

“WHAT ABOUT YOUR FRIENDS?” SOCIAL
SUPPORT MODERATES PERCEIVED
BURDENSONENESS AND SUICIDAL IDEATION
RELATIONSHIP

By
DAVID WILLIAM HOLLINGSWORTH
Bachelor of Arts in Psychology
Morehouse College
Atlanta, Georgia
2012

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 2014

“WHAT ABOUT YOUR FRIENDS?” SOCIAL
SUPPORT MODERATES PERCEIVED
BURDENSONENESS AND SUICIDAL IDEATION
RELATIONSHIP

Thesis Approved:

LaRicka R. Wingate, Ph.D.

Thesis Adviser

DeMond Grant, Ph.D.

Jennifer Byrd-Craven, Ph.D.

ACKNOWLEDGEMENTS

I would like to thank and praise God for providing me the strength and opportunity to successfully complete this thesis. I would like to acknowledge my adviser, Dr. LaRicka Wingate, for her guidance and encouragement. I also would like to acknowledge my thesis committee members, Dr. DeMond Grant and Dr. Jennifer Byrd-Craven, for their suggestions and helpful recommendations. Last, I thank my labmates, family, and friends for their continued support and love.

Name: DAVID WILLIAM HOLLINGSWORTH

Date of Degree: JULY, 2014

Title of Study: "WHAT ABOUT YOUR FRIENDS?" SOCIAL SUPPORT
MODERATES PERCEIVED BURDENSOMENESS AND SUICIDAL
IDEATION RELATIONSHIP

Major Field: CLINICAL PSYCHOLOGY

Abstract: Suicide is a nationwide concern in the young adult population (Centers for Disease Control and Prevention, 2014). An identified risk factor for suicide for young adults is the perception that one is a burden on others (i.e., perceived burdensomeness; Joiner, 2005). Additional research has demonstrated that social support is negatively associated with suicide. However, there are mixed findings on whether social support from family or friends is more beneficial at lowering suicidal ideation in young adults. The purpose of this study was to investigate whether social support from family and friends 1) negatively predicted suicidal ideation and 2) moderated the relationship between perceived burdensomeness and suicidal ideation in a sample of young adults. This study also investigated whether social support from friends accounted for more variance in predicting suicidal ideation than social support from family. Results showed that social support from friends and not family negatively predicted suicidal ideation, while controlling for symptoms of depression and sex. Social support from friends also moderated the relationship between perceived burdensomeness, while social support from family did not. Finally, in the context of social support from family, social support from friends no longer predicted suicidal ideation. Clinical implications of these findings are discussed.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
II. REVIEW OF LITERATURE.....	9
Suicide in Young Adults	9
The Interpersonal-Psychological Theory of Suicide.....	10
Perceived Burdenomeness.....	11
Thwarted Belongingness.....	13
Acquired Capability	14
Social Support and its Development.....	15
Social Support and its Relationship with Suicide	20
Physiological Responses to Social Support	23
Co-Rumination.....	25
The Current Study	27
III. METHODOLOGY	29
Participants.....	29
Materials	29
Procedure	30

Chapter	Page
IV. RESULTS	31
V. DISCUSSION	34
REFERENCES	38
APPENDICES	49

LIST OF TABLES

Table	Page
1.....	50
2.....	51
3.....	52
4.....	53
5.....	54
6.....	55

LIST OF FIGURES

Figure	Page
1.....	56

CHAPTER I

INTRODUCTION

Suicide is a widespread problem throughout the country, and is currently the tenth leading cause of death in the general population (Center for Disease Control & Prevention; CDC, 2014). However, this rank rises to the third leading cause of death in young adults, ages 18-25 (CDC, 2014). According to the CDC, 4,460 young adults died by suicide in 2010 alone (2014). Suicide also accounts for more deaths than the combined fourth through tenth leading causes of death in young adults. In addition, a large number of young adults endorsed having thoughts of suicide or past suicide attempts. In a sample of college students, 11% reported having suicidal ideation, 16.8% had a lifetime suicide attempt or self-injurious episode, and 7% made a suicide plan (Brener, Hassan, Barrios, 1999; Garlow et al., 2008). According to the American College Health Association, 7.5% of college students seriously considered suicide within the past twelve months of being surveyed (ACHA-NCHA, 2012). Wilcox et al. (2010) suggested that young adults are at an increased risk of suicide, because they are transitioning into adulthood and experiencing new stressful events such as leaving home, being away from family, and the pressures of going to college. In addition, they are exposed to other risk factors for suicide (e.g., alcohol, drug use, risky behaviors) and are in the age range where psychological disorders begin to develop (Wilcox et al., 2010).

Wilcox and colleagues also noted that this interaction between being in the age range

where disorders begin to develop and the addition of these new stresses might exacerbate the advancement of psychological disorders. In addition to the risk factors stated above, Joiner (2005) proposed three risk factors of suicide in his Interpersonal-Psychological Theory of Suicide (IPTS).

The IPTS is one of the latest theories on suicide and it “is intended to provide an account of suicide that incorporates the strengths of major existing models, but goes beyond them to develop a framework that is at the same time conceptually more precise and epistemically broader, explaining more suicide related facts” (Joiner, 2005, pg. 38). Although the theory is still relatively new, it has become widely studied in the suicide field (e.g., Cole et al., 2013; Christensen, Batterham, Mackinnon, Donker, & Soubelet, 2014; Joiner et al., 2009; Kleiman, Liu, & Riskind, 2014; Lamis & Lester, 2013; Lamis, Leenaars, Jahn, & Lester, 2013; Lamis & Malone, 2011; Puzia, Kraines, Liu, & Kleiman, 2013; Tucker et al., 2013; Wong, Koo, Tran, Chiu, & Mok, 2011; Van Orden, Merrill, & Joiner, 2005; Van Orden, Witte, Gordon, Bender, & Joiner, 2008; Van Orden et al., 2010; Zhang, Lester, Zhao, & Zhou, 2013). The IPTS posited that people are at a serious risk of a near lethal or lethal suicide attempt during the simultaneous presence of three distinct constructs. These constructs include having an acquired capability to lethally harm oneself through painful experiences throughout an individual’s life (acquired capability), feelings that one does not belong to a group of people (thwarted belongingness), and perceptions that one is a burden on others (perceived burdensomeness). Together, the dimensions of thwarted belongingness and perceived burdensomeness create the *desire* to die, and acquired capability enables an individual the ability to inflict lethal self-harm. When these three constructs are simultaneously met, an individual is at an increased risk of a near lethal or lethal suicide attempt (Joiner, 2005).

The focus of the current study is perceived burdensomeness, which is the thought (although often a cognitive distortion) that an individual is a burden on his or her family, friends, and community. Furthermore, individuals who perceive themselves as a burden often feel

worthless and believe that others will benefit from their death. Perceived burdensomeness is the focus of this paper as it has been demonstrated to be a robust and consistent predictor of suicidal ideation and behaviors (e.g., Garza & Pettit, 2010; Van Orden et al., 2008; Wong, et al., 2011). Perceived burdensomeness has also predicted suicidal ideation above and beyond other strong predictors of suicidal ideation (i.e., symptoms of depression & hopelessness; Van Orden, Lynam, Hollar, & Joiner, 2006). There are also studies where perceived burdensomeness predicted suicidal ideation, while thwarted belongingness did not (Van Orden et al., 2008, Wong et al., 2011; Zhang et al. 2013). In addition, there is evidence demonstrating perceived burdensomeness as a significant third variable in predicting suicidal ideation, while thwarted belongingness was not a significant third variable (Cole et al., 2013; Puzia et al., 2014). These findings suggest that perceived burdensomeness may be the stronger predictor of suicide between the two interpersonal constructs of the IPTS. With the literature suggesting a strong and positive relationship between perceived burdensomeness and suicidal ideation, further research should examine potential factors that could weaken this relationship for young adults. In order to further investigate these potential diluting factors, the current study examined the construct of social support.

Social support is said to exist when one has information that he/she is loved and cared for by others, has esteem, and belongs to a network of communication (Cobb, 1976). The relationship between social support and suicide has been examined historically. This relationship can first be observed in Durkheim's *Le Suicide*, one of the first theories of suicide (1897). According to Durkheim's theory, having a bond and being integrated with others serves as a buffer against suicide. However, if one does not have a bond and depends solely on oneself, thoughts that there is no reason to live may develop. Since Durkheim's classic book, more studies have examined the effect of social support on suicide. There is a consensus that social support negatively predicts suicidal outcomes (e.g., Arria et al., 2009; Handley et al., 2012; Hirsch & Barton, 2011; Kleiman & Liu, 2013; Kleiman, Risking, Schaefer, & Weingarden, 2012; Lewinsohn, Rohde, & Steeley, 1993; Lincoln, Taylor, Chatters, & Joe, 2012; Moody & Smith, 2013; Peltzer, 2008). This

consistent finding demonstrates the importance of studying the relationship between social support and suicide. Although there is evidence that general social support is beneficial to lowering suicide risk, specific sources of social support (i.e., family & friends) have been examined for their differential impact on suicide.

Past research has examined differential relationships between social support from friends and family, and suicide. Some studies indicated that social support from both family and friends was negatively related to suicide (e.g., Christensen et al., 2014; Peltzer, 2008). Past studies have found that social support from family predicted suicide, while support from friends did not (Moody & Smith, 2013; Wang, Wong, Tran, Nyutu, & Spears, 2013). In a study of adolescents, reduced social support from family, positively predicted suicidal ideation, after controlling for depression (Lewinsohn, Rohde, & Steeley, 1993). Conversely, reduced social support from friends did not predict suicidal ideation, after controlling for depression. In addition to predicting suicidal ideation, social support has also been demonstrated to predict possible risk factors of suicide. Positive support from family and friends negatively predicted the possible suicide risk factor of thwarted belongingness (Christensen et al., 2014). However, other studies that have examined the relationship between social support and other risk factors of suicide (i.e., depression & anxiety) found that only support from family was a significant negative predictor of the specific risk factor (Bertera, 2005; Pierce, 1997). The aforementioned studies showed the usefulness of family social support in lowering suicidal thoughts and behaviors, however social support, specifically from friends, merits discussion as well.

The studies mentioned above favor social support from family as a better possible protective factor of suicide. However, other studies suggest the opposite. Higher levels of positive social exchanges with friends and not family were associated with lower levels of suicidal ideation in a sample of 18 and 19 year olds (Bertera, 2007). Nasser and Overholser (2005) also showed support from friends was stronger predictor of depression than support from family

members. With these mixed findings research should continue to investigate both sources of support and its relationship with psychopathology and suicide, as examined in this study.

The research that has demonstrated differences in the relationship between social support from family and friends, and suicide could possibly be explained by the differences between the two sources. While these two networks may overlap in some characteristics, they should be considered two distinct entities for various reasons. First, the two relationships differ in how they are created. An individual has no control over who is in their family or a clear remembrance of when the relationship started or when it will end (Stein, Allen, & Hill, 2003). Further, an individual will always be related to their family and will often be forced to have interactions with them, regardless of the quality of that relationship. However in relationships with friends, individuals can choose whom they decide to befriend or not befriend. If an individual is not receiving support from their group of friends, they can make a new friend, which is not possible with family members. Second, individuals may be more inclined to share certain feelings and information with their friends over their family, which may influence the quality of the relationship. For example, Starr & Davila (2009) suggested that adolescent girls likely seek support from their peers about romantic relationship problems. Barstead, Bouchard, and Josephine (2013) also showed that young adults are more likely to confide in their same-sex best friend. These occurrences allow more opportunities to receive social support from peers. In addition to the factors above, there are other components that influence the evolution of distinct social support sources, specifically, developmental stages.

Research has suggested there are developmental factors that are associated with social support sources. Since suicide is of significant concern for the young adult population, this study will focus on that specific age range. Young adults have a particularly high rate of suicide, 11.0 per 100,000 (McIntosh & Drapeau, 2014). Also, suicide is the second leading cause of death in college students (Suicide Prevention Resource Center, 2004). During the stage of young adulthood, individuals have obtained autonomy from their parents, which is related to a decrease

in perceived social support from parents (Furman & Buhrmester, 1992). During this stage of autonomy development, adolescents and young adults are spending more time with their peers, which allows for more opportunities to receive social support from friends. The development of autonomy could also be related to an increase in conflict between adolescents and their parents (De Goede, Branje, Meeus, 2009; Furman & Buhrmester, 1992). This conflict could be explained by parents not allowing adolescents to develop autonomy. This conflict could then result in lower levels of perceived social support from parents (Jenkins et al., 2002). Last, it is theorized that young adults are in the age period where they will primarily receive social support from their peers (Cobb, 1976). Past research has supported Cobb's theory that the primary source of support changed from a parent to a friend as an individual gets older (Furman & Buhrmester, 1992). While social support, in general, is positive, there is also a negative aspect often associated with it, specifically, co-rumination.

Co-rumination often occurs in the context of social support. Co-rumination can be described as the excessive discussion of problems in a dyadic relationship, and is most prevalent between same sex friends (Rose, 2002). Although co-rumination has its benefits, it also has its downfalls. While co-rumination has been demonstrated to have a positive relationship with friendship quality (Rose, 2002; Rose, Carlson, & Walker, 2007; Starr & Davila, 2009), it is also associated with negative physical and mental health outcomes. In specific, co-rumination was positively correlated with depression (Barstead et al., 2013; Starr & Davila, 2009) and positively predicted depression and anxiety (Rose, 2002; Rose, Carlson, & Walker, 2007). In addition, in two studies of female college students, co-rumination increased levels of cortisol and salivary alpha-amylase, both of which are related to stress (Byrd-Craven, Geary, Rose, & Ponzi, 2008; Byrd-Craven, Granger, & Auer, 2011). Co-rumination also has a negative long-term effect on friendships. In one study of female college students, Starr and Davila (2009) found that co-rumination prospectively led to a decrease in opposite sex interpersonal competence and amount of female friends. These findings suggest that although co-rumination has an immediate and

short-term benefit of increasing friendship quality, it can increase symptoms of psychopathology. Also, after an extended period of time co-rumination can cause interpersonal problems in friendships.

Past research has demonstrated that social support negatively predicts suicidal ideation, however there are mixed findings of which source of support (i.e., family or friends) is the more consistent predictor. In addition, social support from family has been demonstrated to moderate the relationship between a proxy of perceived burdensomeness (i.e., low mattering) and suicidal ideation (Joiner et al., 2009). However, no study has examined social support from friends as a moderator of the relationship between perceived burdensomeness and suicidal ideation. The current study aimed to continue the investigation of the relationship between social support (i.e., from family and friends) and suicidal ideation. An additional aim was to examine social support from friends and family as a moderator of the relationship between perceived burdensomeness and suicidal ideation.

It was hypothesized that social support from friends would predict a negative relationship with suicidal ideation, while controlling for symptoms of depression and sex. It was also hypothesized that social support from family would predict a negative relationship with suicidal ideation, while controlling for symptoms of depression and sex. However, it was hypothesized that social support from friends would account for more variance of predicting a negative relationship with suicidal ideation than social support from family. It was also hypothesized that social support from friends would moderate the relationship between perceived burdensomeness and suicidal ideation, while controlling for symptoms of depression and sex. In addition, it was hypothesized that social support from family would moderate the same relationship in an additional moderation analysis. For both moderation analyses, it was expected that each social support source would weaken the relationship between perceived burdensomeness and suicidal ideation. In all analyses, symptoms of depression were controlled to assure that results are significant above and beyond the effects of depression symptoms. Sex was

controlled because of past research suggesting a sex difference in levels of perceived social support (Cumsille & Epstein, 1994; Geok, 2010; Lamis & Lester; 2013).

CHAPTER II

REVIEW OF THE LITERATURE

Suicide in Young Adults

Suicide is a nationwide epidemic. The most recent data from the Centers for Disease Control and Prevention revealed that over 30,000 people died by suicide in the year 2010 (Center for Disease Control & Prevention; CDC, 2014). Individuals between the ages of 18-25 accounted for over 4,000 of those completed suicides, making suicide the third leading cause of death in that age population (CDC, 2014). Suicide is also the second leading cause of death in college students (Suicide Prevention Resource Center, 2004). While many may not enact in suicide, some may have suicidal ideation or have an attempt. A reported 7.5% of a sample 76,000 college students seriously considered suicide within in the past twelve months of being surveyed (ACHA-NCHA, 2012). Findings from Garlow et al. (2008) showed that 11% of a sample of 729 college students reported having suicidal ideations and 16.8% had a lifetime suicide attempt or self-injurious episode.

Researchers have studied why the young adult population (ages 18-25) has a high number of suicides. It has been proposed new stressors begin to arise at this point in an individuals' life. Some of these new stressors include moving away from home, being away from family members and the pressures from transitioning into college, adjusting to new social environments, and increased academic demands (Arria et al., 2009; Wilcox et al., 2010). In addition, freshmen and sophomores were more likely to consider suicide than seniors in a sample of over 4,000 students

(Brener, Hassan, & Barrios 1999). Furthermore, individuals in young adulthood are exposed to more risk factors of suicide including alcohol use, drug use, and risky behaviors (Wilcox et al.). Wilcox and colleagues commented that this also the period where psychological disorders began to develop and the interaction with new stresses might strengthen the advancement of psychological disorders. Adding to the risk factors above, Dr. Thomas Joiner (2005) proposed three risk factors of suicide in his Interpersonal Psychological Theory of Suicide.

The Interpersonal-Psychological Theory of Suicide

The Interpersonal-Psychological Theory of Suicide was developed in 2005 to explain the phenomenon of suicide. Although the theory is relatively new, it has become widely studied in the suicide field (e.g., Cole et al., 2013; Christensen, Batterham, Mackinnon, Donker, & Soubelet, 2014; Joiner et al., 2009; Kleiman, Liu, & Riskind, 2014; Lamis & Lester, 2013; Lamis, Leenaars, Jahn, & Lester, 2013; Lamis & Malone, 2011; Puzia, Kraines, Liu, & Kleiman, 2013; Tucker et al., 2013; Wong, Koo, Tran, Chiu, & Mok, 2011; Van Orden, Merrill, & Joiner, 2005; Van Orden, Witte, Gordon, Bender, & Joiner, 2008; Van Orden et al., 2010; Zhang, Lester, Zhao, & Zhou, 2013). The theory consists of three distinct constructs, that when met simultaneously places an individual at a severe risk of death by suicide. These constructs include perceived burdensomeness (perceptions of being a burden on others), thwarted belongingness (feelings of not belonging & disconnectedness), and the acquired capability for self-harm (the ability to engage in suicidal behavior; Joiner, 2005). The constructs of perceived burdensomeness and thwarted belongingness are the interpersonal constructs of the theory and are thought to create the *desire* to die. The two constructs are related, however they are distinct, as an individual can feel they belong to a group of people, but still perceive they are a burden to that group (Van Orden et al., 2010). While the two interpersonal constructs create the *desire* to die, the acquired capability construct enables the person to fatally harm his or her self (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). This three-way interaction has been empirically supported to predict suicidal

ideation in a clinical sample of 313 young adults (Joiner, 2009) and 175 African American college students (Davidson, Wingate, Slish, and Rasmussen, 2010).

Perceived Burdensomeness

Perceived burdensomeness can be defined as the cognition that an individual is a burden to others, including family and friends (Joiner, 2005). Joiner emphasizes the term *perceived*, in that people who are suicidal perceive they are a burden, even if that perception is false. Perceived burdensomeness includes feelings of worthlessness and thoughts that often people will benefit from one's death. Additionally, individuals will have perceptions that they are ineffective and that their ineffectiveness negatively affects other people. "Finally, they perceive that their ineffectiveness that negatively affects everyone is stable and permanent" (Joiner, 2005, pg. 98). Joiner suggests that these perceptions influence suicidal behavior and addressing these mistaken perceptions is the groundwork for treating suicidal symptoms.

According to the theory, "perceived burdensomeness comprises two dimensions of interpersonal functioning - beliefs that the self is so flawed as to be a liability on others and affectively laden cognitions of self-hatred" (Van Orden et al., 2008, pg. 583). The liability dimension is positively related to distress from physical illness, unemployment, feeling unwanted, and the belief that one is a burden on the family (Van Orden et al., 2008). The self-hate dimension is positively associated with low levels of self-esteem, shame, and agitation (Van Orden et al., 2008).

Perceived burdensomeness is an important factor to investigate, as has it is a significant predictor for suicidal behaviors (e.g., Conner, Britton, Sworts, & Joiner, 2007; Garza & Pettit, 2010). Findings from Garza and Pettit (2010) showed that perceived burdensomeness significantly predicted suicidal ideation in a sample of 61 Mexican American women. Results from Conner et al. (2007) had similar findings, as they found lower levels of perceived burdensomeness was associated with a lower probability of attempting suicide in a sample of 139 inpatients. Perceived burdensomeness has also predicted suicidal ideation in Asian American and

African-American college students (Wong, Koo, Tran, Chiu, & Mok, 2011; Davidson et al., 2010). In addition, Van Orden et al. (2008) found that perceived burdensomeness predicted suicidal ideation, while thwarted belongingness did not when put in the same regression model in a sample of 309 undergraduate students. Additional results have substantiated these findings as well (Wong et al., 2011; Zhang Lester, Zhao, & Zhou, 2013). Not only has perceived burdensomeness demonstrated to be a consistent predictor of suicidal ideation from Joiner's theory, but it is also predicted suicidal ideation above and beyond hopelessness and symptoms of depression in a sample of 343 adult outpatients (Van Orden et al., 2006).

Joiner et al. (2002) conducted two studies that investigated levels of burdensomeness in letters of 40 suicide completers and attempters. In the study, researchers rated to what degree the letter conveyed feelings of burdensomeness, hopelessness, and emotion regulation. They found that suicide completers endorsed more levels of burdensomeness in their suicide letters than attempters. In addition, they found that suicide completers who had more lethal means of suicide endorsed higher levels of burdensomeness in their suicide letter. These findings implicate that people who have higher levels of burdensomeness will possibly use more lethal means to commit suicide, thus possibly resulting in a higher completion rate.

Through these multiple studies mentioned, perceived burdensomeness has been consistent at predicting suicidality as an independent predictor. It has also been shown to influence suicide as a third variable. Perceived burdensomeness mediated the relationship between alcohol related problems and suicide proneness in a sample of 996 young adults with an average age of 19.2 years (Lamis & Malone, 2011). The authors of this study suggested that levels of perceived burdensomeness and alcohol use should be assessed when determining suicide risk in college students; especially, with the amount of alcohol consumption on college campuses. In addition, perceived burdensomeness predicted suicidal ideation and mediated the relationship between depression and suicidal ideation in a sample of 106 older adults (Jahn, Cukrowicz, Linton, & Prabhu, 2011). Perceived burdensomeness has also been demonstrated to be a

significant third variable in additional studies (Cole et al., 2013; Puzia et al., 2014). In sum, perceived burdensomeness has been demonstrated to be a robust individual and third variable predictor of suicidal outcomes in various samples. In addition to perceived burdensomeness, thwarted belongingness has been shown to be a significant predictor of suicide.

Thwarted Belongingness

In addition to false perceptions of being a burden on others, an individual at a high risk of attempting suicide will also feel a sense of not belonging and being socially alienated. These feelings of low sense of belonging are attributed to the construct of thwarted belongingness (Joiner, 2005). According to Baumeister and Leary (1995), the feeling of belonging is a natural human need and includes frequent interactions with others and feeling cared about. Joiner's theory supports Baumeister and Leary's argument, because if these interactions and feelings are unmet or if they are perceived to be unsatisfactory, then a suicidal desire may develop (Joiner, 2005). Joiner also posited that even if individuals endorse perceptions of being a burden and has the capability to inflict self harm, having meaningful interactions and feelings of being cared about will prevent one from committing suicide (Joiner, 2005).

Previous research has supported Joiner's theory that perceptions of low belongingness are associated with a desire for suicide. Thwarted belongingness significantly predicted suicidal ideation in a sample of 309 college students and mediated the relationship between academic semesters and suicidal ideation (Van Orden et al., 2008). Conner, Britton, Sworts, and Joiner (2007) found that higher levels of belongingness were associated with a lower probability of attempting suicide in a sample of 137 patients at a hospital. The finding of belongingness being associated with suicidality has also been observed in African-Americans (Fitzpatrick, Piko, & Miller, 2008). Together, feelings of not belonging with perceptions of being a burden, places an individual at an increased risk of suicide risk (Van Orden et al., 2008). Together, perceived burdensomeness and thwarted belongingness create the *desire* to die. However, the last construct of the Joiner's theory, acquired capability, enables one to attempt suicide.

Acquired Capability

According to Joiner, having the “desire to die” by perceptions of being a burden on others and feeling of not belonging is not sufficient to make a lethal suicide attempt. Joiner suggested that a person must have the ability to engage in suicidal behavior, which is explained by the construct of acquired capability of self-harm (Joiner, 2005). This ability to inflict self harm comes from a loss of fear of suicidal behaviors through repeated painful and provocative experiences. Joiner proposes that an individual can habituate to painful experiences to the point where a person can engage in behaviors that are painful and physically damaging (e.g., non lethal or lethal self harm) and feel relatively little pain.

Factors that strengthen levels of acquired capability include impulsivity, exposure to suicidality, combat exposure, suicide attempts, and childhood maltreatment (Van Orden et al., 2010). Van Orden et al. (2008) reported that in a sample of 228 adult outpatients, individuals with the highest level of acquired capability had multiple past suicide attempts, followed by individuals with a single past suicide attempt. Individuals with no past suicide attempt had the lowest level of acquired capability. Additionally, experiences including playing contact sports, shooting a gun, physical fights, self-mutilation, and promiscuous sex significantly predicted higher levels of acquired capability (Van Orden et al., 2008).

Previous research findings have supported Joiner’s hypothesis of the association between acquired capability and suicidality. Acquired capability and having painful and provocative experiences were positively correlated with suicidal ideation in the sample of outpatients mentioned above (Van Orden et al., 2008). The same study by Van Orden and colleagues showed that acquired capability alone did not predict suicidal ideation. However, the interaction between acquired capability and perceived burdensomeness predicted suicide risk in a sample of patients at a psychological clinic (Van Orden et al., 2008). These findings support Joiner’s hypothesis that lethal or near lethal suicide attempts require the interaction between desire to die and capability of inflicting self-harm. Davidson and colleagues (2010) demonstrated that when the three constructs

of Joiner's theory are simultaneously present, the interaction predicted suicidal ideation in a sample of 175 African American college students. With research suggesting a strong and positive relationship between the Interpersonal-Psychological Theory of Suicide and suicide, further work should investigate potential factors that could weaken this relationship for young adults. In order to further examine these potential factors, the current study examined the construct of social support.

Social Support and its Development

Cobb (1976) defined social support as information leading an individual to believe that he/she belongs to one or more of three classes. These three classes include information that leads an individual to believe he/she (1) is loved and cared for by others, (2) has esteem, and (3) belongs to a network of communication. Information that compels an individual to believe that one is loved and cared for by others develops through mutual trust and cultivates emotional support. Esteem is information that makes a person feel he or she is esteemed or valued, and "is most effectively proclaimed in the public" (pg. 301). This specific class further supports an individual's sense of worth and may be called esteem support. Third, is the class that includes feelings of belonging to a network of communication and mutual obligation. Within this class, information is mutually shared with all members of that network. Additionally, Cobb suggested that social support occurs throughout an individual's entire life, from birth to death and stressed the need of investigating the role of social support from childhood to adulthood. Finally, Cobb discussed how sources of support change from various people throughout a person's life. Specifically, at the beginning of life, support comes from the family. As the individual ages, support comes from peers and the community. Support then comes from the family again, as the person nears death.

As Cobb stated, sources of support vary at different stages of a person's life and these specific sources of support should be investigated. An individual's social interactions with family and friends may overlap, however they should be considered two distinct sources of support for

various reasons. First, relationships with friends and family have differences in their development. An individual has no control over who is in their family or a clear remembrance of when the relationship started or when it will end (Stein, Allen, & Hill, 2003). In addition, people will always be related to their relatives and will often be forced to have some interaction with them, even if these interactions are not always positive or supportive. If a person is not receiving positive interactions and social support from their group of friends, they can find new friends. Second, individuals may be more willing to share certain feelings with friends over their family, which may influence the quality of the relationship.

For the young adult population, late adolescence is a time period where they begin to become more independent from their families (e.g. moving away from home, going to college; Arria et al., 2009). These new experiences away from their parents could make young adults rely on their friends more for social support. Larson, Richards, Moneta, Holmbeck, and Duckett (1996) demonstrated that during late adolescent, participants spent less time with their family in a sample of 220 youth aged 10-18. The authors noted that there was a sharp decline in time spent with family members on Friday and Saturday nights. Variables including having a car, being employed, and permission to stay out late were significantly related to older adolescents spending less time with their families. Interestingly, they also found that although social support declined overall; for girls, communication with their parents did not. This decline in time spent with family members may reduce the opportunities to receive social support from them. However, the adolescents will have more opportunities to receive social support from their peers, specifically their closest group of friends. Adolescents also reported having more positive experiences with their friends than their family (Larson, 1983). More positive experiences could then increase perceptions of more social support from friends. Young adults are also more likely to confide in their same-sex best friends than other social network members, increasing the perception of social support (Barstead et al., 2013).

De Goede, Branje, and Meeus (2009) found that in a sample of over 1,000 participants, middle adolescents reported lower rates of social support from parents than early adolescents. Additionally, social support from parents increased during middle adolescence to late adolescence in female participants. Furthermore, social support from friends has been demonstrated to exceed social support from parents for a sample of 16 to 19 year olds, compared to participants 9 to 15 years old (Bokhorst, Sumter, & Westenberg, 2009). Furman and Buhrmester (1992) also showed a decline in parental support and also reported that social support from friends and romantic partners increased during late adolescence. In addition, research has evidenced that as students enter high school, social support from friends becomes increasingly important on negative affect, and that the association between the two variables increased as their age increased (Weinstein, Mermelstein, Hedeker, Hankin, & Flay, 2006). However, the relationship between social support from family and negative affect remained constant over the same period. These findings support Cobb's conceptualization of social support sources changes across the lifespan. An additional factor that could have an impact on the evolution of social support includes developmental stages, including autonomy and egocentrism.

Autonomy is another factor that plays a role in the development of social support during adolescence and young adulthood. Although there is not a universal definition of autonomy, generally it can be described as "a state of being independent or self-governing" (Spear & Kulbok, 2004, pg. 144). In a review of the literature of autonomy, Spear and Kulbok discussed studies demonstrating that autonomy involves decision making for oneself, and can be influenced by age, gender, culture and other demographic variables. In addition, parents who fostered autonomy development in their children tended to have better outcomes and wellbeing (e.g., academic self-motivation, positive interpersonal relationships, less likely to engage in risky behaviors). However, in environments that were not nurturing and loving, adolescents may not be able to develop autonomous skills and could go to their peers for support (see Spear & Kulbok, 2004). Findings have also demonstrated that adolescence is the age where social support from

parents decreases and autonomy from parents increases (Furman & Buhrmester, 1992). This increase in autonomy could also be related to an increase in conflict between adolescents and their parents (De Goede, Branje, Meeus, 2009; Furman & Buhrmester, 1992). It should also be noted that more conflicts between adolescents and parents have been associated with perceived less social support from parents (Jenkins, Goodness, Buhrmester, 2002). These conflicts could be due to the parent not providing the environment necessary for the development of autonomy and the adolescent attempting to develop autonomy regardless of the parents' support.

In addition to the development of autonomy, the development of egocentrism could also play a role in social support development. According to Elkind (1967), two constructs of egocentrism develop during adolescence. First is imaginary audience, which is the adolescent's perception that all of the attention is on him or her. This also include assumptions that other people are consumed with the adolescent's appearance and behavior. Elkind further suggested that many adolescent behaviors are caused by an inability to understand that their perception differs from others. The second construct according to Elkind is *personal fable*. Personal fable can be described as the adolescent's belief that he or she is unique and invulnerable. Other feelings related to this construct include thoughts that parent's "don't know how it feels.." or that something will happen to others, but to not him or her. An example given by Elkind is young girls who do not take precautions of becoming pregnant, because of their personal fable that pregnancy will not happen to them, but to others instead. In relation to social support, items related to imaginary audience were negatively correlated with social support from parents and close friends in a sample of 100 adolescents (Vartanian, 1997). However, a measure of items related to personal fables was positively correlated with social support from family and close friends in the same sample of adolescents (Vartanian, 1997). These findings suggest that support from family and close friends may strengthen the adolescent's perceptions that he or she is invulnerable. According to Elkind, as adolescents reach 15 or 16 years of age, a sense of a "real audience" develops and personal fables almost completely diminish due to seeing themselves in a

more realistic light. In addition to developmental factors impacting social support, the sex of an individual has also been demonstrated to impact levels of social support.

Past research has indicated that females tend to report higher rates of social support than males (Cumsille & Epstein, 1994; Geok, 2010; Lamis & Lester, 2013). Female adolescents also reported higher levels of social, prosocial, and esteem support than males in a sample of 223 adolescents (Kuttler, La Greca, & Prinstein, 2003). Specifically, younger females reported greater prosocial support from female friends. In addition, males reported greater esteem support from female friends than male friends. Although females tend to report higher rates of social support than males, Furman and Buhrmester (1992) showed that in a sample of 216 college students, males endorsed higher levels of social support from their romantic partner than females. Additionally, Benenson et al. (2009) showed in a sample of college students, males tend to be more tolerable and satisfied with same-sex friends. In addition, a violation of a friendship norm had less of a negative impact on the friendship for males than females. These findings suggest that females, compared to males, may be more sensitive to negative interactions with other females.

Adding to this sex difference observed in social support, Taylor et al. (2000) advanced that under stressful situations, women are apt to “tend and befriend.” Specifically, when faced with stress, women are proposed to tend to their offspring and become more involved and contribute in social groups. Taylor further noted that tending to offspring under stressful circumstances is important to species survival, while befriending is prospectively associated with better physical and mental health. A key piece of their model is the hormone oxytocin, which is related to stress. In particular, it is asserted that oxytocin is released during stressful situations that may prompt affiliative needs (Taylor, 2006). Taylor discussed findings that support these proposals; such that high levels of oxytocin were related to having gaps in social relationships and perceptions of not being cared for among women (see Taylor, 2006). As with sex differences in social support, Taylor indicated there is a sex difference in the relationship between oxytocin

and social behavior. In specific, oxytocin may be more important in influencing women's behavior than men's behavior under stressful situations, which may be due to the effects of estrogen in women. However, it was noted that more research needs to be conducted to make any substantial inferences.

Social Support and its Relationship with Suicide

The role of social support as a buffer on psychological disorders, including suicide, has been greatly researched over time and has demonstrated to serve as a possible protective factor. In 1897, Emile Durkheim published *Le Suicide*, one of the first theories of suicide. In *Le Suicide*, Durkheim used a sociological perspective to study suicide and discussed the importance of social factors and its impact on suicide. Particularly relevant to this study is Durkheim's conceptualization of "Egotistic Suicide." This form of suicide includes the integration of religious, domestic, and political societies. Durkheim stresses that suicide is associated with the integration of social groups that an individual is a member of. When the individual's society is strongly integrated it can serve as buffer of suicide. Belonging to a group, creates a bond between individuals that unite and attaches them and prevents negative feelings from occurring. This bond creates a consistent distribution of ideas and feelings that are mutually shared between individuals of the group. The bond also includes a collective moral support and leads to sharing energy and support. Belonging to a group is thought to serve as a buffer of suicide because a person will put the interest of other group members, before their own selfish interest of self-harm. The individual may not want to break the bond that unites him or herself with others, which prevent feelings of their own troubles.

However, if this social group is weakened or nonexistent, then one will depend solely on his or her self. This lack of integration can lead to thoughts that there is no reason to endure the suffering in one's life. This excessive individualism lacks the love, support, and sharing seen in social groups, leading to a detachment from society. Durkheim noted that one cannot live without an attachment to other people or objects that survive that individual and that life can be

intolerable without reasons to live it. A person with excessive individualism can have thoughts that their “efforts will finally end in nothingness” (pg. 210) and would then lead to the loss of courage to live. This specific type of suicide is thought to explain Durkheim’s findings of people who were unmarried having higher rates of suicide than those who were married.

More contemporary studies investigating this relationship between suicide and social support further supports Durkheim’s theory and implications (e.g., Arria et al., 2009; Kleiman & Liu, 2013; Moody & Smith, 2013). Hirsch and Barton (2011) found that different forms of support were negatively correlated to suicidal behaviors and that tangible support (e.g., buying lunch, providing a phone number) negatively predicted suicidal thoughts and behaviors in a sample of 439 college students. Lincoln, Taylor, Chatters, and Joe (2012) found that support from family lowered the odds of suicidal ideation and attempts in a sample of 6,082 African American and Caribbean Black participants (2012). In a sample of 169 college students, an increased level of social support was negatively related with suicidal behaviors (Kleiman, Risking, Schaefer, & Weingarden, 2012). Findings have also displayed that a higher availability of perceived support was related with lower levels of suicidal ideation and that as social support increased, the odds of suicidal ideation decreased over twelve months in a sample of adults (Handley et al., 2012). Further, social support from family and friends negatively predicted the possible suicide risk factor of thwarted belongingness in a sample of over 1,000 adults (Christensen et al., 2014). In summary, past research has illustrated that engaging in positive interactions and receiving quality support from people in a social network protects people from suicidal risk factors, thoughts, behaviors, and attempts. Positive interactions and communication with family and friends may also enable individuals to vocalize suicidal thoughts and lead to an increase of support to seek professional help, which may also decrease the rate of attempted suicide.

While an increased amount of social support has a positive effect on suicide, the other end of the spectrum should be discussed as well. Findings from Wilcox et al. (2010) demonstrated that low levels of social support were associated with having one-time and

persistent suicidal ideation in a sample of college students. Similarly, there is an association between deficiencies of social support and suicidal ideation (Arria et al., 2009). In a longitudinal study by Liu and Mustanski (2012), low levels of social support was related to greater suicidal ideation over a 6 month follow up in a sample of 246 lesbian, gay, bisexual, and transsexual adolescents and young adults.

Research has been conducted on the relationship between various sources of social support and suicide with mixed findings. Peltzer (2008) found that individuals with higher levels of support from family and friends were at a lower risk for suicide than those with lower support in a sample of 1,157 high school students. However, some findings indicate that one relationship has more of an impact on suicide than the other. Some studies have displayed results favoring the family relationship over peer relationships. Lewinsohn, Rohde, and Steeley (1993) found that reduced social support from family and friends independently positively predicted past suicide attempts in a sample of over 1,000 adolescents. However, when controlling for depression, support from friends did not predict a past suicide attempt, while support from family continued to predict an attempt. Pierce and colleagues (1997) demonstrated that support from parents and not friends were significantly negatively related to depression, which is a strong predictor of suicidal ideation, in a sample of college students. Bertera (2005) found similar results, with increased support from relatives and not friends significantly being negatively linked with anxiety and mood disorders. Social support from family has also been demonstrated to have a negative indirect relationship to suicidal behaviors, while social support from friend did not in a sample of 289 African-American college students (Wang, Wong, Tran, Nyutu, & Spears, 2013). The aforementioned studies showed the benefit of family social support in lowering suicidal thoughts and behaviors, however social support, specifically from friends, merits discussion as well.

While the studies above have demonstrated social support from family as being a more robust protective factor against suicide, other findings have suggested that support from friends has a more significant impact on suicide than family support. Lower levels of suicidal ideation

were associated with higher levels of positive social exchanges with peers and not family members in a sample of 18 and 19 year olds (Bertera, 2007). Interestingly, the findings were the opposite for participants aged 15 to 17. In the 15 to 17 year old age group, lower levels of suicidal ideation were related to higher levels of positive social exchanges with family members and not friends. These findings support the idea that age is an important factor on the relationship between social support from various social support sources and suicide. Results from Nasser and Overholser (2005) also displayed support from friends was a better predictor of depression than support from family in a sample 90 psychiatric inpatients, who ranged from age 25 to 55. The authors posited that this finding may be explained by inpatients perceiving that support from family is obligatory, thus not having the same effect as support from friends.

Lamis and Lester (2013) conducted a regression analysis with risk and protective factors of suicide (i.e., perceived burdensomeness, social support from friends, and social support from family) predicting suicidal ideation in a sample of college students. Surprisingly, they found that social support from friends positively predicted suicidal ideation in males. There was no relationship between the two variables in females. Additionally, none of the other social support variables predicted suicidal ideation. They attributed their findings to various factors including the high correlation between the subscales measuring family and friends social support affecting its statistical power. Also, they suggested that social support may be hard to assess in people who are depressed or suicidal. In addition to social support having a positive effect on mental health and suicide, social support has also been demonstrated to have a benefit on physical health.

Physiological Responses to Social Support

While this paper focused on social support and its benefits on mental health, social support also has a positive effect on physical health. Along with Cobb, Taylor (2006) stressed the importance of social support and relationships. Specifically, it is posited that social relationships are a basic need similar to hunger, thirst, and sexual desire. In addition, just as these physical needs have signs when they are not met, so do social relationships. Taylor proposed that if an

individual's social network is non-supportive and hostile, it will increase psychological and biological stress responses. Conversely, if these needs are met, stress responses will decrease.

In a review of the relationship between social support and physiological outcomes, Uchino (2006) examined the effect that social support has on many physiological responses. Some of the findings discussed include social support being associated with lower levels of blood pressure, less atherosclerosis and lower levels of cortisol. It was proposed that social support influences physical health outcomes through two different pathways. According to the first pathway, social support promotes healthier behaviors (e.g., eating healthier, exercising, not smoking) and better adherence to taking medication. The second pathway included social support being linked to psychological processes including appraisals, emotions, feelings of being in control, and moods (see Uchino, 2006).

While studying social support the other end of the spectrum, social rejection, merits investigation as well. In particular, the physiological responses that occur during social rejection. Stroud (2009) found that adolescents ($N= 43$) had higher physiological responses (i.e., cortisol, salivary alpha amylase, & systolic and diastolic blood pressure) than children when in an experimental scenario where they were rejected from peers. Results also showed that the reactivity of adolescent's heart rates was increased after a peer rejection session. Stroud, Salovey, and Epel (2002) demonstrated a sex difference in the physiological responses to social rejection. Specifically, they found that in a sample of 58 young adults, women had a significant increase in their levels of cortisol when put in an experimental situation of social rejection. However, this increase in cortisol was not observed in males who were put into the social rejection condition. The authors posited that this sex difference in reactions to social rejection could make women more vulnerable to depression, which could explain why women have higher rates of depression than men. Interestingly, the authors also found that there were no sex differences in the self-report of the negative affect in the social rejection condition. In other words, women and men both reported finding the social rejection scenario similarly stressful, however only women had

physiological responses to it. The authors postulated that since sex differences in physiological responses were not related to differences in self-report measures, the physiological responses could be due to biological or cognitive processes. These studies highlight some of the negative physiological consequences of peer rejection for adolescents and young adults. In addition, the authors made implications that their findings could help explain the etiology of depression and other psychological disorders in this age range. As mentioned previously, social support, in general, is positive and beneficial to one's health. However, there is also a negative aspect often associated with it, specifically, co-rumination.

Co-Rumination

Co-rumination is characterized by excessive discussion of problems in a dyadic relationship (Rose, 2002). Co-rumination is thought to be most prevalent between same-sex friends, and consists of mutual encouragement of discussing problems and focusing on negative emotions (Rose, 2002). Co-rumination has been thought of as a “trade off”, because it has costs and benefits. Positive aspects of co-rumination include self-disclosure between friends, which Rose posited would be related with having “high quality, emotionally close friendships” (Rose, 2002, pg. 1831). This “benefit” of co-rumination has been supported, as there is evidence of a positive relationship between co-rumination and reported quality of friendship in adolescents (Rose, 2002; Rose, Carlson, & Waller, 2007; Starr & Davila, 2009). However, the “costs” of co-rumination include that it is similar to rumination, which has been demonstrated to have a relationship with suicidal ideation (see Morrison & O’Connor, 2008). While rumination includes focusing on negative emotions to oneself (Nolen-Hoeksema, 1991), co-rumination involves sharing these negative emotions and having them reinforced (Rose, 2002). Not surprisingly, co-rumination has been positively associated with symptoms of depression, anxiety and internalizing problems (Rose, 2002; Rose et al., 2007; Starr & Davila, 2009). In addition to depression and anxiety, co-rumination also has shown to increase levels of cortisol and salivary alpha-amylase (Byrd-Craven, Geary, Rose, & Ponzi, 2008; Byrd-Craven, Granger, & Auer, 2011). Research also

suggests that although co-rumination may be beneficial to friendship quality initially, over time it can actually cause tension between friends. Starr and Davila (2009) found that over a one year period, co-rumination actually decreased opposite sex interpersonal competence and number of female friends.

As with social support, there is a sex difference in levels of co-rumination, with females endorsing higher rates than males (Barstead et al., 2013; Rose, 2002; Rose et al., 2007). Rose suggested that co-rumination could help in the understanding of why adolescent girls endorse higher rates of friendship quality, but also internalizing symptoms when compared to adolescent males (Rose, 2002). Co-rumination also seems to function differently between genders. Specifically for females, higher rates of co-rumination were associated with high quality friendships through self-disclosure. However, it also was associated with an increase of internalizing problems and depression (Barstead et al., 2013; Rose, 2002). However, males may be protected against emotional problems by lower levels of co-rumination. Rose conjectured this could be due to males spending less time focusing on problems and concerns with their friends. However, this absence of talking about problems could then lead to a delay of developing high quality relationships because of not sharing personal thoughts and feelings.

As with social support, it is also beneficial to look at adolescents co-ruminating not only with peers, but with parents as well. The results from co-rumination with a parent, specifically a mother, were similar to that of co-ruminating with a friend. Waller and Rose (2010) found that in a sample of 516 adolescents, those who co-ruminated with their mothers, co-ruminated more about their mother's problems. In addition, the authors found that co-rumination between adolescent and mother positively predicted the quality of the relationship between the two, as well as family cohesion. However, it also positively predicted symptoms of anxiety and depression in adolescents. Waller and Rose (2013) also investigated the relationship between co-ruminating with mothers and friends. They found that co-ruminating with mothers predicted co-ruminating with friends in a sample of 393 adolescents. Supporting their 2010 findings,

adolescents co-ruminating about their mother's problems positively predicted symptoms of anxiety and depression, while co-ruminating about the adolescent's problems did not. As seen in previous research, co-rumination between friends positively predicted symptoms of anxiety and depression. Last, friendship co-rumination mediated the relationship between mother-child co-rumination (i.e., about mother's problems) and symptoms of anxiety and depression. These findings suggest that co-ruminating with friends may be worse on emotions than co-ruminating with mothers.

The Current Study

Past research has showed that social support negatively predicts suicidal ideation, however there are mixed findings of which source of support (i.e., family or friends) is the more consistent predictor. In addition, social support from family moderated the relationship between a proxy of perceived burdensomeness (i.e., low mattering) and suicidal ideation (Joiner et al., 2009). However, no study has examined social support from friends as a moderator of the relationship between perceived burdensomeness and suicidal ideation. The current study aimed to continue the investigation of the relationship between social support (i.e., from family and friends) and suicidal ideation. An additional aim was to examine social support from friends and family as a moderator of the relationship between perceived burdensomeness and suicidal ideation.

In the current study, it was hypothesized that social support from friends would predict a negative relationship with suicidal ideation, while controlling for levels of symptoms of depression and sex. It was also hypothesized that social support from family would predict a negative relationship with suicidal ideation, while controlling for symptoms of depression and sex. However, it was hypothesized that social support from friends would account for more variance in predicting a negative relationship with suicidal ideation than social support from family, while controlling for levels of symptoms of depression and sex. Furthermore, it was hypothesized that social support from friends would moderate the relationship between perceived

burdensomeness and suicidal ideation, while controlling for symptoms of depression and sex. It was also hypothesized that social support from family would moderate the relationship between perceived burdensomeness and suicidal ideation, while controlling for levels of symptoms of depression and sex. It was expected that the positive effects of social support weakens the relationship between perceptions of being a burden and suicidal ideation in young adults. Symptoms of depression were controlled to see if results are above and beyond the effects of symptoms of depression. Sex was also controlled for due the research showing a sex difference in levels of perceived social support (Cumsille & Epstein, 1994; Geok, 2010; Lamis & Lester; 2013).

CHAPTER III

METHODOLOGY

Participants

Participants included 371 ($M_{age} = 19.18$, $SD = 1.29$) predominately female (78.7%) undergraduate students at a large Midwestern university. The racial composition of the sample was 77.1% Caucasian, 5.1% African-American, 3.5% Hispanic/Latino, 2.2% Asian-American, 6.7% American Indian, 2.4 Biracial, and 2.2% other. Three participants (.8%) did not report their ethnicity.

Materials

Demographics Questionnaire. Demographic information was collected from participants including age, sex, and ethnicity.

Social Support Appraisals Scale. The SS-A (Vaux et al., 1986) is a 23 item self-report measure that assesses social support from family, friends, and others. Specifically, the friends (sum of 7 “friend” items) and family (sum of 8 “family” items) subscales were used for this study. The additional eight items are added to calculate a total social support score, which was not used in this study. The SS-A questions are rated on a likert scale with response options ranging from 1 (strongly agree) to 4 (strongly disagree). For this study, reverse coding was used and higher scores on the measure indicated higher levels of social support as seen in Jia et al. (2004). Internal consistency for both scales were good (friends subscale, $\alpha = .89$) and (family subscale, $\alpha = .78$).

Interpersonal Needs Questionnaire. The INQ (Van Orden, Cukrowicz, Witte, & Joiner, 2012) is a 15-item self-report measure that assesses belongingness and burdensomeness items are evaluated on a seven point likert scale with response options ranging from 1 (not at all true for me) to 7 (very true for me). Items are summed with higher scores on the measure indicating higher levels of perceived burdensomeness. For the purpose of this study, only the six items that are included in the perceived burdensomeness subscale were analyzed. The perceived burdensomeness subscale had excellent internal consistency in this study ($\alpha = .96$).

Center for Epidemiological Studies Depression Scale. The CES-D (Radloff, 1977) is a 20-item self-report measure that assesses an individual's symptoms of depression in the past week. Items are evaluated on a likert scale and response options range from 0 (rarely or none of the time) to 3 (most or all of the time). Items are summed and higher scores represent greater severity of symptoms of depression. The scale has been indicated to be appropriate for both the clinical and non-clinical populations. In this study it had excellent internal consistency ($\alpha = .91$).

The Hopelessness Depression Symptom Questionnaire – Suicidality Subscale. The HDSQ-SS (Metalksy & Joiner, 1991) is a subscale of the Hopelessness Depression Symptoms Questionnaire. It is a four item self-report scale that measures suicidal ideation in the past two weeks. Items are evaluated on a likert scale with response options ranging from 0 to 3 and the corresponding responses vary for each item. Items are summed with higher scores indicating higher levels of suicidal ideation. The suicidality subscale had excellent internal consistency ($\alpha = .94$).

Procedure

Participants who agreed to participate were directed to the Qualtrics website, which contained the study's informed consent form, measures, and debriefing sheet. After completion, participants received class credit through an online research system. This study was approved by the University Human Research and Compliance Office.

CHAPTER IV

RESULTS

The means, standard deviations, and correlations between study variables are reported in Table 1. As expected, symptoms of depression, perceived burdensomeness, and suicidal ideation were positively correlated with another. Also as expected, social support from family and friends were negatively correlated with symptoms of depression, perceived burdensomeness, and suicidal ideation.

A hierarchical regression was conducted to test the first hypothesis that social support from friends would negatively predict suicidal ideation after controlling for symptoms of depression and sex. In step one of the analysis, sex and symptoms of depression were entered as control variables and accounted for 11% of the variance of suicidal ideation (see Table 2). Social support from friends was entered in the second step of the regression equation. It negatively predicted suicidal ideation, accounting for an additional 1% of the variance, after controlling for sex and symptoms of depression ($\beta = -.12$, $t(367) = -2.21$, $p = .028$).

An additional hierarchical regression analysis was conducted to test the second hypothesis that social support from family would negatively predict suicidal ideation after controlling for symptoms of depression and sex. In step one of the analysis, sex and symptoms of depression were entered as control variables and accounted for 11% of the variance of suicidal ideation (see Table 3). Social support from family was entered in the second step of the regression equation and did not significantly predict suicidal ideation, above and beyond sex and

symptoms of depression ($\beta = -.064$, $t(367) = -1.22$, $p = .223$).

To test the third hypothesis that social support from friends accounts for more variance of predicting a negative relationship with suicidal ideation after controlling for sex and symptoms of depression, a third hierarchical regression was conducted. In step one of the analysis, sex and symptoms of depression were entered as control variables and accounted for 11% of the variance of suicidal ideation. Social support from family was entered in the second step of the regression equation and did not account for additional variance of suicidal ideation above and beyond sex and symptoms of depression ($\beta = -.06$, $t(367) = -1.22$, $p = .22$). Social from friends was entered in the third step of the regression equation and did not account for additional variance of suicidal ideation above and beyond sex, symptoms of depression, and social support from family ($\beta = -.12$, $t(367) = -1.84$, $p = .066$). See Table 4.

A hierarchical regression was conducted to test the fourth hypothesis that social support from friends moderates the relationship between perceived burdensomeness and suicidal ideation. To test this hypothesis, the recommendations of Aiken and West (1991) were used. Specifically, sex (control), the centered variables of symptoms of depression (control), the first order effects of perceived burdensomeness, social support from friends, and the interaction of perceived burdensomeness and social support from friends were entered into the regression equation. Results indicated that social support from friends significantly moderated the relationship between perceived burdensomeness and suicidal ideation ($\beta = -.15$, $t(365) = -2.16$, $p = .031$). See Table 5. The interaction term of social support by perceived burdensomeness accounted for an additional 1% of the variance in suicidal ideation above and beyond symptoms of depression, sex, and first order effects. To examine the significant interaction, regression lines of both predictor and moderator variables were created by plotting the values of one standard deviation above and below the mean for each variable (Aiken & West, 1991). Simple slope analyses demonstrated that at high levels of social support from friends, the relationship between perceived burdensomeness and suicidal ideation was no longer significant ($\beta = .17$, $t(365) = 1.55$, $p = .122$). However, at low

levels of social support the relationship between perceived burdensomeness and suicidal ideation was strengthened ($\beta = .34$, $t(365) = 5.68$, $p < .001$). See Figure 1.

To test the final hypothesis that social support from family moderates the relationship between perceived burdensomeness and suicidal ideation, the same steps in the moderation analysis above were used, with social support from family replacing social support from friends. The moderation analysis revealed that social support from family did not significantly moderate the relationship between perceived burdensomeness and suicidal ideation ($\beta = -.04$, $t(365) = -.761$, $p = .447$). See Table 6.

CHAPTER V

DISCUSSION

Past research has investigated social support from family and friends as predictors of suicidal ideation, however there have been mixed findings. The current study sought to determine which source of support (i.e., family or friends) would negatively predict suicidal ideation. The study also aimed to investigate whether source would account for more variance of predicting a negative relationship with suicidal ideation in a sample of young adults. Last, the study examined social support from family and friends, independently, as moderators of the relationship between perceived burdensomeness and suicidal ideation.

Results of the first hypothesis indicated that social support from friends significantly negatively predicted suicidal ideation, while controlling for symptoms of depression and sex. This result supported the hypothesis and signifies that receiving social support from friends significantly decreases thoughts of suicide in young adults. However, the second hypothesis that social support from family decreases thoughts of suicide in young adults was not supported. The third hypothesis that social support from friends accounts for more variance of predicting suicidal ideation was also not supported.

The study's fourth hypothesis that social support from friends would moderate the relationship between perceived burdensomeness and suicidal ideation was supported. Specifically, the relationship between perceived burdensomeness and suicidal ideation was not

significant for young adults who endorsed high levels of social support from friends. However, this relationship was strengthened for those with low levels of social support from friends. The last hypothesis of the study was not supported, as social support from family did not moderate the relationship between perceived burdensomeness and suicidal ideation.

The results of this study demonstrate that for young adults, social support from friends may be more effective than support from family at reducing levels of suicidal ideation in young adults. Although social support from friends did not account for more variance of predicting suicidal ideation than support from family, the effectiveness of social support from friends lowering suicidal ideation was still demonstrated. This can also be observed in the finding of social support from friends having a higher magnitude negative correlation with suicidal ideation than social support from family. In addition to this, is the finding that social support from friends, and not family, negatively predicted suicidal ideation. Social support from friends moderating the perceived burdensomeness and suicidal ideation relationship also demonstrates the benefit of having social support from friends. These findings of social support from family not being a significant negative predictor of suicide could be due to the fact that this sample of young adults in college may be away from their family and less likely to have opportunities to receive support from them.

The findings of the study are also consistent with Cobb's idea that social support comes from various sources at different stages of life. According to Cobb, young adulthood is the stage that social support will come primarily from peers and the community. Results showing that social support from friends and not family negatively predicted suicidal ideation support the aforementioned assumptions. Contrary to the finding of Joiner et al. (2009), social support from family did not moderate the relationship between perceived burdensomeness and suicidal ideation. This inconsistency could be due to Joiner and colleagues using a proxy to measure perceived burdensomeness, which may not have fully assessed perceived burdensomeness.

However, the present study utilized a measure that was validated to directly assess the construct of perceived burdensomeness.

Implications of this study include the possibility that young adults may be at risk for suicidal behaviors if they both have perceptions of being a burden on others and receive low levels of social support from friends. However, young adults who perceive they are a burden on others are buffered against suicidal thoughts, if they have high levels of social support from friends. Clinical implications include the possible benefit of clinicians assessing clients' perceptions of being a burden as it is a significant predictor of suicidal ideation. In addition to assessing for perceptions of being a burden, clinicians should assess for the client's level of perceived social support. If a young adult client has low levels of social support, especially from friends, and perceives that they are a burden on others, they may be at risk for developing suicidal thoughts and behaviors. If a young adult client is reporting low levels of social support from friends, clinicians may find it beneficial to incorporate activities and behaviors that increase social interactions and the opportunities for their clients to receive social support from peers (e.g., Behavioral Activation). Colleges and universities can play a useful role in helping young adults increase social support as well. Since the demographic of college campuses includes a large number of young adults, it would be valuable for colleges to develop activities and events that promote positive and healthy social interactions to increase peer social support. These positive interactions among students could possibly decrease the prevalence of suicide on college campuses.

This study adds to the literature by continuing to support the notion that increased levels of social support are negatively associated with thoughts of suicide. Also, it adds to the existing studies that investigated the relationship between specific sources of social support and suicide risk. A novel finding this study adds to the suicide field is the result showing that social support from friends moderates the relationship between perceptions of being a burden and suicidal ideation. Last, this study supports the use of the IPTS to investigate suicide risk in young adults.

Findings of this study should be taken into consideration with some limitations. First, due to the cross-sectional design, whether the relationship between perceived burdensomeness and suicidal ideation changes over time could not be observed. Future studies should use a longitudinal method to examine how changes in social support over time (e.g., still at home with parents to moving out of the house) may impact rates of perceptions of being a burden and suicidal ideation. In addition, this study used a convenience sample with college undergraduate students as participants. Thus, results cannot be generalized to individuals who do not attend college and may not have the same opportunities to make friends. Result also cannot be generalized to young adults with more severe psychopathology and higher suicide risk. In addition, the sample was predominantly female, which could have impacted the results, as social support looks different between sexes. In specific, females tend to report higher levels of perceived social support. Furthermore, females may engage in activities, which males may not engage in, that could increase the perception of support. Also, young adults may have other sources of social support that were not accounted for in this study (e.g., church groups, therapists). Further research should observe these other possible sources of support and their impact on interpersonal risk factors of suicide and suicide risk. Further research should also examine social support (i.e., from family & friends) and its relationship with suicide in collectivist societies, as past research has demonstrated a negative association with collectivism and suicide (Eskin, 2013; Lester, 2002). Societies with collectivist views may foster better social support networks, possibly lowering suicide rates. Future research should also see if these findings are consistent across ethnic minority groups, as this sample was composed of predominantly Caucasians.

REFERENCES

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA, US: Sage Publications Inc.
- American College Health Association. American College Health-Association-National College Health Assessment II: Undergraduate Reference Group Executive Summary Spring 2012. (2012). Hanover, MD: American College Health Association.
- Arria, A. M., O'Grady, K. E., Caldeira, K. M., Vincent, K. B., Wilcox, H. C., & Wish, E. D. (2009). Suicide ideation among college students: A multivariate analysis. *Archives Of Suicide Research*, 13(3), 230-246. doi:10.1080/13811110903044351
- Barstead, M.G., Bouchard, L.C., & Shih, J.H. (2013). Understanding gender differences in co rumination and confidant choice in young adults. *Journal of Social And Clinical Psychology*, 32(7), 791-808. doi: 10.1521/jscp.2013.32.7.791
- Baumeister, R.F. & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-592. doi: 10.1037/0033-2909.117.3.497
- Benenson, J.F., Markovits, H., Fitzgerald, C., Geoffroy, D., Flemming J., Kahlenberg, S.M., & Wrangham, R.W. (2009). Males' greater tolerance of same-sex peers. *Psychological Science*, 20(2), 184-190. doi:10.1111/j.1467-9280.2009.02269.x

- Bertera, E. M. (2005). Mental health in U.S. adults: The role of positive social support and social negativity in personal relationships. *Journal Of Social And Personal Relationships*, 22(1), 33-48. doi:10.1177/0265407505049320
- Bertera, E. M. (2007). The role of positive and negative social exchanges between adolescents, their peers and family as predictors of suicide ideation. *Child & Adolescent Social Work Journal*, 24(6), 523-538. doi:10.1007/s10560-007-0104-y
- Bokhorst, C. L., Sumter, S. R., & Westenberg, P. (2010). Social support from parents, friends, classmates, and teachers in children and adolescents aged 9 to 18 years: Who is perceived as most supportive?. *Social Development*, 19(2), 417-426. doi:10.1111/j.1467-9507.2009.00540.x
- Brener, N. D., Hassan, S., & Barrios, L. (1999). Suicidal ideation among college students in the United States. *Journal Of Consulting And Clinical Psychology*, 67(6), 1004-1008. doi:10.1037/0022-006X.67.6.1004
- Byrd-Craven, J., Geary, D. C., Rose, A. J., & Ponzi, D. (2008). Co-ruminating increases stress hormone levels in women. *Hormones And Behavior*, 53(3), 489-492. doi:10.1016/j.yhbeh.2007.12.002
- Centers for Disease Control and Prevention (2014). *Web-based Injury Statistics Query and Reporting System*. Retrieved May 6, 2014 from www.cdc.gov/injury/wisqars/index.html.
- Chou, K. (1999). Social support and subjective well-being among Hong Kong Chinese young adults. *The Journal of Genetic Psychology*, 160(3), 319-331.
- Christensen, H., Batterham, J.P., Mackinnon, A.J., Doner, T., & Soubelet, A. (2014). Predictors of the risk factors for suicide identified by the interpersonal-psychological theory of suicidal behavior. *Psychiatry Research*.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.

- Cole, A. B., Slish, M. L., Tucker, R. P., Hollingsworth, D. W., O'Keefe, V. M., & Wingate, L. R. (2013). Burdensomeness, depression, and suicide in an American Indian sample. *Ethnicity and Inequalities in Health and Social Care*, 6(2/3), 77-86.
- Conner, K. R., Britton, P. C., Sworts, L. M., & Joiner, T. E. (2007). Suicide attempts among individuals with opiate dependence: The critical role of belonging. *Addictive Behaviors*, 32(7), 1395-1404. doi:10.1016/j.addbeh.2006.09.012
- Cumsille, P. E., & Epstein, N. (1994). Family cohesion, family adaptability, social support, and adolescent depressive symptoms in outpatient clinic families. *Journal Of Family Psychology*, 8(2), 202-214. doi:10.1037/0893-3200.8.2.202
- Davidson, C. L., Wingate, L. R., Slish, M. L., & Rasmussen, K. A. (2010). The great black hope: Hope and its relation to suicide risk among African Americans. *Suicide And Life-Threatening Behavior*, 40(2), 170-180. doi:10.1521/suli.2010.40.2.170
- De Goede, I., Branje, S., Delsing, M., & Meeus, W. (2009) Linkages over time between adolescent's relationships with parents and friends. *Journal of Youth and Adolescence* 38, 1304-1315. Doi: 10.1007/s10964-009-9403-2
- Durkheim, E. (1951). *Le Suicide*. New York: The Free Press.
- Elkind, D. (1967). Egocentrism in adolescence. *Child Development*, 38(4), 1025-1034. doi:10.2307/1127100
- Eskin, M. (2013). The effects of individualistic-collectivistic value orientations on non-fatal suicidal behavior and attitudes in Turkish adolescents and young adults. *Scandinavian Journal Of Psychology*, 54(6), 493-501. doi:10.1111/sjop.12072
- Fitzpatrick, K. M., Piko, B. F., & Miller, E. (2008). Suicide ideation and attempts among low income African-American adolescents. *Suicide And Life-Threatening Behavior*, 38(5), 552-563. doi:10.1521/suli.2008.38.5.552
- Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63(1), 103-115. doi:10.2307/1130905

- Garlow, S.J., Rosenberg, J., Moore, J.D., Haas, A.P., Koestner, B., Hendin, H., & Nemeroff, C.B. (2008). Depression, desperation, and suicidal ideation in college students: Results from the American Foundation for suicide prevention college screening project at Emory University. *Depression and Anxiety*, 25, 482-488.
- Garza, M. J., & Pettit, J. W. (2010). Perceived burdensomeness, familism, and suicidal ideation among Mexican women: Enhancing understanding of risk and protective factors. *Suicide And Life-Threatening Behavior*, 40(6), 561-573. doi:10.1521/suli.2010.40.6.561
- Geok, L. (2010). Perceived social support, coping capability and gender differences among young adults. *Sunway Academic Journal*, 6, 75-88.
- Handley, T. E., Inder, K. J., Kelly, B. J., Attia, J. R., Lewin, T. J., Fitzgerald, M. N., & Kay Lambkin, F. J. (2012). You've got to have friends: The predictive value of social integration and support in suicidal ideation among rural communities. *Social Psychiatry And Psychiatric Epidemiology*, 47(8), 1281-1290.
- Hirsch, J. K., & Barton, A. L. (2011). Positive social support, negative social exchanges, and suicidal behavior in college students. *Journal Of American College Health*, 59(5), 393-398. doi:10.1080/07448481.2010.515635
- Jahn, D. R., Cukrowicz, K. C., Linton, K., & Prabhu, F. (2011). The mediating effect of perceived burdensomeness on the relation between depressive symptoms and suicide ideation in a community sample of older adults. *Aging & Mental Health*, 15(2), 214-220. doi:10.1080/13607863.2010.501064
- Jenkins, S., Goodness, K., & Buhrmester, D. (2002). Gender differences in early adolescents' relationship qualities, self-efficacy, and depression symptoms. *The Journal Of Early Adolescence*, 22(3), 277-309. doi:10.1177/02731602022003003
- Jia, H., Uphold, C. R., Wu, S., Reid, K., Findley, K., & Duncan, P. W. (2004). Health-Related Quality of Life Among Men with HIV Infection: Effects of Social Support, Coping, and Depression. *AIDS Patient Care And Stds*, 18(10), 594-603. doi:10.1089/apc.2004.18.594

- Joiner, T. E., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M., & Lester, D. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal Of Social And Clinical Psychology*, 21(5), 531-545. doi:10.1521/jscp.21.5.531.22624
- Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.
- Joiner, T. E., Van Orden, K. A., Witte, T. K., Selby, E. A., Ribeiro, J. D., Lewis, R., & Rudd, M. (2009). Main predictions of the interpersonal-psychological theory of suicidal behavior: Empirical tests in two samples of young adults. *Journal Of Abnormal Psychology*, 118(3), 634-646. doi:10.1037/a0016500
- Kleiman, E. M., & Liu, R. T. (2013). Social support as a protective factor in suicide: Findings from two nationally representative samples. *Journal Of Affective Disorders*, 150(2), 540-545. doi:10.1016/j.jad.2013.01.033
- Kleiman, E. M., Riskind, J. H., Schaefer, K. E., & Weingarden, H. (2012). The moderating role of social support on the relationship between impulsivity and suicide risk. *Crisis: The Journal Of Crisis Intervention And Suicide Prevention*, 33(5), 273-279. doi:10.1027/0227-5910/a000136
- Kuttler, A., La Greca, A. M., & Prinstein, M. J. (1999). Friendship qualities and social-emotional functioning of adolescents with close, cross-sex friendships. *Journal Of Research On Adolescence*, 9(3), 339-366. doi:10.1207/s15327795jra0903_5
- Lamis, D. A., Leenaars, L. S., Jahn, D. R., & Lester, D. (2013). Intimate partner violence: Are perpetrators also victims and are they more likely to experience suicide ideation?. *Journal Of Interpersonal Violence*, 28(16), 3109-3128. doi:10.1177/0886260513488691
- Lamis, D. A., & Lester, D. (2013). Gender differences in risk and protective factors for suicidal ideation among college students. *Journal Of College Student Psychotherapy*, 27(1), 62-77. doi:10.1080/87568225.2013.739035

- Lamis, D.A., & Malone, P. S. (2011). Alcohol-related problems and risk of suicide among college students: The mediating roles of belongingness and burdensomeness. *Suicide And Life-Threatening Behavior*, 41(5), 543-553. doi:10.1111/j.1943-278X.2011.00052.x
- Larson, R. W. (1983). Adolescents' daily experience with family and friends: Contrasting opportunity systems. *Journal Of Marriage And The Family*, 45(4), 739-750. doi:10.2307/351787
- Larson, R. W., Richards, M. H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents' daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Developmental Psychology*, 32(4), 744-754. doi:10.1037/00121649.32.4.744
- Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1993). Psychosocial characteristics of adolescents with a history of suicide attempt. *Journal Of The American Academy Of Child & Adolescent Psychiatry*, 32(1), 60-68. doi:10.1097/00004583-199301000-00009
- Lester, D. (2002). Collectivism and rates of personal violence (suicide and homicide). *Psychological Reports*, 90(1), doi:10.2466/PR0.90.1.300-300
- Lincoln, K. D., Taylor, R., Chatters, L. M., & Joe, S. (2012). Suicide, negative interaction and emotional support among black Americans. *Social Psychiatry And Psychiatric Epidemiology*, 47(12), 1947-1958. doi:10.1007/s00127-012-0512-y
- Liu, R. T., & Mustanski, B. (2012). Suicidal ideation and self-harm in lesbian, gay, bisexual, and transgender youth. *American Journal Of Preventive Medicine*, 42(3), 221-228. doi:10.1016/j.amepre.2011.10.023
- Metalsky, G. I., & Joiner, T. E. (1997). The Hopelessness Depression Symptom Questionnaire. *Cognitive Therapy And Research*, 21(3), 359-384. doi:10.1023/A:1021882717784
- Moody, C., & Smith, N. (2013). Suicide protective factors among trans adults. *Archives Of Sexual Behavior*, 42(5), 739-752. doi:10.1007/s10508-013-0099-8

- McIntosh, J. L., & Drapeau, C. W. (for the American Association of Suicidology). (2014). *U.S.A. suicide 2011: Official final data*. Washington, DC: American Association of Suicidology, dated June 19, 2014, downloaded from <http://www.suicidology.org>.
- Nasser, E. H., & Overholser, J. C. (2005). Recovery from major depression: The role of support from family, friends, and spiritual beliefs. *Acta Psychiatrica Scandinavica*, 111(2), 125-132. doi:10.1111/j.1600-0447.2004.00423.x
- Peltzer, K. (2008). Social support and suicide risk among secondary school students in Cape Town, South Africa. *Psychological Reports*, 103(3), 653-660. doi:10.2466/PR0.103.7.653-660
- Pierce, G. R., Sarason, I.G., Sarason, B. R., Solky-Butzel, J. A., & Nagle, L. C. (1997). Assessing the quality of personal relationships. *Journal Of Social And Personal Relationships*, 14(3), 339-356. doi:10.1177/0265407597143004
- Puzia, M. E., Kraines, M. A., Liu, R. T., & Kleiman, E. M. (2014). Early life stressors and suicidal ideation: Mediation by interpersonal risk factors. *Personality And Individual Differences*, 5668-72. doi:10.1016/j.paid.2013.08.027
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401. doi:10.1177/014662167700100306
- Rose, A. J. (2002). Co-rumination in the friendships of girls and boys. *Child Development*, 73(6), 1830-1843. doi:10.1111/1467-8624.00509
- Rose, A. J., Carlson, W., & Waller, E. M. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: Considering the socioemotional trade-offs of co-rumination. *Developmental Psychology*, 43(4), 1019-1031. doi:10.1037/0012-1649.43.4.1019

- Starr, L. R., & Davila, J. (2009). Clarifying co-rumination: Associations with internalizing symptoms and romantic involvement among adolescent girls. *Journal Of Adolescence*, 32(1), 19-37. doi:10.1016/j.adolescence.2007.12.005
- Stein, H., Allen, J. G., & Hill, J. (2003). Roles and relationships: A psychoeducational approach to reviewing strengths and difficulties in adulthood functioning. *Bulletin Of The Menninger Clinic*, 67(4), 281-313. doi:10.1521/bumc.67.4.281.26981
- Stroud, L. R., Foster, E., Papandonatos, G. D., Handwerger, K., Granger, D. A., Kivlighan, K. T., & Niaura, R. (2009). Stress response and the adolescent transition: Performance versus peer rejection stressors. *Development And Psychopathology*, 21(1), 47-68. doi:10.1017/S0954579409000042
- Stroud, L. R., Salovey, P., & Epel, E. S. (2002). Sex differences in stress responses: Social rejection versus achievement stress. *Biological Psychiatry*, 52(4), 318-327. doi:10.1016/S0006-3223(02)01333-1
- Suicide Prevention Resource Center. (2004). Promoting mental health and preventing suicide in college and university settings. Newton, MA: Education Development Center, Inc.
- Taylor, S. E. (2006). Tend and Befriend: Biobehavioral Bases of Affiliation Under Stress. *Current Directions In Psychological Science*, 15(6), 273-277. doi:10.1111/j.1467-8721.2006.00451.x
- Taylor, S. E., Klein, L., Lewis, B. P., Gruenewald, T. L., Gurung, R. R., & Updegraff, J. A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or flight. *Psychological Review*, 107(3), 411-429. doi:10.1037/0033-295X.107.3.411
- Tucker, R. P. & Wingate, L .R. (In Press) Basic needs satisfaction and suicidal ideation: A self-determination theory prospective on interpersonal suicide risk and suicidal thinking. *Archives of Suicide Research*.
- Tucker, R. P., Wingate, L. R., O'Keefe, V. M., Slish, M. L., Judah, M. R., & Rhoades-Kerswill, S. (2013). The moderating effect of humor style on the relationship between interpersonal

- predictors of suicide and suicidal ideation. *Personality And Individual Differences*, 54(5), 610-615. doi:10.1016/j.paid.2012.11.023
- Uchino, B. N. (2006). Social Support and Health: A Review of Physiological Processes Potentially Underlying Links to Disease Outcomes. *Journal Of Behavioral Medicine*, 29(4), 377-387. doi:10.1007/s10865-006-9056-5
- U.S. Department of Health and Human Services. (2012). *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotions, Office on Smoking and Health.
- Van Orden, K. A., Merrill, K. A., & Joiner, T.E. (2005). Interpersonal-psychological precursors to suicidal behavior: A theory of attempted and completed suicide. *Current Psychiatry Reviews*, 1(2), 187-196. doi:10.2174/1573400054065541
- Van Orden, K. A., Lynam, M. E., Hollar, D., & Joiner, T. E. (2006). Perceived Burdensomeness as an Indicator of Suicidal Symptoms. *Cognitive Therapy And Research*, 30(4), 457-467. doi:10.1007/s10608-006-9057-2
- Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, T.E. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behavior among adults. *Journal Of Consulting And Clinical Psychology*, 76(1), 72-83. doi:10.1037/0022-006X.76.1.72
- Van Orden, K. A., Witte, T. K., James, L. M., Castro, Y., Gordon, K. H., Braithwaite, S. R., & Hollar, D.L., Joiner, T.E. (2008). Suicidal ideation in college students varies across semesters: The mediating role of belongingness. *Suicide And Life-Threatening Behavior*, 38(4), 427-435. doi:10.1521/suli.2008.38.4.427
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E. (2010). The interpersonal theory of suicide. *Psychological Review*, 117(2), 575-600. doi:10.1037/a0018697

- Van Orden, K. A., Cukrowicz, K. C., Witte, T. K., & Joiner, T. E. (2012). Thwarted belongingness and perceived burdensomeness: Construct validity and psychometric properties of the Interpersonal Needs Questionnaire. *Psychological Assessment, 24*(1), 197-215. doi:10.1037/a0025358
- Vartanian, L. (1997). Separation-individuation, social support, and adolescent egocentrism: An exploratory study. *The Journal Of Early Adolescence, 17*(3), 245-270. doi:10.1177/0272431697017003001
- Vaux, A., Phillips, J., Holly, L., Thomson, B., Williams, D., & Stewart, D. (1986). The social support appraisals (SS-A) scale: Studies of reliability and validity. *American Journal Of Community Psychology, 14*(2), 195-219. doi:10.1007/BF00911821
- Waller, E. M., & Rose, A. J. (2010). Adjustment trade-offs of co-rumination in mother-adolescent relationships. *Journal Of Adolescence, 33*(3), 487-497. doi:10.1016/j.adolescence.2009.06.002
- Waller, E. M., & Rose, A. J. (2013). Brief report: Adolescents' co-rumination with mothers, co-rumination with friends, and internalizing symptoms. *Journal Of Adolescence, 36*(2), 429-433. doi:10.1016/j.adolescence.2012.12.006
- Wang, M., Wong, Y., Tran, K. K., Nyutu, P. N., & Spears, A. (2013). Reasons for living, social support, and Afrocentric worldview: Assessing buffering factors related to Black Americans' suicidal behavior. *Archives Of Suicide Research, 17*(2), 136-147. doi:10.1080/13811118.2013.776454
- Weinstein, S. M., Mermelstein, R. J., Hedeker, D., Hankin, B. L., & Flay, B. R. (2006). The Time-Varying Influences of Peer and Family Support on Adolescent Daily Positive and Negative Affect. *Journal Of Clinical Child And Adolescent Psychology, 35*(3), 420-430. doi:10.1207/s15374424jccp3503_7
- Wilcox, H. C., Arria, A. M., Caldeira, K. M., Vincent, K. B., Pinchevsky, G. M., & O'Grady, K. E. (2010). Prevalence and predictors of persistent suicide ideation, plans, and attempts

- during college. *Journal Of Affective Disorders*, 127(1-3), 287-294.
doi:10.1016/j.jad.2010.04.017
- Wong, Y., Koo, K., Tran, K. K., Chiu, Y., & Mok, Y. (2011). Asian American college students' suicide ideation: A mixed-methods study. *Journal Of Counseling Psychology*, 58(2), 197-209. doi:10.1037/a0023040
- Zhang, J., Lester, D., Zhao, S., & Zhou, C. (2013). Suicidal ideation and its correlates: Testing the interpersonal theory of suicide in Chinese students. *Archives Of Suicide Research*, 17(3), 236-241. doi:10.1080/13811118.2013.805643

APPENDICES

Table 1.
Correlation, Means, and Standard Deviations

	1	2	3	4	5
1. Perceived Burdensomeness	-	-.30**	-.39**	.45**	.51**
2. Family Social Support		-	.58**	-.17**	-.35**
3. Friend Social Support			-	-.26**	-.48**
4. Suicidal Ideation				-	.33**
5. Depression					-
<i>M</i>	7.48	28.79	24.52	.18	12.58
<i>SD</i>	4.54	3.04	3.41	.83	10.24

Note: ** $p <.001$

Table 2.
Hierarchical Regression Analysis of Social Support from Friends as a Predictor of Suicidal Ideation Controlling for Sex and Symptoms of Depression,

Predictors entered in step	<i>F</i>	ΔR^2	<i>df</i>	<i>t</i>	β	<i>p</i>
1	22.86	.111	2,368			.000
Sex				.419	.021	.676
Depression				6.74	.33	.000
2	17.036	.012	3,367			.000
Friend SS				-2.21	-.12	.028

Note. Friend SS= Friend Social Support

Table 3.
Hierarchical Regression Analysis of Social Support from Family as a Predictor of Suicidal Ideation Controlling for Sex and Symptoms of Depression

Predictors entered in step	<i>F</i>	ΔR^2	<i>df</i>	<i>t</i>	β	<i>p</i>
1	22.864	.111	2,368			.000
Sex				.42	.02	.676
Depression				6.74	.33	.000
2	15.76	.004	3,367			.000
Family SS				-1.22	-.06	.223

Note. Family SS= Family Social Support

Table 4.
Hierarchical Regression Analysis of Social Support from Family and Social Support from Friends as Predictors of Suicidal Ideation Controlling for Sex and Symptoms of Depression

Predictors entered in step	F	ΔR^2	df	t	β	p
1	22.86	.111	2,368			.000
Sex				.42	.02	.676
Depression				6.74	.33	.000
2	15.76	.004	3,367			.000
Family SS				-1.22	-.06	.223
3	12.75	.008	4,366			.000
Friend SS				-1.84	-.12	.066

Note. Family SS= Family Social Support, Friend SS= Friend Social Support

Table 5.
Hierarchical Regression Analysis of Perceived Burdenomeness X Social Support from Friends Interaction as Predictors of Suicidal Ideation Controlling for Sex and Symptoms of Depression

Predictors entered in step	F	ΔR^2	df	t	β	P
1	22.86	.111	2,368			.000
Sex				.42	.021	.676
Depression				6.74	.33	.000
2	26.09	.111	4,366			.000
Friend SS				-1.10	-.06	.272
PB				6.85	.38	.000
3	22.02	.010	5,365			.000
FriSS X PB				-2.16	-.15	.031

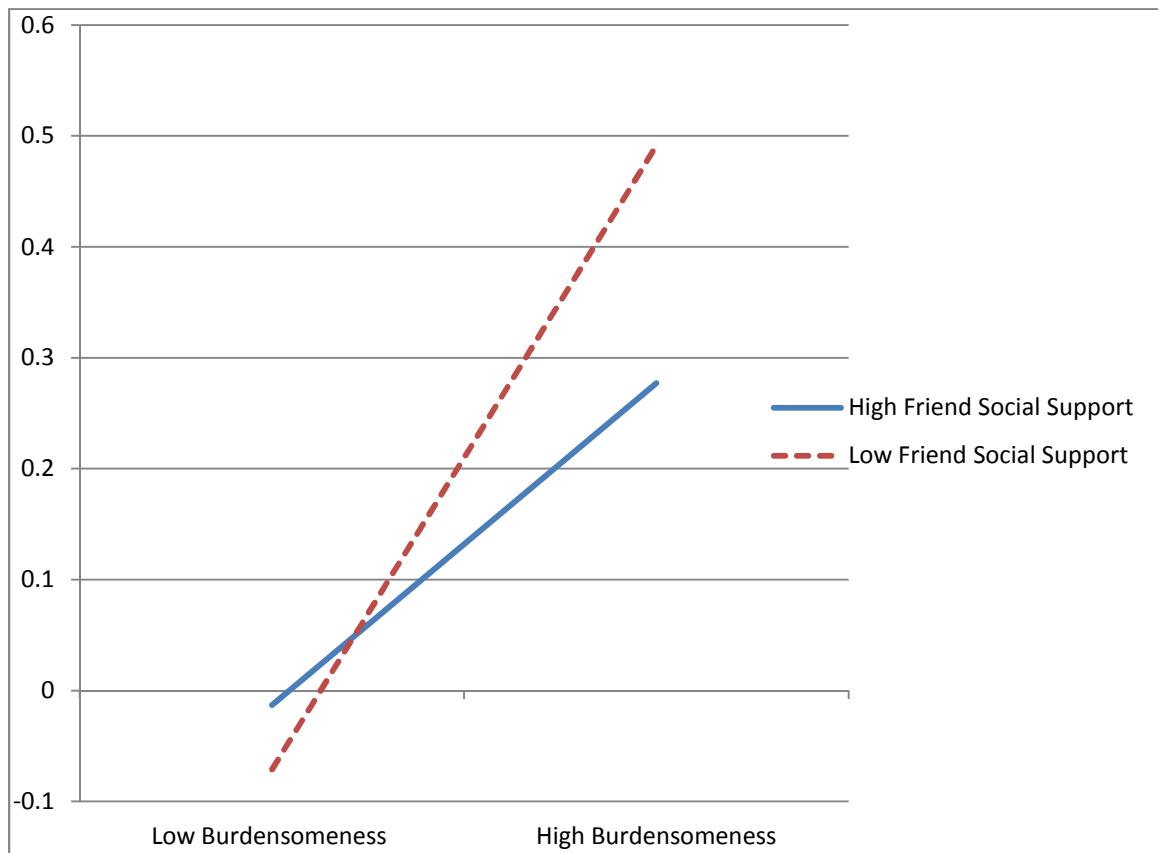
Note. PB= Perceived Burdenomeness, Friend SS= Friend Social Support, FriSSXPB= Interaction of Friend Social Support and Perceived Burdenomeness

Table 6.
Hierarchical Regression Analysis of Perceived Burdensomeness X Social Support from Family Interaction as Predictors of Suicidal Ideation Controlling for Sex and Symptoms of Depression

Predictors entered in step	F	ΔR^2	df	t	β	p
1	22.86	.111	2,368			.000
Sex				.42	.02	.676
Depression				6.74	.33	.000
2	25.72	.109	4,366			.000
Family SS				-.25	-.01	.796
PB				7.02	.39	.000
3	20.67	.001	5,365			.000
FamSS X PB				-.76	-.04	.447

Note. PB= Perceived Burdensomeness, Family SS= Family Social Support, FamSSXPB= Interaction of Family Social Support and Perceived Burdensomeness

Figure 1.
Social Support from Friends as a Moderator of Perceived Burdenomeness and Suicidal Ideation



VITA

David William Hollingsworth

Candidate for the Degree of

Master of Science

Thesis: "WHAT ABOUT YOUR FRIENDS?" SOCIAL SUPPORT MODERATES PERCEIVED BURDENOMENESS AND SUICIDAL IDEATION RELATIONSHIP

Major Field: Clinical Psychology

Biographical:

Education:

Completed the requirements for the Master of Science in Clinical Psychology at Oklahoma State University, Stillwater, Oklahoma in July, 2014.

Completed the requirements for the Bachelor of Arts in Psychology at Morehouse College, Atlanta, Georgia in 2012.

Experience:

Graduate Student, Dr. LaRicka R. Wingate, Laboratory for the Study of Suicide Risk & Resilience, Oklahoma State University

Research Intern, Dr. Carlos Zarate, Experimental Therapeutics & Pathophysiology Branch, National Institute of Mental Health, National Institutes of Health

Research Assistant, Dr. Erin Tully, Department of Psychology, Georgia State University

Professional Memberships:

Association of Behavioral and Cognitive Therapies

Oklahoma State University Psychology Graduate Student Association

Oklahoma State University Black Graduate Student Association

Psi Chi International Honor Society in Psychology

Association of Black Psychologists Student Circle