.

Summary

Despite the increase in suicide related research in recent years, the body of literature regarding suicide in the Amish is incomplete, scarce, and dated. Even with this lack of research, there are data that indicate that the Amish are at risk for suicide, since they are susceptible to many of the risk factors associated with suicide; the most notable being depression.
The Interpersonal Theory of Suicide offers a framework through which psychologists can conceptualize suicide. It consists of the three core constructs of thwarted belongingness, perceived burdensomeness, and acquired capability. Though this theory is relatively new, it provides a promising framework for assessing suicidal ideation and desire to die.

Culture pervades every aspect of an individual’s life, including the manifestation of mental health symptoms and beliefs towards self-harm. As such, the Amish culture should play a role in the perception of thwarted belongingness, perceived burdensomeness, and acquired capability for suicide. These variables have been shown to be related to the desire to die and suicidal intent. Therefore, examining depression and suicide in the Amish through the framework of Joiner’s Interpersonal Theory of Suicide is meaningful and consistent with the current recommendations for providing appropriate mental health assessment and treatment to diverse cultural groups.

**Purpose of the Study**

The larger purpose of this study was to contribute to the body of research regarding suicide in the Amish and to examine the cultural validity of Joiner's Interpersonal Theory of Suicide. The research question under consideration was "What is the role of the Interpersonal Theory of Suicide in understanding suicidality in the Amish?" This question was answered by examining the validity of instruments designed to measure Joiner's main constructs of suicide desire (thwarted belongingness and perceived burdensomeness) and acquired capability with the Amish. Investigating the cultural validity of two measures of Joiner's Interpersonal Theory of suicide added to the
current literature base regarding suicide in the Amish; an understudied, and often ignored, population and the findings offer psychologists with a framework through which to conceptualize suicidality in the Amish.
CHAPTER II

LITERATURE REVIEW

Introduction

The purpose of this chapter is to provide a review of the literature regarding the assessment of suicide risk in the Amish. To do so, four major areas of relevance will be explored. First, I will provide a summary of the Amish culture and practices, particularly since some researchers have noted that culture and social structure have the ability to impact an individual’s mental health (Angel & Williams, 2000). This section will provide a background of the relevant social, cultural, and religious influences on the Amish and the Amish way of life. The second topic that will be discussed is suicide in the Amish and the specific suicide risk factors that are relevant to the Amish will also be explored. Third, the Interpersonal Theory of Suicide (Joiner, 2005) and the development of instruments based on this theory will be reviewed. Finally, I will discuss how Joiner’s Interpersonal Theory of Suicide is relevant to the Amish population.

The History of the Amish

During the 16th century, Europe was undergoing extreme changes both politically and socially. For a millennia, the Catholic church was not only a source of religious guidance, it was also responsible for mediating national conflicts, crowning rulers, promoting trade, and encouraging the exploration of uncharted territories. The church was an integral part of the political, social and economic structure of Western Europe. It
was such a powerful force that opposition to the church was not only seen as a crime against God, but a crime against the state as well (Nolt, 2003).

The year 1517 marked the beginning of the Protestant reformation. It was in this year that Martin Luther, a Wittenberg monk, began to challenge the religious doctrine of the Catholic Church. He proposed that salvation was based on an individual’s faith alone and not through an individual’s participation in the church’s sacraments, which threatened the power that the Catholic Church had amassed. Luther’s teachings rapidly spread throughout Europe and he quickly gained a following among young reformist-minded residents (Nolt, 2003). By 1522, the Reformist movement had reached Switzerland. In Zurich, Luther’s followers included the priest Huldrych Zwingli. Zwingli quickly gained his own following of individuals who were excited by his Reformist teachings. Though encouraged by the movement away from the Catholic Church, Zwingli and his followers were afraid that the movement would lose momentum. Many of these followers felt that the strong ties that already existed between church and state would impede the movement’s progression.

The Church’s tradition of baptizing infants also troubled some of the Zurich Reformists. These radical reformers felt that baptism should only be conferred upon adults who fully understood and were strongly committed to the teachings of Jesus Christ. They argued that in baptizing infants, they were not giving individuals the ability to make an informed decision to join the church. As such, many of these radical reformers chose to be baptized again as adults. This practice gave birth to a new faction of the Reformist movement. Members of this sect were known as Anabaptists which, when translated to English, means “rebaptizers” (Kraybill, 2001; Nolt, 2003).
For the next 200 years, like many other religious minority groups, the Anabaptists were targets of religious persecution. They were labeled heretics, and the first Anabaptist was killed just five months after the first rebaptism. They were often tortured, branded, drowned, dismembered and killed by religious and civil authorities. This persecution forced many to flee for their lives. Early settlements of Anabaptists sprung up in the Netherlands, Germany, and France. Eventually, many of them made their way to North America.

Separation of Sects

During this time of persecution, the Anabaptists went through their own “reformation.” The major point of dissent among members was the excommunication of wayward members. Traditionally, the shunned individual was excluded from Holy Communion, but maintained contact with his or her family and community. Some individuals, however, believed that the expelled member should also be shunned socially as well. As a result of this dissent, the Anabaptist church eventually split into two separate sects, the Amish and the Mennonites. Though these two groups share many of the same fundamental beliefs, they continue to remain separate and distinct groups. Despite the differences between these groups, they are more similar to one another than to the larger society. Today the Anabaptists are comprised of four different sects, ranging from the ultra-conservative Old Order Amish to the much more lenient Liberal Mennonites. Though the Liberal Mennonites are more liberal than the Old Order Amish, they are still very conservative in the eyes of the dominant culture (Savelles, 1988).

The first large migration of Amish came to the New World between 1717 and 1732. Around five hundred people joined some of the earlier Amish settlers in Lancaster, Pennsylvania. Another large wave of immigrants made their way to North America
between 1817 and 1860. During this time period, nearly three thousand immigrants settled in Ohio, Illinois, Indiana, Ontario, New York, Iowa, and Louisiana (Kraybill, 2001). Today, there are nearly two hundred and sixty thousand Anabaptists living in North America (Young Center for Anabaptist and Pietist Studies, 2008).

**Religion and Culture**

Religion and culture are inexorably linked in the Amish population. Religious beliefs are present in all aspects of daily life. According to Kraybill (2001), the Amish belief system can be summed up in seven basic tenets. These include the practice of adult baptism, belief in the church as a covenant community, the exclusion of errant members from communion, a strict and literal obedience to the teachings of Jesus Christ, a refusal to swear oaths, a rejection of violence, and social separation from the evil world. This belief system is passed down through the *Ordnung*, which is a set of rules and regulations that govern the behavior, speech, and dress of the Amish. The *Ordnung* is not a written code of conduct, rather it is passed down through the socialization process. It consists of a set of rules and regulations that govern the behavior, speech, and dress of the Amish. Kraybill (2001) refers to the *Ordnung* as an “understood” set of expectations. He compares the process of gender role socialization in the dominant culture to that of children learning the rules and social mores set forth by the set of expectations outlined in the *Ordnung*. Two tenets from the *Ordnung* that are particularly relevant to this discussion include the practice of adult baptism and a social separation from the larger world.

**Adult Baptism**

As mentioned before, the Amish engage in the practice of adult baptism. It is not a decision taken lightly by the Amish. They believe that only people who are well
informed and truly committed to the teachings of the church should be baptized. The choice to commit or not to commit oneself to the Church has significant ramifications. For example, individuals who choose not to be baptized cannot marry someone of the Amish faith as an Amish bishop will not perform a marriage ceremony with an individual outside of the faith.

Though raised in the Amish faith, individuals are not considered full members of the Church until they are baptized. As such, they are not subject to the Church’s authority. Prior to baptism, which usually occurs between the ages of 16 and the early twenties, many Amish youth enter a period of time known as *rumspringa*, where they are allowed to engage in more mainstream behaviors including wearing trendy clothes, riding in cars, and experimenting with alcohol and other recreational drugs. This period of "running around" (Kraybill, 2001; p. 67) is given to Amish youth so that they are able to fully commit themselves to the church by understanding what they are giving up by choosing to be baptized. Kraybill describes *rumspringa* as a form of "social immunization, by which a small dose of worldliness strengthens Amish young people for the temptations they will face in adulthood" (p. 68).

**Social Separation**

It is the social separation from the greater society for which the Amish are most well-known. They are fearful of the impact that technology may have on their community and as such they prefer to live without many of the modern amenities that the larger population takes for granted. Their fear is not unwarranted. For example, the Industrial Revolution of late 19th century and early 20th century was the catalyst for immense social changes. Instead of living in the small villages and towns that populated the United States prior to the Industrial Revolution, individuals and families moved to
large cities. Prior to industrialization, many families relied on farms for their survival. As such, they not only lived together but worked together as well. As families moved to larger cities and abandoned farming for factory work, they also transitioned from working as a unit to working in individual jobs outside of the home.

Like the Industrial Revolution, the Technological Revolution has resulted in immense changes in the structure of families and communities. Many researchers have started to investigate how modernization has caused a fragmentation in society. Though it is easier than ever to keep in touch with other people, we do so in a very passive manner. Instead of visiting, we rely on a telephone call or email, or other forms of social networking to satisfy our need to socialize. Avoiding such modern influences from the outside world allows Amish communities to maintain the close-knit ties that bind members together, as well as helping them to preserve their culture and identity (Kraybill, 2001). Though the Amish prefer to remain separate from the larger society, they have found ways to negotiate with the modern world. As Hostetler (1993) notes, "the Amish are a slow changing people, but they are not an "archeological discovery" (pg viii).

The Amish Today

As of 2008, the estimated Amish population in the United States was 230,850 in 28 states. Between the years of 1992 and 2008, they witnessed an 85% growth in their total population and an 81% growth in the number of settlements located throughout the United States. The largest settlement is located in Holmes County, Ohio, with approximately 19,000 members. The oldest settlement is located in Lancaster, Pennsylvania (citation).
According to Hurst and McConnell (2010), though historically the Amish are an agricultural society, the number of Amish involved in full-time farming has dropped significantly. The shift away from farming has impacted Amish communities differently. The Amish located in Lancaster, Pennsylvania, rely mostly on "tourism, commercialism, and large-scale Amish enterprises" (Hurst & McConnell, p. 175). In Ohio, despite the rural location, the percentage of those involved primarily in farming was only 7%. Instead, the Amish earn wages in manufacturing, retail trade, and the tourist industry (Hurst & McConnell). This shift has resulted in boundary changes between the Amish and their English neighbors and an increased interaction with the outside world. Hurst and McConnell note that with regard to the Holmes County Amish, "The complex boundaries that separate the Amish and English communities require continual boundary-maintenance work to balance in-group and out-group pressures in different institutional domains" (p. 259).

In summary, the Amish are a close-knit society whose members are governed by a strict unwritten code of conduct and the authority of the church. They prefer to remain separate from the larger society, as a way of protecting their value system and to maintain their identity. Despite these efforts, however, Amish communities have experienced significant changes in recent years regarding their interactions with the outside world and their economic structure. These changes, the social structures of Amish communities, and the cultural tenets that guide the Amish have likely had significant impacts on their world-view. In the next section, mental health conditions in the Amish will be discussed and cultural factors relevant to the manifestation of symptoms of mental illness will be explored.
Mental Health Issues and Suicide

The Amish emphasize hard work, and for them, a positive well-being is characterized by a good appetite, looking physically well, and the ability to do vigorous physical labor. The Amish view a poor appetite as indicating poor health, which may be physical or mental health. The Amish recognize mental health disorders as illnesses and they are able to identify symptoms associated with mental illness, though these symptoms may be different than what is typically witnessed in the general population. For example, behaviors that the Amish associated with psychological problems include frequent doctor's visits, a failure to find satisfaction in a day's work, preoccupation with problems of religious orthodoxy, a rigidity of attitudes, and with men in particular, a failure to marry (Hostetler, 1993).

Mental Health Issues

The research regarding mental illness and suicide risk in the Amish is inconsistent and scarce. Most objective data indicate a lower rate of depression, other data indicate similar rates of depression, and yet other data and anecdotal accounts identify depression as a pervasive and serious problem in this population. For example, though Miller and colleagues (2007) found that Amish women tend to rate their mental health as higher, reporting fewer symptoms of anxiety and depression, fewer life stressors, and more social support than women in the general population, Hurst and McConnell (2010) noted little differences between the Amish and non-Amish with regard to mental health conditions. They reported that clinicians observed that “the rate of psychiatric illness among the Amish does not seem to be significantly different from that found in the general population” (p. 240).
Conversely, other research has suggested that the rate of depression is actually higher in the Amish than in the non-Amish. Specifically, Hostetler (1993) noted that physicians treating Amish patients find that certain complaints occur more frequently among the Amish than in their non-Amish patients. Among these complaints are vague "mental health concerns" (p. 325). He also noted that other anecdotal data indicate that there are reports of women who experience crying spells and have problems that they believe their husbands do not understand.

Fuchs and colleagues (1990) examined the health risks among a sample of Amish in Holmes County, Ohio, and their findings are consistent with Hostetler’s argument that the rate of depression may be higher in the Amish. Their sample consisted of 400 adult Amish individuals and 773 non-Amish adults. Among the Amish, 42.7% were men and 57.3% were women. Among the non-Amish sample, 43.7% were men and 56.3% were women. The researchers used the Behavioral Risk Factor Survey (BFRS) to assess health risk factors among both groups. With regard to the data collection procedures, the Amish were assessed through door-to-door surveys while the non-Amish were surveyed through telephone interviews. These researchers noted that in comparing the results of their study to the representative sample of the general population, the Amish suffered more frequently from depression and anxiety. Specifically, Amish women were significantly more likely to report symptoms of depression than their non-Amish peers (Amish = 46.7%; non-Amish = 37.5%; \( p < .05 \)). Additionally, both Amish men and women were considerably more likely to endorse symptoms of anxiety (Amish men = 20.5%, non-Amish men = 12.4%; \( p < .05 \); Amish women = 30.6, non-Amish women = 14.9; \( p < .01 \)) than individuals in the general population.
This study is not without limitations. First, the BFRS is a self-report measure and it was administered to the groups in different ways. This is important to note, because the Amish were surveyed through face-to-face interactions, while the non-Amish participants had the anonymity of a telephone conversation. Though the extent of the potential impact this methodology had on the study is not known, it is likely that the results were influenced by these different data collection approaches. Additionally, the BFRS only contained two items assessing mental health, which does not allow for a more thorough diagnostic evaluation. Finally, this study was not targeted specifically at assessing mental health conditions in the Amish, but rather medical risk factors. As such, though it provides some support for the experience of depression in the Amish, the information is limited.

Given the conflicting research available, it is difficult to ascertain whether or not the rate of affective disorders is lower, equal to, or higher than what is observed in the general population. According to Hostetler (1993), what is evident through his experiences and interviews with providers is that the types of mental health disorders observed in the Amish are typical of any American rural population, with mood disorders being the most prevalent. If one is comparing the Amish to other rural populations, then it is reasonable to assume that the rate of depression may be higher in the Amish than with the general population. For example, recent research indicates that the rate of depression in rural America is higher than the rate of depression in urban areas. In 2007, Mark, Shern, and Bagalman, published a report for Mental Health America (MHA) on the rate of depression in each state and the District of Columbia. Four different measures of depression and mental health status were used to develop one composite measure of the level of depression in each state. Specifically, the measures of depression status
were the percentage of the adult population experiencing at least one major depressive
episode in the past year, the percentage of adolescent population experiencing at least one
major depressive episode in the past year, the percentage of adults experiencing serious
psychological distress, and the average number of days in the last 30 days in which the
population reported that their mental health was poor. The data for these measures came
from surveys conducted by the federal government. Specifically, the data were collected
by the Substance Abuse and Mental Health Services Administration and the Center for
Disease Control through the use of the National Household Survey on Drug Use and
Health (NSDUH) and the Behavioral Risk Factor Surveillance System (BRFSS).

It is important to note that six of the most sparsely populated states (according to
the U.S. census) had rates of depression higher than the national average (Mark, Shern,
Bagalman, & Cao, 2007). In addition, seven of the most sparsely populated states had
higher incidents of "serious psychological distress" than the national average (MHA,
2007). Probst, Laditka, Moore, Harun, Powell, and Baxley (2006) also found that
depression is more prevalent in rural areas than in urban areas. Specifically, their
research found that a total of 2.6 million rural adults screened positive for depression,
which indicates that depression in this population is significantly higher than among
urban populations (6.1% versus 5.2%, \( p = .017 \)). In addition, although not statistically
significant, those who screened positive for depression were likely to report that their
symptoms interfered “a lot” with their life or activities (46.7% rural, 44.3% urban,
\( p = .41 \)). Both the data from the Mark et al. (2007) study and the Probst et al. (2006) study
are based on self-report surveys, which inherently carry some limitations. Most
importantly, there is the possibility of under-reporting, whether as a result of
defensiveness or social desirability. Regardless of the study limitations, however, the
data provide valuable insight regarding the rate of depression in the rural and urban areas and the findings suggest that the rate of depression is higher in rural areas. This is important to the current study as the Amish are essentially a rural population.

With regard to depression in the Amish specifically, in their study on suicide, Egeland and Sussex (1985) identified 26 records of Amish individuals who had died by suicide over a one hundred-year time period, and 24 of those identified retrospectively met criteria for a major affective disorder. The researchers explained that they identified these cases through multiple methods of case finding. Specifically, they noted that they reviewed the extensive community records and obituary materials for the century under study and they obtained actual death certificates for the recent 30-year period during which they were available. Also, hospital charts and medical records were reviewed with informed consent for psychiatric patients. Additionally, the researchers spoke with a number of community historians and informant members of the church districts, who have shared incidents of suicide in their group.

In the 26 cases of suicide that the researchers identified, there appeared to be a family history of affective disorders. Those cases identified as presenting with unipolar depression also demonstrated a strong family history of other mental health issues, including anxiety and personality disorders (Egeland & Sussex, 1985).

In their landmark study of affective disorders, Egeland and Hostetter (1983) examined the mental health issues of Amish. They reviewed two hundred cases of individuals presenting for treatment at a local clinic and also completed a community-based epidemiological survey. In reviewing the available medical records of the 200 active cases, they identified 112 cases of mental illness over a period spanning the years 1976-1980. The diagnosis was then reviewed by a psychiatric board and a consensus
diagnosis was reached using the Research Diagnostic Criteria (RDC). When the medical
record was not available, the researchers interviewed the patient using the Schedule for
Affective Disorders – Lifetime Version (SADS-L). Of those 112 cases, 34% were
identified as bipolar disorder and 37% were cases of unipolar depression (n = 38 and n= 41, respectively), indicating that 71% of those cases identified were classified as a major
affective disorder (n = 79). In their review of the medical records and interviews with
patients, the researchers also found evidence of psychotic and thought disorders (n = 15)
and personality disorders (n = 6). What is interesting to note is that no gender differences
were found in the rates of mental illness. Men and women were equally likely to
experience affective disorders (Men n = 55, Women n = 57). The researchers noted that
this is very different than the general population, in which the rate of depression in
women was twice that of men. Other research has indicated that this trend of double the
rate of depression in women is true across both rural and urban populations (CDC, 2007).

Egeland and Hostetter, offered a few suggestions that may help to explain this
phenomenon. They noted that in the general population, depression in men may be
masked by “alcoholism and sociopathy” (p. 60). They also hypothesized that depression
in the Amish may be masked by other factors, like the tendency for the Amish to be stoic
and hard-working, even when facing illness. Specifically, Egeland and Hostetter pointed
out that affective disorders and malingering, by their very definition result in role
impairment, and the Amish are less likely to admit role impairment. Additionally, in the
Amish society, men and women are equally unlikely to adopt a “somatic” role given the
dominant work ethic and the need for both sexes to be functioning members of the
community. They noted that, as such, depression is as likely to be masked in men as it is
in women.
Other researchers have hypothesized that in the general population, the rate of depression is lower in men because they are socialized to express aggression and hostility, which serves to release pent up emotions. Women, on the other hand, are socialized to repress feelings of aggression, which leads to more internalized feelings of anger and distress (Jakubasch & Huberschmid, 1994). In support of this hypothesis, Jakubasch and Huberschmid pointed out that in times of war, the rate of depression in the general population is lower. In the pacifist Amish society, both genders are discouraged from expressing overt aggressive tendencies and thus their internalized distress may be increased. As such, the Amish may be at risk for depression because they have fewer acceptable means of expressing negative emotions. Though the authors did not conduct their own research, they cited the study by Fuchs and colleagues (1990) that indicated that the rate of depression in the Amish is lower as evidence for their hypotheses.

Jakubasch, Würmle, and Genner (1994) examined this phenomenon in more depth. These researchers hypothesized that they would find lower rates of hostility, but higher rates of guilt and depression in an Amish sample. They used the Beck Depression Inventory (BDI, Beck, Rush, Shaw, & Emery, 1979) and the Buss-Durkee Hostility Inventory (BDHI, Buss & Durkee, 1957) to measure these constructs. In their sample of 25 men and 18 women (N =43), they found that the mean rate of depression was much higher in the Amish than their control group of 298 individuals from the general population, as 41.9% of the participants endorsed symptoms consistent with depression, whereas the average rate of reported depression in the general population at that time was 19.8%. Unfortunately, though the researchers report mean scores and significance levels, they do not report specific t-scores for all of their analyses (Amish mean = 14.1, Control
group mean = 4.7, *p* < .0002), so these cannot be examined. The researchers also noted that, as compared to the general population, the rate of hostility was 20% lower (Amish mean = 23.0, Control group mean = 29.3, *p* < .001, no t-score available), and that the rates of both depression and hostility in the Amish were equal between Amish men and women (*t* = -0.23, *p* = .82; *t* = .10, *p* < .92, respectively). Though they did not report specific means, in examining subscale scores on the BDHI these researchers also found that the Amish had a lower number of assaults (*p* < .009), negativism (*p* < .009), and indirect (*p* < .05) and verbal hostility (*p* < .009), and higher mean scores in suspicion (*p* < .002) and guilt (*p* < .009) than the control group, again, the researchers did not report specific t-scores. Though these findings provide a plausible hypothesis to explain the differences in the distribution of depression witnessed between the Amish society and the general population, there are some problems with the research. Foremost, the Amish sample size was small and only representative of one community. Additionally, there was little information about this sample outside of age, sex, and marital status; it is not known how the sample was recruited. Finally, though the researchers provided significance levels, they did not provide the reader with descriptive statistics on the subscales that they discussed.

In summary, the research surrounding mental illness in the Amish is limited and outdated. Most of the data regarding mental illness in the Amish indicates that affective disorders are the most commonly occurring mental illness. However, the research is inconsistent regarding the rate of mental illness in the Amish. Some of the data indicate that depression is lower in the Amish, other researchers suggested it may be higher, and yet others proposed that the rate is comparable to the general population.
Suicide in the Amish

Given what little we know about mental illness in the Amish, it is not surprising that accurate data regarding the suicide rate in the Amish population are hard to find. The last reported statistic was in 1986, when Kraybill, Hostetter, and Shaw (1986) noted that the suicide rate in the Amish was less than half that of the general population. Specifically, they reported that in 1980, the rate of suicide in the Amish of Lancaster County, Pennsylvania, was 5.5 per 100,000, whereas the national suicide rate was 12.5 at that time. Similarly, in the study discussed previously by Egeland and Sussex (1985), the researchers found the rate of suicide to be less than that in the general population. They noted that it was meaningless to calculate the rate of suicide per 100,000 as it is in the general population, since the population of Amish during that time period was never greater than 12,000. The researchers reported however, that they were able to calculate an average rate of suicide for each decade. They noted that around the turn of the century (1890-1900), the rate was comparable to that in the general population, at 10 per 100,000. Since that time, however, the researchers found that the rate had decreased and was no longer a significant cause of death in the Amish. For example, through 1970-1980, the rate was only 4.3 per 100,000. The researchers also found the means by which individuals died by suicide were more violent in the Amish as compared to suicide in the general population and thus more likely to lead to death. Specifically, individuals were more likely to choose means such as firearms, hanging, and drowning. None of the suicides was through “uncertain measures like gas, pills, or poisons” (p. 916). They also noted that the women in the sample were just as likely to die by violent means as men.

Egeland and Hostetter (1983) also examined “the mortality of depression” (i.e., the rate of depressed individuals who die by suicide) (p. 59) by talking to individual
Amish families about their ancestors. In their research, they asked about relatives who had displayed any symptoms of mental illness. Through the interviews they conducted, the researchers identified 263 cases of depression (as reported by their relatives) in past generations, spanning a one hundred year time frame (1880-1980). In 27 of these instances, the identified family member died by suicide.

There are various limitations to these studies. First, as noted before, the data are historical and gathered through interviews with family members. Additionally, there remains the possibility that some of the identified deaths were misclassified as suicides, when they may actually have been the result of accidents. Similarly, some deaths not identified as a suicide may have actually been the result of self-directed lethal behaviors. Another limitation of this research is the fact that it does not account for the occurrence of suicidal behaviors that did not result in death. The lack of data in this area precludes one from estimating the prevalence of suicide attempts in the Amish. Unfortunately, there are no available data regarding the current rate of suicide in the Amish. However, though the rate of suicide has remained relatively stable, ranging between 10.5 and 12.5 per 100,000 in the general population (CDC, 2009), other sub-groups have experienced significant changes in their rate of suicide. For example, in the 1980’s, there was an increase in the suicide rate for youths and in the 1990’s, the rate of suicides for Black males also increased. More notably, for the purposes of this proposed study, there has been a change in the rate of suicide in rural populations. In their examination of state-by-state suicide rates, the CDC indicated that suicide rates were highest in states with highly rural areas, including Alaska, Montana, New Mexico, and Wyoming (CDC, 2007). In addition, Singh and Siahpush (2002) found that during a 27-year time span ranging from 1970–1997 there were significant rural–urban differences in male suicide mortality, with
rising suicide rates in rural areas. The numbers increased consistently, which suggested widening rural–urban differentials in male suicide deaths over time. Rural men in each age cohort had about twice the suicide rate of their urban counterparts. With regard to women, from 1995 to 1997, the suicide rates were 85% higher in rural areas than in the most urban areas. Given these data, and the fact that the Amish by their very nature live in rural areas, it is likely that the rate of suicide in the Amish may have also increased since 1980.

A review of the literature has shown that there is very little research on the issue of suicide in the Amish, despite the fact that the Amish are susceptible to many of the factors identified as risks for suicide. Additionally, studies indicate that there is a higher rate of suicide in rural areas, areas in which the Amish are more likely to be found. It is increasingly clear that more research needs to be done in this area, and as such, this rest of this literature review will focus on one theory that offers a promising framework through which to examine the phenomenon of suicide in the Amish.

The Interpersonal Theory of Suicide

Suicide is still a relatively rare form of death. Joiner (2005) noted that the instinct for self-preservation is strong, and as such, it prevents many from engaging in intentional self-directed lethal behavior. Yet, reports indicate that nearly 34,598 people die from suicide each year in the United States alone (CDC, 2010). In 2010, the CDC noted that suicide was the eleventh leading cause of death, placing death by suicide at between 10 in 100,000 and 15 in 100,000 a year. This underscores the fact that despite the biological drive for self-preservation, some people still make the choice to die by suicide and any potential explanation of suicidal acts should account for this inconsistency.
Also complicating the matter of suicide is the fact that individuals who die by suicide usually present with a variety of risk factors, as opposed to a single risk factor in isolation (Joiner, 2005). These risk factors include mental health diagnoses, previous suicide attempts, social isolation, family conflict, unemployment, and physical illnesses. Although there are various theories of suicidal behavior, none account for all of these risk factors that contribute to an individual’s death by suicide; nor do they explain how an individual could move from suicidal ideation to suicidal behaviors. In 2005, Thomas Joiner developed the Interpersonal Theory of Suicide in an effort to provide a comprehensive theory of suicidal behavior that accounted for many of the identified risk factors and also explained how suicidal ideation transforms to suicidal intent and behavior.

In 2005, Thomas Joiner developed the Interpersonal Theory of Suicide in an effort to provide a comprehensive theory of suicidal behavior. In constructing his theory of suicidal behavior, Joiner examined Shneidman’s five clusters of psychological needs that reflect different kinds of psychological pain (Joiner, 2005). According to Shneidman, these five needs are also risk factors for suicide. The five needs that Shneidman identified are thwarted love, ruptured relationships, assaulted self-image, fractured control, and excessive anger related to frustrated needs for dominance (Joiner). Joiner agreed that Shneidman's five needs are important, but he viewed them as collapsible into two broader concepts; thwarted belongingness and perceived burdensomeness. These concepts comprise two of the three major foundations underlying Joiner's theory of suicidal behavior and they account for Shneidman’s five needs, which have also been identified as suicide risk factors.
With regard to the first concept, perceived burdensomeness, Joiner (2005) described this construct as the belief that one is so inherently flawed that he or she is a liability to loved ones. In addition, he asserted that those who view themselves as a burden on others have a poor self-image, feel a lack of control over their circumstances, and experience a range of negative emotions related to their belief that their failures negatively impact those around them. Therefore, the construct of perceived burdensomeness includes cognitions of self-hatred and accounts for the suicidal risk factors of unemployment, homelessness, physical and mental illnesses, and low self-esteem. It also allows for the failed needs that Shneidman identified as assaulted self-image, fractured control, and anger related to frustrated dominance.

Joiner (2005) explained that the second construct of his theory, thwarted belongingness, occurs when the need to belong is unmet. He noted, “The need to belong is a fundamental human motive. When this need is thwarted, numerous negative effects on health, adjustment, and well-being have been documented” (pg. 83-84). As such, his theory asserts that along with perceived burdensomeness, thwarted belongingness is a contributor to suicidal desire. Joiner reported that a fully satisfied need to belong involves two components: interactions with others and a feeling of being cared about. Suicidal individuals likely experience very few, if any, positive interactions that fulfill this need. In other instances, they may completely lack the social interactions with others that are necessary to satisfy a sense of belonging. In addition, either because of these poor interactions or for other related reasons, suicidal individuals may not feel cared about or connected to others. According to Joiner, thwarted belongingness accounts for the suicidal risk factors of social isolation, death of a spouse, and family conflict. In addition, it allows for the needs that Shneidman identified as thwarted love and ruptured
relationships (Joiner). Figure 3 is a representation of the interaction between thwarted belongingness and perceived burdensomeness.

Thwarted belongingness and perceived burdensomeness as representing suicidal desire are only two of the three major tenets of Joiner’s theory. He explained that these two concepts together only account for suicidal ideation. He posited that in order for an individual to possess suicidal intent a third criterion must be met. He noted that to die by suicide, individuals must have acquired capability.

*Figure 3.* Thwarted Belongingness and Perceived Burdensomeness in the Interpersonal Theory of Suicide

This construct includes a decreased fear of self-inflicted lethal behaviors that is gained through repeated exposure to physically painful and/or fear-inducing experiences. This concept accounts for the risk factors of a family history of suicide, increased pain tolerance, lowered fear of death, past suicide attempts, past abuse, and combat exposure. He cites the theory of opponent processes in support of this construct. This theory proposes that with repeated exposure to a behavior or stimulus, “the effects of provocative stimuli diminishes, and the opposite effect, or opponent process, becomes amplified and strengthened’ (Joiner, 2005; p. 59). In the theory of opponent processes, when individuals regularly engage in suicidal behaviors or are exposed to other fearful
situations, the fear associated with that behavior is diminished. Instead, these situations are no longer fearful; people essentially become "courageous" in tasks related to injury, potential death, and pain. He reported that to be "competent and courageous" (p. 59) in any task, including lethal self-harm behaviors, an individual must have experience with it. In this way, Joiner asserted that individuals work up to the extreme act of suicide by engaging in any activity that simultaneously allows them to increase their pain tolerance and decrease their fear of injury.

According to Joiner, though acquired capability is important, it is necessary for all three factors (i.e., thwarted belongingness, perceived burdensomeness and acquired capability) to be present in order for an individual to attempt suicide or die by suicide. It is the presence of acquired capability that transforms suicidal ideation to suicidal intent. Figure 4 is a representation of how Joiner’s three concepts interact to transform suicidal ideation into suicidal behaviors.

*Figure 4.* Acquired capability and the Interpersonal Theory of Suicide
In his 2005 text on suicide, Joiner points out that:

…there are many people who, through an array of provocative experiences, have become fearless, pain-tolerant, and knowledgeable about dangerous behaviors, and yet who have no desire whatsoever to hurt themselves. Those who do have the desire (through thwarted belongingness and perceived burdensomeness), coupled with the ability, are viewed as at high risk for serious suicidal behavior (pg. 47).

Joiner identified four main hypotheses of his theory. First, passive suicidal ideation results from the presence of thwarted belongingness and perceived burdensomeness. Secondly, the presence of both thwarted belongingness and perceived burdensomeness simultaneously, and when viewed as stable and unchanging (i.e., the addition of hopelessness), is enough to achieve active suicidal desire. Thirdly, the simultaneous presence of suicidal desire (thwarted belongingness, perceived burdensomeness) and a lowered fear of death is a condition under which suicidal desire changes to suicidal intent. Fourth, the outcome of serious self-directed lethal behavior is most likely to occur in the context of thwarted belongingness, perceived burdensomeness (and hopelessness regarding both), and acquired capability (Joiner, 2005).

**Empirical Support for Thwarted Belongingness**

There are various studies examining the tenets of the Interpersonal Theory of Suicide. In 2006, Joiner, Hollar, and Van Orden examined the construct of belongingness by looking at the impact of “pulling together” and how it was connected to the reported incidence of suicide related deaths. They defined “pulling together” as feeling a part of a larger system, or perceiving oneself as a member of a valued group, and engaging in this behavior satisfies an individual’s “need to belong.” In support of this phenomenon, Joiner and colleagues noted that during times of national crises (like September 11, 2001), the rate of overall suicide tends to decrease as individuals “pull
together” behind a common cause. The researchers hypothesized that sports-related pulling together meets the need of belongingness. They tested their hypothesis through three separate studies.

In the first study, Joiner and colleagues examined this phenomenon by gathering data regarding the rates of suicide in two counties with winning NCAA football teams. Specifically, they examined the deaths by suicide reported by the Departments of Health in both Franklin County, Ohio, home of The Ohio State Buckeyes and Alachua County, Fl, home to the University of Florida Gators from 1990-2002. From these data, suicide rates per 100,000 for each year were calculated. The researchers also gathered information regarding the national football rankings of both The Ohio State Buckeyes and the University of Florida Gators. Through their research, they found that there was a negative correlation between suicide rates and national rankings (N = 24; \( r = -.55, p < .01 \)).

In the second study, the researchers looked at the rate of suicide as reported by the National Center for Health Statistics on the day of the U.S. Olympic Hockey team’s win over the dominant U.S.S.R. team in the 1980 Olympics (February 22, 1980). Notably, the researchers found that fewer suicides occurred on this date than on any other February 22nd throughout the 1970’s and 1980’s, \( t(15) = 6.56, p = .001 \) (Joiner et. al., 2006).

Finally, Joiner and colleagues also looked at the rate of suicide on Super Bowl Sunday. They examined the suicide rates for Super Bowl Sundays VI to XXVIII and the Sundays before and after each Super Bowl as reported by the National Center for Health Statistics. They predicted that the sports related pulling together would mean that there would be fewer suicides on Super Bowl Sundays than the Sundays both preceding and
following the Super Bowl. In their analyses, they did not find that there was a significant main effect for the day, \( F(1,20) = 1.18, \ p > .05 \). They did however, note a significant effect for time \( F(1,20) = 11.20; \ p < .01 \) as there appeared to be more suicides after 1984 than before 1984. The researchers noted that this difference is to be expected, as the population increased as well. What the researchers noted as their most important finding however, is the significant effect they found from the interaction between day and time \( F(120) = 6.68, \ p < .05 \), which indicated that fewer suicides occurred on Super Bowl Sundays (\( M = 74.55 \)) than comparison Sundays (\( M = 81.68 \)) (Joiner et. al., 2006). Taken as a whole, these three studies were seen as supporting the assertion that sports related “pulling-together” is associated with lower suicide rates. According to the authors, these findings provide evidence that not having a sense of belonging to a group larger than oneself can indicate a risk for suicidal ideation. Conversely, it appears that a sense of belonging may serve as a protective factor against suicide (Joiner et. al., 2006).

There are numerous limitations to the Joiner et al. study on sports related “pulling together” acting as a function of belongingness. First, and most notably, there is the fact that the studies are purely correlational and naturalistic observations, and as such, no definitive cause and effect relationship can be determined. In fact, it is possible that the patterns that Joiner and colleagues observed were due to other, unrelated factors, or these findings could also be purely coincidental. Second, there is the generalizability of the studies, especially with regard to the research on the impact of winning football teams and the rate of suicide. This study is very specific with regard to the population it examines, and it should be noted that similar results may not be found in other areas of the country. Joiner and colleagues admit that the two communities studied are both very passionate about college football. Football, and successful football teams, may be more
important to members of these communities. Regardless of the limitations of these studies, they at least provide some support for the role that sports related pulling together has on the rate of suicide in specific communities and populations.

In 2011, You, Van Orden, and Conner examined the role of disrupted social connections in suicidal thoughts and behavior. Their sample (n = 814) was recruited from four residential substance abuse treatment programs. This sample consisted of 584 men and 228 women. The majority of the sample identified as non-Hispanic White (58.6%). The remaining participants were 34.6% non-Hispanic Black and 6.8% other ethnicities/races. The researchers used three measures to assess different facets of social connectedness. Belongingness was assessed by using the Interpersonal Needs Questionnaire (INQ, Van Orden, Witte, Gordon et al., 2008), perceived social support was assessed by the Kessler Perceived Social Support Scale (KPSS, Kessler et al., 1992), and interpersonal conflict was measured using the Test of Negative Social Exchange (TENSE, Ruehlman & Karoly, 1991). Suicidal ideation and attempts were assessed using items from the National Comorbidity Survey. Finally, substance abuse severity was assessed using the Alcohol Use Disorders Identification Test (AUDIT, Bohn, Babor, & Kranzler, 1995).

The researchers used multinomial regression analyses to compare non-suicidal participants, those with suicidal ideation, and suicide attempters. Their analyses revealed that decreased levels of perceived social support (Odds ratio = 0.98, 0.97-0.99, p < .01) and belongingness (Odds ratio = 0.96, 0.95-0.98, p < .01) were associated with a greater probability of suicidal ideation. Additionally, decreased levels of perceived social support (Odds ratio = 0.98, 0.97-0.99, p < .01) and belongingness (Odds ratio = 0.97, 0.96-0.98, p < .01) were associated with a greater probability of a suicide attempt.
Similarly, increased levels of interpersonal conflict were associated with greater probability of ideation (Odds ratio = 1.03, 1.02-1.05, \( p < .01 \)) and attempt (Odds ratio = 1.02, 1.01-1.03, \( p < .01 \)). Finally, living alone was related to a greater probability of attempt (Odds ratio = 1.57, 1.04-2.35, \( p < .01 \)) but not ideation. The researchers noted that in their results they found support for the hypothesis that all indices of social connectedness were associated with a greater probability of a history of a suicide attempt and a history of ideation, with the exception of living alone, which was only associated with suicide attempts.

There are a number of limitations to this study. First, the sample was made up of residents of substance abuse programs, so the generalizability of the findings are suspect. In addition, suicidal behaviors were measured retrospectively and through self-report, and associations with current suicidal ideation and belongingness were not explored. Despite these limitations, the researchers concluded that these findings provide additional empirical support for the Interpersonal Theory of Suicide and more specifically, the role of belongingness in suicidal behaviors.

**Empirical Support for Perceived Burdensomeness**

Van Orden, Lynam, Hollar, and Joiner (2006) examined perceived burdensomeness as it relates to past and present suicidal symptoms. They examined these variables in 343 (187 female, 156 male) adult outpatients presenting to a college counseling center. The ethnic composition of the sample was representative of the area's population. Specifically, it was 83% Caucasian, 8% African-American, 4.7% Hispanic, 2.3% Asian American, and .04% Native American. The sample had a range of diagnoses consisting mostly of individuals with mood disorders, anxiety disorders, substance use disorders, personality disorders, and adjustment disorders. They administered standard
background information forms, the Beck Depression Inventory (BDI), the Beck Scale for Suicide Ideation (BSSI), and items they created on perceived burdensomeness and hopelessness. Their hierarchical regression included steps that accounted for depression, age, gender, personality status, and hopelessness in an effort to determine how much perceived burdensomeness uniquely accounted for suicidal symptoms. The researchers conducted two regression analyses, one with current suicidal symptoms as the dependent variable and the other with past suicidal symptoms as its dependent variable. In the first step, they added relevant demographic symptoms as independent variables. In the second step, they entered depression as an independent variable. In the third step, they added hopelessness to the model, and in the final step, they added perceived burdensomeness as the final independent variable.

Results indicated that the demographic variables alone did not predict suicidal symptoms. When the researchers added depression to the model, they found that the combination of the demographic variables and depressive symptomology accounted for 33% of the variance in current suicidal symptoms ($R^2 = .33$, $F(4, 38) = 42.13$, $p < .001$). They noted that adding hopelessness increased the variance accounted for to 39% ($R^2 \Delta = .06$, $F(5, 337) = 42.31$, $p < .001$). When they added the final variable, perceived burdensomeness, to the model, they found that it was able to account for an additional 3% of the variance, and that this amount was statistically significant ($R^2 \Delta = .03$, $F(6, 336) = 39.37$, $p < .001$).

With regard to past suicidal acts, the demographic variables did not hold any explanatory value. When the researchers added depression to the model containing past suicidal acts, they were able to account for 7% of the variance ($R^2 = .07$, $F(4, 336) = 6.00$, $p < .001$). Adding hopelessness as an independent variable only accounted for an
additional 1% of the variance. Finally, when the researchers added perceived burdensomeness as a predictor, the variance accounted for increased to 10%, or another 2% of the total variance accounted for ($R^2 \Delta = .02, F (6, 336) = 6.02; p< .001$). Based the aforementioned results, Van Orden and colleagues concluded that there are significant relationships between depression, hopelessness, perceived burdensomeness, and current suicidal ideation. They also noted that there is a relationship between depression, hopelessness, and perceived burdensomeness and past suicidal acts. In addition, the researchers determined that perceived burdensomeness was able to account for a unique amount of the variance in current suicidal ideation and past suicide attempts, indicating that perceived burdensomeness is able to predict suicidal ideation and attempts above and beyond demographic risk factors, depression, and hopelessness (Van Orden et al., 2006).

Though the results of this study provide some support for the role of perceived burdensomeness in suicidal ideation, there are limitations that should be addressed. First, the design of the study was cross-sectional, which does not allow for direct cause and effect relationships to be determined. Second, another limitation of the study is the sample, which was made up of predominantly Caucasian college students. This limits the generalizability of the findings. Third, since this study was completed prior to the development of the Interpersonal Needs Questionnaire, there was no known measure of perceived burdensomeness and as such, the researchers only used one item to assess this construct. In addition, they also only used one item to measure hopelessness. Given the limited information that a single item is able to provide, these measures are likely to yield less reliable estimates of the constructs. Furthermore, the items used may not be pure estimates of the constructs they intend to measure. For example, Van Orden and colleagues noted that the item they used to assess hopelessness may, in fact, reflect self-
efficacy or perceptions of one’s problem-solving abilities. Finally, perceived burdensomeness only accounted for an additional 2% of the variance which, although it was found to be significant, is still a relatively small amount of the variance.

In 2008, Van Orden, Witte, Gordon, Bender, and Joiner examined all three constructs by examining suicidal ideation (perceived burdensomeness and thwarted belongingness) and capability for suicide. The researchers examined how perceived burdensomeness and thwarted belongingness contribute to suicidal ideation, and how acquired capability relates to past suicidal acts and clinician rated current risk for suicide. Their research consisted of three studies. In the first study, Van Orden and colleagues examined the ability of perceived burdensomeness and thwarted belongingness, as measured by the 12-item Interpersonal Needs Questionnaire (INQ, Van Orden, Witte, Gordon et al., 2008), to account for unique variance in suicidal desire (as measured by the Beck Scale for Suicidal Ideation [BSSI, Beck & Steer, 1991]), in a sample of 309 undergraduate students. The INQ was developed by the research group to measure perceived burdensomeness and thwarted belongingness. Initial psychometric properties were found to be promising, as internal consistency coefficients were found to be adequate for both constructs (α = .89 for perceived burdensomeness, α = .85 for thwarted belongingness). Both, though thwarted belongingness more so than perceived burdensomeness, correlated with an item on the related construct of loneliness. Though the researchers did not report the specific correlation between thwarted belongingness and perceived burdensomeness and the item on loneliness, they did report the correlation coefficients between the constructs and also with other measures of depression and suicidal ideation. Specifically, Van Orden and colleagues noted that the two constructs under investigation were significantly correlated with one another (r = .58, p < .01). In
addition, perceived burdensomeness was significantly correlated with scores on the Beck Scale for Suicidal Ideation ($r = .50, p < .01$) as well as scores on the Beck Depression Inventory ($r = .71, p < .01$). Likewise, thwarted belongingness was also correlated with scores on both the Beck Scale for Suicidal Ideation ($r = .35, p < .01$) and the Beck Depression Inventory ($r = .60, p < .01$).

The researchers then completed a series of regression analyses in which suicidal desire was the dependent variable. They controlled for age, gender, and depressive symptoms by adding them to the model first. After that, they added perceived burdensomeness, thwarted belongingness, and the interaction between the two constructs as independent variables. They noted that age, gender, and depressive symptomology were able to account for unique variance in suicidal ideation ($R^2 = .17, F(3, 305) = 20.46, p = .000$). When the researchers added the additional independent variables of thwarted belongingness and perceived burdensomeness they were able to account for an additional 9% of the variance ($R^2 \Delta = .09, F(5, 303) = 21.47, p = .000$). Individually, perceived burdensomeness was significantly related to suicidal ideation, but thwarted belongingness was not. Finally, when they added the interaction between these two variables to the model, the variance accounted for increased by 4% ($R^2 \Delta = .04, F(6, 302) = 21.06, p = .000$). Based on the results of their first study, Van Orden and others concluded that the combined presence of thwarted belongingness and perceived burdensomeness may be particularly dangerous with regard to the development of suicidal ideation.

There are a number of weaknesses to this study. First is the generalizability of the results. The sample from the first study was made up of college students enrolled in an introductory psychology course, and it was predominantly female (74%). In addition, the racial and ethnic background of the participants is unknown, though the researchers
assume it is similar to the racial and ethnic composition of the university. Second, like other studies reviewed, this examination relied on a cross-sectional design, which precludes causal inferences. Finally, though the Interpersonal Needs Questionnaire (INQ) showed promising preliminary psychometric properties, at the time it was a new instrument and research regarding its reliability and validity was lacking.

**Empirical Support for Acquired Capability**

In 2000, Joiner and Rudd examined differences between those who have attempted suicide multiple times and those who only have one or no prior attempts. In this study, there were two main hypotheses. Based on the Interpersonal Theory of Suicide, the researchers hypothesized that individuals with multiple prior suicide attempts would show an increase in acquired capability, and consequently, lethality. Consistent with the theory of opponent processes and the concept of acquired capability, multiple prior attempts should lower one's fear of suicide and/or death, due to the repeated exposure to a fearful stimuli or situation (i.e., suicide attempt). As such, they used prior suicide attempts as an indication of acquired capability. Additionally, they believed that prior attempts were more strongly related to suicidal intent than life stressors or negative events, and negative events would, in fact, have very little impact on suicidal severity. In contrast, the researchers believed that for individuals with only one or no suicide attempts, suicidal severity will be more strongly impacted by the experience of negative life events. The researchers also noted that in the presence of negative events, individuals with multiple attempts may experience more persistent suicidality than individuals with only one or no prior attempts because they may lack the resources to cope with the crisis.
These researchers administered the Modified Scale for Suicidal Ideation (MSSI, Miller et al., 1986), the Suicide Probability Scale (SPS, Cull & Gill, 1988), and the Life Experiences Survey (LES, Samson, Johnson, & Siegel, 1978). In their study of 326 youth inpatients, they were able to find support for their hypotheses. Specifically, they found that negative life events were significantly related to the severity of suicidal symptoms for never or first-time attempters (n = 259, $r = .31, p < .01$ for MSSI; $r = .33, p < .01$ for SPS), but not for multiple attempters (n = 67, $r = .10, p > .05$ for MSSI; $r = .09, p > .05$). This suggested that the severity of suicidal symptoms was unrelated to negative life events for multiple attempters, and instead, a history of prior attempts was more strongly related to current suicidality. Also consistent with their hypotheses, these researchers found that there was a relationship between the presence of negative events and crisis duration among multiple attempters (n = 60, $r = .45, p < .01$) but no relation between negative events and crisis duration among never- and first-attempters (n = 189, $r = .04, ns$).

Based on the results of their regression analyses, Joiner and Rudd (2000) concluded that, as compared to individuals with a single attempt or individuals with suicidal ideation but no intent, individuals with multiple suicide attempts experienced more intense suicidal symptoms, including desire to die, plans to attempt, and resolve to die ($R^2 = .12, F (1, 322) = 3.92, p < .01$). They also experienced greater intensity and duration of suicidal ideation ($R^2 = .06, F (1, 245) = 7.78, p < .05$). This is consistent with the Interpersonal Theory of Suicide, as it demonstrated that “painful and provocative” experiences such as multiple suicide attempts have the potential to increase an individual’s capability for suicide as evidenced by the increased intensity and duration of their suicidal symptoms.
There are numerous limitations to this study. First, though the researchers found support for their hypothesis that in the presence of negative events, individuals with multiple attempts may experience more persistent suicidality than individuals with only one or no prior attempts, there is no way to determine whether this is because those with multiple attempts have fewer resources, as they hypothesized. In addition, the researchers assumed that the crisis at the baseline was the same crisis one month later. Another limitation was the use of self-report measures for both symptom severity and crisis, which does not offer much insight into the type of crisis the individual is experiencing. Finally, it is important to know that, although the results were significant, the effect sizes were small. Though this study does have limitations, the results do offer some support for the role of past provocative experiences (i.e., multiple suicide attempts) in development and severity of suicidal ideation and behaviors (Joiner & Rudd, 2000).

In 2005, Joiner, and colleagues conducted three studies that examined some of the core theoretical hypotheses. The studies examined the nature of acquired capability in four separate samples. In line with the Interpersonal Theory of Suicide, acquired capability is gained through repeated exposure to traumatic or painful stimuli, which would include past suicide attempts. In their research, they predicted that the relationship between lifetime number of suicide attempts and current suicidal ideation would be strongly related and relatively unaffected by other covariates like age, gender, marital status, ethnicity, mental health diagnoses, family history of suicide, substance abuse, and negative life events. In the first study, the researchers had a sample that consisted of 297 individuals (244 men and 53 women) who had been identified as at risk for suicidality based on past attempts and severe current ideation, and who had received treatment at a United States Army Medical Center. They were referred to the study from
an inpatient facility and the emergency department. Sixty-two percent were Caucasian, 25% were African American, 10% were Hispanic, 1% were Native Americans, 1% were Asian Americans and the final 1% consisted of other ethnicities. In addition, 44% of the participants were single, 37% were married, 10% were separated, 7% were divorced, and 1% were widowed. In this sample, they found support for their hypothesis. They noted that the relationship between lifetime number of suicide attempts and current suicidal ideation was $r = .24$. After controlling for the covariates, the correlation only dropped to .20, or 4% of the variance ($p < .05$). The researchers also noted that no other clinical indicator showed the same level of association with current suicidal ideation as a history of suicidal acts. Their results suggested that acquired capability may be gained through prior suicide attempts, and that prior suicide attempts are related to current suicide ideation. As such, acquired capability is also related to suicidal ideation.

The second study was made up of 98 (39 men, 59 women) undergraduate psychology students, who were recruited through introduction to psychology courses. With this sample, the correlation between number of past attempts and suicidal ideation was $r = .44$ ($p < .05$). After controlling for age, gender, marital status, ethnicity, mental health diagnoses, family history of suicide, substance abuse, and negative life events, they found an increase in the relationship between attempt status and suicidal ideation ($r = .48$, $p < .05$). The third study consisted of 60 outpatients presenting to a community mental health clinic in Brazil with depression. The results of this study were consistent with the previous studies. They found that the relationship between past suicidal acts and current ideation was $r = .24$ ($p < .05$), and this only increased marginally after accounting for other risk factors ($r = .28$, $p < .05$).
The participants in the final study were recruited from four different teaching hospitals across the United States. All 77 patients were identified as depressed and older than the age of 50. In this instance, prior suicidal acts and current thoughts of suicide demonstrated a .35 association ($p < .05$) and after controlling for the other variables, the relationship decreased to $r = .27$ ($p < .05$). Though the data are correlational and causation cannot be inferred, the results suggest that there is a strong relationship between past attempts and current suicidal ideation, and the researchers posit that one possible reason for this result is that past attempts may serve to increase an individual's acquired capability for suicide (Joiner et al., 2005).

Although the results of the aforementioned studies offer some evidence for the role of past suicidality in current suicidal ideation, there are a number of weaknesses to these studies. First, the researchers restricted their analyses to the ability of past suicide attempts to predict current suicidal ideation. Although the results suggest that there is a relationship between these two factors, given the design of the study, a cause and effect relationship cannot be assumed. As such, other, unaccounted for factors could be impacting the results. In addition, in all three studies, current suicidal symptoms were used as the dependent variables. As the authors noted, suicidal symptoms do not necessarily lead to death by suicide. The researchers pointed out that future studies with suicide attempts or death by suicide as the dependent variable might provide more compelling evidence for their hypotheses. An additional limitation of the study is the distinction made, or lack thereof, between self-harm and suicide attempt. The authors noted that in the fourth study they defined any intentional self-destructive act with resulting harm as a suicide attempt. Unfortunately, engaging in self-harming behaviors does not necessarily mean an individual is attempting to die by suicide. Finally, the
results of the study are not that strong. For example, though in study one the effect of past suicidal behavior on subsequent suicidal symptoms was significant, the amount of variance accounted for was only 4%, which is relatively low.

In another study examining the role of acquired capability, Van Orden, Witte, Gordon, Bender, and Joiner (2008) examined current risk for suicide based on past suicide attempts and exposure to other painful and provocative stimuli. They noted that according to the Interpersonal Theory of Suicide, acquired capability can be gained by prior suicide attempts, which places them at an increased risk for current suicide. Given this hypothesis, Joiner and colleagues reported that there should be a strong relationship between the number of past suicide attempts and an individual's acquired capability. They measured acquired capability by an instrument they developed, the Acquired Capability for Suicide Scale (ACSS). This instrument was designed to assess an individual’s fearlessness associated with self-injury and it consists of 5, 5-point, Likert scale items. The researchers noted that the ACSS also demonstrated adequate construct validity as it correlated in the expected direction with Linehan, Goodstein, Nielsen, and Chilie’s (1983) Fear of Suicide Scale on the Reasons for Living Inventory (r = -.48; p < .0001) and with an item on the Beck Scale for Suicide Ideation (BSSI, Beck & Steer, 1991) that assesses one’s courage to kill oneself (r = .79; p < .007). In addition, consistent with Joiner’s assumption that acquired capability is distinct from current depression, the ACSS did not correlate with the Beck Scale for Suicide Ideation (r = .09; p < .35), or the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979), (r = -.11; p < .25).

Van Orden and colleagues’ (2008) sample consisted of 228 adult outpatient community mental health patients, who were new adult therapy cases admitted to the
Participants were 74% Caucasian, 12% African-American, 9% Hispanic, and 5% other race or ethnicity. The patients were predominantly from a low socioeconomic status, with 50% of the clinic population reporting a family income of less than $10,000 per year. In addition, the majority of the participants had never attempted suicide (84.6%). After conducting a one-way analysis of variance, the researchers found that the number of past suicide attempts was related to acquired capability, $F(5, 225) = 3.59; p = .029$. The lowest level of acquired capability was reported by individuals with no past attempts ($M = 2.55, SD = 0.81$). As the number of past attempts increased, so did the participants' scores on the acquired capability measure ($M = 2.68, SD = 0.90$ for one attempt; $M = 3.13, SD = 0.87$ for more than one attempt). Van Orden et al. also conducted a regression analysis examining the relationship between painful and provocative experiences and current risk for suicide. The researchers accounted for age, gender, depression, and suicidal ideation by adding those variables into the equation first. This model accounted for a significant amount of the variance ($R^2 = .07, F(4, 223) = 4.34, p = .002$). When the researchers added painful and provocative experiences to the model, they were able to account for an additional 7% of the variance ($R^2 \Delta = .07, F(5, 222) = 7.24; p < .001$). The researchers noted that their results are consistent with the interpersonal theory of suicide in that past suicide attempts and exposure to painful and provocative experiences increases an individual's acquired capability for self-harm.

Van Orden and others (2008) also explored who is at greatest risk for suicide. To do this, they examined the ability of perceived burdensomeness and acquired capability to account for variance in clinician rated risk for current suicide. Their study consisted of 153 adult outpatient mental health clinic clients. Their regression analysis included clinician rated risk for suicide as a dependent variable. They controlled for age, gender,
and depression, which significantly predicted clinician rated risk ($R^2 = .23, p < .001$). Once they added perceived burdensomeness and acquired capability as additional independent variables, they were able to account for an additional 5% of the variance ($R^2 \Delta = .05, p < .001$). In the final step, the researchers added the interaction between perceived burdensomeness and acquired capability and found that amount of variance accounted for increased to 8%, but added only an additional 3% ($R^2 \Delta = .03, p < .001$). Given these results, Van Orden and colleagues concluded that the combined presence of perceived burdensomeness and acquired capability increases an individual's current clinician rated risk for suicide.

Combined, these two studies provide some support for the development of acquired capability through past suicide attempts and the relationship between acquired capability and suicide lethality. However, there are a number of limitations to these studies that need to be mentioned. Both samples were made up of adult clients from a college outpatient clinic, which significantly reduces the generalizability of the results. Like the other studies reviewed, these two studies are cross-sectional and as such, no cause and effect relationship can be determined. With regard to the first study exclusively, the researchers measured suicide attempts retrospectively, and by self-report. There was no way to verify the data through hospital admissions or secondary reports from others. In the second study, the researchers used clinician-rated future risk for suicide, which may not be a reliable measure of suicidal behavior. Finally, though the data offer preliminary support for the ACSS, it was developed for the purposes of this study and more research should be done in order to verify the strength of its psychometric properties.
Bender, Gordon, Bresin, and Joiner (2011) were also interested in examining acquired capability. Specifically, they wanted to explore the mediating role of painful and provocative experiences, a factor already identified as related to acquired capability (Joiner et al., 2005; Van Orden et al., 2008), in the relationship between impulsivity and suicidality. To explore this relationship, they completed two studies. The first study consisted of 182 undergraduates (109 women, 73 men). The mean age of the sample was 19 years, and the sample was predominantly Caucasian (71%). Fourteen percent of the sample was African American, 9% identified as Hispanic, 1% were Asian, and 2% identified as "Other." The researchers assessed impulsivity (as measured by the Barratt Impulsivity Scale [BIS]) and acquired capability for suicide (as measured by the ACSS). Painful and provocative life events were assessed using the combination of the Impulsive Behavior Scale (IBS) and a scale created by the researchers, the Painful and Provocative Events Scale (PPES).

Pain tolerance was assessed with a pressure algometer that was applied to the skin. Participants were instructed to verbally report when the pain became too uncomfortable to continue. At this point, the algometer was retracted and the digital display showed the values of the pressure at the time of retraction.

The researchers conducted three regression analyses. The first examined the ability of impulsivity to account for variance in painful and provocative experiences, and this relationship was found to be significant ($\beta = .69; t = 5.53; p < .001$), indicating that increased impulsivity was related to the number of past painful and provocative experiences. The second analysis looked at the ability of painful and provocative experiences to account for variance in acquired capability for suicide, with impulsivity as a mediator. This, too, was found to be significant ($\beta = .32; t = 6.64; p < .001$). These
results suggest that painful and provocative experiences may increase an individual's impulsivity, which in turn impacts an individual's acquired capability for suicide. Additionally, painful and provocative experiences were still a significant predictor, even after impulsivity was removed as a mediator ($\beta = -1.9; t = -2.19; p < .05$). Overall, the entire model was able to account for 20% of the variance in acquired capability for suicide. The researchers then completed the regression analysis with pain tolerance as the dependent variable. They noted that when controlling for impulsivity, painful and provocative experiences were a significant predictor of pain tolerance ($\beta = 5.09; t = 6.12; p < .001$). While controlling for painful and provocative experiences, however, impulsivity was not a significant predictor of pain tolerance ($\beta = -2.41; t = 1.58; p = .11$). The model accounted for about 16% of the variance in pain tolerance.

The sample in the second study completed by Bender et al. (2011) was made up of 516 adult outpatient clients at a university-based community outpatient clinic. The sample was 51% female and 48% male, and it too was predominantly Caucasian (74%). The rest of the sample was made up of 9% Hispanic, 12% African American, and 5% Other race or ethnicity. With regard to analyses, the same procedure as outlined in study one was utilized except sensation seeking was substituted for impulsivity and pain tolerance. Specifically, a regression analysis revealed that sensation seeking was able to account for 16% of the variance in painful and provocative experiences ($\beta = .67; t = 9.96; p < .001$). In the second regression, painful and provocative experiences were able to account for some of the variance in acquired capability for suicide while controlling for sensation seeking ($\beta = .04; t = 4.52; p < .001$). Additionally, sensation seeking was able to account for variance in acquired capability for suicide when controlling for painful and
provocative experiences ($\beta = .04; t = 10.45; p < .001$). Overall, the full model was able to account for 28% of the variance in acquired capability for suicide.

Given the results of these studies, Bender and colleagues concluded that impulsivity does have an indirect relationship with suicidality, and this relationship is mediated by painful and provocative experiences. The researchers interpreted this to mean that impulsive people have a higher capability for suicidal behavior because they are more likely to have engaged in painful and provocative behaviors. This tendency then increases their experience with behaviors indicated to increase capability for suicide. Though these findings provide additional support for the development of acquired capability for suicide, the study is not without its limitations. First, given the cross-sectional design of the study, direct cause and effect relationships cannot be determined. This leaves the results open to interpretation and also leaves the possibility that the results could be impacted by other factors. Second, the samples in the study were primarily Caucasian and the participants in the first study were undergraduates, which significantly narrowed the age range of the participants. These factors may limit the generalizability of the results.

In summary, though the Interpersonal Theory of Suicide is relatively new, its research base is promising and continues to grow. The results of the current research base provide preliminary support for Joiner’s assumptions. There is research supporting the hypothesis that the presence of thwarted belongingness and perceived burdensomeness are related to suicidal ideation. There is also evidence to support the idea that exposure to painful and provocative experiences, including past suicide attempts, has the potential to increase an individual's current risk for engaging in a
suicidal act (i.e. acquired capability). The next section will explore the utility of the Interpersonal Theory of Suicide in studying suicide in the Amish.

**The Interpersonal Theory of Suicide and the Amish**

According to the Joiner’s Interpersonal Theory of Suicide, suicidal desire is a function of the two constructs of perceived burdensomeness and thwarted belongingness. As such, individuals possess the desire to die if they first view themselves as a burden to their loved ones, and second, feel separated from their identified social group.

**Perceived Burdensomeness**

The concept of perceived burdensomeness may be particularly salient with collectivistic cultures like the Amish. According to Triandis (1995), collectivism entails the need to preserve group accord above and beyond the interest of individuals and sub groups. Values such as interpersonal harmony and group unity are core components of the belief system. With regard to the Amish, in 2006, Stevic noted that "the focus of Amish culture is on the community rather than on the individual; they are truly a collectivist society" (p. 9). In collectivistic societies, individuals are expected to work as a way to contribute to the greater good. Labor is a shared duty and an expectation. As some researchers noted, "People are expected to work, they need not enjoy it" (Andrews & Boyle, 2007). This is particularly apparent in the Amish society, where an individual is not permitted to obtain work outside of the community unless the position allows the individual to maintain his or her religious beliefs and strong family ties, and if the job directly or indirectly benefits the community (Hurst & McConnell, 2010). By contrast, in individualistic cultures, people are encouraged to choose occupations that provide the individual with a sense of worth and purpose, and the position's potential contribution to family and community are not salient factors in the decision-making process.
Given the collectivistic ideology to which the Amish ascribe, it is not surprising that Amish individuals frown on being a burden to others (Hurst & McConnell, 2010). They are strongly influenced to be contributing members of their community. Adopting a sick role, whether it is physical or mental illness is not conducive to a collectivistic belief system. This makes Joiner's concept of perceived burdensomeness particularly relevant. Though perceived burdensomeness in a person from an individualistic society is stressful and has been found to contribute to suicidal ideation, it is reasonable to hypothesize that perceived burdensomeness would be even more distressing to an individual from a collectivistic culture like the Amish society.

**Thwarted Belongingness**

The concept of thwarted belongingness may also play a significant role in depression and suicidal ideation in the Amish. As noted previously, operating as a member of a community is important in the Amish culture and any instance in which individuals feel like they are not a member of the community would be difficult to manage. For example, Hurst and McConnell (2010) spoke with some mental health providers in Wayne and Holmes Counties, Ohio, who provide treatment to Amish individuals. Though not directly, the practitioners they spoke with identified characteristics of thwarted belongingness as a factor in the presenting concerns of their clients. For example, the clinicians they spoke with reported that for those who seek treatment, patients who are members of more conservative churches are more likely to complain about issues related to authority and oppression. Specifically, one practitioner reported:

I see a lot more depressed patients in that group (Old Order Amish), and I think because the rules are so strict, that some people just feel crushed underneath them… While some adjust and accept the rules, I think you have more in that
group that struggle with depression and anxiety. There’s more of a sense of ‘I’m being watched and I don’t want to be watched’ (p. 241).

This observation highlights that mental health issues observed in some Amish may be related to the degree to which the individual is able to conform to the norms of the church. Those individuals who experience discrepancies between their actual behavior and attitudes, and the ideals expressed in their religious doctrines and in their church, may experience more stress (Hurst & McConnell, 2010). The increased stress may place them at greater risk for depression and suicide. Conversely, Hurst and McConnell also noted that a sense of belonging may serve as a protective factor for some Amish individuals. They reported that, "For those who accept the rules, however, there is a firm basis for making decisions that help minimize stress” (p. 243).

**Acquired Capability**

The saliency of acquired capability in the Amish is less easy to determine. On the one hand, the Amish are well known for their pacifist nature with young men refusing military service of any kind (Kraybill, 1990). On the other hand, Amish individuals are exposed to reasonably dangerous stimuli from a very young age. As Hurst and McConnell (2010) noted, working with farm machines and horses can be dangerous. Medical providers identify farming and carpentry as the leading causes of injuries among their Amish patients. In addition, Joiner (2005) noted that increased pain tolerance can also serve to reduce a fear of pain and/or death. Given this, it is notable that some doctors observe that their Amish patients have a higher pain tolerance than their non-Amish patients. “Without exception, the professionals we interviewed noted several qualities in their Amish patients that they admired. They consistently mentioned the higher pain tolerance they found among their Amish patients, both men and women”
With regard to substance abuse, which can also increase capability through decreased inhibitions and increased pain tolerance, most researchers agree that alcohol and substance abuse in the Amish is much lower than in the general population. During the period of Rumspringa, however, it is not unusual for adolescents to abuse alcohol and other substances (Kraybill).

**Conclusion**

In conclusion, this literature review supports the assertion that depression and suicide in the Amish population is an important health issue and that currently, there is a gap in the research exploring this concern. There is very little known data regarding the levels of depression in the Amish, and the rate of suicide is even more difficult to ascertain from the literature. It is apparent that more specific research with the Amish is needed to assess the problems using culturally valid measures of depression and suicide risk. With regard to the assessment of suicide risk factors in the Amish, Joiner's Interpersonal Theory of Suicide seems particularly relevant to the Amish culture. The three core concepts that underlie this theory have been shown to relate to both suicidal ideation and desire to die. The Amish are a collectivistic culture that promotes group harmony and the needs of the community over the needs of an individual. As such, one could argue that thwarted belongingness and perceived burdensomeness are especially dangerous risk factors for suicide in Amish individuals. The magnitude and degree of risk associated with acquired capability is harder to ascertain, as there are conflicting factors that could both serve to increase or reduce acquired capability. Notably, the Amish are pacifists, and believe in non-violence. On the other hand, they also have a great deal more exposure to dangerous farm equipment and machinery and have been noted to have higher pain tolerances than their non-Amish peers.
Purpose and Research Questions

Despite the relative wealth of literature available on assessing suicide risk in various cultural groups, there is no current research that examines suicide risk in the Amish. Thus, the purpose of this study is to investigate the issue of suicide risk in the Amish by examining suicide risk within the framework of the Interpersonal Theory of Suicide.

Based on previous research, this study will investigate hypotheses related to the model provided in Figure 5.

Figure 5. Model of Hypotheses
This model suggests the following hypotheses.

1. Collectivism scores will be negatively related to depression suicidal desire.

2. Depression and suicidal desire will account for a significant amount of the variance in suicidal behavior.

3. As with the general population, the relationship between depression and suicidal behaviors will be moderated by sex.

4. Similarly, acquired capability will partially mediate the relationship between suicidal desire and suicidal behavior.
CHAPTER III

METHODOLOGY

This chapter details the methodology that was used to examine the research questions regarding the cultural validity of the Interpersonal Theory of Suicide in an Amish population. In particular, the research design, participants, data collection procedures, and measurement instruments are explained. Additionally, the study hypotheses are provided and the statistical analyses that were utilized are also reviewed.

Research Design

In order to test the Interpersonal Theory of Suicide and its relevancy to an Amish population, a survey research design was used. This design assisted in the investigation of suicidal behaviors in the Amish. An a priori power analysis indicated that a sample size of 110 ($\alpha = .05$, Estimated $R^2 = .15$) would be sufficient for the regression analyses that was used test the primary hypotheses of this study. Because the preliminary analyses included an investigation of the structural validity of the INQ and ACSS, the sample size was increased to 120 to meet the recommended standards for factor analysis. According to Costello and Osborne (2005), in determining sample size in factor analysis, the general recommendation followed by most researchers is ten subjects per item. Hatcher (1994) recommended a sample size that is the larger of 100 subjects or 5 to 10 times the number of variables being analyzed. Therefore, a sample size of 120 for the 12-item INQ and the 5-item ACSS was deemed adequate for the structural validity analyses.
Participants

Participants for this study were recruited from Amish communities in northeast Ohio. Participants were enlisted through a network sampling procedure in which the primary researcher contacted members of the Amish community and asked for their participation. Amish participants then asked Amish friends and/or family members to participate in this study and pass the surveys on to those who agreed to participate (snowball sampling). Participants were at least 18 years old and self-identified as Amish.

Demographic characteristics of the participants are shown in Table 1.

Approximately 55% (n = 67) of the participants in the study were women and 44% were men (n = 53), with less than one percent of the sample not reporting gender (n = 1).

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* Sum of percentages exceeds 100% because of rounding

The ages of the participants ranged from 18 to 88, with an average of 41.67. With regard to marital status, 65% of the participants were married (n = 79), 29% were single
(n = 36), 3% were widowed (n = 3) and 3% of participants did not report their marital status (n = 3). Sixty-two percent of the participants (n = 75) reported that they were parents, while 37% did not have any children (n = 45) and one percent did not report whether they had children (n = 1). The majority of the participants were baptized into the church (93%; n = 112), while eight of the participants reported that they were not baptized into the church (7%) and one participant did not report baptismal status.

**Procedure**

The surveys were self-administered, paper-pencil measures. They were attached to self-addressed, stamped envelopes in which the participants could seal their responses and mail them directly back to the primary researcher. This was done in order to protect the privacy and confidentiality of the participants. In order to track the response rate, each survey was assigned a number (i.e., 1-380), and it was noted which surveys were given to each contact assisting in the collection. A total of 380 surveys were distributed and 129 were returned.

The survey packet consisted of an informed consent document that outlines the purpose of the study, six assessment measures, a background questionnaire, and a debriefing form with the national suicide prevention hotline and a list of local mental health agencies where individuals can seek treatment in the event that they experience distress or suicidal ideation.

Prior to data collection, an approval from The University of Akron Institutional Review Board (IRB) was obtained for the proposed research (Appendix C). The informed consent form (Appendix A) detailed the purpose, risks, and time needed to complete the study, provided assurance regarding the confidential and anonymous nature of the data collection, and reviewed the rights of the participants. These rights include
the right to withdraw from participation, and the right to contact the researcher with questions concerning the study. In addition, participants were directed to seek immediate mental health assistance in the event that they had suicidal thoughts. The contact information for two local mental health agencies (The Counseling Center of Wayne and Holmes County & Your Human Resource Center), a local crisis hotline number (1-877-264-9029), and the National Suicide Prevention Hotline (1-800-273-8255) was provided on both the informed consent form and the help seeking information form (Appendix B).

Measures

In order to test the hypotheses in question, six measurement instruments were used: The Patient Health Questionnaire – 9 (PHQ-9) (Spitzer, Williams, & Kroenke, 2000); the Suicidal Behaviors Questionnaire - Revised (SBQ-R) (Osman, Bagge, Gutierrez, Konick, Kopper, Barrios, 2001); the Interpersonal Needs Questionnaire (INQ) (Van Orden, Witte, Gordon, Bender, & Joiner, 2009; Van Orden, 2009); the Acquired Capability for Suicide Scale (ACSS) (Van Orden, Witte, Gordon, Bender, & Joiner, 2009) Triandis’ measure of Collectivism and Individualism (TMCI) (Triandis, ), and the Beck Hopelessness Scale (BHS), (Beck et al., 1974). In addition, a background questionnaire was utilized.

Background Questionnaire (Appendix D)

The background questionnaire asked for the participant’s age, sex, marital status, if they have any children, and if they had been baptized into the church. These items were designed to assess for known demographic risk factors for suicide, as well as to determine the level formal commitment the individual had made to the church. With regard to marital status, it was expected that the majority of the respondents would identify as married, single, or widowed. Divorce is uncommon in the Amish community,
though it does occur on rare occasions. The Amish view their marriage vows as vows to God as opposed to vows to another person and divorce is grounds for excommunication. When one partner initiates a divorce and is excommunicated, the partner and children are allowed to remain within the church, but the individual is not allowed to remarry unless the excommunicated previous spouse dies (Hurst & McConnell, 2010).

**Triandis’ (1995) Measure of Collectivism and Individualism (Appendix E)**

Triandis and Gelfand (1995) asserted that individualism and collectivism are constructs that are both horizontal (emphasizing equality) and vertical (emphasizing hierarchy). Given this argument, they attempted to further define and measure the concepts of individualism and collectivism within the vertical and horizontal framework. They developed a measure intended to assess these concepts. The collectivistic nature of the Amish society makes the in-groups (church and community) two important groups from which an Amish individual may feel disconnected, which may lead to higher levels of thwarted belongingness. To measure this important construct, Triandis’ measure of Collectivism and Individualism was utilized to assess the participant’s collectivistic beliefs. This measure consists of 16 items, with eight items assessing the horizontal and vertical dimensions of individualism and eight items assessing the horizontal and vertical dimensions of collectivism. The items are scored on a 5-point Likert scale, where one equals “Strongly disagree” and five equals “Strongly agree.”

Triandis and Gelfand (1995) identified four distinct patterns in individualism and collectivism. In Horizontal Individualism (HI), people want to be unique and distinct from groups. They are highly self-reliant, but they are not necessarily concerned with gaining status. In contrast, in Vertical Individualism (VI), individuals often want to become distinguished and they are likely to do this through competition with others. In
Horizontal Collectivism (HC), individuals see themselves as being similar to others. They emphasize common societal goals, interdependence, and socialability, but they are not likely to submit to authority. With regard to Vertical Collectivism (VC), individuals emphasize the integrity of the in-group and are willing to sacrifice personal goals for the group goals. Unlike HC, if the in-group authorities want the individuals to act in ways that benefit the in-group, they submit to the will of the authorities, even if the act is extremely distasteful to them.

They conducted four studies, and their results provided support for their assertions regarding horizontal and vertical individualism and collectivism. In their studies, they utilized items modified from an earlier study by Singelis and Traindis (1995) to capture all four domains. The items they utilized all had factor loadings on the expected constructs (.40 - .68). HI included items such as “I often do my own thing;” VI included items like “When another person does better than I do, I get tense and aroused;” HC included items such as “The well-being of co-workers is important to me;” and VC was based on items like “It is important to me that I respect the decisions made by my groups.” The content of their measure related in expected ways to other measures of collectivism (i.e., Cheek, Tropp, & Chen, 1994; Clark, Oulette Powell, & Milberg, 1987; Gudykunst, Matsumoto, Ting-Toomey, Nishida & Karimi, 1994; Maslach, Stapp, & Santee; 1985; Oyserman, 1983; Singelis & Triandis, 1995) and in predicted ways with similar constructs. For example, in their studies, VI (more so than HI) was positively correlated with competition and hedonism and HI was positively related to self-reliance. With regard to the collectivism domains, VC was related to traditionalism and authoritarianism and HC was positively correlated with socialability, interdependence,
and hedonism. Positive correlation coefficients ranged from .25-.77 and negative correlation coefficients ranged from -.29 to -.45.

**The Patient Health Questionnaire (PHQ-9; Appendix F)**

The PHQ-9 is a nine-item measure developed as a brief depression screen for use in medical settings. It is adapted from the self-report version of the PHQ, a larger, more comprehensive assessment of mental health. The PHQ is a three-page self-administered instrument that screens for five of the most common classes of mental health diagnoses observed in medical settings. The PHQ-9 consists of the items from the PHQ that are designed to assess specifically for symptoms of depression. The items included in the measure represent the nine DSM-IV-TR diagnostic criteria. The PHQ-9 functions as a dual purpose instrument, as it not only assesses depressive symptomology, but it also provides an indication of episode severity (Kroenke, Spitzer, & Williams, 2001).

There are various studies that provide support for psychometric properties of the PHQ-9 and its use in assessing depression. During its initial development, Kroenke, Spitzer and Williams (2001) found that the PHQ-9 had internal consistency of .89 in one study and .86 in another study. Test-retest reliability was also found to be excellent, with a .84 correlation between scores received at the initial evaluation and a follow-up evaluation 2 days later. Construct validity was determined in comparing the PHQ-9 to the Medical Outcomes Study Short Form (SF-20) scales, self-reported disability days, clinic visits, and the general amount of difficulty patients attribute to their symptoms. The PHQ-9 correlated strongly with the scales on the SF-20 intended to assess mental health (r = .73) general health perceptions (r = .55), social functioning (r = .52), and role functioning (r = .43). It also strongly correlated with symptom related difficulty (r = .55). Moderate correlations were found between PHQ-9 scores and disability days (r = .39),
physician visits (r = .24) and SF-20 scales that assess physical functioning (r = .37) and bodily pain (r = .33). Additionally, receiver operating characteristics (ROC) analyses indicated that the PHQ-9 is able to discriminate well between individuals with depression and individuals without depression (.95). Another study examined the convergent validity of the PHQ-9, and found that scores on the PHQ-9 were highly correlated with Structured Clinical Interview for DMS Disorders (SCID) ratings of major depressive episodes (Cannon, Tiffany, Coon, Scholand, McMahon, & Leppert, 2007). Recently, Kroenke Spitzer, Williams, and Lowe (2010) conducted a systematic review of the research regarding the PHQ-9. They concluded in their research that in their review, the PHQ-9 was found to be equal or superior to other measures of depression symptomology.

Although the PHQ-9 was originally developed for use in medical settings, there is some evidence for the validity of its use outside of a medical setting. Specifically, Martin, Rief, Klaiberg, and Braehler (2006) examined the construct validity of the PHQ-9 in a sample of 2066 participants (age 14-93) from the general population in Germany. Participants were recruited through the political election register in 1998 and were representative of the population in terms of age, gender and education. Results were promising. Individuals who scored high on depression on the PHQ-9 also had higher depression scores on the Brief-BDI (r = .73; p < 0001), and the General Health Questionnaire – 12 ([GHQ-12], Goldberg & Williams, 1988), (r = .59; p < 0001). The correlations of the PHQ-9 depression severity score with related subscales of the Short Form (36) Health Survey ([SF-36], Bullinger & Kirchberger, 1998) were moderate to high (Emotional functioning r = -.58, p < .001; Social functioning r = -.71, p < .001, and Mental Health r = -.71, p < .001). In addition, t-tests indicated that the relationship between PHQ-9 depression scores and the SF-36 scales was stronger than the relationship
between the Brief-BDI and the SF-36 (t-scores ranged from 6.66 to 12.5, \(df=2051, p < .001\)) and those of the GHQ-12 with the SF-36 (t-scores ranged from 2.62 to 8.83, \(df=2051, p < .001\)) with one exception of no significant difference in mental health.

Martin, Rief, Klaiberg, and Braehler’s (2006) findings support the ability of the PHQ-9 to discriminate between depressed and non-depressed individuals in the general population.

Though the PHQ-9 has not been validated on an Amish population, it has proven to be effective in assessing depression in other cultural groups. For example, in 2005, Huang, Chung, Kroenke, Delucchi, and Spitzer examined the utility of the PHQ-9 with non-Hispanic White Americans, African Americans, Hispanic Americans, and Chinese Americans. They found that the factor structure of the PHQ-9 with all four groups was similar, with one general factor emerging in their factor analyses. Internal consistencies for the total scale scores ranged from .79-.86. In general, similar rates of depression were found in all groups, except for Chinese men, who were less likely to evidence clinically significant scores. In addition, though endorsement rates of the items were similar across all four groups, there was some evidence of differential item functioning on some items. Of note, Chinese Americans were more likely to endorse sleeping difficulties and psychomotor retardation, and less likely to endorse changes in appetite. Hispanic Americans had lower mean scores in sleep abnormalities, low energy, and guilt as compared to Chinese Americans and non-Hispanic White Americans, but not African Americans. Hispanic Americans were also more likely to endorse anhedonia.

In the present study, the PHQ-9 was used as a basic measure of depressive symptomology. The total scale score was used in examining the construct validity of the INQ and the ACSS (and by extension, the Interpersonal Theory of Suicide). In addition,
it assisted in exploring the nature of the relationship between depression and suicide in
the Amish community, and in comparing this relationship to that found in the general
population.

The Suicide Behaviors Questionnaire - Revised (SBQ-R; Appendix G)

In 1983, Linehan and Colleagues developed The Suicide Behaviors Questionnaire
(SBQ). Since that time, the SBQ has been revised and adapted into a shorter instrument. In 1988, Cole shortened the SBQ to four items through the use of factor analysis. The
SBQ-R was developed in 2001 by Osman and colleagues. It is a four-item self-report
instrument designed to assess suicidal behaviors and it has been useful in differentiating
between individuals at risk for suicide and those not at risk for suicide (Osman et al.,
2001). The SBQ-R differs from earlier versions of the SBQ in that the response formats
were modified.

The four items included on the SBQ-R assess for past suicidal ideation and
attempt, frequency of suicidal ideation, suicide threats, and risk for suicide. Each item is
rated on a rating scale. Item 1 (“Have you ever thought about or attempted to kill
yourself?”) is rated on a 4 point scale (1 = “Never” to 4 = “I have attempted to kill myself
and really hoped to die”); Item 2 (“How often have you thought about killing yourself in
the past year?”) is rated on a 5 point scale (1 = “Never” to 5 = “Very often – 5 or more
times”); Item 3 (“Have you ever told someone that you were going to commit suicide, or
that you might do it?”) is rated on 3 point scale (1 = “No” to 3 = “Yes, more than once, and
really wanted to do it”); Item 4 is rated on 7 point scale (0 = “Never” to 6 = “Very
likely”).

The SBQ-R shows adequate internal consistency, with reported values ranged
from .71 to .86 in samples of undergraduate students (Gutierrez et al., 2000; Osman et al.,
It has also demonstrated convergent validity through high correlations obtained between the SBQ-R and the Positive and Negative Suicidal Ideation Inventory PANSI (r = .60, p < .01; Muehlenkamp et al., 2005) and with the Self-Harm Behavior Questionnaire (r = .77, p < .01; Gutierrez, Osman, Barrios, & Kopper, 2001). Additionally, research has indicated that the SBQ-R has good concurrent validity, as suicidal patients consistently score significantly higher on the SBQ-R than nonsuicidal patients across clinical and nonclinical samples (all p’s < .01) (Osman et al., 2001).

**The Interpersonal Needs Questionnaire (INQ-12; Appendix H)**

In a study discussed previously, Van Orden, Witte, Gordon, Bender, and Joiner (2008) examined suicidal desire and capability for suicide. Though it has already been noted that this series of research studies provided further support for Joiner’s Interpersonal Theory of Suicide, what has not been noted is that this study also resulted in the development of two instruments intended to assess Joiner’s three constructs of perceived burdensomeness, thwarted belongingness, and acquired capability. The preliminary research examining the reliability and validity of these measures shows promising psychometric properties.

The first measure Van Orden and colleagues (2008) developed is the Interpersonal Needs Questionnaire (INQ). This instrument is intended to assess levels of perceived burdensomeness and thwarted belongingness in patients. This instrument was created to measure individuals’ current beliefs about the extent to which they feel connected to others, and the extent to which they feel like a burden on others in their lives. The 12-item scale utilizes 7-point Likert type rating scale where one equals “Not at all true for me” and seven equals “Very true for me.” Seven of the items were designed to reflect perceived burdensomeness and 5 items were used to assess thwarted
belongingness. Scores were coded in such a way so as higher values reflect higher levels of perceived burdensomeness and thwarted belongingness. Van Orden and colleagues found adequate internal consistency for belongingness items (α = .85) and burdensomeness items (α = .89). In addition, they were able to establish preliminary construct validity as both constructs correlate with other measures of depression and suicidal ideation. For example, Thwarted Belongingness was correlated with bother the Beck Depression Inventory (BDI; \( r = .60; p < .01 \)), and the Beck Scale for Suicidal Ideation (BSS; \( r = .35, p < .01 \)), as was Perceived Burdensomeness (BDI \( r = .71; p < .01 \); BSS \( r = .50, p < .01 \)).

Freedenthal, Lamis, Osman, Kahlo, Gutierrez (2011) found high sub-scale reliability estimates of .94 (95% CI == .93-.95) for the Perceived Burdensomeness (PB) subscale and .93 (95% CI == .92-.95) for the Thwarted Belongingness (TB) subscale in the INQ-12. The researchers were also able to determine that the INQ-12 is made up of one general factor, and two specific sub-factors. For the INQ-12 PB factor, the items loaded higher on the general factor than the specific factor, though three items significantly loaded on the specific factor (factor loadings ranged from .24-.54). For the INQ-12 TB factor, all items loaded higher on the specific factor (range = .69 – .74) than on the general factor. For the general factor (G), the factor pattern coefficients ranged from moderate (.41) to high (.91). Freedenthal and colleagues noted the correlation between subscales was moderate (\( r = .50; p < .001 \)) and the correlations between the subscales and the total score to be high (PB \( r = .85; p < .001 \); TB \( r = .88; p < .001 \)), adding additional support for the two factor structure of the INQ. Finally, the researchers were able lend support to the convergent and discriminant validity of the INQ since both subscales were negatively correlated with reasons for living for both men (PB \( r = -.63; p \))
< .01; TB r = -.56; p < .0) and women (PB r = -.54; p < .01; TB r = -.50; p < .01).

Additionally, PB was strongly associated with depressive symptoms for both men (PB r = .61; p < .01; TB r = .38; p < .01) and women (PB r = .57; p < .01; TB r = .39; p < .01), current suicidal ideation for both men (PB r = .68 p < .01; TB r = .36; p < .01) and women (PB r = .53; p < .01; TB r = .42; p < .01), and current suicidal proneness for both men (PB r = -.45; p < .01; TB r = -.57; p < .01) and women (PB r = .52; p < .01; TB r = .41; p < .01). Finally, both PB and TB were negatively associated with perceived social support for both men (PB r = .55; p < .01; TB r = .44; p < .01) and women (PB r = -.31; p < .01; TB r = -.37; p < .01).

The Acquired Capability for Suicide Scale (ACSS; Appendix I)

The second measure developed by Van Orden and others (2008) is the Acquired Capability for Suicide Scale (ACCS). This instrument was designed to assess an individual’s fearlessness associated with self-injury and it consists of five, 5-point Likert rating scale items, where one equals “Not at all like me” and seven equals “Very much like me.” As with the INQ-12, the ACSS also demonstrated adequate construct validity as it correlated in the expected direction with Linehan, Goodstein, Nielsen, and Chilie’s (1983) Fear of Suicide Scale on the Reasons for Living Inventory (r = -.48; p < .0001) and with an item on the Beck Scale for Suicide Ideation (BSS) that assesses one’s courage to kill oneself (r = .79; p < .007). In addition, consistent with Joiner’s assumption that acquired capability is distinct from current depression, the ACCS did not significantly correlate with the Beck Scale for Suicide Ideation (r = .09; p < .35), or the Beck Depression Inventory (r = -.11; p < .25).
The Beck Hopelessness Scale (BHS; Appendix J)

The Beck Hopelessness Scale (BHS; Beck et al., 1974; Appendix F) was developed to assess an individual’s feelings of hopelessness and pessimistic expectations. It is a 20-item true-false inventory and it has been recognized as a useful instrument in the assessment of suicidality, since hopelessness is a well-known risk factor for suicide. Individuals are asked to specify their agreement or disagreement with the items. Examples of items include “I can’t visualize my future,” “My future is dismal,” “I have good luck and positive things happen to me,” “Things don’t go my way,” and “The future is unclear.” Nine of the items are reverse coded and total scores range from 0 to 20. A higher score indicates a larger degree of hopelessness. Current recommendations note that a cutoff score of 9 had a 90% sensitivity rate with hospitalized patients with suicidal ideation (Beck et al., 1989). With regard to construct validity, the BHS has shown high correlations with other clinical ratings of hopelessness (r = .74, p < .001 in general practice patients and r = .62, p < .001 in suicide attempters) (Beck et al., 1974). Beck and colleagues (1974) determined that the BHS had a high degree of internal consistency with a diverse sample of hospitalized patients with recent histories of suicidal behaviors (Kuder-Richardson Formula 20 = .93). Other researchers have also noted that the BHS has demonstrated adequate internal consistency with diverse samples of college students. For example, Muehlenkamp and colleagues found internal consistencies ranging from .79-.88, and a Guiterrez and other found similar results with their sample of college students (e.g., KR-20 = .82).

Statistical Hypotheses and Analyses

Preliminary analyses assessed the construct validity of the INQ and ACSS in the Amish population. Internal structure analyses were completed (i.e., exploratory factor
analysis). It was hypothesized that the factor structure of both the INQ and the ACSS would be similar to that found in the general population.

To assist in further interpretation of the data within the Interpersonal Theory of Suicide, the relationship between collectivism and the other constructs under investigation were examined. Given the underlying assumptions of the Interpersonal Theory of Suicide, the following hypotheses were examined with bivariate correlations. See Figure 5 for a model of these hypotheses.

1. Collectivism scores on Triandis’ measure of individualism and collectivism would be negatively related to depression as measured by the PHQ-9 and suicidal desire as assessed by the INQ.

To examine the primary research questions, that is, the ability of the Interpersonal Theory of Suicide in predicting suicidal behaviors in the Amish population, the following hypotheses were developed and were tested through hierarchical regression. See Figure 5 for a model of these hypotheses.

2. Depression as measured by the PHQ-9, and suicidal desire as measured by the INQ, together and individually will account for a significant amount of the variance in suicidal behavior as measured by the SBQ-R.

3. Within the full model as identified above, as with the general population, the relationship between depression and suicidal behaviors will be moderated by sex.

4. Similarly, within the full model, acquired capability as measured by the ACSS will partially mediate the relationship between suicidal desire and suicidal behavior.
CHAPTER IV
RESULTS

This chapter presents the results of the study. First, descriptive statistics regarding the demographic characteristics of the sample and the research variables are presented. Second, the results of the statistical analyses examining the study hypotheses are reviewed. Third, exploratory analyses examined the factor structure of the INQ, and the results of those analyses are detailed.

A total of 129 surveys were returned and 121 of those surveys were sufficiently complete and were utilized in the analyses. Missing value analyses indicated that some of the items had missing data, ranging from one missing value to 10 per variable. The majority of the missing items were on the Beck Hopelessness Scale (BHS). Twenty-six percent of the cases had at least one item missing on the BHS. Missing value analyses indicated that some of the missing data was not missing at random. In addition, in some cases, the missing data exceeded 5% and thus, means replacement was not viable option for use as a data replacement technique. Though deleting cases with missing data was an option, it would have resulted in a significant loss of subjects. Currently, multiple imputation is considered the most respectable method of dealing with missing data, partly because it makes no assumptions about whether the data are missing at random. Tabachnick and Fidell (2007) recommend that when dealing with data not missing at random and especially when dealing with a small data set, any analyses should be
repeated both with and without the missing data. Any differences should then be examined. Given these recommendations, multiple imputation was used to replace the missing data in the current study and the analyses were done both with and without the missing data. The results of the separate analyses were virtually identical and as such, the results of the analysis with the original data set are reported.

**Descriptive Statistics**

To provide more insight into depression and suicide risk in Amish adults, descriptive statistics for the main research variables were completed prior to testing the main hypotheses. The next section will detail the results of these analyses.

**Depression**

Descriptive statistics for responses to the PHQ-9 measuring depressive symptoms are presented in Table 2. Using the cutoff score of 10 and above, participants were classified as at-risk for depression. According to Kroenke, Spitzer, and Williams (2001), scores greater than or equal to 10 showed 80% specificity and sensitivity in screening for major depressive disorder.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Min/Max</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9 Total Score</td>
<td>3.09</td>
<td>3.94</td>
<td>0/27</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHQ-9 Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Risk Group</td>
<td>2.27</td>
<td>2.05</td>
<td></td>
<td>111</td>
<td>92%</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Depression Risk Group</td>
<td>14.75</td>
<td>5.70</td>
<td></td>
<td>8</td>
<td>7%</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Eight of the 121 participants were classified as at-risk for depression (7%), whereas 111 participants were classified as not at-risk (93%). Two of the 121 participants did not complete all of the items on the PHQ-9. The overall mean PHQ-9 score was 3.09 ($SD = 3.94$). The mean score for the at-risk group was 14.75 ($SD = 5.70$) and the mean score for the not at risk group was 2.27 ($SD = 2.05$). With regard to depression and gender, the total PHQ-9 mean score for women was 3.58 ($SD = 4.55$) and for men, the total mean score was 2.55 ($SD = 2.96$). A chi square analysis indicated that there was no differences between the sexes and their risk for depression $\chi^2(1, n = 120) = 1.277, p = .258$. A t-test of mean differences did not indicate that there were any significant differences on mean depression scores between the sexes $t(118) = 1.41, p = .161$.

**Suicide Risk**

Descriptive statistics for responses to the SBQ-R measuring suicide risk are presented in Table 3. The overall mean SBQ-R score was 3.54 ($SD = 1.39$). The mean score for men was 3.45 ($SD = .85$) and the mean score for women was 3.60 ($SD = 1.73$). A t-test was used to determine if there were any significant differences between mean scores between the sexes and no significant differences were found $t(116) = .566, p = .572$. Though no significant differences in overall mean scores were found between men and women on suicide risk, it is worth mentioning that of the three participants identified as at risk for suicide, all were women.

Using the cutoff score of 7 and above, participants were classified as at risk for suicide (Osman, et al., 2001). One hundred and nineteen of the 121 participants completed the SBQ-R. Three of the 119 participants were classified as at risk for suicide.
(3%), while 116 participants were classified as not at risk (97%). The mean score for the at-risk group was 10.33 ($SD = 3.51$) and the mean score for the not at risk group was 3.36 ($SD = .74$). A chi square analysis was used to test for differences in suicide risk status between the sexes, and no significant difference was found $\chi^2(1, n = 120) = 2.434, p = .119$.

Table 3
*Descriptive Statistics for the SBQ-R*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$M$</th>
<th>$SD$</th>
<th>Min/Max</th>
<th>$n$</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBQ-R Total Score</td>
<td>3.54</td>
<td>1.39</td>
<td>3/18</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Not Reported</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SBQ-R Groups *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Risk Group</td>
<td>3.36</td>
<td>.74</td>
<td></td>
<td>116</td>
<td>97%</td>
</tr>
<tr>
<td>Men</td>
<td>53</td>
<td></td>
<td></td>
<td>45%</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>63</td>
<td></td>
<td></td>
<td>53%</td>
<td></td>
</tr>
<tr>
<td>Not reported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Group</td>
<td>10.33</td>
<td>3.51</td>
<td></td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Men</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>3</td>
<td></td>
<td></td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Item 1: Suicide ideation and attempt*</td>
<td>1.19</td>
<td>.47</td>
<td>1/4</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>102</td>
<td></td>
<td></td>
<td>84%</td>
<td></td>
</tr>
<tr>
<td>Brief Thought</td>
<td>15</td>
<td></td>
<td></td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Plan</td>
<td>4</td>
<td></td>
<td></td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Attempted</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Reported</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 2: Frequency of suicidal thoughts in the past year*</td>
<td>1.07</td>
<td>.42</td>
<td>1/5</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>117</td>
<td></td>
<td></td>
<td>97%</td>
<td></td>
</tr>
<tr>
<td>1 time</td>
<td>2</td>
<td></td>
<td></td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>2 times</td>
<td>1</td>
<td></td>
<td></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>3–4 times</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 or more</td>
<td>1</td>
<td></td>
<td></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Not reported</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item 3: Past suicide threats</td>
<td>1.03</td>
<td>.20</td>
<td>1/3</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>118</td>
<td></td>
<td></td>
<td>98%</td>
<td></td>
</tr>
<tr>
<td>At one time</td>
<td>1</td>
<td></td>
<td></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>More than once</td>
<td>1</td>
<td></td>
<td></td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Not reported</td>
<td>1</td>
<td></td>
<td></td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 cont.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Min/Max</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 4: Future likelihood of suicide attempt*</td>
<td>.25</td>
<td>.64</td>
<td>0/6</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
<td></td>
<td></td>
<td>101</td>
<td>84%</td>
</tr>
<tr>
<td>No chance at all</td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>8%</td>
</tr>
<tr>
<td>Rather unlikely</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>6%</td>
</tr>
<tr>
<td>Unlikely</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Likely</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Rather likely</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Very likely</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Not reported</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

SBQ-R = The Suicide Behaviors Questionnaire – Revised, Osman et al., 2001
* Sum of percentages exceeds 100% because of rounding

For item one, which assesses the life time experiences of suicidal behavior, the majority of participants denied experiencing any suicidal ideation (84%; n = 102), while 13% endorsed at least a brief thought (n = 15), and 3% reported having a plan for suicide at some point in their lifetime (n = 4).

For suicidal behavior during the past year, 98% of participants (n = 117) denied experiencing any suicidal thoughts. Three percent of the participants acknowledged having at least one thought (n = 3), and one participant reported considering suicide five or more times in the past year (1%).

With regard to suicidal behaviors, only 3% of the sample reported that they had threatened suicide in the past year (n = 3), while the majority of the participants denied threatening suicide (97%, n = 118). One participant did not answer this question. Of those participants who answered the final question, all reported that there was no chance, or it was at least unlikely, that they will attempt suicide in the future (100%, n = 120). One participant did not answer this question.
Research Variables

Descriptive statistics for the research variables (i.e., suicidal behavior, depression, hopelessness, collectivism, perceived burdensomeness, thwarted belongingness, and acquired capability), divided by sex, are presented in Table 4.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal Behavior</td>
<td>3.54</td>
<td>1.39</td>
<td>3</td>
<td>14</td>
<td>.190</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>3.45</td>
<td>.84</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>3.6</td>
<td>1.73</td>
<td>3</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>3.09</td>
<td>3.94</td>
<td>0</td>
<td>26</td>
<td>.182</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>2.55</td>
<td>2.96</td>
<td>0</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>3.57</td>
<td>4.55</td>
<td>0</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Hopelessness</td>
<td>2.61</td>
<td>2.17</td>
<td>0</td>
<td>15</td>
<td>.618</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>2.27</td>
<td>1.85</td>
<td>0</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>2.95</td>
<td>2.43</td>
<td>0</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Collectivism</td>
<td>32.68</td>
<td>3.83</td>
<td>18</td>
<td>40</td>
<td>.754</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>33.38</td>
<td>4.07</td>
<td>18</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>32.14</td>
<td>3.59</td>
<td>21</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Perceived Burdensomeness</td>
<td>11.51</td>
<td>6.04</td>
<td>1</td>
<td>43</td>
<td>.051</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>10.21</td>
<td>4.16</td>
<td>1</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>12.58</td>
<td>7.10</td>
<td>6</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Thwarted Belongingness</td>
<td>10.07</td>
<td>6.71</td>
<td>4</td>
<td>29</td>
<td>.479</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>9.98</td>
<td>6.49</td>
<td>4</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>10.14</td>
<td>6.98</td>
<td>5</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Acquired Capability</td>
<td>7.73</td>
<td>3.65</td>
<td>0</td>
<td>16</td>
<td>.629</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td>7.74</td>
<td>3.50</td>
<td>0</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>6.98</td>
<td>3.78</td>
<td>0</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 120; for men n = 53; for women n = 66. Suicidal Behavior = SBQ-R (Osman, et al.); Depression = PHQ-9 (Kroenke, Spitzer & Williams, 2001); Hopelessness = BHS (Beck et al., 1974); Collectivism = Traindis’ Measure of Individualism and Collectivism (Traindis & Gelfand, 1995); Perceived Burdensomeness and Thwarted Belongingness = INQ (Van Orden, et al., 2008); Acquired Capability = ACSS (Van Orden et al., 2008).

Based on t-tests, no statistically significant mean differences (p ≤ .05) were found between the sexes on any of the variables. A full correlation matrix for the variables is included in Appendix K.
Exploratory Analyses

Exploratory analyses assessed the construct validity of the INQ in the Amish population (i.e., exploratory factor analysis). It was believed that the factor structure for the INQ with the Amish would be similar to that found with the general population. Responses to the 12-item INQ were subjected to exploratory factor analyses using squared multiple correlations as prior communality estimates. The principal-axis factoring method was used to extract the factors, and this was followed by a promax rotation. Because there is an a priori factor structure, a confirmatory factor analysis would have been preferable to an exploratory factor analysis. However, the sample size in the current study is insufficient for completing a confirmatory factor analysis (Hatcher, 1994).

Factor Structure of the INQ

As expected, results of the exploratory factor analysis of the INQ support a two factor structure. In Table 5, the initial eigenvalues and the percentages of variance for 2 factors and the eigenvalues for the 2-factor solution, percentages of variance, and cumulative variance are presented. In addition, the factor correlation matrix for the two factors is presented in Table 6.

As suggested by Hatcher (1994), Kahn (2006), and Tinsley and Tinsley (1987), multiple criteria were considered in determining how many factors to retain. These criteria included (a) Kaiser’s criterion (i.e., retaining factors with eigenvalue of 1.0 or more), (b) Cattell’s scree test, (c) the proportion of variance accounted for by the last factor, and (d) the total variance accounted for the factor solution, which according to Tinsley and Tinsley (1987), should be 40% or above. Kahn (2006) also suggested using
a parallel analysis in determining which factors to retain. As such, O’Connor’s (2000) SPSS computer program was used to complete the parallel analysis and the results were consistent in supporting the presence of a two-factor solution because only the first two raw data eigenvalues exceed the values generated by the parallel analysis. The eigenvalues computed by the parallel analysis are included in Table 5.

Table 5  
*Eigenvalues and Variance Explained by the Factors*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial eigenvalues</th>
<th>Eigenvalues after rotation</th>
<th>Parallel analysis eigenvalues</th>
<th>Percentage of variance*</th>
<th>Percentage of variance**</th>
<th>Cumulative percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.703</td>
<td>5.44</td>
<td>.8832</td>
<td>47.53</td>
<td>45.33</td>
<td>45.33</td>
</tr>
<tr>
<td>2</td>
<td>2.66</td>
<td>2.35</td>
<td>.6223</td>
<td>22.14</td>
<td>19.61</td>
<td>64.94</td>
</tr>
</tbody>
</table>

Note. **indicates percentage of variance after principal axis factoring.

Table 6  
*Factor Correlation Matrix for the Two Factors*

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Perceived Burdensomeness</td>
<td>1.000</td>
<td>.335</td>
</tr>
<tr>
<td>2 Thwarted Belongingness</td>
<td>.335</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Estimates of internal consistency reliability, along with means and standard deviations, for the two factors in the current sample are presented in Table 7. As indicated, moderately high internal consistency reliability estimates were obtained, ranging from .87 - .90.

Table 7  
*Means, Standard Deviation and Internal Consistency Reliabilities for the INQ Factors*

<table>
<thead>
<tr>
<th>Factor</th>
<th>M</th>
<th>SD</th>
<th>Coefficient alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Perceived burdensomeness</td>
<td>1.440</td>
<td>.30</td>
<td>.90</td>
</tr>
<tr>
<td>Factor 2: Thwarted belongingness</td>
<td>2.32</td>
<td>.51</td>
<td>.87</td>
</tr>
</tbody>
</table>

Table 8 presents the communalities and Table 9 presents the 12 INQ items and factor loadings by factor. With this sample, two items on the INQ did not load on the
expected factors. Based on previous research, item number 7 (i.e., “These days I think I contribute to the well-being of the people in my life”) was expected to load on the burdensomeness factor. Instead, it loaded more heavily on the belongingness factor. Similarly, item 9 (i.e., “These days, I feel disconnected from other people”) loaded more heavily on the burdensomeness factor when it was believed it would load on belongingness.

Table 8
Factors, Items, and Factor Loadings of the INQ items after Promax Rotation

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loadings</th>
<th>Crossloadings</th>
<th>Communalities after extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Perceived Burdensomeness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. These days the people in my life would be better off if I were gone.</td>
<td>.902</td>
<td>.007</td>
<td>.817</td>
</tr>
<tr>
<td>2. These days the people in my life would be happier without me.</td>
<td>.959</td>
<td>-.055</td>
<td>.888</td>
</tr>
<tr>
<td>3. These days I think I have failed the people in my life.</td>
<td>.657</td>
<td>-.011</td>
<td>.426</td>
</tr>
<tr>
<td>4. These days I feel like a burden on the people in my life.</td>
<td>.928</td>
<td>-.069</td>
<td>.823</td>
</tr>
<tr>
<td>5. These days I think the people in my life wish they could be rid of me.</td>
<td>.843</td>
<td>.056</td>
<td>.745</td>
</tr>
<tr>
<td>6. These days I think I make things worse for the people in my life.</td>
<td>.891</td>
<td>.063</td>
<td>.836</td>
</tr>
<tr>
<td>9. These days, I feel disconnected from other people.*</td>
<td>.425</td>
<td>-.009</td>
<td>.234</td>
</tr>
<tr>
<td>Factor 2: Thwarted Belongingness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. These days I think I contribute to the well-being of the people in my life.*</td>
<td>.487</td>
<td>.158</td>
<td>.644</td>
</tr>
<tr>
<td>8. These days, other people care about me.</td>
<td>.736</td>
<td>.027</td>
<td>.189</td>
</tr>
<tr>
<td>10. These days, I feel that there are people I can turn to in times of need.</td>
<td>.808</td>
<td>-.012</td>
<td>.646</td>
</tr>
<tr>
<td>11. These days, I am close to other people.</td>
<td>.952</td>
<td>-.047</td>
<td>.879</td>
</tr>
<tr>
<td>12. These days, I have at least one satisfying interaction every day.</td>
<td>.830</td>
<td>-.046</td>
<td>.665</td>
</tr>
</tbody>
</table>

*Items that switched factors
Tests of the Hypotheses

This study included four main hypotheses that were tested through correlational and hierarchical regression analyses. The results of these analyses are presented in the following section.

Hypothesis One

Hypothesis one suggested that collectivism scores on Triandis’ measure of individualism and collectivism would be negatively related to depression as measured by the PHQ-9, suicidal desire as assessed by the INQ, and hopelessness as assessed by the BHS. Consistent with recommendations, the correlational analyses were completed both with and without the missing data. There were no differences found between the results, therefore the original dataset was used. A model of the study’s main hypotheses and these correlations are presented in Appendix L.

Table 9
Correlations among Depression, Hopelessness, Perceived Burdensomeness, Thwarted Belongingness, and Collectivism

<table>
<thead>
<tr>
<th>Variable</th>
<th>PHQ-9</th>
<th>BHS</th>
<th>PB</th>
<th>TB</th>
<th>Collectivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHS</td>
<td>.552**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB</td>
<td>.463**</td>
<td>.412**</td>
<td>.455**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>TB</td>
<td>.264*</td>
<td>.047</td>
<td>.455**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Collectivism</td>
<td>-.330*</td>
<td>-.273*</td>
<td>-.223*</td>
<td>-.256*</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. N = 120. PHQ-9 = Patient Health Questionnaire-9; BHS = Beck Hopelessness Scale; PB = Perceived Burdensomeness; TB = Thwarted Belongingness; Collectivism = Collectivism.

**P < .01.

As predicted, collectivism was negatively correlated with depression, suicidal desire (thwarted belongingness and perceived burdensomeness), and hopelessness, though it was only significantly correlated with depression and thwarted belongingness. Correlations ranged from -.213 to -.097. In addition, perceived burdensomeness,
thwarted belongingness, depression, and hopelessness were all positively correlated with one another and the correlations ranged from .064 to .598. Only the positive correlation between hopelessness and thwarted belongingness was non-significant.

**Hypothesis Two**

The second hypothesis suggested that suicidal desire (i.e., perceived burdensomeness and thwarted belongingness) would account for a significant amount of the variance in suicidal behavior above and beyond other known predictors of suicidal behavior (i.e., depression and hopelessness). This hypothesis was tested through the use of hierarchical multiple regression. It should be noted that based on arguments in the literature regarding the uselessness of centering the variables, the decision was made to not center the data (Echambadi, 2007; Kromney, 1998). The dependent variable in the analysis was suicide risk as measured by the SBQ-R. In step one, the demographic characteristics of age, marital status, and parental status were entered. These variables were entered in the first step because they are all known risk factors for suicide. In step two, depression as measured by the PHQ-9 was entered. In step three, hopelessness, as measured by the BHS was entered. In step four, perceived burdensomeness and thwarted belongingness, as measured by the INQ, were entered. Subscale scores for perceived burdensomeness and thwarted belongingness were computed based on the results of the factor analysis. Since prior research has indicated that the combined presence of thwarted belongingness and perceived burdensomeness may be particularly dangerous with regard to the development of suicidal ideation (Van Orden et al., 2008) the interaction between these two variables was added in the final step.
Prior to running the analyses, the data were screened for normality. It was expected that given the homogenous nature of the population and the low base rate of suicide risk, the data would be skewed. As expected, the data screening revealed that the data are not normally distributed. In addition, 2 cases were identified as outliers based on their Mahalonbis distance scores ($\chi^2 > 26.13$). To examine the effect of the outliers, separate analyses were conducted both with and without the outliers. The results of the analysis indicated that the outliers did have a significant impact on the results. After verifying that the outliers were not due to an error in data entry, it was decided that all analyses would be completed both with the outliers retained and deleted. It should be noted that even though the outliers had extreme scores on the PHQ-9 and the SBQ-R, these “extreme” scores were still not the maximum values on these measures. For example, the highest obtained score on the SBQ-R was 14, and the potential maximum was 18. Thus, the decision was made to run the analyses with the outliers included because transforming the data to fit a more normal distribution would not allow for the inclusion of significant scores on the dependent variable (suicide risk), and as such, it would eliminate the possibility of identifying potential risk factors for suicide risk.

According to the results after the outliers were removed from the analyses, none of the characteristics measured were significant predictors of suicide risk in the Amish. Demographic characteristics accounted for 2.7% of the overall variance ($R^2 = .027, F(3, 80) = .738, p = .532$). When depression was entered, an additional .3% of the variance was added ($R^2\Delta = .003, F(1, 79) = .259, p = .612$). With the addition of hopelessness, the total amount of variance accounted for was 3.1% ($R^2\Delta = .001, F(1, 78) = .074, p = .786$). When the addition of thwarted belongingness and perceived burdensomeness to
the model, the total variance accounted for was 4.1% ($R^2 \Delta = .010, F(2, 76) = 397, p = .674$). Finally, suicidal desire (the interaction between thwarted belongingness and perceived burdensomeness) was added to the model and an additional 2.9% amount of the variance was accounted for, bringing the total variance accounted for to 7% ($R^2 \Delta = .029, F(1, 76) = 2.344, p = .130$). The results of the analyses are presented in Table 10.

Table 10  
Summary of Hierarchical Regression Analyses for Variables Predicting Suicidal Behavior

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>B</th>
<th>SE B</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>.027</td>
<td>.027</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.087</td>
<td>.006</td>
<td>.002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>-.335</td>
<td>.278</td>
<td>-.199</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental status</td>
<td>.087</td>
<td>.291</td>
<td>.052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.030</td>
<td>.003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>.016</td>
<td>.031</td>
<td>.058</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.031</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hopelessness</td>
<td>-.016</td>
<td>.057</td>
<td>-.035</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td>.041</td>
<td>.010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Burdensomeness</td>
<td>.031</td>
<td>.036</td>
<td>.131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thwarted Belongingness</td>
<td>1.903E-005</td>
<td>.013</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td>.070</td>
<td>.029</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB X TB</td>
<td>-.007</td>
<td>.004</td>
<td>-.767</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The non-significant findings may be attributed to the fact that two of the three original participants whose scores on the SBQ-R indicated that they were “at risk” for suicide were eliminated from the analyses because they were also identified as outliers. It is important to note that when these cases were not omitted from the analyses, all of the predictor variables (except for the demographic characteristics) were found to be significant predictors of suicide risk ($p < .05$). In fact, demographic characteristics accounted for 8.7% of the overall variance ($R^2 = .087, F(3, 82) = 2.611, p = .057$). When depression was entered, an additional 34.4% of the variance was added ($R^2 \Delta = .344, F(1,$
With the addition of hopelessness, the total amount of variance accounted for was 46\% (\(R^2 \Delta = .029, F(1, 80) = 4.222, p = .043\)). When the addition of thwarted belongingness and perceived burdensomeness to the model, the total variance accounted for was 55.5\% (\(R^2 \Delta = .095, F(2, 78) = 8.314, p = .001\)). Finally, suicidal desire (the interaction between thwarted belongingness and perceived burdensomeness) was added to the model and consistent with predictions, it was able to account for variance above and beyond other predictors of suicide risk as an additional 8.3\% amount of the variance was accounted for, bringing the total variance accounted for to 63.8\% (\(R^2 \Delta = .083, F(1, 77) = 17.684, p = .000\)). The results of the analyses with the complete data set are presented in Table 11.

### Table 11

<table>
<thead>
<tr>
<th>Variable</th>
<th>(R^2)</th>
<th>(\Delta R^2)</th>
<th>B</th>
<th>SE B</th>
<th>(\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.087</td>
<td>.087</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>-.872</td>
<td>.534</td>
<td>-.265</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental status</td>
<td>-.136</td>
<td>.562</td>
<td>-.041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.431</td>
<td>.344</td>
<td>.233</td>
<td>.032</td>
<td>.601***</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.460</td>
<td>.029</td>
<td>-.148</td>
<td>.072</td>
<td>-.021</td>
</tr>
<tr>
<td>Hopelessness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td>.555</td>
<td>.515</td>
<td>.173</td>
<td>.043</td>
<td>.585***</td>
</tr>
<tr>
<td>Perceived Burdensomeness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thwarted Belongingness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td>.638</td>
<td>.083</td>
<td>.015</td>
<td>.003</td>
<td>1.312***</td>
</tr>
<tr>
<td>PB X TB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \(p < .01\); ***\(p < .001\).

**Hypothesis Three**

The third hypothesis suggested that within the full model (Appendix L), as with the general population, the relationship between depression and suicidal behaviors will be
moderated by sex. This hypothesis was tested through a hierarchical regression analysis as recommended by Frazier, Tix and Barron (2004). Consistent with the previous analyses, these regression analyses were run on the data both with and without the two identified outliers omitted. Suicide risk as measured by the SBQ-R was entered as the dependent variable. In the first step of the analysis, sex was entered as a predictor. In the second step, depression was entered as an additional predictor variable. Finally, in the last step, the product of sex and depression was entered as the final predictor variable.

The results of the analyses are presented in Table 12.

<table>
<thead>
<tr>
<th>Variable</th>
<th>R²</th>
<th>ΔR²</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.005</td>
<td>.005</td>
<td>.119</td>
<td>.151</td>
<td>.074</td>
</tr>
<tr>
<td>Step 2</td>
<td>.037</td>
<td>.031</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td>.048</td>
<td>.025</td>
<td>.178</td>
</tr>
<tr>
<td>Step Three</td>
<td>.037</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex X Depression</td>
<td></td>
<td></td>
<td>-.008</td>
<td>.051</td>
<td>-.025</td>
</tr>
</tbody>
</table>

*p < .05

According to the analyses, gender did not moderate the relationship between depression and suicide risk. Gender alone did not account for a significant amount of the variance in suicidal behavior ($R^2 = .005, F(1, 114) = .624, p = .431$). When depression was entered into the model, the model accounted for 3.7% of the variance in suicidal behavior ($R^2\Delta = .031, F(1, 113) = 3.678, p = .058$). With the addition of the interaction term, an additional .4% of the variance was accounted for ($R^2\Delta = .000, F(1, 112) = .028, p = .868$).

Similar to the findings for hypothesis two, these non-significant findings may be attributed to the fact that two of the three original participants whose scores on the SBQ-R...
R indicated that they were “at risk” for suicide were eliminated from the analyses because they were also identified as outliers. It is important to note that when these cases were not omitted from the analyses, gender was found to moderate the relationship between depression and suicide risk. In fact, the analyses with the outliers retained indicated that gender alone did not account for a significant amount of the variance in suicidal behavior ($R^2 = .003, F(1, 116) = .321, p = .572$). When depression was entered into the model however, the model accounted for 33.7% of the variance in suicidal behavior ($R^2\Delta = .335, F(1, 114) = 58.102, p = .000$). With the addition of the interaction term, an additional 7% of the variance was accounted for ($R^2\Delta = .070, F(1, 114) = 13.465, p = .000$) and this amount was significant. The results of these analyses are presented in Table 13. Because the moderator effect was found to be significant, post hoc simple slope analyses were completed to assist in interpreting this effect. The results of these analyses indicated that as the level of depression increases, so does suicide risk, but this is also true to a greater extent for women.

Table 13

<table>
<thead>
<tr>
<th>Variable</th>
<th>(R^2)</th>
<th>(\Delta R^2)</th>
<th>(B)</th>
<th>(SE)</th>
<th>(\beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>.003</td>
<td>.003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td>-.147</td>
<td>.260</td>
<td>-.053</td>
</tr>
<tr>
<td>Step 2</td>
<td>.337</td>
<td>.335</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td>.206</td>
<td>.027</td>
<td>.584***</td>
</tr>
<tr>
<td>Step Three</td>
<td>.407</td>
<td>.070</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex X Depression</td>
<td></td>
<td></td>
<td>-.217</td>
<td>.059</td>
<td>-.364***</td>
</tr>
</tbody>
</table>

*** \(p < .001\)

Hypothesis Four

Finally, hypothesis four suggested that within the full model, acquired capability as measured by the ACSS will partially mediate the relationship between suicidal desire as measured by the INQ, and suicidal behavior as measured by the SBQ-R. This was also
tested through the use of hierarchical regression. Though the use of structural equation modeling (SEM) is preferred when assessing mediation effects, according to Frazier and colleagues (2004), multiple regression can be used when SEM is not a feasible option. With regard to the current study, the sample size is insufficient for SEM analysis.

To assess the mediation relationship under consideration, two regression analyses were run. In the first analysis, suicide risk, as measured by the SBQ-R was entered as the dependent variable and suicidal desire (i.e., PBxTB interaction) as measured by the INQ was entered as the predictor variable. The interaction term was computed using subscale scores based on the results of the factor analysis. In the second step, acquired capability as measured by the ACSS was added to the model. In the second regression analysis, acquired capability as measured by the ACSS was entered as the dependent variable and suicidal desire (i.e., PBxTB interaction) as measured by the INQ was entered as the predictor variable. Consistent with the previous analyses, these regression analyses were run on the data both with and without the two identified outliers omitted.

According to Frazier and colleagues (2004), to confirm that a variable is a mediator, it must first be demonstrated that there is a relationship between the IV and DV (suicidal desire and suicide risk, respectively). Second, there must be a relationship between the IV and the mediator (suicidal desire and capability). Third, the mediator (capability) must be shown to predict the DV (suicide risk) even after controlling for the IV (suicidal desire), and finally, the relationship between the IV (suicidal desire) and the DV (suicide risk) is reduced with the mediator (capability) in the equation. The results of the analyses are presented in Table 14.
The results of the analyses indicate that acquired capability does not mediate the relationship between suicidal desire and suicide risk, as it could not be demonstrated that there was a significant relationship between the independent variable (suicidal desire) and the mediator (acquired capability) ($R^2 = .004$, $F(1, 105) = .379$, $p = .540$). This was also true for the results of the analyses when the outliers were retained ($R^2 = .002$, $F(1, 107) = .263$, $p = .609$).

Table 14

Summary of Hierarchical Regression Analyses for the Mediating Effect of Acquired Capability

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
<th>B</th>
<th>SE B</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td>.314</td>
<td>.314</td>
<td>.001</td>
<td>.001</td>
<td>.113</td>
</tr>
<tr>
<td>PBxTB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.318</td>
<td>.004</td>
<td>-.019</td>
<td>.022</td>
<td>-.084</td>
</tr>
<tr>
<td>Capability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td>.002</td>
<td>.002</td>
<td>.002</td>
<td>.003</td>
<td>.615</td>
</tr>
</tbody>
</table>

* $p < .05$; *** $p < .001$.  Note. In the first regression, suicide risk is the dependent variable. In the second analysis, capability is the dependent variable.
CHAPTER V
DISCUSSION

The primary aim of this research study was to investigate suicide risk in an Amish community within the framework of the Interpersonal Theory of Suicide. This chapter will discuss the results, strengths and limitations of the study as well as provide implications for future practice and research. Overall, the results of this research fill an important gap in the literature. Prior to this study, there was very little current literature surrounding depression and suicide risk in Amish populations. This study provides valuable insight into the prevalence and assessment of these constructs with the Amish and how Joiner’s Interpersonal Theory of Suicide may assist in conceptualizing suicide risk in this understudied population.

A total of 129 Amish adults were solicited through a network sampling procedure and completed the research survey. Of the 129 returned surveys, 121 were utilized for the analyses. First, the data were screened for normality. It was expected that given the homogenous nature of the population and the low base rate of suicide risk, the data would be skewed. As expected, the data screening revealed that the data are not normally distributed. In addition, 2 cases were identified as outliers. Unfortunately, these cases were two of three instances where the participant could be classified as “at risk for suicide.” In eliminating them from the analyses, it eliminated any significant scores on the dependent variable and as such, the results of the analyses were non-significant.
Because suicide is a low base rate event, a decision was made to retain the outliers and run the analyses both with their inclusion and their omission. This decision was made because transforming the data to fit a more normal distribution would not allow for the inclusion of significant scores on the dependent variable (suicide risk), and as such, it would eliminate the possibility of identifying potential risk factors for suicide risk. It should be noted that even though the outliers had extreme scores on the PHQ-9 and the SBQ-R, these “extreme” scores were still not the maximum values on these measures. For example, the highest obtained score on the SBQ-R was 14, and the potential maximum was 18. Thus, the conceptual significance of the findings was deemed as important as the statistical significance. After the data were screened, they were subjected to descriptive and exploratory analyses. Then, to determine the role of the perceived burdensomeness, thwarted belongingness, and acquired capability in predicting suicide risk above and beyond depression and hopelessness in Amish adults, multiple hierarchical regression analyses were conducted. The results of the analyses were mixed. When the outliers were retained the findings partially support the usefulness of the Interpersonal Theory of Suicide in predicting suicide risk in the Amish. Specifically, thwarted belongingness and perceived burdensomeness were able to account for a significant amount of the variance in suicide risk, above and beyond depression and hopelessness.

**Summary of Results**

The results of the descriptive analyses provided some important information regarding the prevalence and assessment of depression and suicide risk in the Amish. Most importantly, there appears to be little difference in the rates of depression and
suicide risk between the Amish and the general population. This is consistent with past observations. In their text on the Amish and Amish culture, Hurst and McConnell (2010) noted little differences between the Amish and non-Amish with regard to mental health conditions. They reported that clinicians observed that “the rate of psychiatric illness among the Amish does not seem to be significantly different from that found in the general population” (p. 240).

In the current study, 7% of respondents had scores on the PHQ-9 (Spitzer et al., 2000) that place them at risk for depression. Though it is difficult to compare this rate to rate of depression in the general population because the rates reported for the general population vary, this finding is similar to what has been found in some studies. For instance, in their examination of depression within rural populations, Probst and colleagues (2006) noted that 6.1% of their participants screened positive for depression. Similarly, Kessler, Chiu, Demler, and Walters (2005) noted that 6.7% of adults met criteria for depression in the past year.

Interestingly, despite the similar rates of depression between the Amish and the general population, the mean PHQ-9 (Spitzer et al., 2000) score in the current study ($M = 3.09$, $SD = 3.94$, $n = 119$) was markedly lower than that previously reported in research with the general population ($M = 5.03 - 5.05$, no $SD$ reported, $n = 580$; Kroenke et al., 2001). It was also lower than the mean score observed in ethnic minorities ($M = 6.0 - 6.5$, no $SD$ reported, $n = 3,417$; Huang et al, 2006).

With regard to suicide risk, 3.7% of adults in the general population reported experiencing suicidal ideation (Crosby et al., 2011). In the current study approximately 4% of the participants had suicidal ideation at least once in the past year, whereas 16%
acknowledged experiencing a passing suicidal thought at least once in their life. Three women met criteria for being “at risk” for suicide in the future, with total SBQ-R (Osman et al., 2001) scores greater than or equal to 7. It is important to note that like the rate of depression, although the rates of suicidal ideation appear similar between the current sample and those reported by the general population, the mean SBQ-R score found in the current study \((M = 3.54, SD = 1.39, n = 119)\) is lower than what has been found with European Americans from the general population \((M = 4.82, SD = 2.41, n = 220)\).

There are various social and cultural factors that influence the perception and treatment of health and mental health issues in the Amish and may assist in explaining the discrepancy between mean scores on the PHQ-9 (Spitzer et al., 2000) and the SBQ-R (Osman et al., 2001) between the Amish and the general population. First, the results may simply indicate that though the rate of depression and suicide risk are similar, the severity of the symptoms related to each may be less intense in the Amish. This may be indicative of more adaptive coping skills or a result of their strong social support network. Alternately, there may a minimization of symptoms or reluctance among some Amish individuals to endorse depressive symptomology, which if true, is important information for practitioners. This assertion is worth consideration, especially given the strong Amish belief in the will of God. They may acknowledge that medicine can help in treating an illness, but it is God who heals (Hostetter, 1993; Hurst & McConnell, 2010). Hurst & McConnell (2010) noted “It is self-centeredness and selfishness that lead to fear, which in turn leads to emotional difficulties like depression and anxiety” (p. 244). Given these religious beliefs, many Amish may not recognize psychological distress as
such, they may instead view their symptoms as an indication that they have not submitted themselves to Christ enough or that they have sinned (Hurst, 2010). There is the belief that the Bible can teach one the truth and to heal, individuals must shift their focus from themselves to God and others. Experiencing, and therefore endorsing, depressive symptoms may indirectly be seen as self-centeredness or a lack of faith in God’s ability to heal.

Cates and Graham (2002) offered an example of how this played out in their treatment of one Amish client. In their case example an individual presented with significant somatic complaints, yet scored within normal limits on the Beck Depression Inventory. Upon reviewing the answers, his therapist discovered that the man was unwilling to endorse many of the symptoms because he felt that they reflected a lack of appreciation for God. Thus, it is important for practitioners to be aware of these beliefs and how they may impact Amish patients’ endorsement of depressive symptomology.

To assess the cultural validity of the INQ (Van Orden et al., 2008) with the Amish, the INQ was subjected to an exploratory factor analysis. As expected, results of the exploratory factor analysis of the INQ support a two factor structure. With this sample, however, two items on the INQ did not load on the expected factors. Based on previous research (Freedenthal et al., 2011), item number 7 (i.e., “These days I think I contribute to the well-being of the people in my life”) was expected to load on the burdensomeness factor. Instead, it loaded more heavily on the belongingness factor. Similarly, item 9 (i.e., “These days, I feel disconnected from other people”) loaded more heavily on the burdensomeness factor when it was believed it would load on belongingness. It is not known why these two items loaded on unexpected factors. Prior
research with the general population did not indicate that these two items may have questionable validity. Both loaded onto expected factors and had moderately high factor loadings of .645 and .655, respectively (Van Orden, 2009). The results of the current analyses may be an indication that these two items are either not good items with the Amish or because they may have different meanings for the Amish.

The INQ (Van Orden et al, 2009) also demonstrated good convergent validity, as the results of the correlational analyses indicated that the INQ correlated in expected directions with other measures of depression and suicide risk. Specifically, thwarted belongingness was positively related to depression, perceived burdensomeness and suicide risk and negatively related to collectivism. Similarly, perceived burdensomeness was also positively correlated with depression, thwarted belongingness, and suicide risk and negatively correlated with collectivism. These findings lend more support to the argument that the INQ is a valid instrument to use with the Amish because they suggest that consistent with the Interpersonal Theory of suicide, individuals are more likely to possess the desire to die if they first view themselves as a burden to their loved ones, and second, feel separated from their identified social group. These findings are not surprising given the collectivistic ideology to which the Amish ascribe. Members are expected to both be contributing members of their community and expected to conform to the norms of the church (Hurst & McConnell, 2010). These findings suggest that the inability to do one or the other may be risk factors for depression and suicide.

With regard to the main analyses, hypothesis one suggested that collectivism scores on Triandis’(1995) measure of individualism and collectivism would be negatively related to depression as measured by the PHQ-9 (Spitzer et al., 2000), suicidal desire (i.e.,
perceived burdensomeness and thwarted belongingness) as assessed by the INQ (Van Orden et al, 2009), and hopelessness as assessed by the BHS (Beck et al., 1974). As predicted, collectivism scores were negatively related to depression scores and suicidal desire, though in the analyses run with the outliers omitted the negative correlation between collectivism and perceived burdensomeness was non-significant. All correlations were significant with the complete data set. These findings support the assertion that collectivism may act as a protective factor against depression and suicide risk, which highlights the importance of a supportive social network.

Inconsistent with predictions, though hopelessness was negatively correlated with collectivism scores, this result was not statistically significant. There are multiple reasons that may explain why the relationship between collectivism and hopelessness was found to be non-significant. First, there was a large amount of missing data on the BHS and this may have impacted the results. This is unlikely however, because when the missing data were replaced through multiple imputation, the results were still non-significant. A more likely reason for this non-significant finding is with regard to the cultural validity of the BHS with the Amish. Other data obtained through this research study suggest that this instrument may not be a culturally valid instrument to use with the Amish. The cronbach’s alpha for the BHS with the current sample was low (.51), indicating that it is not assessing the construct it is intended to assess. It is difficult to speculate as to why the BHS performed so poorly with this sample, but some qualitative data offered by participants supports the idea that the experience of hopelessness may be fundamentally different for Amish adults. This finding will be discussed in more detail later in this chapter.
Hypothesis two predicted that suicidal desire (i.e., perceived burdensomeness and thwarted belongingness) would be able to account for a significant amount of the variance above and beyond other known predictors of suicide (i.e., depression and hopelessness). According to the results after the outliers were removed from the analyses, none of the characteristics measured were significant predictors of suicide risk in the Amish. These non-significant findings may be due to the fact that there was very little variability in scores on the SBQ-R (Osman et al., 2001), which assessed the dependent variable (i.e., suicide risk). Relatedly, two of the three original participants whose scores on the SBQ-R indicated that they were “at risk” for suicide were eliminated from the analyses because they were also identified as outliers. It is likely that this influenced the results, especially considering that when the outliers were included in the analyses, all of the predictor variables except for hopelessness were able to account for a significant amount of the variance in suicide risk. In fact, thwarted belongingness, perceived burdensomeness and the combination of the two variables were able to account for an additional 17.8% of the variance above and beyond depression and hopelessness.

Hypothesis three suggested that similar to the general population, sex would moderate the relationship between depression and suicide risk in the Amish. Similar to the findings for hypothesis two, in the analyses run without the outliers sex did not moderate the relationship between depression and suicide risk. These results may also be attributed to the low variability in SBQ-R (Osman et al., 2001) scores and the elimination of the outliers from the analyses. When the outliers were retained, the results of the analyses were consistent with the predictions and previous research. Sex was found to
moderate the relationship between depression and suicide risk, indicating that females with depression are at even greater risk for suicide.

Hypothesis four predicted that acquired capability would mediate the relationship between suicidal desire and suicide risk. In fact, acquired capability not only failed to mediate the relationship between suicidal desire and suicide risk, it was also found to be unrelated to any of the study’s research variables. Unlike hypotheses two and three however, these findings were consistent across all results and were not dependent upon the outliers being retained. There are multiple potential explanations for these non-significant findings. First, there is the question of the cultural validity of the instrument with the Amish. According to Joiner (2005), acquired capability is gained through a lowered fear of death and an increase in pain tolerance. The ACSS (Van Orden et al., 2008) is intended to measure these two constructs, but the instrument only consists of five items. According to Costello and Osborne (2005), each factor should have at least 3 items. They also noted that “A factor with fewer than three items is generally weak and unstable” (p. 5). Because the version used in the current study was so brief, it could not be subjected to exploratory analyses that would have investigated its validity Amish adults and as such, there is no way to verify through factor analysis that the instrument is valid with this population. However, there is some qualitative data that supports its lack of validity. For example, like the BHS, this measure had skipped items. Specifically, approximately 5.8% of respondents failed to answer item number 5 (i.e., “I am not at all afraid to die”). It also had a low alpha (.60), indicating poor internal reliability. Though the response rate in and of itself is not indicative of a culturally inappropriate question, some qualitative comments offered hint that the question may have a different meaning
for Amish individuals. Specifically, some of the respondents simply put a question mark as their response. Other comments hinted at some ambivalence about the question (i.e., “In one way, yes – but in another way, no, because I know I’m ready whenever because I’ll be in heaven” and “Dying yes, but then meeting Jesus when his time is to call me home is not scary.”) With the Amish, death is not necessarily an event to be feared (i.e., “I’m not afraid to go home to the Lord, I’m ready” and “If the Lord is my salvation, whom shall we fear…”), yet this lack of fear does not necessarily put them at greater risk for suicide. Therefore, a lowered fear of death with the Amish may be more indicative of an individual’s faith in God as opposed to their risk for suicide.

Another issue that may have influenced the results of the analyses for hypothesis four is with regard to the brevity of the instrument. Even if acquired capability is a culturally relevant construct with the Amish, the 5-item version of the ACSS (Van Orden et al., 2008) used in the current study may have been inadequate in assessing it. This is less likely however, given the fact that the 5-item version has been used in previous research with the general population and it was sufficient in assessing this acquired capability. Specifically, in 2008, Van Orden and colleagues were able to use the ACSS and show that acquired capability, perceived burdensomeness, and the combination of the two, were able to account for a significant amount of the variance in clinician rated risk for suicide above and beyond demographic characteristics and depression. Unfortunately, in the Van Orden study, acquired capability was not entered into the regression equation alone, so there is no way to know how much of the variance can be solely attributed to acquired capability.
Strengths and Limitations

The current study exhibited several strengths. First and foremost, it added to the literature base surrounding the prevalence of specific mental health issues with Amish adults. Prior to this research, there was very little current and empirical data regarding depression and suicide risk in this population. In addition, the current study provided important information regarding suicide risk factors and conceptualizing suicide risk in Amish adults. Another strength of the current study is it provided useful information regarding the cultural validity of the Interpersonal Theory of Suicide, which is a relatively new theory that has little research specifically with cultural minorities and different faith communities. Though many of the research studies that have examined the Interpersonal Theory of Suicide have been with diverse samples, none have examined the role of the theory with specific faith communities.

Although this investigation provided initial empirical data on suicide risk and depression with the Amish, some limitations of this study need to be discussed. The first limitation of note is with regard to the sample. Unfortunately, the results of this study are based on a relatively small sample size (n = 121). Likewise, the sample was drawn exclusively from northeast Ohio. It is not known how the inclusion of participants from other Amish communities outside of Ohio would have impacted the findings. These two factors greatly threaten the generalizability of the results to the larger Amish population.

Additionally, this study did not ask participants to identify their sect membership. As discussed in the literature review, there are many sects of Anabaptists, ranging from
the very conservative Old Order Amish to the more liberal Mennonite. Thus, the results of this study should be interpreted with caution in terms of generalizability across all sects.

Another limitation of this study relates to the sampling process. Respondents in this study were self-selected to complete the survey. Help-seeking and treatment in general varies greatly from family to family and between communities and health care decisions traditionally rest with the family head (Hurst & McConnell, 2010). These values may have influenced an individual’s choice to participate. Some participants may have wanted to complete the survey but were unwilling to do so because it was not condoned by a family head or community leader. Likewise, some participants may not have completed the survey because of a desire to participate, but rather, they may have felt compelled to complete the survey because an authority figure asked it of them.

Similarly, individuals with suicidal thoughts could have been drawn to respond to the survey invitation, or in contrast, those without suicidal ideation or mental health issues may have selected to complete the survey in an effort to show the “healthy” nature of the Amish in general.

These suppositions are supported through some of the qualitative data offered by participants. Many participants chose to add qualifiers to their answers on the standard measures included in the survey or to the survey in its entirety. For example, with regard to providing evidence of the healthy nature of Amish community members, one participant commented “Life is God’s will, how we respond to it is our choice. We have much support through our church, family, and community.” Likewise, another responded “With God in heaven, a good husband & many friends, life is good!” With regard to
those with suicidal desire and/or mental health issues being drawn to participate in the study, one participant commented “Blessed be your effort. Many Amish need help. Many Amish do not like to admit their struggles in such.”

An additional limitation is with regards to language and translation. For the Amish, their first language is Pennsylvania Dutch. Their proficiency with English depends largely on the amount of interaction they have with the outside world. As such, individuals from more conservative churches, who are more segregated from the larger population, are more likely to have difficulty with English. There are also gender differences in English proficiency. For example, women tend to have less contact with the outside world, and are therefore more likely to have difficulty with English (Hurst & McConnell, 2010). With regard to the current study, all of the measures were in English and there is no way to know how the participants’ English proficiency impacted their responses.

Another limitation of the current study was the use of a 5-item scale to measure acquired capability. The results of the analyses indicate that acquired capability is not significant in predicting suicide risk, but it is not known if this is because the construct is culturally irrelevant, or if it is because the construct was not adequately assessed.

Finally, the most notable limitation of the current study is with regard to the amount of missing data. The results of this study are based on a data set that is missing a large proportion of values for some items. The Beck Hopelessness scale in particular, had a very poor response rate. Qualitative comments suggest that the missing data are reflective of a commonly held Amish belief or value that is characteristic of the Amish population as a whole. Specifically, many of the BHS items assess an individual’s belief
in fate or luck. Because of their strong religious convictions, the Amish do not believe in these constructs. They believe that their lives are in God’s hands and whatever happens in life is a result of His plan for them. Given the low alpha and poor response rate, the results of the current study may be an underestimate of the role of hopelessness in suicide risk in Amish adults.

Implications for Research and Theory

The current research surrounding the Interpersonal Theory of Suicide indicates that it is a promising framework through which to conceptualize suicide risk (Bender et al., 2011; Joiner et al., 2005, 2006, 2009, Van Orden et al., 2008, 2010). It was believed that this theory would be useful in conceptualizing suicide risk in Amish adults because of the uniqueness of the culture. Perceived burdensomeness and thwarted belongingness in particular, seemed especially salient given the collectivistic nature of the Amish community. In the current examination, the use of the theory in conceptualizing suicide risk in the Amish was partially supported in that perceived burdensomeness and thwarted belongingness were found to be significant predictors of suicide risk above and beyond other risk factors, but acquired capability was not found to be a significant predictor. Future research endeavors with this population should attempt to replicate these findings.

One of the limitations of the current study was the use of the 5-item ACSS (Van Orden et al., 2008). Not only is the measure brief, it also had a low alpha (.60). There is a longer version of the ACSS that is now available, and though it does not have as much research support as the 5-item version, additional studies using the longer version may assist in determining the cultural relevancy of the construct of acquired capability.
The scope of this research study was limited to suicide risk factors and though some protective factors may be inferred from the results (i.e., sense of belongingness, lack of burdensomeness), its primary focus was not on protective factors. Collectivism was found to be negatively correlated with thwarted belongingness, perceived burdensomeness, depression and suicide risk, which suggests that for those who perceive themselves to have a strong social support, they are less likely to feel like a burden or an outcast, and they are also at less risk for depression and suicide. Future research should examine potential protective factors in more detail. A study utilizing the Reasons for Living Inventory (Linehan, 1983) would be particularly useful in identifying additional protective factors specific to the Amish population.

It is also important to note that qualitative approaches may yield more complete information. For example, based on the results of the current study, it is reasonable to hypothesize that the construct of hopelessness may be fundamentally different in the Amish community. Although the current study was quantitative in nature, the BHS elicited a great deal of unsolicited feedback from participants and these comments highlight the incongruities between the underlying assumptions of the BHS and core ideological and religious values held by the Amish. Thirteen of the participants added qualitative comments to their answers on the BHS. For example, on item number 8, which states “I happen to be particularly lucky, and I expect to get more of the good things in life than the average person,” some participants remarked upon the appropriateness of the question (i.e., “Inappropriate question” and “Theologically incorrect question”). Likewise, other participants commented on the appropriateness of
the word “lucky” (i.e., “I am blessed, not lucky;” “Jesus has blessed me richly,” and “Is it luck or living a Christian life?”). Similar religious comments were noted to item number 15, (i.e., “I have great faith in the future”). Three participants clarified this statement by responding that their faith is in God (i.e., “In God;” “Great faith in God;” and “Because God is in control!”).

There appears to be a lack of research regarding the construct of hopelessness in faith communities and the validity of the BHS with specific faith communities. Though there is a body of literature dedicated to spiritual and/or religious well-being and its relation to suicidality and depression, there is nothing specific to the use of the BHS with spiritual individuals. The research that does exist indicates faith and/or religious orientation is negatively related to depression and hopelessness and also that spiritual well-being can act as a protective factor against suicide risk (Simonson, 2008; Taliaferro, Rienzo, Pigg, Miller, & Dodd, 2009). In addition, Murphy and Fitchett (2009) found that belief in a concerned God was associated with lower level of depression and better treatment outcomes. In the research studies completed by Taliferro and colleagues (2009) and that completed by Murphy and Fitchett (2009), the Beck Hopelessness Scale was administered. Unlike in the current study, the researchers reported adequate alpha coefficients (.80 and .89, respectively) for the BHS in their samples. What is different from the current study is that the samples surveyed by these researchers were not made up of exclusively religious or spiritual participants. In fact, one sample consisted of individuals receiving treatment for depression (Murphy & Fitchett, 2009) and the other was composed of college students (Taliferro et al., 2009). In both cases, the participants reported on their spiritual/religious well-being and involvement. Future qualitative
research that explores the meaning of hopelessness with faith communities may help to
determine if it is essentially different for individuals with a strong faith as it appears to be
in the current study, or if there is something unique about how the current sample of
Amish adults experience the construct of hopelessness. The unreliability of the BHS in
the current study may have underestimated the role of hopelessness in depression and
suicide risk.

**Implications for Practice**

Aside from providing valuable information regarding the rates of depression and
suicide risk and the utility of the Interpersonal Theory of Suicide in conceptualizing
suicide risk in the Amish, this study also yielded valuable information regarding the
culturally valid assessment and prediction of suicide risk with this population. The APA
urges psychologists to utilize reliable and culturally valid instruments (APA, 2002) and to
try to understand the role of culture in assessment and treatment. It has already been
noted that though the ACSS may not be the most useful indication of suicide risk status
for Amish clients, the INQ may be more beneficial in the prediction of this construct.
Specifically, exploratory analyses indicated that the INQ is a culturally valid instrument
and the results of the regression analyses indicated that it was able to account for variance
in suicide risk above and beyond depression and hopelessness.

Though the BHS (Beck et al., 1974) is a well-established measure for assessing
suicide risk among members of the general population, unlike the INQ (Van Orden et al.,
2009) the results of the current study suggest that the BHS may not be a useful tool in
assessing suicide risk in the Amish and may actually be a culturally invalid measure. In
examining the response rate of the participants in the current study, almost 30% of the
respondents failed to endorse at least one item on the BHS. Six of the twenty items had missing values that ranged from 5.8% to 9.1% and the chronbach’s alpha was low (.51).

The response rate and the qualitative comments previously mentioned on the BHS were not the only indicator that it may not be culturally valid with the Amish. Hopelessness has been established as an important risk factor for suicide and the BHS is the most widely used measure of hopelessness in use. In the general population, the BHS has demonstrated its ability to predict suicide risk above and beyond depression. Research has demonstrated that patients who score a 9 or above on the BHS are 11 times more likely than those who scored 8 or below to die by suicide in the future. In fact, in one recent study, a BHS score of 9 or above defined a group (N=1,161) that included 16 (94.1%) of the 17 patients who committed suicide (Beck et al., 2006). However, in the current study, BHS scores were not significant predictors of suicide risk above and beyond depression. In fact, when examining the results of the analyses with the complete data set, BHS scores only accounted for an additional 2.9% of the total variance in suicide risk above and beyond depression, and this amount was not statistically significant. Hopelessness accounted for even less variance when extreme cases were eliminated from the analyses. In examining the results of the analyses where the outliers were omitted, hopelessness only accounted for an addition .1% of the variance in predicting suicide risk, and this amount was not significant.

Another implication for practice is with regard to the use of a multidimensional approach to assessing depression and suicide with Amish clients. The results of the current study suggest that there may be a tendency for Amish clients to underreport or minimize symptoms. It is therefore important for the practitioner to explore responses
with the client and to not take scores at face value. Avoiding mental health terminology and instead focusing on functioning in daily living may be more useful in gathering the information needed to make a diagnosis and plan treatment.

Finally, because collectivism was shown to be negatively related to depression, suicide risk, perceived burdensomeness and thwarted belongingness, it is important for practitioners to understand the role of the family, church, and community in an Amish client’s life. As such, one should ask about faith as well as social and community support and capitalize on the positive relationships in the individual’s life, including the client’s relationship with God. Having this conversation may also assist the practitioner in identifying potential stressors impacting psychological well-being. For example, in discussing these relationships, one may gain a greater understanding of the client’s sense of connection or disconnection to their family, church, and community.

**Summary**

In summary, the results of the current study indicate that the rates of depression and suicide risk in the Amish are similar to the rates in the general population, though there may be qualitative differences in the Amish individuals’ experiences of depression and suicidal ideation and/or their willingness to report symptoms. In addition the results suggest that the Beck Hopelessness Scale is not a useful indicator of suicide risk in the Amish. Finally, the Interpersonal Theory of Suicide may offer one way to conceptualize suicide risk in the Amish, though only parts of it appear culturally appropriate since acquired capability was not found to be related to any other research variable and was also not predictive of suicide risk. This study is particularly relevant to counseling psychology and its commitment to multiculturalism and social justice.
REFERENCES


Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (September 17, 2009). The NSDUH Report: Suicidal Thoughts and Behaviors among Adults. Rockville, MD.


APPENDIX A

INFORMED CONSENT FORM

Dear Participant,

You are invited to participate in a research project being conducted by Janette Mance, a doctoral candidate in Counseling Psychology at the University of Akron.

Title of Study: Understanding Suicide Risk in the Amish: Investigating the Cultural Validity of The Interpersonal Theory of Suicide.

Purpose: The purpose of this research is to explore factors related to suicide in the Amish population. Approximately 100 individuals will participate in this study.

Procedures: Should you decide to participate, you are asked to complete several questionnaires that are designed to measure depression, frequency of suicidal thoughts and behaviors, and feelings associated with both.

Eligibility: You are eligible for the study if you are Amish and 18 years or older.

Risks and Discomforts: There are no foreseeable risks with participation in this research. Some participants may experience negative feelings when filling out the self-report survey questions. Participants are strongly urged to seek immediate attention from a mental health professional should they feel suicidal. In that event, please contact the National Suicide Hotline at 1-800-273-TALK. You may also contact one of your local mental health agencies:

The Counseling Center of Wayne and Holmes County
2285 Benden Drive
Wooster, OH 44691
Office: (330) 264-9029

Your Human Resource Center
186 West Jackson Street
Millersburg, Ohio 44654
Phone: 330-674-4608

This information will also be provided on a separate page at the end of the survey.

Benefits: There are no direct benefits from your participation in this study, but your assistance will help us to better understand depression and suicide in your community, as well as help us in identifying factors that are associated with suicide risk.
Right to refuse or withdrawal: Your participation is voluntary, and you may refuse to participate or withdraw at any time.

Anonymous and Confidential data collection: This survey is anonymous and confidential, meaning that no identifying information will be collected and your responses will not be linked with your name or any identifying information. Also, findings will only be reported in cumulative form.

Who to contact with questions: If you have any questions, you may contact me at 330-309-3127 or 8177 Cleveland-Massillon Rd. #C28, Clinton, OH 44216, or my faculty advisor, Dr. James R. Rogers at 330-972-7779 or 411 Wolf Ledges Parkway, Suite 106, Akron, OH 44311. This study is approved by the Institutional Review Board for the Protection of Human Subjects at the University of Akron. Questions regarding human subjects’ rights can also be directed to the UA Institutional Review Board, Office of Research Services and Sponsored Programs at 330-972-7666 or 1-888-232-8790.

Acceptance and Signature:
I have read the information provided and all of my questions have been answered. I voluntarily agree to participate in this study. My completion of this survey will serve as my consent.
APPENDIX B

HELP-SEEKING INFORMATION

Thank you for your participation in this study. If you experienced any suicidal thoughts as you were completing this survey, I strongly urge you to seek immediate mental health attention.

- Please contact the National Suicide Hotline at 1-800-273-TALK.
- You may also contact one of your local mental health agencies:

  The Counseling Center of Wayne and Holmes County
  2285 Benden Drive
  Wooster, OH 44691
  Phone: (330) 264-9029

  Your Human Resource Center
  186 West Jackson Street
  Millersburg, Ohio 44654
  Phone: 330-674-4608
APPENDIX C

HUMAN SUBJECTS APPROVAL

NOTICE OF APPROVAL

February 20, 2012

Janette Mance-Khoury
321 Duke Street #112
Norfolk, VA 23510

From: Sharon McWhorter, IRB Administrator

Re: IRB Number 20120125 "Understanding Suicide Risk in the Amish: Examining the Cultural Validity of the Interpersonal Theory of Suicide"

Thank you for submitting an IRB Application for Review of Research Involving Human Subjects for the referenced project. Your protocol represents minimal risk to subjects and has been approved under Expedited Category #2.

Approval Date: February 16, 2012
Expiration Date: February 16, 2015
Continuation Application Due: February 2, 2013

In addition, the following is/are approved:

- Waiver of documentation of consent
- Waiver or alteration of consent
- Research involving children
- Research involving prisoners

Please adhere to the following IRB policies:

- IRB approval is given for not more than 12 months. If your project will be active for longer than one year, it is your responsibility to submit a continuation application prior to the expiration date. We request submission two weeks prior to expiration to insure sufficient time for review.
- A copy of the approved consent form must be submitted with any continuation application.
- If you plan to make any changes to the approved protocol you must submit a continuation application for change and it must be approved by the IRB before being implemented.
- Any adverse reactions/incidents must be reported immediately to the IRB.
- If this research is being conducted for a master's thesis or doctoral dissertation, you must file a copy of this letter with the thesis or dissertation.
- When your project terminates you must submit a Final Report Form to close your IRB file.

Additional information and all IRB forms can be accessed on the IRB web site at:
http://www.uakron.edu/research/pssy/compliance/IRBforms.php

Cc: James Rogers - Advisor
Cc: Stephanie Woods - IRB Chair

Office of Research Services and Sponsored Programs
Akron, OH 44325-2102
330-972-7605 • 330-972-8281 Fax

The University of Akron is an Equal Education and Employment Institution.

[Approved consent form(s) enclosed]
APPENDIX D

BACKGROUND QUESTIONNAIRE

Instructions: Please answer the following questions.

1. Gender: Male Female
2. Age: ________
3. Marital Status: ______________________________
4. Do you have children? YES NO
5. Have you been baptized into the church? YES NO
APPENDIX E

PATIENT HEALTH QUESTIONNAIRE – 9 (PHQ-9)

Over the *past two weeks*, how often have you been bothered by the following?

<table>
<thead>
<tr>
<th></th>
<th>Little interest or pleasure in doing things</th>
<th>Not at all</th>
<th>Several</th>
<th>More than one half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Feeling bad about yourself, - or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Trouble concentrating on things, such as reading the newspaper</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Moving or speaking so slowly that other people have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

10 If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home or get along with others?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
<th>Extremely</th>
</tr>
</thead>
</table>

Add columns:

Total:
APPENDIX F

SUICIDE BEHAVIORS QUESTIONNAIRE – REVISED (SBQ-R)

Instructions: Please check the number beside the statement that best applies to you.

1. Have you ever thought about or attempted to kill yourself?
   - 1. Never
   - 2. It was just a brief passing thought
   - 3a. I have had a plan at least once to kill myself but did not try to do it.
   - 3b. I have had a plan at least once to kill myself and really wanted to die.
   - 4a. I have attempted to kill myself but did not want to die.
   - 4b. I have attempted to kill myself and really wanted to die.

2. How often have you thought about killing yourself in the past year?
   - 1. Never
   - 2. Rarely (1 time)
   - 3. Sometimes (2 times)
   - 4. Often (3-4 times)
   - 5. Very Often (5 or more times)

3. Have you ever told someone that you might commit suicide or that you might do it?
   - 1. No
   - 2a. Yes, at one time, but did not really want to die
   - 2b. Yes, at one time, and really wanted to die
   - 3a. Yes, more than once, but did not really want to do it
   - 3b. Yes, more than once, and really wanted to do it

4. How likely is it that you will attempt suicide one day?
   - 0. Never
   - 1. No chance at all
   - 2. Rather unlikely
   - 3. Unlikely
   - 4. Likely
   - 5. Rather likely
   - 6. Very likely
APPENDIX G

THE INTERPERSONAL NEEDS QUESTIONNAIRE – 12 (INQ-12)

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

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all true for me</td>
<td>Somewhat true for me</td>
<td>Very true for me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. These days the people in my life would be better off if I were gone.
2. These days the people in my life would be happier without me.
3. These days I think I have failed the people in my life.
4. These days I feel like a burden on the people in my life.
5. These days I think the people in my life wish they could be rid of me.
6. These days I think I make things worse for the people in my life.
7. These days I think I contribute to the well-being of the people in my life.
8. These days, other people care about me.
9. These days, I feel disconnected from other people.
10. These days, I feel that there are people I can turn to in times of need.
11. These days, I am close to other people.
12. These days, I have at least one satisfying interaction every day.
APPENDIX H

ACQUIRED CAPABILITY FOR SUICIDE SCALE (ACSS)

Instructions: Please read each item below and indicate to what extent you feel the statement describes you. Rate each statement using the scale below and indicate your responses on your answer sheet.

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all like me</td>
<td>Very much like me</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_____1. Things that scare most people do not scare me.

_____2. I can tolerate a lot more pain than most people.

_____3. People describe me as fearless.

_____4. The pain involved in dying frightens me.

_____5. I am not at all afraid to die.
APPENDIX I

BECK HOPELESSNESS SCALE

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APPENDIX J

TRAINDIS’ MEASURE OF INDIVIDUALISM AND COLLECTIVISM

Instructions for the next 16 items: Please read each statement then indicate your agreement or disagreement with each item by using the following scale.

<table>
<thead>
<tr>
<th>1</th>
<th>Strongly disagree</th>
<th>2</th>
<th>Disagree</th>
<th>3</th>
<th>Neutral or Undecided</th>
<th>4</th>
<th>Agree</th>
<th>5</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I’d rather depend on myself than others.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>I rely on myself most of the time; I rarely rely on others.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3</td>
<td>I often do &quot;my own thing.&quot;</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>My personal identity, independent of others, is very important to me.</td>
<td></td>
<td></td>
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<tr>
<td>5</td>
<td>It is important that I do my job better than others.</td>
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<tr>
<td>6</td>
<td>Winning is everything.</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>Competition is the law of nature.</td>
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<tr>
<td>8</td>
<td>When another person does better than I do, I get tense and aroused.</td>
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<tr>
<td>9</td>
<td>If a coworker gets a prize, I would feel proud.</td>
<td></td>
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<tr>
<td>10</td>
<td>The well-being of my coworkers is important to me.</td>
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<tr>
<td>11</td>
<td>To me, pleasure is spending time with others.</td>
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<tr>
<td>12</td>
<td>I feel good when I cooperate with others.</td>
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<tr>
<td>13</td>
<td>Parents and children must stay together as much as possible.</td>
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</tr>
<tr>
<td>14</td>
<td>It is my duty to take care of my family, even when I have to sacrifice what I want.</td>
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<tr>
<td>15</td>
<td>Family members should stick together, no matter what sacrifices are required.</td>
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<tr>
<td>16</td>
<td>It is important to me that I respect the decisions made by my group.</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX K

**CORRELATION MATRIX FOR ALL RESEARCH VARIABLES**

<table>
<thead>
<tr>
<th></th>
<th>1. PHQ-9</th>
<th>2. BHS</th>
<th>3. Coll.</th>
<th>4. PB</th>
<th>5. TB</th>
<th>6. ACSS</th>
<th>7. SBQ-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>.588**</td>
<td>(.51)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>-.306**</td>
<td>-.134</td>
<td>(.76)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>.768**</td>
<td>-.538</td>
<td>-.218*</td>
<td>(.90)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>.295**</td>
<td>.122</td>
<td>-.260**</td>
<td>.305**</td>
<td>(.87)</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>-.038</td>
<td>-.103</td>
<td>.002</td>
<td>.071</td>
<td>-.031</td>
<td>(.60)</td>
</tr>
<tr>
<td>7.</td>
<td>.576**</td>
<td>.229*</td>
<td>-.326**</td>
<td>.486**</td>
<td>.227*</td>
<td>-.047</td>
<td>(.75)</td>
</tr>
</tbody>
</table>

*p <.01, **p < .001. Note. Cronbach’s alphas for scales presented in parenthesis along the diagonal. N = 121. Depression = PHQ-9; Hopelessness = BHS; Collectivism = Traindis’ measure of Individualism and Collectivism; Perceived Burdensomeness = PB; Thwarted Belongingness = TB; Acquired Capability = ACSS; Suicide risk = SBQ-R.
APPENDIX L

MODEL OF THE STUDY HYPOTHESES

![Diagram showing the relationships between variables such as Depression, Hopelessness, Collectivism, Thwarted Belongingness, Perceived Burdensomeness, PB X TB Interaction, Sex, and Suicidal Behaviors. The diagram includes correlations such as .768**, .588**, .306**, .295**, .134, .122, .218*, .538**, .260**, .305**, and .122.](image)