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# The Relationship Between Adolescent Suicidality and Engagement in Risky Behaviors

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The Relationship Between Adolescent Suicidality and Engagement in Risky Behaviors.

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A Dissertation Presented to the College of Psychology

of Nova Southeastern University

in Partial Fulfillment of the Requirements

for the Degree of Doctor of Philosophy

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## Approval Page

This Dissertation was submitted by Elissa Golden under the direction of the Chairperson of the Dissertation committed listed below. It was submitted to the College of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.
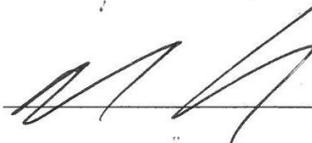
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**ABSTRACT**

THE RELATIONSHIP BETWEEN ADOLESCENT SUICIDALITY AND

ENGAGEMENT IN RISKY BEHAVIORS

by

Elissa Golden

Nova Southeastern University

Adolescent suicide is a serious and growing problem among adolescents. Therefore, the goal of the current study was to try and identify predictors of suicidal ideation. The first objective was to examine whether the level of engagement in risky behavior predicts an increase in total suicidal ideation above and beyond other well-known risk factors (i.e., family functioning, gender, and problem-solving skills). The second objective was to investigate whether different types of risky behaviors (i.e., internalizing versus externalizing) predict different forms of suicidal ideation (i.e., passive versus active) above and beyond perceived family functioning, gender, and problem-solving skills. The pre-test archival data of 358 students who participated in a weekly problem-solving group were analyzed. Using four questionnaires, their perceived family functioning, knowledge of the problem-solving process, number of risk-taking behaviors, and level of suicidal ideation were assessed during the first and last sessions. Gender and perceived family functioning uniquely and consistently contributed to the variance in active, passive and total suicidal ideation scores. The active, passive and total suicidal ideation scores of adolescent males were consistently lower than adolescent females. When compared to

adolescents who described having no relationship with their families, those adolescents who reported having a good or great relationship with their families consistently reported lower passive, active, and total suicidal ideation scores. Having an okay relationship produced mixed results. Total risky behavior scores significantly predicted adolescents' total suicidal ideation scores above and beyond perceived family functioning and gender.  In addition, internalizing behaviors, but not externalizing behaviors, predicted an increase in passive, active, and total suicidal ideation scores above and beyond perceived family functioning and gender.  Based on these findings, current screening, prevention and treatment programs would benefit from adding questions designed to determine an adolescent's engagement in internalizing behaviors and how they perceive their family relationships. This may help in identifying at-risk adolescents earlier so that they can receive the help and support they require.

## Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the Student Handbook of Nova Southeastern University. This dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

Where another author's ideas have been presented in this dissertation, I have acknowledged the author's ideas by citing them in the required style.

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**Elissa Golden** _____

**October 2, 2018** _____

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**Statement of the Problem**

Suicide and Adolescence

Suicide among adolescents is a major societal challenge worldwide. In the United States, suicide is the second leading cause of death among individuals 10-24 years of age (after accidental injuries) (Control, 2014). This translates to approximately 5,000 suicides every year (Control, 2014). In 2014, the Centers for Disease Control and Prevention conducted a nationwide survey and determined that during the 12 months prior to survey completion, 17.0% of these adolescents had seriously considered attempting suicide, 13.6% had made a plan of how they would attempt suicide, 8.0% had attempted suicide one or more times, and 2.7% had made a serious suicide attempt that required medical attention (Control, 2014). Research has consistently shown that adolescents who have survived suicide attempts are at an increased risk for attempting suicide in the future and show increasing suicidal intent and decreasing time between each subsequent attempt (Goldston et al., 2015; Shaffer et al., 1996). The CDC (2014) data indicated that the prevalence rate of suicide attempts was highest among females, ninth graders, and Native American/Alaskan Native/ Hispanic students. Males are nearly five times as likely as females ages 15 to 19 years old to die by suicide and nearly six times more likely than females ages 20 to 24 years old.

Psychological and Monetary Costs

Research has demonstrated that adolescents who express suicidal ideation have deficits in behavioral and emotional functioning (e.g., low self-esteem, depressive symptoms) that may extend into young adulthood (Goldney, Smith, Winefield, Tiggeman, & Winefield, 1991;

Groleger, Tomori, & Kocmur, 2003) Male and female adolescents with suicidal ideation at 15 years of age described greater levels of psychopathology, problem behaviors, suicidal ideation, and suicide attempts by age 30 than those without suicidal thoughts at age 15 (Reinherz, Tanner, Berger, Beardslee, & Fitzmaurice, 2006). Overall, adolescents with suicidal ideation in mid-adolescence were 12 times more likely to attempt suicide between ages 15 and 30 and twice as likely to meet criteria for a mental disorder (Reinherz et al., 2006). They also reported poorer global, social, and occupational functioning, characterized by lower levels of coping, social support, self-esteem, socioeconomic status, and communication with others (Reinherz et al., 2006).

In 2008, using data from the World Health Organization (WHO) World Mental Health Survey Initiative, Nock et al. (2008) investigated the risk factors and prevalence of suicidal behaviors across 17 countries. The results indicated that the lifetime prevalence rate of suicidal ideation among adolescents was 9.2%. In addition, 3.1% had created a plan, and 2.7% reported a previous suicide attempt (Nock et al., 2008). Among those reporting suicidal ideation, 33.6% proceeded to create a plan and 29% made a suicide attempt. In addition, the risk of suicidal behavior was significantly related to being female, being younger, having fewer years of formal education, and having a prior mental health disorder. Among those reporting suicidal ideation, an earlier age of onset was significantly associated with a greater risk for creating a plan and attempting suicide. In general, 60% of the transition from ideation to plan and attempt occurred within the first year after onset. Importantly, the risk of the first onset of suicidal ideation increased sharply during adolescence and young adulthood, defining this as a critical period for intervention. Several countries displayed an earlier risk of suicidal ideation (Japan, New Zealand, and the USA), while other countries (Israel, Mexico, Spain, and Ukraine) showed an increase later in life. Among high-income countries, mood disorders were the strongest predictors of suicidal

behavior, while impulse control disorders were the strongest predictors in low and middle-income countries.

Another study conducted by Field, Diego, and Sanders (2001) found that individuals with suicidal ideation reported a reduced quality and number of family and peer relationships. They also reported increased anger and depression, less happiness, lower grade point averages, problem-solving deficits, hopelessness, cognitive distortions, and an increase in impulsivity and drug use (cocaine, cigarettes, and marijuana). Furthermore, there was a strong correlation and reciprocal relationships among depression, suicidal behavior, and engagement in risky behavior.

Adolescents who met criteria for depression were more likely to engage in risky and suicide-related behaviors (Rosenberg et al., 2005; WISQARS, 2010). These included, but were not limited to, behaviors such as weapon carrying /fighting, unsafe sexual activity, alcohol/substance use, and smoking. Likewise, adolescents who report engaging in multiple risky behaviors also reported more significant suicidal behaviors and depression. Therefore, understanding the relationships among these three variables and reducing youth engagement in risky behaviors may be an important area for intervention.

Suicide is associated with significant emotional and monetary costs. The total lifetime cost of self-inflicted injuries occurring in 2000 was approximately $33 billion (Corso, Mercy, Simon, Finkelstein, & Miller, 2007). This included one billion for medical treatment and $32 billion for lost productivity. In 2013, the CDC estimated that this amount rose to approximately $51 billion for fatal suicides and 10.4 billion for non-fatal self-inflicted injuries. (Control & Prevention, 2013).

Family members and close friends are impacted by each suicide and experience a range of complex grief reactions, including guilt, anger, and feelings of abandonment (Jordan, 2001). Furthermore, adolescents exposed to the suicidal behavior of a peer are nine times more

likely to report suicidal ideation and to attempt suicide themselves. They are also more likely to engage in risky behaviors such as smoking cigarettes, using drugs, binge drinking, fighting, and self-injuring (Control & Prevention, 2013). This exposure to a peer's suicide also increased the likelihood that they would report symptoms of depression and meet diagnostic criteria for a mental health disorder (Borowsky, Ireland, & Resnick, 2001; Hazell & Lewin, 1993; Ho, Leung, Hung, Lee, & Tang, 2000).

Treatment Effectiveness

Suicide statistics reveal a serious epidemic affecting adolescents and society as a whole. Interventions designed to decrease depression, suicidal behavior, and other risky behaviors have produced mixed results. Brent et al. (1997) found that 65% of adolescents who participated in cognitive behavioral therapy (CBT) experienced a decrease in symptoms and a quicker treatment response when compared to supportive or family treatment. In addition, a 12-week Depressed Adolescent Treatment Program based on interpersonal psychotherapy showed a decrease in depressive symptoms and an improvement in social functioning as well as problem-solving skills (Mufson, Weissman, Moreau, & Garfinkel, 1999). However, Lewinsohn and Clarke (1999) found that although cognitive behavioral therapy may be effective, adolescents who were seen in treatment for seven or fewer sessions were just as likely as those who did not receive treatment to relapse in adulthood. A meta-analysis of 17 studies exploring the effectiveness of psychosocial interventions for suicidal adolescents (10-18 years old) concluded that the number of suicidal and self-harm events at post-test decreased for individuals receiving therapy compared with those who were in control groups (Corcoran, 2011). However, individuals who were assessed after longer periods (three, six, or 12 months) of time, were slightly more likely to report suicidal

and self-harm events than control participants (Corcoran, 2011). Among these studies, those measuring suicidal ideation demonstrated a slight decrease, both at post-test and at follow-up, when compared to control participants.

Studies examining the efficacy of medication have found selective serotonin reuptake inhibitors (SSRIs) such as Paxil and Prozac, to reduce symptoms of depression (Renaud, Brent, Birmaher, Chiappetta, & Bridge, 1999). However, tricyclic antidepressants have not been found to be as effective, due to the possible side effects and safety concerns (Geller, Reising, Leonard, Riddle, & Walsh, 1999). The psychosocial and pharmaceutical interventions used varied across studies and demonstrated inconsistent results and limited benefits to individuals participating in the intervention conditions. This is consistent with other studies that have concluded that the benefit of participating in an intervention program was only slightly greater than taking medication alone or receiving standard medical care (Crawford, Thomas, Khan, & Kulinskaya, 2007; Daniel & Goldston, 2009; Tarrier, Taylor, & Gooding, 2008).

In 2001, the Florida Initiative for Suicide Prevention (FISP) organization began utilizing a modified version of the Solutions Unlimited Now (SUN) program developed by Judith Tellerman (2001). This program was designed to teach at-risk adolescents healthy coping and problem-solving strategies. It was hypothesized that a boost in problem-solving skills would improve perceived family functioning and reduce engagement in risky and suicidal behaviors. In order to evaluate the effectiveness of the program, FISP initiated a collaboration with the Nova Southeastern University School of Clinical Psychology. Under the direction of Dr. Ralph E. Cash, the Suicide Prevention among Adolescents: Research and Evaluation (SPARE) group was formed to address this task. A series of surveys were utilized to evaluate each participant's level of risk-taking behaviors, family functioning, problem-solving skills, and suicidal ideation before and after

participation in a problem-solving or reading skills group. This data set was initially analyzed as part of a dissertation conducted by (Johns, 2010). The database also serves as a foundation for the current study.

Prior to the intervention (i.e., the problem-solving training experimental group or the reading enhancement control group), perceived family functioning was determined to be positively correlated with both knowledge of the problem-solving process and suicidal ideation. In addition, perceived family functioning and knowledge of the problem-solving process were significantly negatively related to the majority of the risky behaviors assessed. Suicidal ideation was significantly and positively correlated with eight out the nine risky behaviors assessed. Moreover, adolescents who reported a positive relationship with their parents reported less suicidal ideation, engaged in fewer problematic behaviors, and exhibited better problem-solving skills than adolescents who reported poorer family functioning. Additionally, adolescents who demonstrated stronger problem-solving skills also reported less suicidal ideation and engagement in risky behaviors than adolescents with poorer problem-solving skills. Lastly, adolescents who reported higher levels of suicidal ideation tended to engage in more incidents of problematic risky behavior than adolescents who reported lower levels of suicidal ideation.

Post-intervention, the results revealed a significant improvement in the experimental group participants' knowledge of the problem-solving process. However, perceived family functioning and suicidal ideation failed to change significantly from pre-test to post-test, although they did trend in the predicted direction. In addition, knowledge of the problem-solving process was no longer significantly correlated with suicidal ideation at post-test. Less knowledge of the problem-solving process and poorer perceived family functioning were still associated with a greater frequency of risky behaviors. Furthermore, lower suicidal ideation scores continued to be

associated with less participation in risk-taking behaviors.  However, only two of the nine risky behaviors measured significantly improved from pre-test to post-test (i.e., tobacco use and self-injurious behavior). Overall, this study (Johns, 2010; Tellerman, 2001) demonstrated important relationships among perceived family functioning, problem-solving skills, suicidal ideation, and risky behavior.  It was theorized, however, that due to several study limitations (e.g., attrition rate and inconsistent group attendance) it may have been harder to detect significant changes among some of the variables.

To illuminate and to explain further the underpinnings of the relationship between suicidal ideation and risky behavior among adolescents, the current dissertation utilized only the pre-test archival data gathered by FISP and SPARE in order to limit the impact of attrition.  The goals of the current dissertation were to investigate further the contribution of various risk factors to the formation of the relationships among suicidal ideation and engagement in risky behaviors. In addition, this study will build upon the previous research by exploring the possible relationships among different components of suicidal ideation and various types of risky behaviors in an adolescent population.  This information may assist in the development of treatment protocols that are more effective in identifying at-risk youth and reducing their levels of suicidal ideation and engagement in risky behaviors.

**Chapter II**

**Literature Review**

Risky Behavior and Adolescence

During adolescence, there is a general increase in risk-taking behaviors (Michael & Ben-Zur, 2007). Results from the American National Longitudinal Study of Adolescent Health established that the most common risky behaviors are smoking cigarettes, drinking alcohol, using marijuana, fighting, and engaging in unprotected sexual intercourse (Zweig, Phillips, & Lindberg, 2002). A similar longitudinal study conducted by the World Health Organization investigated youth between 11 and 15 years old in over 35 countries. They concluded that by 15 years of age, 23% smoked cigarettes, 29% consumed alcohol on a weekly basis, and 22% had already tried marijuana (Michael & Ben-Zur, 2007). In addition, 26% of males and 11% of females reported that they had engaged in risky behaviors several times during the past year (Michael & Ben-Zur, 2007). Adolescents who engaged in multiple risk-taking behaviors were more likely to report mental health problems. They were also nine times more likely to be arrested, three times more likely to drop out of school, 1.8 times more likely to be unemployed, and 1.42 times more likely to report poorer health (Hair, Park, Ling, & Moore, 2009).

Using a sample of nine to 17 years old youths, Flisher et al. (2000b) found that there is a correlation between engagement in risky behavior and exposure to external stressors. Individuals were more likely to engage in risky behavior if they experienced numerous negative life events. These included an unstable family environment, parental discord and quarreling, low academic achievement, poor physical health, exposure to physical and non-physical punishment, and having only one primary caretaker. In addition, having a previous or current psychiatric diagnosis with a more substantial level of impairment increased the likelihood of engaging in risky

behaviors.  Interestingly, involvement in risky behaviors was negatively correlated with parental monitoring, social competence, higher social class, and verbal intelligence.  Flisher et al. (2000b) also determined that positive relationships existed among risky behaviors, such that participation in one behavior significantly increased the chance of participation in others. In their study, the strongest relationships existed among marijuana use, alcohol use, and sexual activity, which tended to co-occur.  In addition, there was a significant positive relationship between involvement in these risky behaviors and subsequently engagement in physical fights or suicidal behavior (Flisher et al., 2000b). Burrow-Sanchez (2006) used data from the Youth Risk Behavior Survey (YRBS) to examine the correlation between health risk behaviors and increased suicidal ideation.  The results revealed that individuals who admitted to using laxatives, inhalants, steroids, and alcohol or drugs prior to having sexual intercourse also reported increased suicidal ideation.

A study examining whether non-involvement in risky behaviors leads to more positive well-being found that as adolescents increased their involvement in risky behaviors, they also experienced more negative outcomes and developmental challenges (Willoughby, 2007). Adolescents who abstained completely from involvement in risky behaviors reported the most positive developmental status across 12 indices.  These included overall well-being, academic orientation, personal relationships/friendships, temperament, and parental relationships or monitoring.  Importantly, approximately half of the individuals who reported some involvement in risky behaviors also endorsed a positive developmental status.  However, individuals in the high-risk group reported the most negative developmental status (Willoughby, 2007). Therefore, engaging in risky behaviors during adolescence may not necessarily lead to a negative developmental status, but the chances increase as the number and intensity of risky behaviors increase.

Using data from the National Longitudinal Study of Adolescent Health, Borowsky et al. (2001) examined the predictive and protective factors of suicidal attempts among adolescents in grades seven-12. They concluded that teens who used drugs or alcohol reported more academic problems. In addition, they were more likely to attempt suicide or to be the perpetrator or victim of violence. However, adolescents who also reported protective factors such as positive emotional well-being or family support were 70-85% less likely to report attempting suicide. Farrell, Danish, and Howard (1992) found that the frequencies of smoking, alcohol consumption, marijuana use, delinquency, and sexual intercourse were positively correlated with each other. However, they were negatively correlated with indications of well-being such as school attendance and grade point average (GPA).

The Youth Risk Behavior Surveillance System (YRBSS) was designed by the Center for Disease Control (CDC) to describe the prevalence of health-risk behaviors among adolescents and to assess the trends in health-risk behaviors over time within the United States. Through extensive review of the research, they concluded that the leading causes of morbidity and mortality can be placed into six health-risk behavior categories: 1) behaviors that contribute to unintentional injuries and violence; 2) sexual behaviors that contribute to HIV infection, other STDs, and unintended pregnancy; 3) tobacco use; 4) alcohol and other drug use; 5) unhealthy dietary behaviors; and 6) physical inactivity (Control & Prevention, 2013). The data resulting from these questionnaires have been utilized in multiple research studies. For the purposes of this dissertation, the use of the YRBS will be discussed as it relates to suicidal ideation.

Lowry, Crosby, Brener, and Kann (2014) examined the YRBS data from 1991-2011. The aim of the study was to examine the relationships among suicidal thoughts and attempts and different types of health-risk behaviors over time. They established that male and female high

school students who endorsed violence-related behaviors, substance use, risky sexual behaviors, and unhealthy weight control strategies were also at a higher risk for attempting suicide than their peers.  In addition, their suicide risk increased as their engagement in risky behaviors rose.  Certain behaviors that were associated with suicide risk also varied by gender.  For females, injection drug use, carrying a weapon, and methamphetamine use showed the strongest associations with suicide risk.  For males, injection drug use, using vomiting or laxatives for weight control, and forced sexual encounters showed the strongest associations with suicide risk.

A study conducted by Stevens and Griffin (2001) utilized data from the YRBS middle school surveys to explore patterns of risky behavior in that population.  The data indicated that both male and female students tended to engage in multiple risk behaviors.  In addition, as the students aged, their risky behavior use either remained stable or increased.  The most common risky behaviors reported were alcohol use, participating in a physical fight, marijuana/cigarette use, and carrying a weapon.  However, females also reported seriously contemplating suicide.  Overall, 27.1% of the female sample reported serious consideration of attempting suicide as opposed to 15.1% of male students.  The authors concluded that engagement in risky behaviors may have more serious consequences for females, even though males remain at risk.

Flannery, Sneed, and Marsh (2003) had 2,730 students complete the YRBS in an attempt to develop an understanding of the relationship between risky behaviors and suicidal ideation.  Using factor analysis, they reduced the data to six subscales or factors: substance use, highway risk, sexual activity, violent behavior, health behaviors, and suicidal ideation. Then, using cluster analysis, the authors identified six clusters: the health and safety cluster, which represented students who reported limited or no engagement in any risky behaviors; the poor health cluster, which was comprised of students who reported having bad diet and exercise patterns but who

scored low on all other risky behaviors; the sexually active cluster, which represented students who endorsed average diet/exercise habits and reported limited risky behavior use overall, but were very sexually active; the silent suicide cluster, which was comprised of students who reported a substantial risk for suicide-related behaviors but no other risk behaviors; the moderate risk cluster, which involved students who reported moderately high engagement in several risk factors, such as highway danger, violence, substance use, and sexual activity; and the multiple risk group, which encompassed students who reported minimal positive health behaviors and an extremely high engagement in all risk behavior areas. The authors concluded that adolescent suicide appears to consist of at least two major clusters: the silent suicide cluster and the multiple risk cluster. The silent suicide cluster did not engage in overtly risky behaviors. However, on closer investigation, this group consisted of 75% females. The authors hypothesized that this group was more likely to exhibit internalizing behaviors such as low self-esteem, anxiety, depression, and suicidal ideation. In contrast, the multiple risk cluster was comprised of more males and demonstrated a link between increased risky behavior participation and suicidal ideation. Overall, the authors concluded that there are two groups of adolescents at risk for suicide. The first group engages in suicide-related internalizing behaviors and the second group engages in both internalizing and externalizing risky behaviors.

A study conducted by Witte et al. (2008) also used data from the Youth Risk Behavior Survey and divided the sample into three groups: (1) individuals who planned but did not attempt suicide, (2) individuals who attempted without a plan (impulsive attempters), and (3) individuals who planned and attempted (planners). The authors measured impulsivity by using information from 10 survey questions, such as in the past 30 days, how many times did you drive inebriated, have five drinks in a row within a couple of hours, use marijuana, use cocaine, use needles to inject

drugs, take laxatives or vomit, and/or take diet supplements without doctor's advice to lose weight. Other questions included how many individuals you have had sexual intercourse with, what method of protection did you use, and have you ever gotten pregnant or impregnated someone. The data indicated that adolescents who had planned suicide without attempting were significantly less impulsive than those who had attempted without planning and those who had both planned and attempted. Importantly, participants who had made a suicide attempt without prior planning were less impulsive than those who had planned and attempted. This is consistent with Joiner's interpersonal-psychology theory because individuals who had planned and enacted their suicide attempt were significantly more likely to have engaged in other impulsive and risky behaviors when compared to those who had attempted suicide without prior planning and those who had planned but did not make a suicide attempt. These findings demonstrated that the link between impulsivity and suicidal behavior may not be a direct relationship.

Using data from the Youth Risk Behavior Survey, Simon and Crosby (2000) examined the differences among four groups of at-risk youth who reported: (1) no suicidal ideation (73.7%), (2) thoughts only (6.6%), (3) plans without previous attempts (11%), (4) attempts without a previous plan (1.3%), and (5) attempts along with plans (7.3%). The results revealed that students who reported making a suicide attempt without a plan (nonplanners) were significantly less likely than attempters who reported planning to use alcohol, to binge drink, use marijuana, or carry weapons. However, they were both just as likely to report cocaine use and involvement in physical fights. The authors concluded that individuals who planned a suicide attempt may be more likely to experience other mental health related symptoms and have a greater intention to die. Therefore, they are also more likely to engage in impulsive and risky behavior. They confirmed that both planners and nonplanners engaged in risky behavior, but the motivation appeared to be

different.  For nonplanners, this may be a result of poor impulse control, whereas for planners, it may be an attempt to mitigate and to reduce their depressive symptoms.

Another study utilized the data from the Youth Risk Behavior Survey in order to group adolescents into five categories: (1) no suicidal ideation or plan, (2) ideation, plan, and an attempt requiring medical treatment, (3) ideation, plan, and an attempt not requiring medical intervention, (4) ideation and plan only, and (5) ideation only.  The authors discovered that engagement in risky behaviors increased as the level of planning and severity of the suicidal activity increased. They concluded that a parallel relationship may exist between the progression and planning of suicidal behavior and the frequency of an adolescent's engagement in risky behavior (Perez, 2005)

Using data from the Youth Risk Behavior Survey, Pena, Matthieu, Zayas, Masyn, and Caine (2012) examined the relationship between previous suicide attempts and health-risk behaviors during an eight-year period from 1999-2007. The authors identified three subgroups: (1) attempters who reported low levels of substance use and violent behaviors (low SU-VB), (2) attempters who reported high levels of substance use and violent behaviors (high SU-VB), and (3) attempters who reported extreme levels of substance use and violent behaviors (extreme SU-VB). In general, all three groups endorsed depressive symptoms.  However, the proportion of youth who reported two or more suicide attempts increased among the subgroup of attempters who endorsed higher levels of substance use and violent behaviors.  In fact, approximately 84.6% of those in the extreme SU-VB subgroup reported a previous suicide attempts as opposed to 49.4% of those in the low SU-VB subgroup.  In addition, there were racial and gender differences across the different subtypes of suicide attempters.  Overall, females attempted suicide more often than males.  In addition, females made up the majority of the low (66.1%) and high (67.7%) SU-VB groups while males made up the majority of the extreme (65.9%) SU-VB subgroup.  Generally, white

adolescents (60.6%) reported the highest numbers of suicide attempts followed by Hispanic (22.4%) and black (17.0%) students. Among females, this pattern remained similar. However, proportionately, Hispanic females were the most at-risk group. Among males, white males (21.5%) were most at risk followed by Black (9.3%) and Hispanic males (8.0%). Taken together, preventing and treating substance use and violent behaviors may serve as essential strategies for reducing suicide attempts. In addition, both ethnicity and culture must be considered when assessing an individual's level of risk.

The YRBS has proven to be a useful and informative measure. As demonstrated above, it has been utilized in a number of important research studies to illustrate the relationship between risky behavior use and suicidal ideation. Therefore, nine questions related to risky behavior use were selected from the YRBS by the FISP) and SPARE group. These questions were used to evaluate how engagement in risky behavior use changed during an intervention program designed to teach problem-solving skills to at-risk youth. These initial results were analyzed as part of a dissertation conducted by (Johns, 2010). However, the current study will utilize the data to explore the relationships among different types of risky behavior and suicidal ideation and behavior.

Relationships Among Suicide and Risky Behaviors

Research has demonstrated that a subset of adolescents' cope with stressful or unpleasant situations by engaging in risky behaviors such as drinking alcohol (Foster, 2001), experimenting with drugs (Gray et al., 2002; King et al., 2001), exhibiting violent behaviors (Gray et al., 2002; King et al., 2001), and other risky activities (Beautrais, 2003). However, these risky behaviors may also lead to an increase in depression or suicidal ideation and serve as warning signs for later suicidal behavior (Beautrais, 2003; Gould, Greenberg, Velting, & Shaffer, 2003; Gray et al., 2002;

King et al., 2001). A study conducted by Cho, Hallfors, and Iritani (2007) demonstrated that the earlier an adolescent engages in risky behavior, the higher the likelihood that he or she will report depressive symptoms, endorse suicidal ideation or attempts, and express the belief that suicide is a solution to problems. For boys, the earlier the commencement of hard drug use, the greater the suicidal risk.  Early drug use onset and regular cigarette smoking were positively correlated with depressive symptoms, suicidal ideation, and the belief that using alcohol and/or drugs contributed to or caused their thoughts of suicide.  Marijuana use was also associated with the belief that suicide could be used to solve problems. For girls, early and regular cigarette smoking, alcohol consumption, and drug use were associated with an increase in depressive symptoms and suicidal ideation.  Current alcohol use was also associated with increased suicide attempts.  In addition, there was a positive relationship between increased alcohol and drug use in the last month and an increase in suicidal thoughts (Cho et al., 2007).  Windle (1997) found that among both male and female adolescents, the severity of their depression, the number of cigarettes smoked in the last 30 days, and the frequency of their illicit drug use differentiated those who reported suicidal ideation from those who reported previous suicide attempts.  Among girls, the number of stressful life events was also a significant contributor to both suicidal attempts and ideation.

Wu et al. (2004) found that youth aged nine to 17 years old who reported suicidal ideation were four times more likely to admit alcohol abuse/dependence than non-suicidal youth. In addition, individuals who related a past suicidal attempt were 12 times more likely to report alcohol use/dependence than non-suicidal youth. Furthermore, youth who said they had engaged in suicidal behavior were more likely to have another psychiatric disorder.  These results demonstrate that the type and severity of suicidal behavior may correlate with different patterns of alcohol use as well as with psychiatric disorders.  Interestingly, abuse/dependence involving drugs other than

alcohol was not associated with previous suicide attempts, but smoking was found to be positively correlated, even after controlling for alcohol and drug use/dependence.

Miller et al. (2011) found that among a Mexican adolescent sample those who reported the use of alcohol, illicit drugs, or tobacco at some time during their lives also reported a higher occurrence of suicidal thoughts, plans, and attempts. In addition, adolescents who reported dependence on or abuse of these substances had a higher incidence of suicide-related behaviors. Therefore, drug dependence, rather than occasional drug use, appeared to be more strongly related to the onset and perpetuation of suicidal ideation.  The authors concluded that a mental health diagnosis strengthened and explained part of the relationship between substance use and suicidal ideation.

Ellis and Trumpower (2008) concluded that undergraduate students who expressed suicidal ideation were more likely than those who did not to report maladaptive health-related attitudes as well as alcohol and drug use.  Those who expressed suicidal ideation also showed a trend toward more problem-drinking and cigarette use when compared to undergraduates without suicidal ideation.  Hallfors et al. (2004) analyzed data from the National Longitudinal Study of Adolescent Health and established that as participation in risk-taking behaviors increases, so does suicidal ideation. Adolescents who participated in one risky behavior usually took part in multiple risky behaviors. Overall, 28% of seventh-12th graders who completed the National Longitudinal Study indicated engaging in two or more types of risky behaviors (Reinherz et al., 2006).  Additionally, there was a significant, negative relationship found between risky behaviors and mental health (Hallfors et al., 2004).  In general, adolescents who reported alcohol/drug use, smoking, or unsafe sexual activity were considerably more likely to experience depression, to describe suicidal ideation, and to report previous suicide attempts when compared to adolescents who abstained

from risky behaviors entirely (Hallfors et al., 2004). This trend was related to the nature of the adolescents' levels of engagement in high-risk behaviors. Specifically, adolescents who reported marijuana use, IV drug use, and increased sexual activity were the most at risk for depression. However, those reporting multiple and same-sex partners and moderate levels of smoking and alcohol use were at a relatively lower risk. Adolescents who indicated low levels of drug/alcohol use and sexual activity were at the lowest risk, except when compared to adolescents who completely abstained from engaging in any risky behaviors.

Similar results have been found in Western European Countries. Husky, Guignard, Beck, and Michel (2013) utilized data from a telephone survey conducted by the National Institute for Health Promotion and Health Education in France. They found that suicidal ideation and attempts were linked to risky sexual activity and substance use. In their study, having unprotected sex with a new partner or being younger than 14 during a first sexual encounter was significantly related to reporting suicidal ideation and one or more previous suicide attempts. On the other hand, individuals who were not sexually active were more likely to report lower rates of suicide attempts. Smoking was also found to be associated with suicidal ideation and suicide attempts in women but not in men. However, daily alcohol use, binge drinking, and the number of times getting drunk were all associated with suicidality in both genders. In addition, daily alcohol intake was more significantly correlated with suicidal ideation in men than women.

A Canadian study (Afifi, Cox, & Katz, 2007) found that all of the health risk behaviors they sampled were positively correlated with suicidal ideation and attempts. Of the 12 studied by the authors, eight health risk behaviors (sexual intercourse, fighting with a weapon, carrying a knife, damaging property, gambling, smoking cigarettes, and using marijuana) showed the largest association with suicidal attempts and ideation. Among males, sexual intercourse, smoking

cigarettes, fighting with a weapon, and using marijuana/hashish showed the greatest association with suicide attempts. Among females, fighting with a weapon, carrying a knife, and engaging in risky sexual intercourse demonstrated the strongest associations with both suicidal ideation and attempts.

Overall, it is unclear whether adolescents engage in high-risk behaviors in response to a pre-existing depressive state or whether participating in risky behaviors can lead to the development of depressive symptoms and suicidal ideation. However, these research studies demonstrate the importance of screening adolescents who report high-risk behaviors.

Depression and Suicidal Ideation

Research has shown that the lifetime prevalence rates of depressive symptoms among high school students may be as high as 25%, with a one-year incidence rate of 3-4% among adolescents (Brooks, Harris, Thrall, & Woods, 2002). Importantly, depressed children are four to five times more likely to express suicidal ideation or to report a suicide attempt later during adolescence (Kovacs, Goldston, & Gatsonis, 1993). Depression has been established as an important predictor of suicidal ideation. For example, 40 to 80% of adolescents who attempt suicide are believed to meet criteria for depression (Beautrais, Joyce, & Mulder, 1998; Goldston et al., 1998; Gould et al., 1998). Another study found that 41% of depressed adolescents experienced suicidal ideation and 21% reported a previous suicide attempt (Lewinsohn, Clarke, Seeley, & Rohde, 1994). Furthermore, depression was found to account for the greatest increase in the likelihood of future suicidal behavior among adolescents (Beautrais, Joyce, & Mulder, 1996). Another study found that individuals with a history of multiple suicide attempts reported an earlier age of onset of depressive symptoms and exhibited higher levels of current suicidal ideation and depressive

symptoms (Gibb, Andover, & Miller, 2009). One study found that among high school students, depressed affect was the most significant predictor of suicidal ideation and the desire to kill oneself (Chabrol, Rodgers, & Rousseau, 2007). In boys, additional predictors included the loss of positive affect, somatic symptoms and physical retardation.

It is estimated that nine out of 10 individuals who die by suicide have a diagnosable psychiatric disorder, and the most common diagnosis is depression (Hawton, Casanas, Haw, & Saunders, 2013). Approximately one in six individuals receiving treatment for depression will eventually die by suicide, illuminating the need for more effective interventions (Hawton et al., 2013).

As the above-mentioned research suggests, suicidal ideation among adolescents can lead to serious consequences. The Suicide Ideation Questionnaire (SIQ) was created to identify a range of at-risk individuals who report thoughts of death (Reynolds, 1987). In addition, a shortened version of the SIQ, the Suicide Ideation Questionnaire-Jr. (SIQ-JR), was created containing critical items that can be used for a quick and accurate assessment of suicidal ideation (Reynolds, 1987). A number of studies have examined the clinical utility of both measures.

A study by Pinto, Whisman, and McCoy (1997) examined the psychometric properties and clinical utility of the SIQ within an adolescent inpatient population (13-18 years old). Their sample consisted of 67 suicide ideators, 88 suicide attempters, and 72 non-suicidal psychiatric patients. Each participant completed the SIQ within a few days of admission. The results indicated that the SIQ was able to differentiate psychiatric controls from attempters/ideators, although it was less able to differentiate between attempters and ideators. Overall, adolescents with a mood disorder scored significantly higher on the SIQ than did adolescents without a mood disorder.

Another study used the SIQ to measure suicidal ideation during outpatient treatment and aftercare for adolescents with a diagnosis of an alcohol use disorder (Kaminer, Burleson, Goldston, & Burke, 2006). One hundred seventy-seven adolescents who participated in cognitive behavioral group therapy and who reported no past suicidal behavior over the last 30 days were included. Treatment completers were then randomized into three groups: (1) no-active aftercare, (2) in-person aftercare, or (3) telephone aftercare conditions for a period of 12 weeks. In general, the SIQ was able to differentiate changes in suicidal ideation between the in-person aftercare and the no-active care condition. Overall, the in-person aftercare paradigm showed a significant decrease in suicidal ideation.

The SIQ-JR has also been found to be an excellent predictor of future suicide attempts in comparison to other measures of depression, anxiety, and alcohol use (Keane, Dick, Bechtold, & Manson, 1996). The results of the study showed that the psychological profile of a suicide attempter differs from that of other adolescents in their mean scores on the SIQ-JR and the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) as well as their anxiety scores using DSM-III criteria.

With a sample of college students, Weber, Metha, and Nelsen (1997), investigated the link between depression (as measured by the Beck Depression Inventory), suicidal ideation (using the SIQ), loneliness (assessed by the Revised UCLA Loneliness Scale), stress (employing the Social Readjustment Rating Scale), and hopelessness (as reflected in the Beck Hopelessness Scale). The authors found significant positive correlations for the relationships between suicide ideation and depression, loneliness, and hopelessness. In addition, there was also a small but significant relationship found between suicide ideation and stress. Likewise, they uncovered positive relationships between depression and between loneliness or hopelessness. A moderate but

significant relationship was also found between depression and stress, while a small significant relationship was found between stress and hopelessness. Therefore, the SIQ can be a useful measure for establishing relationships among suicidal ideation and other risk factors for suicide.

The SIQ-JR scores have also been found to be positively correlated to a number of items on the Million Adolescent Personality Inventory (Siemen, Warrington, & Mangano, 1994). In particular, scholastic achievement, academic confidence, self-concept, self-confidence, personal esteem, inhibition, personal sensitivity, social conformity, consistency of school attendance, and family support were all significantly correlated with suicidal ideation scores.

Passive and Active Suicidal Ideation

There is research to suggest that suicidal ideation is comprised of both active and passive components. In addition, whether individuals present with active, passive or a combination of both components is believed to have important implications for their future suicidal risk. According to the U.S. National Institute of Mental Health, passive suicidal ideation can be defined as a "desire for death" (O'Carroll et al., 1996). It can also be represented by an individual's feeling that life is not worth living or that they would be better off dead. In contrast, active suicidal ideation has been defined as "a specific plan or intent to die". These individuals have thoughts about harming themselves, plans for committing suicide and some intention to carry out the plans (May, Overholser, Ridley, & Raymond, 2015; Raue, Meyers, Rowe, Heo, & Bruce, 2007; Schulberg et al., 2005). Both passive and active suicidal ideation are believed to exist on a continuum, wherein passive suicidal ideation represents a lower level of risk than active suicidal ideation and suicide attempts (Linden & Barnow, 1997; Yip et al., 2003). Therefore, only a small percentage of individuals progress from passive suicidal ideation to more severe forms of suicidal ideation and

behavior (Crosby, Cheltenham, & Sacks, 1999; Kessler, Borges, & Walters, 1999; LeMaster, Beals, Novins, & Manson, 2004).

Beck, Kovacs, and Weissman (1979) used the Suicidal Ideation Inventory to define the different characteristics and components of suicidal ideation. They established three factors: active suicidal desire, passive suicidal desire and preparation. Active suicidal desire consisted of questions related to assessing their wish to live, wish to die, reasons for living/dying, desire to make an active suicide attempt, frequency, attitude toward ideation/wish, expectancy/anticipation of actual attempt, reason for contemplated attempt, control over suicidal action and deterrents to an active attempt. Active suicidal ideators reported less wish to live, more desire to die, their reasons for dying outweighed their reasons for living, they reported more desire to make an active suicide attempt, longer periods of existing suicidal ideation, persistent thoughts of suicide, an accepting attitude towards their ideation or wish to die, less sense of control over their suicidal action or acting out, less deterrents to making an active attempt and increased level of expectation of an actual attempt. Passive suicidal ideators endorsed items that reflected an avoidance of taking steps to save their life, their courage to carry out an attempt and any concealment of suicidal ideas / plans. Lastly, the preparation factor consisted of items that reflected availability of the method, formulation of a detailed plan and available means to carry out their plan or attempt. Taken together, there is sufficient evidence to suggest that passive and active suicidal ideation are comprised of distinct components which consist of their own set of characteristics and features.

Szanto et al. (1996) utilized the Scale of Suicidal Ideation (SSI) (Beck et al., 1979), the Hamilton Depression Rating Scale (Ham-D) (Hamilton, 1960) and the Beck Depression Inventory (BDI) (Beck & Steer, 1987) to identify the differences between active and passive suicidal ideators and how these differences relate to future suicide risk. An active ideator was defined as someone

who is seriously contemplating, planning and wishing to die by suicide. A passive ideator was defined as someone who indicated they would avoid steps necessary to save or to maintain life or that they were having thoughts about killing themselves but would not carry them out. The results indicated that active suicidal ideators had higher BDI scores and expressed greater self-disgust and self-hatred when compared to passive ideators. However, they both reported similar levels of hopelessness and number of past suicide attempts. The authors suggested that an individual may experience passive and active suicidal ideation during different major depressive episodes and at different points in their lives. However, both can be associated with increased risk for future suicide attempts.

The interpersonal theory of suicide (IPTS) proposes that thoughts related to perceived burdensomeness or a low sense of belongingness can be considered forms of passive suicidal ideation. Perceived burdensomeness reflects the belief that the self is incompetent and a liability or a burden to others (Van Orden, 2005) such that those around them would be better off if they no longer existed. A low sense of belongingness occurs when individual experiences thoughts related to not feeling cared about or connected to others. In order for the individual to progress from passive to active suicidal ideation or suicidal intent, they must simultaneously experience perceived burdensomeness, low sense of belongingness, fearlessness of death and the acquired capability to die (Van Orden et al., 2010).

Pfeiffer et al. (2014) examined the relationships between active / passive suicidal ideation, depression, hopelessness, perceived burdensomeness and a low sense of belongingness. Using the Beck Depression Inventory II (BDI-II) and Beck Suicide Scale (BSS), active suicidal ideation was presumed if the individual endorsed statements about killing oneself if the chance arose on the BDI-II or having a weak desire to kill oneself or a moderate to strong wish to die by suicide

on the BSS. Passive suicidal ideation was determined to be present if the individual endorsed statements (on the BSS) indicative of a weak or moderate desire to die, limited reasons for living or indicating that they would not take life-saving steps if necessary. On the BDI-II, endorsing the idea that they were experiencing thoughts of killing themselves but would not carry them out was reflective of passive suicidal ideation. Overall, individuals with active suicidal ideation scored significantly lower on measures of belongingness when compared to individuals with passive suicidal ideation or no suicidal ideation. Interestingly, perceived burdensomeness (not belongingness) was associated with passive suicidal ideation. Hopelessness, was also found to be a primary predictor of passive suicidal ideation but not of active suicidal ideation. Individuals who reported higher levels of somatic / affective symptoms of depression (e.g. sadness, anhedonia, agitation, irritability, fatigue, problems concentrating, changes in appetite, and changes in sleep) were also more likely to report active suicidal ideation. Taken together, support for the interpersonal-psychological model is confounded. However, passive and active suicidal ideation appear to have different characteristics and predictors which, lead to different symptoms and outcomes.

Horton et al. (2016) established that perceived burdensomeness and at a marginal level, low sense of belongingness independently differ between adolescents with and without current suicidal ideation. Furthermore, the interaction between perceived burdensomeness and low sense of belongingness marginally distinguished between adolescents with passive and active suicidal ideation. Acquired capability for suicide also distinguished between adolescents with or without recent suicidal intent. When examining all three constructs simultaneously, they found a main effect of each construct and interaction effects for thwarted belongingness by perceived

burdensomeness, and a three-way interaction of IPTS constructs with suicidal symptom severity. Therefore, there was some preliminary evidence to support the IPTS model.

Baertschi et al. (2017) utilized the Scale for Suicide Ideation (SSI) (Beck et al., 1979) in order to examine active and passive suicidal ideation within the context of the interpersonal-psychological model. The passive subscale consisted of items related to wish to live, wish to die, reasons for living/dying, desire to make an active suicide attempt, motivation to take steps to save their life, duration of suicide ideation, frequency of suicide ideation, attitude toward ideation, and control over suicidal action. In contrast, the active subscale consisted of items related to specificity or planning of a contemplated attempt, availability or opportunity of method for a contemplated attempt, sense of capability to carry out attempt, expectancy / anticipation of actual attempt, actual preparation for contemplated attempt, writing a suicide note and final acts carried out in anticipation of death. Overall, they established that greater levels of perceived burdensomeness (PB) but not low sense of belongingness did predict passive suicidal ideation and accounted for 10.6% of the variance. However, they did not find evidence to support the hypothesis that the interaction between perceived burdensomeness and low sense of belongingness accounts for the transition from passive to active suicidal ideation. In addition, the interaction between active suicidal ideation and fearlessness of death did not predict the transition from active suicidal ideation to suicidal intent. Therefore, the data did not provide support for many aspects of the interpersonal-psychology model. It is important to note that Baertschi et al. (2017) used a different method for differentiating active from passive suicide ideators than originally proposed by Beck et al. (1979). This may have impacted their results. However, it also illuminates the need for a universal way of defining and measuring the different components of suicidal ideation and their associated level of risk.

Research concerning active and passive suicidal ideation has largely focused on active suicidal ideation as an indicator of future suicide risk (Raue et al., 2007; Schulberg et al., 2005). In the past, research has demonstrated the predictive value of suicide notes (Beck, Morris, & Lester, 1974) and "final acts" in assessing suicide intent (Dorpat & Boswell, 1963; Tuckman & Youngman, 1968). However, Baca-Garcia et al. (2011) deduced that individuals who reported both active and passive suicidal ideation also had the highest rate (25.9%) of a lifetime suicide attempt. In addition, individuals who described passive suicidal ideation reported a higher rate of lifetime suicide attempts (5.41%) when compared to individuals who expressed active suicidal ideation alone (2.75%). Overall, 33% of individuals who reported a previous suicide attempt described passive suicidal ideation but no active ideation or plan (Baca-Garcia et al., 2011). Another study conducted by May et al. (2015) found that although active ideators had a higher rate of past attempts than passive ideators, nearly half of passive ideators had previously attempted suicide. These studies suggest that passive suicidal ideation alone is an important risk factor for future suicide attempts and may provide the opportunity to intervene earlier and save more lives.

Based on the above research, there is sufficient evidence to support a meaningful distinction between passive and active suicidal ideation. They both appear to represent different components of suicidal ideation with distinct features and implications for future suicidal behavior. However, they are not always mutually exclusive and an individual who experiences both active and passive suicidal ideation may be at an especially high risk for future suicide. Unfortunately, defining these components has been challenging and there is still no universal way of measuring them.  Therefore, the current study will aim to uncover some of the correlates of passive and active suicidal ideation. The interpersonal-psychological model states that individuals who engage in risky behavior and encounter painful or provocative experiences regularly may exhibit less fear of

death and a greater capability to commit suicide. Therefore, we were interested in examining whether different types of suicidal ideation (active or passive) predicted engagement in specific kinds of risky behaviors and vice versa. This would also help identify individuals at risk using other indicators previously not considered part of a standard risk assessment.

Depression, Suicidal Ideation and Risky Behaviors

The link between increased suicidal ideation and increased participation in risky behaviors may be explained partly by the correlation between such behaviors and depression. The following section will examine the links among depression, suicidality, and the most common risky behaviors, i.e., alcohol, smoking, drug use, and sexual activity.

**Smoking.** According to Johnston, O'Malley, Bachman, and Schulenberg (2012), 40% of adolescents have tried cigarettes by the end of high school, and 17% of 12th graders are daily smokers. Hanna and Grant (1999) found that individuals who started smoking when they were young were at a greater risk for mild to severe depression when compared to the adolescents who began smoking later. Adolescents who began smoking before the age of 13 also reported having more academic and social problems. Regular smokers were 15 times more likely to drink, 11 times more likely to use other drugs, and 12 times more likely to get pregnant than abstainers from smoking. All of these were risk factors for developing subsequent symptoms of depression (Hanna, Yi, Dufour, & Whitmore, 2001). A Canadian study reported that individuals who began smoking during adolescence and continued into young adulthood reported poorer monetary success, educational attainment, physical/mental health, and thus a greater likelihood of depression (Georgiades & Boyle, 2007). A cross-sectional study examining whether beginning to smoke at a young age predicted later suicidal ideation and/or depression produced mixed results (McGee,

Williams, & Nada-Raja, 2005). The authors inferred that although smoking in adolescence was associated with suicidal ideation in young adulthood, other factors, such as depression, stress, and quality of family relationships, played key roles in this correlation. The authors did not find support for their hypothesis that smoking at age 15 predicts a later depressive episode. In addition, smoking while experiencing a depressed mood did not lead to later suicidal ideation.

Research conducted by Saules et al. (2004) deduced that students who reported an increase in depression during college were more likely to begin smoking. Furthermore, students with a history of depression were more likely to become daily smokers and to have an increased risk of further depression (Breslau, Peterson, Schultz, Chilcoat, & Andreski, 1998; Hintikka et al., 2009a). Acierno et al. (2000) established that there is a significant, positive correlation between heavy smoking and major depressive disorder in females but not in males. In fact, Poulin, Hand, Boudreau, and Santor (2005) found that female smokers demonstrated a twofold increase in depression compared with males and non-smokers. A 10-year prospective study conducted by Goodwin, Perkonigg, Hofler, and Wittchen (2013) found that adolescents who smoked were two to three times more likely to have a pre-existing diagnosis of major depressive disorder and substance use disorder at baseline. However, persistent smoking over time did not necessarily increase the likelihood of a mood disorder, although it did increase the probability of another substance use disorder diagnosis. The authors postulated that adolescents may begin smoking due to ineffective coping skills and depressive symptoms; however, as they age, they develop better or different coping mechanisms that change the relationship between smoking and depressive symptoms (Goodwin et al., 2013).

Oquendo et al. (2004) found that the most powerful predictors of future suicidal behavior were the severity of an individual's depression and smoking habits. Bronisch, Hofler, and Lieb

(2008) concluded that suicidal ideation and attempts increased as tobacco use increase. Overall, the rates of suicidal ideation and depression nearly doubled among regular smokers with nicotine dependence when compared to non-smokers. Pre-existing suicidality, however, did not show a positive correlation with subsequent tobacco use. According to Escobedo, Reddy, and DuRant (1997) adolescents who smoked were also more likely to use drugs, to carry a weapon, to drink alcohol, to fight, and to engage in risky sexual activity. Everett, Malarcher, Sharp, Husten, and Giovino (2000) came to a similar conclusion. They found that adolescent smokers were more likely to report substance use, physical fighting, weapon carrying, suicide attempts, and risky sexual behaviors than non-smokers. Smokers were also more likely than non-smokers to exhibit delinquent and violent behavior, to experience drug-related problems, and to report low academic achievement (Ellickson, Tucker, & Klein, 2001). Additionally, externalizing behaviors such as drug use and high-risk sexual behaviors were associated with a decreased likelihood of making a smoking cessation attempt. Other factors, such as a history of physical fighting, alcohol consumption, marijuana use, and sex before age 13, were associated with decreased likelihood of quitting successfully. Interestingly, adolescents who reported feeling depressed over the last year were more likely to attempt to stop smoking (Abrantes et al., 2009).

**Alcohol use.** Among American high school students, 30% will consume alcohol by the eighth grade, and 69% will consume alcohol before they finish high school (Johnston et al., 2012). By 12th grade, 54% of adolescents reported having been drunk at least once in their lifetimes. Johnson and Mott (2001) estimated that 80% of American adolescents try alcohol before graduating from high school. Among adolescents, alcohol consumption has been positively correlated with both suicide attempts and suicidal ideation (Evans, Hawton, & Rodham, 2004). Between 2001 and 2005, it was estimated that alcohol contributed to the suicides of 480

youths below the age of 21 (CDC, 2006). Another study also demonstrated that suicide rates were approximately eight percent higher among states that had a lower minimum legal drinking age of 18, thus supporting the idea that there may be a link between early drinking and suicidal behavior (Birckmayer & Hemenway, 1999).  Studies show that individuals who use alcohol in their pre-teens are more likely than non-drinkers and adolescent alcohol users to report suicidal ideation and attempts (Swahn & Bossarte, 2007).

A study conducted by Hanna et al. (2001) found that drinking during adolescence significantly increased the odds of being diagnosed with a mood disorder.  In addition, former drinkers or light drinkers were three or four times more likely to meet the diagnostic criteria for depression.  On average, a diagnosis of major depressive disorder preceded alcohol abuse by four and a half years, suggesting that depression may lead individuals to engage in riskier behaviors to cope with their feelings (Deykin, Levy, & Wells, 1987).

Data collected as part of the school-based prevention program, Signs of Suicide, concluded that among middle and high school students, drinking when down and heavy, episodic drinking were significantly associated with suicide attempts (Schilling, Aseltine, Glanovsky, James, & Jacobs, 2009).  For example, reporting one or more episodes of drinking while unhappy (during the course of a year) increased the risk of suicide attempts threefold among those who did not report any suicidal ideation and 68% among those who did report suicidal ideation.  Furthermore, among both impulsive and non-ideating attempters, drinking when they were unhappy demonstrated a stronger association with suicide attempts than heavy, episodic drinking.  In general, the correlation between heavy, episodic drinking and suicide attempts was similar for both ideators and non-ideators (Schilling et al., 2009).

Poulin et al. (2005) found that female adolescents who used alcohol had a twofold increased risk of experiencing depressive symptoms. In addition, younger females who reported heavy binge drinking during early high school were more at risk for depression by grade 12. No correlation was uncovered, however, between alcohol use and depression for males.

A study conducted by Light, Grube, Madden, and Gover (2003) examined the association between adolescent alcohol consumption and suicidal ideation. They determined that a greater percentage of drinkers reported suicidal ideation in comparison to non-drinkers. There was also a significant difference in the number of suicide attempts. Overall, 24% of drinkers and 11% of non-drinkers reported at least one previous attempt. For males, alcohol-related problems seemed to be predictive of future suicidal behavior. For females, on the other hand, suicidality led to an increase in alcohol-related problems. Another study demonstrated that for both male and female adolescents, problem-drinking in combination with depressive symptoms led to the greatest risk for engaging in suicidal behavior. To a lesser degree, a persistently depressed affect and problem drinking without depressed affect also showed a correlation with suicidal behavior (Windle & Windle, 1997). For girls, the number of alcohol-related problems differentiated between those who had reported previous suicide attempts and those who had reported only prior suicidal ideation. For boys, suicide attempters endorsed using alcohol as a coping strategy more than individuals who reported suicidal thoughts (Windle & Windle, 1997).

A study involving 662 sophomores and juniors examined the relationships among depression, hopelessness, lack of social support, alcohol use, and suicidal behavior over a six-month period (Reifman & Windle, 1995). Results indicated that depression and alcohol use predicted future suicidal behaviors, including thoughts, attempts, and communication of the intent to self-harm to others. In a college sample, episodic binge drinking among both genders was

significantly correlated with suicidal ideation (Brener, Hassan, & Barrios, 1999). Wang and Patten (2001) established that women with a diagnosis of major depressive disorder were more likely to binge-drink and to drink alcohol more frequently. Gonzalez and Hewell (2012) established that among college students, drinking to cope with negative internal and external stressors retained a positive relationship with suicidal ideation even after controlling for feelings of depression and hopelessness, suggesting that maladaptive coping mechanisms (e.g., binge drinking) may lead to increased depression and suicidal behavior. Teaching positive coping and mood regulation strategies may therefore be essential. There is also a positive correlation between acute alcohol use and suicidal ideation. Bagge et al. (2013) determined that individuals were at an increased risk for attempting suicide soon after drinking (within one to six hours). Furthermore, higher levels of drinking posed a greater risk for a suicide attempt when compared to lower levels of drinking, no drinking, acute drug use, and experiencing a negative life event.

**Drug use.** It is estimated that approximately 50% of adolescents will try one or more illicit drug(s) before the end of high school (Johnston, O'Malley, & Bachman, 2000; Johnston, O'Malley, Bachman, & Schulenberg, 2006). Moreover, 29% of adolescents reported that they have tried a drug other than marijuana. In general, 20.3% of eighth graders, 40.3% of 10th graders, and 48.8% of 12th graders reported using marijuana in some capacity. In the authors' most recent study, one in 15 adolescents used marijuana almost daily (Johnston et al., 2012). This breaks down to approximately one percent of eighth graders, three percent of 10th graders, and six percent of 12th graders.

Research has established that college students who are experiencing depressive symptoms are three times more likely to abuse drugs (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996). Deykin et al. (1987) estimated that a diagnosis of major depressive disorder may precede drug

abuse by approximately two years or occur simultaneously. Fowler, Rich, and Young (1986) found that out of 133 adolescent suicides, 53% met diagnostic criteria for a substance abuse disorder, and 24% had an additional diagnosis of depression.  A study conducted by MacDonald, Taylor, and Clarke (2009) found that adolescents who endorsed suicidal thoughts and behaviors at nine years old were at an increased risk for later drug dependence and depression.  McCarty et al. (2013) suggested that among both male and females, depression and conduct disorder type symptoms starting in sixth grade predicted later substance use impairment in 12th grade.  In general, drug use or abuse was positively associated with an increase in suicidal ideation/attempts and increased severity of the suicidal attempts reported (Crumley, 1990; Lewinsohn, 1996). In addition, the relationship was even stronger when the drug of choice was considered a "harder" drug (e.g., cocaine, heroin).  Positive associations remained, however, even when the drug of choice was nicotine or marijuana (Garrison, McKeown, Valois, & Vincent, 1993b).

Cannabis use has generated the most research of any recreational drug since it is the most commonly used and most widely available substance.  A study using a French sample of adolescents between the ages of 15-20 examined the link between cannabis use and suicidal thoughts and behavior.  The authors found that cannabis users reported significantly higher rates of suicidal behaviors and depressive/anxious symptomatology when compared to non-cannabis users.  In addition, even after taking into account anxious and depressive symptomatology, cannabis use remained a significant predictor of suicidal behavior (Chabrol, Chauchard, & Girabet, 2008).  Poulin et al. (2005) found that cannabis use by females was associated with depressive symptoms only when the individual reported weekly or daily use.  However, males who reported using cannabis had a significantly increased risk for elevated depressive symptoms than those who had not used cannabis.

In contrast, a longitudinal study of Norwegian adolescents over a 13-year period (12 - 27 age range) found no associations with later depression or suicidal behavior. However, as the sample aged and entered their twenties, a significant relationship was established between any level of cannabis use and suicidal ideation and attempts. More regular cannabis use led to an increased reporting of suicidal thoughts and behavior. In this sample, cannabis use was not as prevalent until late adolescence, which may explain the lack of association during early adolescence (Pedersen, 2008).

A cohort study followed Australian adolescents for seven years, starting at ages 14 and 15 (Patton et al., 2002). They found that as cannabis use increased, so did reported levels of anxiety and depression. This pattern was stronger in females, for whom daily use was associated with a fourfold to fivefold increase in current and future depressive and anxious symptomatology when compared to non-users. In general, regular use (at least weekly) among teenagers was associated with an increase in the development of subsequent depression and anxiety.

A large prospective study followed Australian adolescents from birth until 21-years-old (Hayatbakhsh et al., 2007). They concluded that adolescents who used cannabis frequently before the age of 15 also endorsed symptoms of depression and anxiety in early adulthood. However, pre-existing symptoms of anxiety and depression in early adolescence did not predict future cannabis use. Therefore, this effect cannot be explained by pre-existing symptoms but is more likely due to the early age of onset and the frequency of drug use. In addition, confounding variables such as sociodemographic and parental factors did not explain the effect.

Fergusson and Horwood (1997) utilized the data from the Christchurch Health and Development Study (CHDS) in order to examine the relationships among cannabis use, depression, and suicidal ideation. The participants were assessed at birth, four months, one year,

and then yearly until they were 16 years old. They were then evaluated once more at 18 years old. The authors found that adolescents who used cannabis at least 10 times before the age of 16 also reported later mental health problems, juvenile offenses, and reduced life opportunities (i.e., unemployment and dropping out of school). In addition, they were more likely to come from poorer backgrounds, to report poorer parental attachment, and to have more contact with substance-abusing peers. Fergusson, Horwood, and Swain-Campbell (2002) re-examined the data five years later and found that adolescents who used cannabis on a weekly basis exhibited a higher risk for future illicit drug use. In addition, younger adolescents (14 to 15 years old) were the most at risk when compared to young adults (20 to 21 years old). The authors also confirmed the relationship of weekly cannabis and illicit drug use with higher rates of juvenile delinquency, depression, and suicidal behavior. Once again, younger adolescents (14 to 15 years old) were more at risk for suicidal behavior and juvenile delinquency. However, depression did not vary depending on age. Therefore, early onset regular drug use was associated with poorer psychosocial adjustment in the future, although this effect appeared to decrease with age (Fergusson et al., 2002).

A study utilizing a Canadian sample concluded that adolescents who used drugs were more at risk for subsequent depression (Rasic, Weerasinghe, Asbridge, & Langille, 2013). However, those who used illicit drugs alone or illicit drugs with cannabis were more likely to exhibit suicidal ideation or attempts compared to nonusers or just cannabis users. Substantial cannabis use was associated with depression over the two-year period, but not with suicidal behavior. Among young adults, individuals who reported suicidal thoughts in the past year were also more likely to report marijuana use as a way of coping with their feelings of depression (Kandel, Raveis, & Davies, 1991). Among females, depression predicted an increase in drug use and suicidal ideation.

Therefore, illicit drug use other than cannabis and the number of drugs used in adolescence may have stronger associations with depression than cannabis use alone (Brook, Adams, Balka, & Johnson, 2002; Neighbors, Kempton, & Forehand, 1992).

Using a large, American, school-based sample, Borowsky, Resnick, Ireland, and Blum (1999) found that adolescents who used cannabis or other illicit drugs had higher odds of attempting suicide over a one-year period.  This study confirmed that examining the longitudinal associations between cannabis use and suicidal behavior is crucial to developing an understanding of the risks adolescents face when using substances.  Borges, Walters, and Kessler (2000) analyzed data from the National Co-morbidity Survey. They concluded that individuals who indicated using any of 10 types of drugs (inhalants, cannabis, cocaine, sedatives, heroin, hallucinogens, stimulants, tranquilizers, alcohol, and analgesics) were at a significantly higher risk for future suicide attempts. This was even after controlling for sociodemographic characteristics and mental health diagnoses. In addition, this risk increased as the number of substances used by the individual increased.

Neighbors et al. (1992) found that the number of depression symptoms reported by adolescent juvenile offenders positively correlated with their levels of substance abuse. Adolescents in the polysubstance group (illicit drugs other than marijuana/alcohol) reported a larger number of depressive symptoms when compared to substance abusers (alcohol/marijuana) and nonusers. Felts, Chernier, and Barnes (1992) administered the Youth Risk Behavior Survey to a randomly selected group of North Carolina students in ninth and 12th grade public school classes. The authors found that suicidal ideation was significant for four types of drug use (e.g., alcohol, marijuana, needle drugs, and cocaine/crack).

Brooks et al. (2002) compared the effects of drug use at different ages (childhood, early adolescence, middle/late adolescence, and young adulthood) on the risk for the development of

major depressive disorder (MDD), alcohol dependence, and substance use disorders. They established that marijuana and illicit drug use during every stage of development increased future reports of MDD, alcohol dependence, and substance use disorders. In addition, drug use during childhood and early adolescence was among the strongest predictors of meeting the diagnostic criteria for a psychiatric disorder in the future. The authors concluded that there is a cumulative effect of drug use which appears to precede a diagnosis of both MDD and alcohol dependence.

Georgiades and Boyle (2007) also concluded that regular cannabis use during adolescence was positively correlated with reduced levels of life satisfaction and a greater likelihood of a major depressive disorder diagnosis. Choquet and Menke (1990) chose a French-speaking sample from France and Quebec to examine the link between suicidal ideation and drug/alcohol consumption. They found that adolescents who reported suicidal ideation tended to smoke more, to take psychotropic medicine more often, and to use drugs more frequently. Among Quebec youth, there was also a correlation between regular alcohol consumption and suicidal ideation. However, among youth from France, suicidal ideation was related to more frequent and addictive binge-drinking (Choquet & Menke, 1990).

Vega, Zimmerman, Warheit, Apospori, and Gil (1993) examined illicit drug use among four different ethnic groups (white, black, Hispanic and Cuban). The authors established that there was a positive relationship between the number of risk factors endorsed and the drug use reported. Risk factors included depressive symptoms, past suicide attempts, low self-esteem, perceived peer use, parental smoking, family substance use problems, delinquency, peer approval, low family pride, and willingness to engage in non-normative behavior. Very few adolescents without the above-mentioned risk factors used illicit drugs. However, approximately 36-40% of the individuals with seven or more risk factors used illicit drugs. The relevance of these risk factors

differed culturally, and depressive symptoms were only significant for white students, whereas low self-esteem, delinquency, and past suicide attempts were significant for Hispanics. Low family pride and willingness to engage in non-normative behavior were significant across all groups.

Recreational ecstasy use has also been linked to depression and suicide. Kim, Moon, and Kim (2011) used data from the National Household Survey on Drug Abuse to examine the relationship between ecstasy use and suicidal behaviors. Using an American adolescent population (12 to 17 years old), they concluded that within the past year, 19% of adolescents who used ecstasy had attempted suicide. This was double the rate of suicide attempts among adolescents who had used other drugs or abstained from them completely. It was hypothesized that this may be due to the link between depression and ecstasy, which has been found to lower serotonin levels (Keyes, Martins, & Hasin, 2008) and to increase impulsivity (Butler & Montgomery, 2004; Morgan, Impallomeni, Pirona, & Rogers, 2006; Wan, Baldridge, Colby, & Stanford, 2009). Lastly, adolescents who reported inhalant use indicated more hopelessness, depressive symptoms, and suicidal ideation or attempts over their lifetime than those without inhalant use (Howard & Jenson, 1999; McGarvey, Clavet, Mason, & Waite, 1999).

**Sexual activity.** Numerous research studies have found positive correlations among adolescent sexual activity, depression, poor academic achievement, low self-esteem, and substance use (Hallfors, Waller, Bauer, Ford, & Halpern, 2005; Joyner & Udry, 2000; Lynch, 2001; McGue & Iacono, 2005; Rector, Johnson, & Noyes, 2003; Spriggs & Halpern, 2008). Additionally, it has been demonstrated that the individual's age at the time of his or her first sexual encounter can play a significant role in whether a negative outcome occurs. Mendle, Ferrero, Moore, and Harden (2013) found that younger adolescents (13 to 15 years old) who engaged in any sexual activity

were more likely to report depressive symptoms than older adolescents (16 to 18 years old). Furthermore, adolescents who were depressed were more likely to engage in sexual relations with non-romantic casual partners and in riskier sexual activity (Grello, Welsh, Harper, & Dickson, 2003; Lehrer, Shrier, Gortmaker, & Buka, 2006; Monahan & Lee, 2008; Welsh, Grello, & Harper, 2003). It has also been established that depressed, sexually active, adolescent males may be less likely to use condoms, while depressed females may be more inconsistent with their birth control use (Brooks et al., 2002). In addition, depressed individuals were more likely to have sex with multiple partners and riskier partners, e.g., injection and crack cocaine drug users (Williams & Latkin, 2005).

Kosunen, Kaltiala-Heino, Rimpela, and Laippala (2003), found that adolescents' (14 to 16 years old) depressive symptoms increased proportionately with their number of casual sexual partners and their non-use of contraception, rather than with the total number of sexual experiences they reported. This suggests that the relational context in which sexual activity occurs is an important factor. Adolescents are less likely to report depressive symptoms if they are in a committed relationship of at least four months in duration (Shulman, Walsh, Weisman, & Schelyer, 2009). In addition, sexual activity within a romantic relationship does not appear to predict higher rates of delinquency, substance use, or poorer grades (McCarthy & Casey, 2008; McCarthy & Grodsky, 2011).

There may also be gender differences in the implications of sexual activity. One study analyzing data from the National Longitudinal Study of Adolescent Health found that the relationship between depression and non-romantic sexual activity is strongest for younger girls (Monahan & Lee, 2008). In contrast, the authors concluded that boys, older adolescents, and those in committed relationships do not experience the same frequency or level of depressive symptoms.

However, a similar study found that any sexual activity that occurs outside of a romantic relationship was more positively correlated with higher levels of depressive symptoms when compared to individuals who were dating or abstaining completely (Monahan & Lee, 2008). Shulman et al. (2009), in a study of Israeli adolescents, noted that females reported increased levels of depressive symptoms when they engaged in sexual activity as part of a short-term relationship that they rated low in intimacy and authenticity. However, the authors concluded that involvement in a stable relationship was not associated with an increase in depressive symptoms. Interestingly, at a three-month follow-up, it appeared that depressed adolescent females were also more likely to seek out and to engage in short-term sexual relationships. Importantly, it has also been established that engaging in sexual intercourse during early adolescence can also lead to engagement in other problem behaviors and vice versa (Farrell et al., 1992). In this study, among urban seventh grade boys and girls, those who had sexual intercourse were more likely to exhibit other risky behaviors, such as smoking cigarettes, drinking, using drug, shoplifting, damaging property, and threatening someone verbally or with a weapon.

Harden and Mendle (2011) also examined the relationship between adolescent sexual activity and delinquent behavior (e.g., stealing, drug use, damaging property). They found that in older adolescents, sexual activity that occurred within a committed, romantic relationship predicted lower levels of delinquency. Participation in sexual activity as part of a non-romantic relationship, on the other hand, was related to higher levels of delinquency. A study by Vrangalova and Savin-Williams (2011) found that adolescents who perceived themselves as sexually experienced and "on-time" at age 16 reported better well-being than adolescents who saw themselves as inexperienced or late onset, thus highlighting the importance of an adolescent's self-perception in determining the development of depressive symptoms.

Additional Factors Related to Suicidal Ideation and Risky Behaviors

**Gender, risky behavior, and depression/suicide.** Hallfors et al. (2004) concluded that girls were less likely than boys to engage in high-risk behavior. However, those females who did were more susceptible than males to depression, suicidal ideation, and suicide attempts. According to a study completed by Bae, Ye, Chen, Rivers, and Singh (2005), there are gender-specific patterns of risky behaviors associated with suicide attempts in adolescents. For females, fighting physically over the past 30 days, being forced into sexual intercourse, smoking cigarettes, trying to quit smoking, being offered illegal drugs, and reporting anorexic/bulimic behavior were all significant predictors of self-harm. For males, driving while intoxicated, carrying a weapon, being abused by a boyfriend/girlfriend, using hallucinogenic drugs, and fasting to control weight were all significant predictors of suicide attempts. For both females and males, being threatened or injured with a weapon, being depressed every day for more than two weeks, consuming alcohol, being obese or underweight, and inhaling chemicals to get high were all significant predictors of self-harm. The suicide attempt rate also differed by gender in this study. The overall suicide attempt rate was 17.1% for females and 10.2% for males, thus confirming previous research studies that found that females tend to display a higher suicide attempt rate than males.

Nickerson and Slater (2009) concluded that for both male and female adolescents, carrying a weapon, being threatened or injured at school, having property stolen or damaged at school, and getting into a fight were all significant predictors of suicidal behavior. Another study found that adolescent females may progress directly from depression to suicide risk, whereas males may progress from depression to substance use to suicide (Metha, Chen, Mulvenon, & Dode, 1998). This is consistent with studies suggesting that substance abuse is the primary predictor of suicide

for males, followed by a mood disorder diagnosis. For females, however, a mood disorder

diagnosis is the strongest predictor of suicide (Brent, 1995; Shaffer et al., 1996).

A study conducted by Waller et al. (2006) examined the association between depressive

symptoms and patterns of risky behavior. Risky behaviors included various degrees of alcohol

use, sexual activity, drug use, and combinations of risky behaviors. The authors concluded that

engagement in risky behaviors was associated with increased levels of depression for both male

and females. For females, any engagement in risky behaviors, regardless of the degree, resulted

in an increased report of depressive symptoms when compared to females who abstained from

such behaviors completely. For males, depressive symptoms tended to increase with the severity

of the risky behavior. For example, sexual activity and modest alcohol use were not significantly

related to an increase in depression when compared to those who abstained (Waller et al.,

2006). These studies serve as a reminder that gender must be considered during both the risk

assessment and the treatment of adolescents experiencing suicidal ideation and engaging in risky

behavior.

**Culture, suicidal ideation, and risky behaviors.** Along with gender, culture also

influences the relationship between suicidal ideation and engagement in risky behaviors. Using

data from the YRBS, Pena et al. (2012) examined the relationship between culture, previous

suicide attempts, and health-risk behaviors during a five-year period from 1999-2007. The authors

identified three subgroups: (1) attempters who reported low levels of substance use and violent

behaviors (low SU-VB), (2) attempters who reported high levels of substance use and violent

behaviors (high SU-VB), and (3) attempters who reported extreme levels of substance use and

engagement in violent behaviors (extreme SU-VB). Overall, 28.9% of the sample fell into the low

category (low SU-VB), 53.4% fell into the second category (high SU-VB), and 17.8% fell into the

extreme category (extreme SU-VB). The youth in the low SU-VB category reported limited engagement in health risk behaviors, with almost none at the highest level of intensity or frequency. In addition, 66% of the attempters in this category were female and 49.4% of the youth reported two or more attempts during the past year (Pena et al., 2012). White youth made up the largest proportion (47.5%) of this category, followed by Hispanic/Latina (28.8%), and then Black youth (23.7%). The youth in the high SU-VB category endorsed all high-risk behaviors except for weapon carrying. Sixty-one percent of this group reported two or more suicide attempts, and 68% were females. Overall, white youth comprised 67.7% of this subtype, followed by Hispanics (19.8%), and Blacks (12.9%). The third category consisted of attempters who endorsed all of the high-risk behaviors at the greatest level of intensity. Eighty-four percent of the youth in this group reported two or more attempts, and approximately 66% of the youth in this group were males. Sixty-two percent of the youth were white, 19.9% were Hispanic, and 18.1% were Black. In summary, depressive symptoms were reported by youth in all of the subgroups; however, suicidal behavior tended to increase with the severity, frequency, and intensity of engagement in risky behaviors. Males dominated the extreme subgroup, a finding which supports previous research indicating that males tend to complete suicide more frequently because they use more lethal means. Women, on the other hand, attempted suicide more but used less lethal means and engaged in fewer risky behaviors overall. In addition, cultural background played an important role in determining an individual's level of risk.

Another study found that young Latina females are approximately twice as likely as white or black girls to report suicidality (Rew, Thomas, Horner, Resnick, & Beuhring, 2001). Previous investigations found that marijuana, but not cocaine, was associated with past suicide attempts among white and Mexican-American females. Alcohol consumption, however, was only related

to Mexican-American females' suicide attempts (Grunbaum, Basen-Engquist, & Pandey, 1998).
A review of the YRBS revealed that five out of the 21 health risk behaviors (fighting, hopelessness, smoking, marijuana use, and obesity) that were associated with suicidal ideation also differed by race/ethnicity (Eaton et al., 2012). White females demonstrated the strongest correlations, followed by Hispanic/Latina, and Black females (Eaton et al., 2012). Therefore, culture remains an important factor to consider when attempting to assess an adolescent's suicide risk.

**Problem-solving skills.** Research suggests that adolescents who reported suicidal ideation may also display problem-solving deficits when compared to non-suicidal adolescents. In fact, among hospitalized adolescent suicide attempters (15 to 19 years old), the most commonly endorsed motive was to escape from or to solve a problem (Kotila & Lonnqvist, 1988). In a college sample, poor problem-solving skills have been linked to increased depression, hopelessness, and suicidal ideation (D'Zurilla, Chang, Nottingham, & Faccini, 1998). Levinson and Neuringer (1971) found that adolescents who previously attempted suicide performed poorly on two problem-solving tasks. They also demonstrated less flexibility in their problem-solving approach than those who had no history of attempts. A study by Grover et al. (2009) found that inpatient adolescents who reported higher levels of stress also revealed significant suicidal ideation only when they also endorsed poor problem-solving skills. A meta-analytic investigation of 22 studies concluded that inpatient adolescents who report previous suicide attempts also endorsed poor interpersonal and social problem–solving deficits when compared to non-psychiatric controls (Speckens & Hawton, 2005). Furthermore, in a study by Dour, Cha, and Nock (2011) adolescents who displayed high emotional reactivity and poor problem-solving skills were more likely to attempt suicide than those with average or well-developed problem-solving skills.

There may also be a correlation between problem-solving deficits and risk-taking other than suicidal behavior. One study found that adolescents who demonstrated less knowledge of the problem-solving process engaged in more risk-taking behaviors (Johns, 2010). There was also a significant negative correlation between at-risk teens' levels of problem–solving skills and their report of riding in a vehicle with the driver under the influence, carrying a weapon, engaging in physical fights, using alcohol or drugs, and smoking. Wilson et al. (1995) found that adolescents who reported a previous suicide attempt were just as able as those with no prior attempts to generate adaptive coping strategies in response to recent problematic life events. However, in comparison to non-attempters, they were less likely to utilize the adaptive coping strategies in their daily lives and they generated a larger number of maladaptive coping strategies.

**Family functioning.** Adolescents' perceptions of their family functioning and communication style has been positively correlated with suicidal ideation, depression, and increased participation in risky behaviors. In fact, one study found that 77.3% of suicidal adolescents reported having a conflict with their parents a few hours before their suicide attempt. Suicidal adolescents also reported lower levels of family satisfaction, more family conflict, and more problems at school and with their peers (Pillay & Wassenaar, 1997). Fergusson et al. (2002) examined the relationship between family functioning, parental adjustment, and social background in the development of suicidal behavior between the ages of 15 and 21. In general, there found positive associations between future adolescent suicidal behavior and early motherhood, socio-economic disadvantage, regular or severe physical punishment, childhood sexual abuse, poor parent-child attachment, parental figure changes, parental alcohol problems/illicit drug use, and parental involvement in criminal behavior.

A number of studies have further demonstrated that negative familial characteristics can lead to an increased suicidal risk among adolescents. For example, Adams, Overholser, and Lehnert (1994) determined that suicide risk increased when adolescents depicted their families as rigid, lacking problem-solving skills, less adaptable, and displaying an ineffective communication style. Research by Meneese and Yutrzenka (1990) established that adolescents who described their families as disorganized, aggressive, conflicted, and lacking effective communication skills were also at a higher risk for attempting suicide. Furthermore, irrespective of cultural background, adolescents who reported a large number of negative family events and low parental support admitted a higher number of suicide attempts than their peers (Shepard, 1996).

Using a sample of 51 outpatient adolescents between the ages of 14 and 18, Lucey and Lam (2012) further examined the relationship between an adolescent's family environment and his or her overall suicide risk. The authors found that there was a positive correlation between suicidal risk and family systems characterized by conflictual and hostile interactions, less cohesiveness, overly restrictive control, lower levels of support, and disorganization. Furthermore, adolescents who reported high levels of conflict and poor communication levels, along with parents who discouraged independence and achievement, also reported higher levels of suicidal ideation (King, Segal, Naylor, & Evans, 1993). In general, the severity of the adolescent's suicidal ideation has been found to be positively correlated with the level of family dysfunction described by the adolescent (Brent, Baugher, Bridge, Chen, & Chiappetta, 1999; King et al., 1993; Miller, King, Shain, & Naylor, 1992)

Williams and Lyons (1976) found that family units that contained suicidal adolescents displayed a different pattern of functioning than those without a teen at risk for suicide. The authors concluded that the verbal interactions in families with one or more suicidal adolescents

were more conflicted, as family members tended to speak simultaneously, to interrupt each other frequently, and to bring up information unrelated to the discussion.  They also had more trouble reaching group decisions, displayed fewer constructive habits, and evidenced more negative reinforcement patterns and consequences during their interactions. The suicidal adolescent appeared to receive the most unwarranted positive reinforcement by their parents in relation to their speech and behavior.  It was concluded that both poor communication skills and inappropriate reinforcement patterns may serve to maintain or to intensify suicidal behavior.

Using the Parent-Adolescent Communication Inventory (PACI), Stivers (1988) investigated the communication level among adolescents and their parents in order to determine the relationship of that communication to the parents' perceptions of their adolescents' depression and proneness to suicidal behavior.  Overall, neither the mothers' nor the fathers' scores on the PACI were significantly related to the adolescent's depression or suicidal proneness level; only the adolescents' PACI scores were significant predictors of their depression and suicidality. As a result, the authors concluded that the adolescents may be voicing their difficulties but that a disconnection exists between themselves and their parents.

Utilizing a sample of adolescents who had previously attempted suicide, Stanton, Spirito, Donaldson, and Boergers (2003) explored possible predictors of continued suicidal behavior among teens. They had at-risk adolescents' complete questionnaires 48 hours and three months after their initial attempt.  The results indicated that depressive symptoms and a poor family environment were both associated with recurrent suicidal ideation and reattempts. However, after controlling for depressive symptoms, the impact of family functioning was reduced.  In contrast, Hollis (1996) concluded that the quality of an adolescent's family relationship contributes to the risk of suicidal behavior, over and above depressive symptoms.  Specifically, lack of familial

warmth, family discord, and disturbed mother-child relationships each made a strong contribution.

Adams et al. (1994) examined the relationship between family functioning and adolescent suicidal ideation and attempts by utilizing four separate populations: (1) psychiatric inpatients who had attempted suicide, (2) high school students reporting suicidal ideation, (3) non-suicidal psychiatric inpatients, and (4) non-suicidal high school students. All participants were asked to fill out a series of questionnaires designed to assess level of family functioning, depression, hopelessness, self-esteem, and suicidal ideation and attempts. Overall, both the psychiatric attempter group and the high school student ideator group reported higher levels of dysfunction in their family functioning and mother-adolescent relationships than the non-suicidal groups. Both the attempters and the ideators perceived their families to be poorer at problem-solving, more prone to crisis, and less able to adapt to change. In addition, they described their families as having poor or ineffective communication skills, many power struggles, and inadequate control methods. Lastly, they perceived their family members as being emotionally disengaged or too enmeshed in their lives. Suicidal adolescents defined their relationships with their mothers as characterized by power struggles, poor communication, ineffective discipline or control, and consistent disagreements over important issues. They also reported that important information and feelings were not exchanged or communicated effectively. Interestingly, none of the four groups differed in their perceptions of their relationships with their fathers.

A study by Gorman-Smith, Tolan, Henry, and Florsheim (2000) examined the effects of family functioning among disadvantaged African American and Mexican American youth. They identified four types of families: exceptional families, task-oriented families, struggling families, and moderately functioning families. Exceptional families exhibited the highest level of parental

monitoring, structure, cohesion, discipline, and beliefs about the importance of family. The authors established that adolescents who came from exceptional families reported fewer internalizing and externalizing symptoms as measured by the Child Behavior Checklist (Achenbach & Edelbrock, 1991). This included internalizing items that represented social withdrawal, somatic complaints, and anxiety or depression, as well as externalizing problems representative of delinquent or aggressive behavior. The authors concluded that the more solid and supportive the adolescents' family environments were, the more protected they were against future risk.

To investigate the relationship between family functioning and risk-taking, Cordova et al. (2014) examined the connections among family functioning, parental support trajectories, and engagement in risky behaviors such as alcohol use, binge drinking, and marijuana use. Their sample consisted of 850 adolescents who were deemed at-risk for dropping out of high school. The authors determined that lower levels of family functioning and decreased parent support trajectories were related to an increase in binge drinking and marijuana use.

Wagner et al. (2010) investigated the role of family structure and functioning in predicting substance use among Hispanic/Latino adolescents. Over a period of three years, students were asked to complete a series of surveys. Importantly, in this study, low rates of parental monitoring predicted greater substance use at a two-year follow up. The authors concluded that parental monitoring appears to mediate the relationship between family structure and substance use. Using data from the National Household Survey of Drug Abuse, Hoffmann and Johnson (1998) differentiated patterns of adolescent drug use according to the type of family structure they reported. Adolescents who reported living in mother-father families reported the lowest incidence of marijuana and other illicit drug use, being drunk, and problem drug use over the past year. In

contrast, adolescents from father-stepmother, father only, and relative-only families reported the highest prevalence. Cashwell and Vacc (1996) utilized a sample of 111 adolescents from the community.  They utilized measures of family cohesion, family adaptability, family satisfaction, coercive interpersonal style, deviant peer involvement, and delinquent behaviors.  The results indicated that adolescents who reported lower levels of family unit adaptability and cohesion along with a higher level of involvement with deviant peers were also more likely they to report engaging in delinquent behavior.  In contrast, living in a cohesive family reduced the likelihood of becoming involved with deviant peers.

Interestingly, Fulkerson et al. (2006) determined that a positive relationship exists between family dinner meal frequency and developmental assets, while there is an inverse relationship with engagement in high-risk behaviors.  Specifically, these authors established that adolescents who ate dinner with their families more consistently also reported less substance use, risky sexual activity, violent or antisocial behavior, eating problems, and depression/suicidal behavior.  In addition, they reported more positive family relationships, better self-esteem, and more commitment to school and learning.  Overall, it appeared as if family dinners acted as a protective factor against future developmental problems and engagement in high-risk behaviors.

Using data from the National Longitudinal Study of Adolescent Health (Add Health), Kidd et al. (2006) examined the link between suicide attempts and parent, peer, and school relationships.  They concluded that positive relations with parents were the most consistent protective factors for at-risk youth.  In males, positive school relationships in combination with good parental relationships served as protective factors, especially when peer relations were low.

**Hopelessness and cognitive distortions.** Research has established that hopelessness correlates significantly with suicidal ideation, even after controlling for depression. It is theorized

that hopelessness may account for approximately 60% of the variance between depression and suicidal ideation (Beck, Kovacs, & Weissman, 1975). The authors indicated that some cases, hopelessness may actually be a stronger predictor of future suicide attempts and completions than depression. A longitudinal study conducted by Beck, Steer, Kovacs, and Garrison (1985) concluded that measuring hopelessness among inpatient adults with suicidal ideation enabled them later to distinguish between those who completed suicide and those who did not. However, among adolescents, research has produced mixed results, with one study indicating that hopelessness was a strong predictor of future suicide attempts (Goldston et al., 2001) and other studies finding a modest relationship after controlling for depression (Cole, 1989) and gender-specific effects (Spirito, Hart, Overholser, & Halverson, 1990). Another study examined the roles of hopelessness, depression, and rumination in predicting suicidal ideation among a college sample (Smith, Alloy, & Abramson, 2006). They found that all three factors were positively correlated with self-reported measures of suicidal ideation. However, rumination and hopelessness were also related to the duration of suicidal thinking and predicted the length of suicidality. Therefore, both rumination and hopelessness may play a role in maintaining suicidal ideation.

Additional research has established a positive correlation between feelings of hopelessness and engagement in risky behaviors. Harris, Duncan, and Boisjoly (2002) analyzed data collected as part of the National Longitudinal Study of Adolescent to Adult Health program. The authors found that adolescents who reported lower future expectations also engaged in more risk-taking behaviors (e.g., sexual behavior, drug dealing, weapon carrying). This association was strongest for the onset of drug dealing. For example, when adolescents' future expectations were positive, their risk for drug dealing decreased significantly and vice versa. In terms of weapon carrying and sexual activity, when an adolescent was surrounded by peers with low future expectations, they

were more likely to use or to carry a weapon as well as to report an earlier onset of a first sexual experience.  Finally, school environments that were determined to have students with higher levels of negative future expectations and poorer mental health also reported an earlier age of onset for the first sexual experience for girls and drug dealing for boys.

Another study comprised of 321 Italian adolescents concluded that students who obtained higher scores on the Beck Hopelessness Scale and indicated fewer reasons for living, also engaged in risky behaviors more frequently and perceived them as less risky (Kelly, Rollings, & Harmon, 2005).  The authors concluded that adolescents who displayed chronic self-destructiveness also showed increased levels of hopelessness.  For males, the greater their self-reported self-destructiveness and hopelessness, the more likely they were to engage in risky behaviors such as drug use, binge drinking, sexual activity, and illegal or aggressive behavior within the next six months.  For females, high self-destructiveness and hopelessness scores were related to an increase in binge-drinking and poor academic or work behavior.  Importantly, depressed adolescents also reported a greater number of cognitive distortions, even after controlling for hopelessness (Brent, Kolko, Allan, & Brown, 1990).

Using an adolescent sample, a study examining the validity of the Suicide Cognitions Scale (SCS) established that the SCS correlated significantly with measures of hopelessness, suicidal ideation/behavior, and depression (Gibbs, 2010).  In addition, three main factors were significant: unsolvability, unlovability, and unbearability. Unbearability was found to be the greatest predictor of suicidal ideation and behavior.  These factors separated multiple attempters from single attempters and those individuals who reported only suicidal ideation.

**Personality characteristics.**

*"Impulsives" vs "planners".* Impulsivity is another characteristic common to suicidal adolescents. Research has established that among inpatient adolescents, impulsivity was the second most endorsed personality trait after depression (Withers & Kaplan, 1987). Higher levels of impulsivity have also been linked to an increase in past suicide attempts and substance abuse (Dougherty et al., 2004). Hjelmeland and Groholt (2005) found that adolescents reported less contemplation/planning and more impulsivity before an attempt than adults. However, they experienced similar levels of depression and intention to die. Research has demonstrated that impulsive individuals who described more self-harm behaviors were also more likely to engage in substance use (Cherpitel, 1993). Spokas, Wenzel, Brown, and Beck (2012) found that individuals who made an impulsive suicide attempt were more likely to have been previously diagnosed with an alcohol use disorder than individuals who had planned their attempts. Another study found that individuals who reported a previous impulsive attempt were also more likely to have been in at least one physical fight (Simon et al., 2002). Zouk, Tousignant, Seguin, Lesage, and Turecki (2006) concluded that individuals who scored higher on the Barratt Impulsivity Scale (BIS) also scored higher on measures of aggressive behavior. They were also more likely to have comorbid Axis I and Axis II disorders and a higher lifetime/six-month prevalence rate of substance abuse and dependence than non-impulsive individuals.

There is some evidence to suggest that individuals who indicate lower levels of hopelessness display more impulsive attempts than individuals who report higher levels of hopelessness (Brent, 1987; Brown, Overholser, Spirito, & Fritz, 1991). In addition, a number of studies have demonstrated that the majority of individuals who attempt suicide may not attempt impulsively. It is important, therefore, to consider additional variables when determining whether

someone is at risk (Baca-Garcia et al., 2005; Simon & Crosby, 2000; Witte et al., 2008; Wyder & De Leo, 2007).

While some individuals who engage in suicidal behavior are impulsive, many individuals are "planners". It is hypothesized that seven to 11% of older adolescents and young adults may make a suicide plan (Andrews & Lewinsohn, 1992; Glowinski et al., 2001; Grunbaum et al., 2002; Rueter, Holm, McGeorge, & Conger, 2008). There is some research examining the characteristics of the individuals who are more likely to plan their suicide attempt. For example, Rueter et al. (2008) grouped adolescents into three categories: non-ideators, decreasers, and increasers. Over a 13-year period, the authors concluded that individuals who reported an increase in suicidal ideation at nine different time points were more likely to plan a suicide attempt. However, the probability of actually attempting suicide was greatest for males who indicated a decrease in suicidal ideation.

Another study, using data from the Youth Risk Behavior Survey grouped adolescents into five categories: (1) no ideation/plan, (2) ideation/plan/attempt/medical treatment, (3) ideation/plan/attempt, (4) ideation/plan only, and (5) ideation only. The authors concluded that engagement in risky behaviors increased as the level of planning and severity of the suicidal activity increased. They concluded that a parallel relationship may exist between the progression and planning of suicidal behavior and the frequency of an adolescent's engagement in risky behavior (Perez, 2005). Furthermore, both impulsive adolescents and planners engaged in risky behaviors but with different levels of severity and frequency. Impulsive adolescents reported fighting, smoking, alcohol use, binge drinking, marijuana use, cocaine use and multiple sexual partners. Planners, on the other hand, reported engaging in the same risky behaviors except for smoking and cocaine use. In addition, planners engaged in risky behaviors to a lesser degree than impulsive adolescents with the exception of binge drinking and drunk driving (Perez, 2005).

Individuals who attempt suicide impulsively may exhibit different characteristics than individuals who plan their suicide attempt. For example, several studies have demonstrated that impulsive suicide attempts were associated with lower reported levels of depression, suicidal ideation, hopelessness, and expectations of death than those of individuals who planned their attempt (Baca-Garcia et al., 2005; Conner et al., 2006; Simon & Crosby, 2000; Wei et al., 2013; Williams, Davidson, & Montgomery, 1980; Wojnar et al., 2009; Wyder & De Leo, 2007). Another study conducted by Spokas et al. (2012), confirmed the previous findings but also found that impulsive suicide attempts were correlated with a higher likelihood of the individual's being previously diagnosed with an alcohol use disorder.

A study conducted in China examined the distinguishing characteristics of impulsive and non-impulsive attempters (Li et al., 2003). They concluded that the impulsive group was younger, reported lower levels of depressive symptoms, had less suicidal intent, and described having a higher quality of life. Another study analyzed data from 153 impulsive and non-impulsive suicide attempters (Simon & Crosby, 2000). They concluded that impulsive attempters were more likely to have been in a physical fight during the last 12 months, to score lower on measures of depression, and to report lower expectations of death than non-impulsive attempters. Hopelessness was associated with both groups, suggesting that it is an important variable to consider when conducting a risk assessment. Based on these results, the authors suggested that impulsive individuals may have difficulty controlling aggressive impulses, which leads to impulsive and potentially lethal suicide attempts. Other studies have established that impulsive attempters are more likely to express anger at others and to meet diagnostic criteria for a substance-related disorder (Wei et al., 2013). However, non-impulsive attempters are more likely to meet criteria for a mood disorder and to report a greater wish to die.

Using data from the Youth Risk Behavior Survey (1993), Simon and Crosby (2000) examined the differences among five groups of youth, i.e., individuals who reported no suicidal ideation (73.7%), thoughts only (6.6%), plan but no attempt (11%), attempts but no plan (1.3%), and attempts and plans (7.3%). The results revealed that attempters who did not report a plan were significantly more likely to admit to binge drinking and/or cocaine or marijuana use when compared to adolescents who reported no suicidal ideation. They were also less likely than attempters (who reported planning) to note recent alcohol use, binge drinking, or marijuana use. Individuals who reported suicide attempts but no plans were more likely to report fighting and getting injured from fighting when compared to the other three groups (Simon & Crosby, 2000). Nonplanners were less likely than planners to carry a weapon but more likely to carry a weapon in comparison to individuals who reported no suicidal ideation or thoughts only. Both planners and nonplanners engaged in risky behavior, but the motivation appeared to be different. For nonplanners, this could have been a result of poor impulse control, whereas for planners, it might have been an attempt to mitigate and to reduce their depressive symptoms.

Witte et al. (2008) also used data from the Youth Risk Behavior Survey and divided the sample into three groups: (1) individuals who planned but did not attempt, (2) individuals who attempted without a plan, and (3) individuals who planned and attempted. The authors measured impulsivity by using information from 10 survey questions such as, in the past 30 days, how many times did you drive inebriated, have five drinks in a row within a couple of hours, use marijuana, use cocaine, use needles to inject drugs, take laxatives or vomit, and/or take diet supplements without a doctor's advice to lose weight. Other questions included with how many individuals you have had sexual intercourse, what method of protection did you use, and have you ever gotten pregnant or impregnated someone. The data indicated that individuals who had planned their

suicide without attempting were significantly less impulsive than those who attempted without planning and less than those who had both planned and attempted. Interestingly, individuals who had made an attempt without prior planning were less impulsive than those who had both planned and attempted.

These findings provide support for previous research studies that suggested that individuals who planned their suicide attempt may display more severe pathology, engage in more risky behaviors as coping mechanisms, and display a greater wish to die than impulsive attempters (Witte et al., 2008). These results are also consistent with Joiner Jr, Van Orden, Witte, and Rudd (2009) interpersonal-psychological theory, which states that impulsive individuals who are more likely to be exposed to provocative experiences due to engagement in risky and self-harm behaviors are also more likely to exhibit suicidal behaviors. Individuals in this sample who were showing signs of being closer to suicide (i.e., planned and attempted suicide) reported more painful and provocative experiences, such as drug/alcohol use, promiscuity, and extreme dieting. In this case, exposure to negative experiences and impulsivity worked together to increase an individual's risk for attempting suicide.

A study using a sample of individuals with alcohol dependence investigated the differences between pre-contemplated and impulsive suicide attempts (Conner et al., 2006). The results indicated that impulsive attempters were more likely to be female or individuals with higher levels of alcohol-related aggression. Alcohol-related aggression included getting into an argument, hitting or throwing things, getting into a physical fight, and hitting a significant other or someone else without provocation while under the influence of alcohol. Attempters who reported pre-contemplation were more likely to have a history of illicit drug use and depression and tended to carry out their attempt with greater severity, often resulting in required medical treatment.

***Externalizing vs internalizing characteristics.*** Research has established that the terms internalizing and externalizing are associated with distinct personality characteristics, psychopathology symptoms and patterns of behavior. Therefore, classifying adolescents according to these constructs and characteristics may provide us with some insight into their level of risk for future misbehavior, psychopathology and/or suicide. Individuals who exhibit internalizing personality traits or symptoms have been found to report higher levels of sadness, social withdrawal, anxiety, fearfulness, low self-esteem and depressed affect (Achenbach & Edelbrock, 1991; Achenbach & Rescorla, 2001; Campbell, 1995; Eisenberg et al., 2001; Izard, Libero, Putnam, & Haynes, 1993). Hopwood and Grilo (2010) found that self-defeating, inhibited, introversive, and doleful characteristics correlated with the internalizing dimension on the Millon Adolescent Clinical Inventory (MACI). In contrast, externalizing personality characteristics were associated with hyperactivity, aggression, defiance, unruliness, forcefulness, and oppositional characteristics such as rule-breaking or disruptiveness (Achenbach & Edelbrock, 1991; Campbell, 1995; Hopwood & Grilo, 2010). Impulsivity, sensation seeking, poor behavioral control and risk taking were also common externalizing traits (Achenbach & Rescorla, 2001; Caspi, Henry, McGee, Moffitt, & Silva, 1995; Eisenberg et al., 2001; Hinshaw, 1992; White et al., 1994).

Research suggests that internalizing and externalizing characteristics may lead to different ways of dealing with negative emotions and elicit different patterns of psychopathology and other behavior. Internalizing behaviors have been described as intrapersonal in nature or negative behavior that is inwardly directed toward the self. Such behaviors may also be viewed as passive responses to stress or distress characterized by withdrawal, avoidance and rumination (Saigh, Yasik, Oberfield, Halamandaris, & McHugh, 2002). Externalizing behavior has been defined as more interpersonal in nature or outwardly directed towards others (Achenbach & Edelbrock, 1991;

Campbell, 1995). In general, these behaviors may be considered more active or "acting out" responses to distress (Saigh et al., 2002).

Internalizing characteristics has been linked to diagnoses such as major depressive disorder, generalized anxiety disorder, post-traumatic stress disorder, dysthymia, specific phobia, social phobia, panic disorder, bulimia nervosa, binge eating disorder, subthreshold anorexia nervosa, bipolar I and II disorders, and borderline features (Cross, Westen, & Bradley, 2011; Forbush & Watson, 2013; Forbush et al., 2010). In contrast, externalizing characteristics have been found to be positively correlated with intermittent explosive disorder, sub-threshold pathological gambling disorder, drug-use disorders, alcohol-use disorders, conduct disorder, antisocial behaviors and attention-deficit/hyperactivity disorder (Cross et al., 2011; Forbush & Watson, 2013).

*Internalizing characteristics and risky behaviors.* Internalizing characteristics and psychopathology have been strongly linked to risky behaviors such as disordered eating and self-harm behavior / cutting (Bjärehed, Wångby-Lundh, & Lundh, 2012; Hintikka et al., 2009a; Hintikka et al., 2009b). Research has repeatedly shown that disordered eating is frequently comorbid with disorders characterized by negative affect, worry and rumination such as anxiety and depressive disorders in both men and women (Carlat, Camargo Jr, & Herzog, 1997; Forbush et al., 2010; García-Alba, 2004; Garnefski, Kraaij, & van Etten, 2005; Halliwell & Harvey, 2006; Kaye et al., 2004; Keel, Klump, Leon, & Fulkerson, 1998; Kennedy et al., 1994; Lock, Reisel, & Steiner, 2001; McDermott, Forbes, Harris, McCormack, & Gibbon, 2006; Mitchell, Wolf, Reardon, & Miller, 2014; Muratori, Viglione, Maestro, & Picchi, 2004; Pearlstein, 2002; Slane, Burt, & Klump, 2010; Zaider, Johnson, & Cockell, 2000). Compared with peers without eating disorders, both men and women with eating disorders report higher levels of internalizing traits

and psychopathology such as low self-esteem, perfectionism, anxiety and depression (Leon, Fulkerson, Perry, Keel, & Klump, 1999). Slane et al. (2010) concluded that internalizing psychopathology may be especially important for the development of eating disorders in men. Historically, women have consistently reported more internalizing pathology than men. Therefore, those men who do report high rates of internalizing problems are more likely to develop eating disorders when compared to men who do not report eating pathology.

Internalizing psychopathology is also positively associated with a lower body mass index and a severe level of eating restriction (Dellava et al., 2010). Body dissatisfaction, a precursor to disordered eating has been determined to be positively associated with internalizing symptoms in both boys and girls. (Bearman & Stice, 2008; Cyranowski, Frank, Young, & Shear, 2000; Neumark-Sztainer et al., 2002; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Ohring, Graber, & Brooks-Gunn, 2002; Patalay, Sharpe, & Wolpert, 2015). For males, internalizing problems such as depression may be associated with later body dissatisfaction and disordered eating (Aimé, Craig, Pepler, Jiang, & Connolly, 2008; Bearman, Presnell, Martinez, & Stice, 2006; Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Paxton, Eisenberg, & Neumark-Sztainer, 2006; Quick & Byrd-Bredbenner, 2013). For females, body dissatisfaction may be associated with later internalizing problems (Bearman & Stice, 2008; Ferreiro, Seoane, & Senra, 2011; Paxton et al., 2006). However, their body image was not responsive to changes in their depressive symptoms and seemed to represent a more chronic and independent long-term issue than for males (Aimé et al., 2008; Graber et al., 1994). Musci, Hart, and Ialongo (2014) found evidence to support the role internalizing psychopathology and traits play in the development of binge-eating behaviors. Utilizing the Baltimore How I Feel Questionnaire and the Self-Perception Profiles for Adolescents—Physical Appearance Subscale (Harter, 1986) and Eating Disorders

Inventory—Bulimia Subscale (EDI-B) (Garner, Olmstead, & Polivy, 1983) to assess anxiety, depression, past suicide attempts, eating pathology and concerns regarding their physical appearance, self-worth, self-esteem. Overall, those individuals who displayed a high trajectory of internalizing problems also reported significantly more binge-eating behaviors than the low internalizing trajectory group. Skinner, Haines, Austin, and Field (2012) also found that depressive symptoms among adolescents later predicted increased binge-eating behavior. Williamson, White, York-Crowe, and Stewart (2004) found that individuals who reported higher levels of binge-eating also reported a higher lifetime rate of suicide attempts.

Adambegan et al. (2012) examined the factors that contribute to the development of eating disorders among sisters. They established that the sisters who were later diagnosed with eating disorders also reported greater levels of internalizing problems. These problems included higher levels of social withdrawal, loneliness, inferiority, guilt and depressive symptoms. This is consistent with other studies that found that internalizing characteristics such as high negative affectivity, emotional instability, anxiety, depression, guilt, and low self-esteem are associated with an increase in internalizing psychopathology and the development of anorexia and bulimia (Bulik et al., 2006; Dellava et al., 2010; Fairburn, Cowen, & Harrison, 1999; García-Alba, 2004; McDermott et al., 2006; Muratori et al., 2004; Peñas-Lledó et al., 2010; Pike et al., 2008).

The Sociocultural Model for the development of eating disorders (Stice, 1994) proposes that internalizing characteristics such as low self-esteem increase an individual's tendency to internalize the environmental pressures to be thin. This tendency reinforces negative schemas of their bodies and leads to body dissatisfaction, negative cognitive biases and restrictive eating behavior. This cycle also leads to the development of depression, anxiety and self-dislike or

disgust which then further encourages disordered eating in order to reduce their symptoms (Stice, Akutagawa, Gaggar, & Agras, 2000; Williamson et al., 2004).

Internalizing problems have also been positively linked to self-harm and cutting behavior. In fact, it has been estimated that 90% of self-harmers have at least one comorbid disorder such as depression, anxiety, substance use or an eating disorder (Favazza, DeRosear, & Conterio, 1989; Haw, Hawton, Houston, & Townsend, 2001; Sansone & Levitt, 2002; Suominen et al., 1996). Individuals who self-harm tend to report a longstanding history of anxiety symptoms (Fulwiler, Forbes, Santangelo, & Folstein, 1997). In addition, 50% of self-mutilators tend to experience symptoms of anxiety right before they engage in self-harm behavior. Bennum and Phil (1983), found that adolescents reported feeling anxiety, hostility and frustration prior to an episode of self-mutilation. A study by Hintikka et al. (2009a) concluded that internalizing pathology such as being withdrawn, experiencing somatic complaints and symptoms of depression and anxiety were all associated with self-cutting in female adolescents. In addition, an official diagnosis of major depressive disorder, an anxiety disorder, or an eating disorder were also positively correlated with self-cutting. In contrast, Hintikka and colleagues (2009) did not find significant relationships among externalizing behaviors such as aggressive behavior, rule-breaking, and social problems and self-cutting.

An individual's engagement in self-harm behavior is believed to provide relief, tension release, expression of anger or opportunities for self-punishment (Derouin & Bravender, 2004; Favazza, 1998). The anxiety reduction and the hostility model (Ross & Heath, 2003) have been proposed to explain how self-mutilation develops. According to these models, individuals engage in self-mutilation in order to reduce the feelings of anxiety, tension or hostility and anger. As a result, they feel immediate relief (Favazza, 1998). Self-mutilation can also be viewed as a form

of self-punishment or a way of directing their anger inward, towards an "acceptable" target (Herpertz, Sass, & Favazza, 1997).

Certain symptoms of depression have also been linked to self-mutilation. Individuals who report lower levels of self-worth and higher levels of distress, suicidal ideation, rumination, self-criticism, guilt and self-doubt are more likely to direct their negative feelings toward themselves and to engage in self-harm behavior. (Abela, Brozina, & Haigh, 2002; Garrison et al., 1993a; Haines & Williams, 1997; Hilt, Cha, & Nolen-Hoeksema, 2008; Nolen-Hoeksema & Harrell, 2002; Nolen-Hoeksema, Parker, & Larson, 1994).

Nock and Prinstein (2005) proposed that individuals engage in self-harm behavior in order to avoid negative affective states/punishment from others (automatic negative reinforcement), to attain a certain physiological state, or to gain attention (automatic positive reinforcement). Within this framework, when depressive symptoms create a high level of distress and the individual is unable to regulate his or her emotions in a healthy way, he or she will resort to self-mutilation. Rumination has also been found to exacerbate symptoms of depression and to increase subsequent levels of distress and self-harm behavior (Abela et al., 2002; Nolen-Hoeksema et al., 1994).

There is a positive relationship between disordered eating and engagement in self-harm. Favaro and Santonastaso (1998, 2000) found that 72% of bulimics and 62% of anorexics have engaged in self-harm behavior.  In addition, those who meet criteria for an eating disorder and also engage in self-harm behavior tend to display internalizing characteristics such as low self-directness, low self-esteem, psychasthenia, fear and aggressive-related traits (Tozzi et al., 2006). However, externalizing symptoms may also play a role in the development of eating disorders in certain contexts (Aimé et al., 2008).  For example, impulsivity, interpersonal instability, poor

frustration tolerance, substance use hyperactivity, aggression and delinquent behavior have shown positive associations with eating disorders in both men and women (Favazza & Simeon, 1995; Milos, Spindler, Hepp, & Schnyder, 2004; Stanley, Gameroff, Michalsen, & Mann, 2001; Tozzi et al., 2006; Welch & Linehan, 2002). However, the relationship is significantly stronger for men and for the development of bulimic disorders (Carlat & Camargo Jr, 1991; Ekeroth, Engström, Hägglöf, & Broberg, 2003; Wonderlich, Connolly, & Stice, 2004). Research has shown that men who reported greater levels of anger, impulsivity, and verbal or physical aggression also reported higher levels of binge eating (Kane, Loxton, Staiger, & Dawe, 2004; Peñas-Lledó et al., 2010; Seroczynski, Bergeman, & Coccaro, 1999). Furthermore, men who reported higher levels of hyperactivity or impulsivity also admitted greater dietary restraint (Fichter, Daser, & Postpischil, 1986). In both males and females, unhealthy weight loss methods have been linked to other risky behaviors such as drug use, smoking, risky sexual activity, and delinquency (Krahn et al., 1996). Forcano et al. (2011) found that a certain subset of bulimic individuals tends to exhibit both internalizing and externalizing symptoms such as low cooperativeness, self-directedness and impulsivity. In addition, this group is more likely to engage in self-harm or suicidal behavior and their symptoms are generally more severe and longer in duration.

*Externalizing characteristics and risky behaviors.* Drug use, alcohol use, fighting, engaging in risky sexual activity and driving under the influence are considered externalizing behavior (Cloninger, Sigvardsson, & Bohman, 1988; Crawford, Pentz, Chou, Li, & Dwyer, 2003; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). In addition, stealing, being arrested, engaging in physical fights, and functioning poorly in school have also been characterized as externalizing behavior (Achenbach & Rescorla, 2001; Cross et al., 2011; Eisenberg et al., 2001; Hinshaw, 1992). Impulsivity, sensation-seeking and poor behavioral responses are believed to be explain the link

between externalizing characteristics and risky behaviors such as drug use, alcohol use, and fighting (Caspi et al., 1995; Eklund & Klinteberg, 2005; Gottfredson & Hirschi, 1990; Martin, Lynch, Pollock, & Clark, 2000; Slavin-Mulford et al., 2013; Verdejo-García, Lawrence, & Clark, 2008; Waschbusch, 2002; Waschbusch et al., 2002). Research has established that these factors are important precursors to engagement in early risk behavior (Crawford et al., 2003; Gjerde, Block, & Block, 1988; Selby et al., 2010b; Wong, Ang, & Huan, 2007). In addition, there may be a biological connection. Chambers and Potenza (2003) and Spear (2000), suggested that adolescence is the period when the rise in activity of the dopamine system encourages experimentation with novel and exciting behaviors.

Working memory may also be linked to engagement in risky behavior. Adolescents with a greater ability to manipulate information in working memory appear to have greater control over sensation seeking and other impulsive drives such as risky decision-making (Bechara, Damasio, Tranel, & Anderson, 1998; Bechara et al., 2001; Fellows & Farah, 2003, 2005; Klingberg et al., 2005; Miller & Cohen, 2001). In contrast, adolescents who have difficulty analyzing multiple or conflicting goals are less likely to think before acting and to moderate their interest in novel and exciting experiences. Working memory is also strongly related to general cognitive functioning as assessed in intelligence tests (Colom, Abad, Quiroga, Shih, & Flores-Mendoza, 2008; Shamosh et al., 2008). It is possible that working memory is responsible for a small but persistent role in the positive correlation that has been observed between IQ and youth engagement in multiple risk behaviors (Henry & Moffitt, 1997; Lynam, Moffitt, & Stouthamer-Loeber, 1993).

*Internalizing / externalizing characteristics and risky behaviors.* Some adolescents will display both internalizing and externalizing disorders. Lilienfeld (2003) proposed that internalizing disorders may lead to the development of externalizing disorders and vice versa. For

example, externalizing problems might result in social failures, such as peer rejection, which could cause the expression of co-occurring internalizing problems (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999; Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003; Patterson & Stoolmiller, 1991). They with internalizing problems may report more negative developmental outcomes such as poorer relationships with others and delinquent behavior (Loeber & Keenan, 1994; Miller-Johnson, Lochman, Coie, Terry, & Hyman, 1998; Newman, Moffitt, Caspi, & Silva, 1998; Oland & Shaw, 2005; Rudolph, Hammen, & Burge, 1994). Talbott and Fleming (2003) concluded that adolescents with comorbid internalizing and externalizing problems are at a higher risk for acting negatively with peers, engaging in risky behaviors, and having friends who engage in risky behaviors. Furthermore, feelings of personal distress, which are related to internalizing problems, may result in the expression of co-occurring externalizing problems (Lemerise & Arsenio, 2000). Therefore, the co-occurrence of internalizing and externalizing problems may result from a cycle of reciprocal causation between these problem types (Lilienfeld, 2003; Oland & Shaw, 2005). According to Perle et al. (2013) internalizing symptoms may begin at a young age and lead to the development of externalizing symptoms that are more related to risky behaviors.

Rowe, Liddle, and Dakof (2001) found that a small subsection of substance users exhibited internalizing symptoms such as anxiety and depression. However, the majority of substance use was associated with externalizing problems such as poor impulse control, defiance, delinquency, suicidal behavior, and poly-drug use. This is important because adolescents who are experiencing both externalizing and internalizing disorders may also exhibit a greater level of psychopathology and impairment (Nottelmann & Jensen, 1995; Oland & Shaw, 2005).

A study conducted by Verona, Sachs-Ericsson, and Joiner Jr (2004), found that even after controlling for internalizing psychopathology, an individual's externalizing symptoms remained

an important correlate of suicidal behavior in both men and women. In addition, those who had internalizing disorders did not differ in their rate of suicide attempts when compared to those with externalizing disorders. They concluded that both internalizing and externalizing symptoms are risk factors for suicide-related thoughts and behaviors in adolescence. These results were replicated by Hills, Cox, McWilliams, and Sareen (2005), who also concluded that externalizing psychopathology uniquely contributes to the increase in suicide attempts beyond what was expected from reporting an internalizing disorder. Furthermore, their data showed that externalizing psychopathology was associated with suicide attempts in the absence of internalizing symptoms. A subsequent study by Hills, Afifi, Cox, Bienvenu, and Sareen (2009), examined externalizing psychopathology as a future risk factor for suicide attempts at one- and 13-year follow-ups. They concluded that individuals who were diagnosed with one or more externalizing disorders, including substance use, were significantly more likely to have reported a previous suicide attempt. In addition, meeting criteria for an externalizing disorder was also associated with suicide attempts at the one-year follow-up, although not 13 years later. This result suggests that the effects of externalizing disorders may be stronger in the short-term due to their impulsive nature.

Kashani, Goddard, and Reid (1989) examined the correlates of suicidal ideation in a community sample of adolescents. They found that adolescents who reported experiencing suicidal ideation also showed an increase in both internalizing (e.g., depression and anxiety disorders) and externalizing (e.g., conduct disorders). Suicidal adolescents also exhibited an increase in impulsivity and endorsed the use of aggression or violence as a problem-solving strategy. Not surprisingly, parents were more likely to report their adolescents' externalizing behaviors, while demonstrating less awareness of their adolescents' internalizing symptoms.

Verona and Javdani (2011) recruited a sample of 223 adolescents from two midwestern regions and found that internalizing disorders (depression and anxiety) were positively correlated with an increase in suicidal ideation and attempts. Externalizing disorders (conduct, oppositional-defiant, and attention-deficit disorders) were negatively related to suicidal ideation. However, individuals who reported substance use exhibited an increase in suicidal behaviors and attempts. Therefore, externalizing disorders independent of substance use were unrelated to suicide threats/attempts.

Using data from the National Longitudinal Study of Children and Youth, Peter and Roberts (2010) investigated whether there were gender differences regarding the effects of internalizing, externalizing, and deviant behaviors on suicidal ideation and attempts. For the purposes of this study, deviant behavior was assessed using eight questions. These included how many times in the past 12 months the participants stayed out all night, ran away from home, carried a weapon, sold drugs, engaged in fighting, and damaged property that did not belong to them. In addition, their levels of sexual activity and alcohol/marijuana use were measured. In general, adolescent girls reported a higher rate of suicidal ideation and attempts than males. However, suicidal ideation among both girls and boys was positively associated with engagement in deviant behaviors, although this relationship was stronger for females. In addition, along with deviant behaviors, self-reported alcohol use and sexual activity in females, but not among males, increased the risk of future suicidal ideation. The authors concluded that girls who engage in externalizing behaviors are more at risk than males. They suggested that this may be due to the social stigma associated with females' engaging in deviant behaviors. On the other hand, with regard to internalizing behavior, depression was related to an increase in suicidal ideation for both males and females. Anxiety, however, was only a significant risk factor among male adolescents. The

authors found that deviant behaviors were strongly correlated with suicidal attempts for both genders, but in contrast to suicidal ideation, the relationship was stronger for males.

Another study conducted by Wong et al. (2007) used the Reynolds Adolescent Adjustment Screening Inventory to investigate the relationship between internalizing and externalizing pathology and suicidal behavior. They found that both the emotional distress and the negative self-concept internalizing problem subscales significantly predicted suicidal ideation. However, only one of the externalizing subscales (anger control problems) significantly predicted such ideation. Furthermore, for male adolescents, negative self-concept was the only significant predictor, while emotional distress was the only significant predictor for females.

Sourander, Helstelä, Haavisto, and Bergroth (2001) examined suicidal thoughts and attempts among adolescents over an eight-year period beginning at eight years of age. At age eight, emotional and behavioral problems reported by parents, teachers, or the children themselves were associated with suicidal tendencies eight years later. In general, a high level of externalizing/internalizing problems combined with a low level of social competence resulted in the greatest associations with suicidal features at 16 years of age.

An additional study conducted by Herba, Ferdinand, and Verhulst (2007) investigated Herba, Ferdinand, Van Der Ende &Verhuslt (2007) Herba, Ferdinand, Van Der Ende &Verhuslt (2007) Herba, Ferdinand, Van Der Ende &Verhuslt (2007) Herba, Ferdinand, Van Der Ende &Verhuslt (2007) studied the implications of childhood suicidal ideation on the individual's long-term health outcomes. They followed 2600 children over a 14-year period (1983-1997) and assessed them on six different occasions. They concluded that children who reported suicidal ideation were very likely to experience suicidal ideation and attempts in adulthood. In addition, a

long-term history of suicidal ideation was associated with an increased likelihood of developing a mood or anxiety disorder and, to a lesser extent, an externalizing disorder in adulthood.

Another study examined the relationship between non-suicidal self-injury and internalizing as well as externalizing pathology (Bjärehed et al., 2012). They concluded that a subgroup of adolescents who engaged in frequent and varied forms of self-harm (cutting, carving, burning, severe scratching, sticking sharp objects into the skin, biting/punching, banging their heads, and preventing wounds from healing) also displayed internalizing and externalizing problems. In contrast, a subgroup of girls who engaged primarily in cutting reported mostly internalizing difficulties. For boys, those who engaged in frequent and multiple forms of self-injury reported both externalizing and internalizing pathology. However, boys who engaged primarily in cutting also displayed an increase in internalizing problems similar to the girl's subgroup.

Slavin-Mulford et al. (2013) examined the external correlates of the Personality Assessment Inventory (PAI), which has both internalizing and externalizing subscales. The internalizing subscale consists of items representative of depression, anxiety, and anxiety-related disorders. In contrast, the externalizing subscale consists of items related to antisocial behavior as well as drug and alcohol problems. The authors concluded that there is a positive relationship between the internalizing subscale and an individual's history of self-reported suicide attempts, hospitalizations, physical/sexual abuse, and drug abuse. The externalizing dimension is positively correlated with an increase in arrests and drug/alcohol abuse.

Due to the aforementioned internalizing and externalizing characteristics and psychopathology, certain risky behaviors are more likely to co-occur (Biglan & Cody, 2003; McGue, Iacono, & Krueger, 2006). Certain behaviors lead to the initiation of a related behavior and it is common for an adolescent who participates in one risky behavior to become involved in

another (Flisher et al., 2000b; Reinherz et al., 1995). For example, drinking alcohol, smoking,

using drugs and sexual activity have consistently been found to have positive relationships with

each other (Afifi et al., 2007; Bechara et al., 1998; Escobedo et al., 1997; Everett et al., 2000;

Hallfors et al., 2004; Hanna et al., 2001; Stevens & Griffin, 2001; Zweig et al., 2002). In addition,

self-harm and disordered eating have also been found to co-occur regularly (Bridge, Goldstein, &

Brent, 2006; Favaro & Santonastaso, 1998; Hawton, Rodham, Evans, & Weatherall, 2002;

Jacobson & Gould, 2007; Lewinsohn, 1996; Matsumoto, Azekawa, Itami, & Takeshima, 2008;

Nock et al., 2008; Rodham, Hawton, & Evans, 2004; Seo & Lee, 2013; Swahn et al., 2009).

Although, an adolescent may engage in unique patterns of engagement in risky behaviors these

studies suggest that some patterns are more common than others.  Therefore, the current research

aims to illuminate these patterns and to examine how internalizing and externalizing behaviors

may impact future suicidal ideation and behavior. Up until now, it is clear that both internalizing

and externalizing problems are associated with risk factors for future suicidal ideation and behavior

but the relationship requires further investigation. Defining these associations clearly will help

inform early prevention and treatment.

Joiner's Interpersonal-Psychological Theory of Suicide

Current research has concentrated on examining and identifying the contributing factors to

adolescent suicide.  However, understanding the mechanism of how these factors may increase the

risk and likelihood of suicidal behavior is essential to the development of effective treatment

protocols.  The interpersonal-psychological theory (Joiner, Brown, & Wingate, 2005a) examines

how risk factors and engagement in risky behaviors may interact to increase an individual's desire

and capability to die by suicide.  It is hypothesized that a desire to die occurs when an individual

simultaneously experiences two psychological states: perceived burdensomeness and a low sense

of belongingness. Perceived burdensomeness is the belief that the self is so incompetent that the individual is a liability or a burden to others (Van Orden, 2005). Consequently, the person begins to believe that those around him or her would be better off if he or she no longer existed. A low sense of belongingness occurs when an individual experiences infrequent positive social interaction and does not feel cared about or connected to others. When these two states are experienced simultaneously, they can lead to feelings of loneliness and social withdrawal, which have been linked to depression, suicidal ideation, and completed suicide (Van Orden, 2005). Within this theory, other risk factors, such as prior mental health diagnoses, feelings of hopelessness, impulsivity, poor problem-solving, and family/peer conflict, all interact with and contribute to an individual's low sense of belongingness and perceived burdensomeness, thus resulting in a desire to die and an increase in suicidal ideation.

Perceived burdensomeness and a low sense of belongingness are viewed as insufficient to cause someone to attempt suicide. The individual must also report a fearlessness of death and demonstrate a capability to harm himself or herself. It is proposed that the most direct pathway for acquiring the capability, fearlessness, and de-sensitization to painful stimuli is by repeatedly engaging in para-suicidal and risky behaviors. Through repeated exposure, the individual becomes habituated to the fear of death and develops a pain tolerance, resulting in a greater capability for suicide. This also makes it possible for him or her to engage in increasingly more dangerous, self-injurious, or damaging behavior.

Research has demonstrated that individuals who admitted to engaging in past suicidal behavior reported less fear of dying than individuals who described a history of suicidal ideation with no previous attempts (Van Orden, 2008). These authors also found that the fear of dying by suicide and the number of previous suicide attempts were both strongly associated with an

individual's self-reported measure of acquired capability. Research conducted with clinical outpatients has demonstrated that the number of past suicide attempts can significantly predict an individual's level of acquired capability and future suicidal behavior (Brown, Beck, Steer, & Grisham, 2000; Joiner et al., 2005b).

Linehan, Goodstein, Nielsen, and Chiles (1983) examined 46 depressed individuals who reported previous suicidal ideation and attempts. In general, the authors found that men reported greater levels of acquired capability than females. It was hypothesized that this may explain why women often choose less lethal means of attempting suicide. Research has also demonstrated that individuals with a history of suicide attempts tend to report a higher pain tolerance, as measured by self-report, electric shock, and thermal pain (Orbach, Mikulincer, King, Cohen, & Stein, 1997; Orbach et al., 1996). Furthermore, individuals who reported an absence of physical pain, a longer history of self-injurious behavior, and the use of a larger number of methods also displayed an increase in the number of suicide attempts (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006).

There is research to support the assertion that participation in risky behaviors may increase an individual's level of acquired capability for suicide. For example, individuals who reported engaging in risky behaviors such as physical fights, self-starvation, self-injurious behavior, physical abuse, and drug and alcohol use reported a higher level of acquired capability as measured by self-report questionnaires (Joiner Jr et al., 2009). In addition, individuals who reported shoplifting, engaging in promiscuous sex, playing sports, having a piercing, shooting a gun, hurting animals, and engaging in physical fights also reported higher levels of acquired capability. This is even after accounting for demographic variables and their levels of depression or suicidal ideation (Van Orden, 2008). Another study found that heroin users who were more

habituated to painful stimuli were more likely than non-users not only to attempt suicide, but also to die by suicide (Darke & Ross, 2002).  In a prison sample, a significant positive correlation was established between self-report measures of acquired capability and participants' previous exposure to painful and provocative life events (Smith, Wolford-Clevenger, Mandracchia, & Jahn, 2013).  These included experiences such as using intravenous drugs, engaging in contact sports, experiencing physical or sexual abuse, and suffering accidental injury.

It has been hypothesized that impulsive individuals may report a higher level of acquired capability because they are more likely to have experienced painful and provocative events (Bender, Gordon, Bresin, & Joiner, 2011). Studies have established that violent behavior, self-injecting drug use, and risky sexual activity are linked to impulsive personality characteristics and a subsequent increase in suicidal behavior (Darke & Ross, 2002; Fehon, Grilo, & Lipschitz, 2005; Madden, Petry, Badger, & Bickel, 1997; Whitlock & Broadhurst, 1969).  An analysis of the Youth Risk Behavior Survey results (Witte et al., 2008) revealed that adolescents who had planned for and attempted suicide reported engaging in significantly more impulsive and risky behaviors than adolescents who had not planned their attempt or who had planned it but not attempted.  Moreover, individuals who had not reported any attempts, suicidal ideation, or depression were significantly less impulsive than the other three groups, thus providing support for the supposition that individuals who attempt suicide may be more impulsive and engage in more risky behaviors.  However, this does not mean that the act of suicide itself will be impulsive.  Rather, impulsive individuals may demonstrate a higher suicide risk because of their increased exposure to painful and provocative events and their engagement in risky behaviors, all of which decrease their level of fear and increase their level of acquired capability (Witte et al., 2008).  In total, only 10% of the sample reported an impulsive suicide attempt, indicating that this may not be the

norm. Nevertheless, an assessment of the individual's number and severity of painful and provocative past events may be important in determining that individual's safety risk.

Several studies have provided support for the interpersonal-psychological theory. For example, Joiner et al. (2009) conducted two studies to test the interactive nature of the interpersonal–psychological theory. A sample of 815 individuals (438 women and 377 men), aged 19 to 26, were selected to complete an interview and a few self-report measures designed to assess their levels of perceived burdensomeness and sense of belongingness. Results revealed that individuals who reported a low level of family support and a low sense of belonging also reported the highest levels of suicidal ideation.

In a second study conducted by Joiner et al. (2009), 313 clinical participants who reported a history of severe suicidality were asked to complete an interview and various questionnaires in order to assess the three-way interaction among perceived burdensomeness, low sense of belonging, and lifetime number of suicide attempts (a measure of acquired capability). Results indicated that individuals who reported higher levels of perceived burdensomeness and a low sense of belongingness were also more likely to attempt suicide if they reported higher levels of acquired capability (greater number of past attempts). Furthermore, this interaction also predicted whether the individual would engage in a future suicidal attempt or experience suicidal ideation (Joiner et al., 2009).

A third study conducted by Joiner Jr et al. (2009) utilized a sample of individuals who had either attempted suicide or reported severe suicidal ideation without an attempt. The results revealed that perceived burdensomeness, low sense of belongingness, and acquired capability differentiated between those individuals who reported a previous suicide attempt and those individuals who experienced severe ideation without an attempt. In addition, perceived

burdensomeness and a low sense of belonging translated into suicide attempts among those individuals who reported a higher level of acquired capability (Joiner Jr et al., 2009).

Summary

To summarize, suicide is one of the leading causes of adolescent deaths worldwide. There are significant psychological and monetary costs associated with self-inflicted injuries and completed suicides. These costs negatively impact family members, peers, and society as a whole. Current treatment interventions have produced mixed results and limited benefits to those suffering from depression and reporting suicidal ideation as well as previous suicide attempts.

In 2001, the Florida Initiative for Suicide Prevention group (FISP) initiated a collaboration with the SPARE group in order to assess the effectiveness of a problem-skills group designed to teach at-risk adolescents healthy coping and problem-solving strategies. It was hypothesized that an improvement in problem-solving skills would lead to improved family functioning and reduce engagement in risky and suicidal behaviors. An analysis of the data (Johns, 2010) revealed a significant improvement in participants' knowledge of the problem-solving process. However, perceived family functioning and suicidal ideation failed to change significantly from pre-test to post-test. In addition, knowledge of the problem-solving process was no longer significantly correlated with suicidal ideation at post-test. In terms of risky behavior use, less knowledge of the problem-solving process and poorer perceived family functioning was associated with a greater frequency of risky behaviors. Lower scores on suicidal ideation were indicative of less participation in risk-taking behaviors. However, only two of the nine risk factors significantly improved from pre-test to post-test (tobacco use and self-injurious behavior). Overall, important relationships were identified among problem-solving skills,

perceived family functioning, suicidal ideation, and risky behaviors. However, further investigation is required.

Importantly, engagement in risky behaviors remains one of the strongest predictors of an adolescent's future mental health status. Research has demonstrated that a reciprocal relationship exists between the two, such that as the number and intensity of risky behavior use increases, so does the likelihood of developing depression and suicidal ideation. Suicidal ideation is comprised of passive and active components. Passive suicidal ideation refers to an individual's feeling that life is not worth living or that they would be better off dead. In contrast, active suicidal ideation has been defined as "a specific plan or intent to die". Up until now, passive suicidal ideation has been viewed a less serious form of suicidal ideation when compared to active suicidal ideation. However, research shows that both have distinct characteristics, associations and implications for future suicidal risk and engagement in risky behavior.

For many adolescents, risky behaviors may become coping mechanisms for the mental health issues they are already experiencing. In addition, engagement in one risky behavior usually leads to increased participation in others. In general, smoking, sexual activity, and drug/alcohol use remain the most common risky behaviors among adolescents. However, other factors such as the individual's gender, culture, and personality characteristics also play a role in determining the relationships that develops among depression, risky behaviors, and suicide. For example, being a female, displaying deficits in problem-solving skills, reporting hopelessness/cognitive distortions, being a planner or being impulsive, and exhibiting internalizing versus externalizing characteristics were all associated with different levels of risky behavior, depression, and suicide.

Many theories have been proposed to explain adolescent suicide and depression but understanding the role of risky behaviors has proven quite difficult. Thomas Joiner (REF)

developed the interpersonal-psychology theory, in part, as an attempt to explain this relationship. He observed that an individual is most likely to attempt or to complete suicide when he or she reports perceived burdensomeness, low sense of belonging, and a desire or capability to die. Joiner hypothesized that an individual's desire or capability to die can be increased when that person begins to develop pain tolerance, habituation, or desensitization to painful and provocative stimuli. According to Joiner's theory, when an individual repeatedly engages in risky behaviors, they are slowly able to reduce fear of death, to increase pain tolerance, and thus to acquire a capability to die. In addition, as risky behaviors increase, so do levels of depression, which perpetuates and contributes to this potentially deadly cycle.

The purpose of this dissertation is to focus on better understanding the relationship between suicidal ideation and risky behavior. It also takes into account the variables examined previously (perceived family functioning, problem-solving skill, and risky behavior) as well as new variables, such as gender and ethnicity. It builds upon the previous research by exploring whether different types of risky behaviors (i.e., internalizing vs. externalizing) predict different forms of suicidal ideation (i.e., passive vs. active).

## Research Questions and Hypotheses

The purpose of this study is to explore the relationship between engagement in risky behaviors and suicidal risk during adolescence. In an attempt to better understand this relationship, the following research questions are addressed:

### Research Question One

Do gender, ethnicity, problem-solving skills, family relationships, and risky behaviors display a strong relationship or correlation with active, passive and total suicidal ideation items?

### Hypotheses One

Gender, ethnicity, problem-solving skills, family relationships, and risky behaviors have all been identified as risk factors for the development of suicidal ideation. Therefore, it is anticipated that all of these variables will show a significant correlation with all forms of suicidal ideation. Previous research suggests that individuals who are part of an ethnic minority, are female, have weaker problem-solving skills, describe poorer family relationships and report increased engagement in risky behaviors will have a greater total suicidal ideation score.

### Research Question Two

Does engagement in risky behaviors contribute uniquely to the variance in total suicidal ideation scores above and beyond the other predictors (i.e., gender, ethnicity, problem-solving skills, and family relationships)?

Hypotheses Two

Engagement in risky behaviors (i.e. greater reported number of total risky behaviors) will contribute uniquely to the variance in total suicidal ideation scores above and beyond gender, family relationships, ethnicity and problem-solving skills.

Research Question Three

Do different types of risky behaviors contribute uniquely to the variance in total suicidal ideation scores?

> 3a) Does engagement in internalizing risky behaviors predict total suicidal ideation scores above and beyond the other predictors?
>
> 3b) Does engagement in externalizing risky behaviors predict total suicidal ideation scores above and beyond the other predictors?

Hypotheses Three

> 3a) Engagement in internalizing risky behavior will significantly predict total suicidal ideation scores above and beyond the other predictors.
>
> 3b) Engagement in externalizing risky behaviors will also significantly predict total suicidal ideation scores above and beyond the other predictors.

Research Question Four

Do different types of risky behaviors predict different forms of suicidal ideation?

> 4a) Do internalizing risky behavior total scores predict total passive suicidal ideation scores above and beyond the other predictors?

4b) Do externalizing risky behaviors total scores predict total passive suicidal ideation scores above and beyond the other predictors?

4c) Do internalizing risky behavior total scores predict total active suicidal ideation scores above and beyond the other predictors?

4d) Do externalizing risky behaviors total scores predict total active suicidal ideation scores above and beyond the other predictors?

Hypotheses Four

4a) Increased engagement in internalizing behavior will significantly predict total passive suicidal ideation scores above and beyond the other predictors.

4b) Increased engagement in externalizing risky behaviors will significantly predict total passive suicidal ideation scores above and beyond the other predictors.

4c) Increased engagement in internalizing risky behaviors will predict total active suicidal ideation scores above and beyond the other predictors.

4d) Increased engagement in externalizing risky behaviors will significantly predict total active suicidal ideation scores above and beyond the other predictors.

## Chapter III

## Methodology

Participants

This study utilized a de-identified archival data set that was collected as part of a larger study approved by the Nova Southeastern University (NSU) Institutional Review Board (IRB). For the original study, 285 adolescents were recruited based on professional staff nominations from the Broward County Juvenile Justice Probation Department, the Florida Ocean Sciences Institute (FOSI), the Juvenile Detention Center (JDC), Lauderdale Middle School, Coral Springs Middle School, the Boys and Girls Clubs, Hispanic Unity, and the YMCA. For the students to qualify, they needed to be identified by one of the above institutions as being at-risk for engaging in suicidal or reckless behavior. This was defined as exhibiting one or more risk factors for such behavior, such as legal difficulties, truancy, family dysfunction, and/or poor problem-solving skills. Once potential participants were identified, an information package was sent to the adolescents' parents or legal guardians describing the program and inviting them to gather more information from a Florida Initiative for Suicide Prevention (FISP) or SPARE representative. Note that the study from which the archival data were retrieved was a collaborative effort between FISP and the NSU-based SPARE project. The parents/guardians were given the opportunity to ask questions and, if they displayed interest, were provided with the IRB-approved informed consent form to sign. FOSI and JDC provided IRB-approved consent for adolescents under their guardianship. In general, adolescents 18 and older provided consent themselves, while adolescents 17 years old and younger provided their assent to participation via an IRB-approved assent form, and their parents/guardians provided written consent.

Participants were then randomly assigned to either a problem-solving group or a reading skills control group. The problem-solving group was based on Judith Tellerman's Solutions Unlimited Now (SUN) problem-solving model and adapted to meet the unique demands of the group environment. At the outset of each 10-session group, participants completed the Problem-Solving Skills Test (PSST), the Family Functioning Questionnaire, the Suicide Ideation Questionnaire-Jr (SIQ-Jr), and the Health Risk-Taking Assessment (HRTA). In addition, demographic information regarding age, gender, grade in school, and race/ethnicity was gathered.

Measures

The following measures and questions were chosen to assess the constructs of the study within as few items as practical for these adolescents, many of whom had limited attention spans. Considering the different reading levels of group participants, the facilitator read the complete questionnaires to the group members at the beginning of the first and during the last session.

**The Suicidal Ideation Questionnaire-Junior version (SIQ-Jr).** In this study, we use Reynold's (1988) Suicidal Ideation Questionnaire-Junior version which is a self-report measure that was designed to assess suicidal ideation in adolescents (Appendix A). The questionnaire contains 15 items representative of various suicidal cognitions. The answers are rated using a seven-point, Likert-type scale which ranges from zero (I never had this thought) to six (almost every day). Thus, total scores range from 0-90. A cut-off score of 31 indicates a significant level of suicidal ideation. The psychometric properties of the SIQ-Jr. have been well-established. The internal consistency reliability coefficient for the SIQ-Jr. for the standardization sample of 1290 adolescents was 0.94 using Cronbach's coefficient alpha. In addition, the SIQ-Jr. has shown

convergent validity with measures of depression and anxiety ranging from 0.56 to 0.66 (Reynolds, 1988). Another study (Reynolds & Mazza, 1999) found the internal consistency reliability coefficient of the SIQ-Jr. was .91, and the test-retest reliability coefficient was .89 among a sample of inner-city children and adolescents similar to those in the present study. Permission to reproduce the questionnaire as part of a larger survey was obtained from the publisher.

For the current study, the total suicidal ideation score was derived by creating dichotomous variables for each item. This was determined to be the best approach because the responses were negatively skewed indicating that the majority of the sample did not endorse statements representative of suicidal ideation. In fact, the majority of the sample responded with a zero ("I never had this thought"). Therefore, in order to create two substantial groups for comparison it was determined that the most effective way would be to create dichotomous variables for each statement. A one indicated that the person endorsed the item in any capacity (responded 1-6) and a zero indicated that they had not (response of 0). Then, their individual's responses were added together to derive their total suicidal ideation score.

Research and clinical experience also support the distinction between passive and active suicidal ideation. Passive suicidal ideation has been defined as a "desire for death" (O'Carroll et al., 1996). It can also be represented by an individual's feeling that life is not worth living or that they would be better off dead. In contrast, active suicidal ideation has been defined as "a specific plan or intent to die". These individuals have thoughts about harming themselves, plans for suicide, and some intention to carry them out (May et al., 2015; Raue et al., 2007; Schulberg et al., 2005). In a clinical setting, active suicidal ideation has been thought to represent a greater risk for suicidal ideation, since it represents specific actions that the individual may take to prepare for committing suicide. In contrast, passive suicidal ideation has been thought of as a less severe level since it is

mostly comprised of an individual's thoughts regarding committing suicide and is thought of as a precursor or "warning sign" to more serious future behavior. Therefore, suicidal ideation is thought to occur on a continuum whereby passive suicidal ideation represents the initial stages of thought that can develop into active suicidal ideation with the proper conditions.

In this study, the passive subscale included nine items: I thought it would be better if I was not alive, I thought about people dying, I thought about death, I thought about how people would feel if I killed myself, I wished I were dead, I thought that killing myself would solve my problems, I thought that others would be happier if I was dead, I wished that I had never been born, I thought that no one cared if I lived or died. A total passive suicidal score was created for each participant by utilizing the dichotomous variables previously created and adding up the items they endorsed. The active subscale was comprised of six items: I thought about killing myself, I thought about how I would kill myself, I thought about when I would kill myself, I thought about what to write in a suicide note, I thought about writing a will, and I thought about telling people I plan to kill myself. A total active suicidal ideation score was then created for each participant by utilizing the dichotomous variables previously created and adding up the items they endorsed to form a total score. For the passive subscale, the total scores ranged from zero to nine, and for the active subscale, they ranged from zero to six.

These variables were used as outcome variables in order to determine whether different forms of risky behaviors display unique and meaningful relationships with different forms of suicidal ideation.

**Health Risk-Taking Assessment (HRTA).** The Health Risk-Taking Assessment (HRTA) is a face-valid, nine-item questionnaire that was derived from the larger Youth Risk Behavior Survey (YRBS) created by the Centers for Disease Control and Prevention (CDC, 2006a)

(Appendix B). It was shortened by SPARE in order to provide a quick assessment of health risk-taking behaviors among adolescents. The questionnaire attains information regarding an adolescent's engagement in dieting, smoking, drug/alcohol use, physical fights, sexual activity, and self-harm or suicidal behavior. For the purposes of this project, an adolescent's total risky behavior score was calculated by creating a dichotomous score for each of the nine risk variables. This was decided because each item's response scale is different and does not reflect a uniform and equivalent scale. In addition, participants responses were once again negatively skewed indicating that most participants did not endorse engaging in risky behaviors. Therefore, in order to create a comparison group for analyses it was decided that participants responses would be dichotomized. A score of 1 (per item) indicated that the student engaged in the behavior over the last three months. The exception was sexual activity, where the endorsement of this item reflected whether they had every engaged in risky sexual intercourse at any time during their lifetime. In contrast, a score of 0 indicated that they never engaged in a certain behavior. Therefore, the total score possible will be 9 for each individual. The higher their score, the greater their engagement in risky behavior.

Research also suggests that externalizing and internalizing risk behaviors may exhibit unique and meaningful relationships with suicidal ideation. Therefore, two subscales were established to reflect these two categories. The internalizing subscale was comprised of the items that reflected self-harm behavior such as cutting and disordered eating such as skipping meals, vomiting and taking diet pills / powders or liquids. These risky behaviors were chosen to comprise the internalizing category because they best reflected the definition that internalizing behaviors are intrapersonal in nature or negative behavior that is inwardly directed towards the self (Saigh et al., 2002). They may also be viewed as self-punishing or passive responses to stress or distress

characterized by withdrawal, avoidance and rumination (Saigh et al., 2002). In addition, self-harm and disordered eating behavior tend to co-occur frequently and have been found to be strongly related to internalizing symptoms and psychopathology (Bjärehed et al., 2012; Bridge et al., 2006; Favaro & Santonastaso, 1998; Haw et al., 2001; Hawton et al., 2002; Hintikka et al., 2009a; Jacobson & Gould, 2007; Lewinsohn, 1996; Matsumoto et al., 2008; Nock et al., 2008; Rodham et al., 2004; Sansone & Levitt, 2002; Seo & Lee, 2013; Suominen et al., 1996; Swahn et al., 2009; Tozzi et al., 2006).

The externalizing behavior subscale was formed using items that reflect alcohol/drug use, smoking, impaired driving, physical fighting, weapon carrying, and risky sexual activity. This is consistent with the definition of externalizing behavior which suggests that they are more interpersonal in nature and behavior that is outwardly directed and visible to others (Achenbach & Edelbrock, 1991; Campbell, 1995). These behaviors may be considered more active or "acting out" responses to distress (Saigh et al., 2002). Furthermore, externalizing behaviors have consistently been found to have positive relationships with each other (Afifi et al., 2007; Escobedo et al., 1997; Everett et al., 2000; Hallfors et al., 2004; Hanna et al., 2001; Stevens & Griffin, 2001; Zweig et al., 2002). In addition, it is common for an adolescent who participated in any type of risky behavior (internalizing or externalizing) to participate in another (Reinherz, Giaconia, & Paradis, 2007).

Each item was assigned to either the internalizing or externalizing subscale, as described above. Once again, a score of one indicated that the person engaged in that specific behavior, whereas a score of zero indicated that they had not engaged in that behavior. A total internalizing and externalizing score was then created for each individual participant. For the internalizing scale,

the total scores ranged from zero to two. For the externalizing subscale, total scores ranged from

zero to seven.

**Problem-Solving Skills Test (PSST).** The Problem-Solving Skills Test (PSST) is a 7-

item, face-valid, multiple choice measure constructed for this study by SPARE to assess

knowledge of the critical components of the FISP SUN Problem-Solving Program (Appendix C).

**Family Functioning Questionnaire.** Given the data on perceptions of family dysfunction

as a risk factor for suicidality, the investigators added a question to the demographic questionnaire

to measure perceived family functioning (Appendix D).  Due to the length of the questionnaire,

SPARE and FISP jointly decided to include only one, direct, face-valid question on this topic.  The

question reads as follows, 'How would you describe your relationship with your parents (or legal

guardians)?'  A five-point Likert-type scale was utilized for participants to rank their relationship

with their parents as: (a) great – no problems; (b) good –some small problems; (c) okay – lots of

problems, but no really big ones; (d) poor – lots of big problems; and (e) no relationship – don't

see them or don't want to see them at all. For analyses, dummy coding was utilized so that family

relationship was coded into "ok", "good", and "great", with "no relationship" as the reference

category.  Dummy coding was used because it does not erroneously assume there is a linear

relationship between the response options and the outcome variables.

Procedures

In order to facilitate the groups, clinical psychology doctoral students from Nova

Southeastern University were recruited by FISP and trained in the FISP-adapted SUN problem-

solving model.  Each facilitator participated in a day-long training session which reviewed the

purpose of the project, the problem-solving model, teaching techniques, data collection

procedures, and icebreakers/activities to use during group sessions (Appendices E, F, G, H, I, & J).  Facilitators were also trained on how to assess, to report, and to handle crisis situations (e.g., expressions of suicidal ideation/behavior) (Appendix K).  Facilitators of the reading skills group were trained by a reading specialist affiliated with the Broward County Florida Public Schools to assess the participants' reading levels and to teach them the reading improvement protocol.

The problem-solving groups were conducted weekly for 90 minutes each session and lasted for 10 weeks.  The only exception consisted of adolescents from the Juvenile Detention Center (JDC), who participated in sessions daily instead of weekly.  However, the format remained the same, and each session focused on learning different aspects of the SUN 10-step problem-solving model.  The 10 steps were as follows: (1) acknowledge that you have a problem, (2) identify the problem, (3) convey the problem to the group, (4) have other group members pretend the problem is their own, (5) brainstorm possible solutions, (6) evaluate the pros and cons of possible solutions, (7) choose a good solution, (8) plan in detail how to carry out the solution, (9) carry out the plan, and (10) report back to the group the outcome of the solution.  Other expected benefits included enhancing social skills, learning empathy, and building self-esteem.  It was also assumed that in the long run, participants in the experimental group would be less likely to engage in risky behavior, would report less suicidal ideation, and would describe improved family relationships by the end of the program. In addition, it was hypothesized that they would exhibit greater positive change than those in the control group.  In order to monitor changes, pre- and post-measures were given at the beginning of the first session and at the end of the 10<sup>th</sup> session.  Only data from the initial sessions were used in the present study, thereby eliminating the effects of attrition. The reading skills group utilized the Metropolitan Teaching and Learning Workbooks as a basis for the curriculum, which was also taught over 10 weekly sessions.  These sessions were interactive and

focused on improving reading accuracy and comprehension. In addition, active reading skills were modeled, which helped participants engage in textual analysis, structural recognition, and identification of the main ideas.

**Chapter IV**

**Results**

Demographics

In total, 358 adolescents participated in the SPARE research project. Of those, 296 were in the problem-solving group, 31 students were assigned to the reading group, and 31 adolescents were missing data regarding which group they were assigned to complete. Since the present research was primarily interested in examining the relationship between risky behavior and suicidal ideation according to participants' self-reports and irrespective of the treatment condition, however, data were included from all participants who completed the entire pre-test protocol.

The ages of the participants ranged from 12-18 years, with a mean age of 14.95 years (SD =1.79) and a mean grade level of 9.13 (SD = 1.29). In total, 31.8% were female, 65.1% were male and 3.1% failed to indicate their gender. In terms of ethnicity, 56.7% of the sample identified themselves as Black or African American, 12.3% Hispanic or Latino, 9.5% White or Caucasian, 2.5% American Indian or Alaskan Native, 0.8% Native Hawaiian or Pacific Islander, 0.3% Asian, 15.3% "Other", and 3.1% did not indicate an ethnicity. Overall, 32.4% of the sample were recruited through Florida Ocean Science Institute (FOSI), 30.4% from the Juvenile Detention Centers, 8.4% from Lauderdale Middle School, 7.5% from the YMCA, 2.0% from Coral Springs Middle School, 1.7% from St. Stephen's school, 27% from SOS Children's Village and 10.1% of the location data values were missing (See Table 1).

Table 1

*Frequencies and Percentages for Nominal Variables*

| Variables | *N* | % |
|---|---|---|
| Facility | | |
| Coral Springs Middle School | 7 | 2.0 |
| Lauderhill Middle School | 30 | 8.4 |
| Juvenile Detention Center | 109 | 30.4 |
| YMCA | 27 | 7.5 |
| FOSI | 116 | 32.4 |
| St. Stephens | 6 | 1.7 |
| SOS Children's Village | 27 | 7.5 |
| Missing | 36 | 10.1 |
| Group | | |
| Problem-Solving Skills Group | 296 | 82.7 |
| Reading Skills Group | 31 | 8.7 |
| Missing | 31 | 8.6 |
| Age | | |
| 12 | 52 | 14.5 |
| 13 | 31 | 8.7 |
| 14 | 43 | 12.0 |
| 15 | 61 | 17.0 |
| 16 | 78 | 21.8 |
| 17 | 58 | 16.2 |
| 18 | 17 | 4.7 |
| Missing | 18 | 5.0 |
| Gender | | |
| Female | 114 | 31.8 |
| Male | 233 | 65.1 |
| Missing | 11 | 3.1 |
| Ethnicity | | |
| American Indian/Alaskan Native | 9 | 2.5 |
| Asian | 1 | 0.3 |
| Black or African American | 203 | 56.7 |
| Hispanic or Latino | 44 | 12.3 |
| Native Hawaiian or Pacific Islander | 3 | 0.8 |
| Caucasian | 34 | 9.5 |
| Other | 53 | 14.8 |
| Missing | 11 | 3.1 |

*Note.* Due to rounding error, percentages may not add up exactly to 10

Measure Descriptives

To gain a better understanding of this sample's response patterns, two tables were created to determine trends in responding among the total sample and then divided by gender and ethnicity. The total number of total suicidal ideation statements that could be endorsed was 15. For passive suicidal ideation, the highest number of items that could be endorsed was 9. For active suicidal ideation, the highest number of items that could be endorsed was 6. For total risky behaviors, the maximum number of items that could be endorsed was 9. For internalizing behaviors, the maximum number of items that could be endorsed was 2. For externalizing, the maximum number of items that could be endorsed was 7. Therefore, the following means and standard deviations are interpreted with respect to the total possible items that can be endorsed on any given measure and subscale.

In terms of suicidal ideation, the total sample endorsed an average of approximately 2 items out of 15 possible items (M = 2.863, SD = 3.805). Females (M = 4.155, SD = 4.493) tended to endorse more items than males (M = 2.232, SD = 3.248). For passive suicidal ideation, the total sample endorsed an average of approximately 2 out 9 possible items (M = 2.225, SD = 2.714). For active suicidal ideation they endorsed an average of 0 to 1 out of 6 possible items (M = .689, SD = 1.452). Females (M = 4.155, SD = 4.493). endorsed more total suicidal ideation than males (M = 2.232, SD = 3.248). Females (M = 3.057, SD = 3.050). also endorsed more passive items than males (M = 1.827, SD = 2.445). In addition, females (M = 1.105, SD = 1.802). endorsed slightly more active suicidal ideation items than males (M = .489, SD = 1.202). In terms of risky behaviors, the total sample endorsed an average of 2 items out of 9 possible risky behaviors (M = 2.863, SD = 3.805). Females (M = 2.722, SD = 2.201) endorsed slightly less risky behaviors than males (M = 2.797, SD = 2.112).     However, females (M = .241, SD = .490).   endorsed slightly more

internalizing behaviors than males (M = .230, SD = .517). In contrast, males (M = 2.554, SD = 1.949) endorsed slightly more externalizing behaviors than females (M = 2.426, SD = 2.034) (See Table 2).

In this sample, Caucasian's (M = .3.903, SD = 4.650) on average, endorsed the most total suicidal ideation items when compared to American Indian / Alaskan Native (M = .875, SD = .1.458), Asian (M = .2.000, SD = 0.000), Black / African American (M = 2.846, SD = 3.801), Hispanic / Latino (M = 3.400, SD = 3.875), Native Hawaiian / Pacific Islander (M = 2.667, SD = .577) and Other (M = 2.280, SD = 3.429). Caucasian's (M = 1.152, SD = 1.873) also endorsed the most total active suicidal ideation scores compared to American Indian / Alaskan Native (M = .125, SD = ..354), Asian (M = .000, SD = .000), Black / African American (M = .695, SD = 1.425), Hispanic / Latino (M = .781, SD = 1.589), Native Hawaiian / Pacific Islander (M = .000, SD = .000) and Other (M = .460, SD = 1.216). Caucasian's (M = 2.807, SD = 3.092) also endorsed slightly more passive suicidal ideation compared to American Indian / Alaskan Native (M = .750, SD = 1.165), Asian (M = 2.000, SD = 0.000), Black / African American (M = 2.240, SD = 2.763), Hispanic / Latino (M = 2.537, SD = 2.776), Native Hawaiian / Pacific Islander (M = 2.667, SD = .577), Other (M = 1.820, SD = 2.396).

In terms of total risky behaviors, Adolescents who identified their ethnicity as Native Hawaiian / Pacific Islander (M = 7.000, SD = .000), endorsed 7 out of 9 possible items. Although, this was a very small sample size consisting of only 2 adolescents. The results for the rest of the sample was as follows, American Indian / Alaskan Native (M =3.600, SD = 2.302), Asian (M = 1.000, SD = 0.000), Black / African American (M = 2.393, SD = 1.966), Hispanic / Latino (M = 3.071, SD = 2.124), Native Caucasian (M = 3.821, SD = 1.982), Other (M = 3.143, SD = 2.460).

Adolescents who identified their ethnicity Native Hawaiian / Pacific Islander (M = .667, SD = ..577) also endorsed more internalizing behaviors when compared to American Indian / Alaskan Native (M =.333, SD = .500), Asian (M = .000, SD = 0.000), Black / African American (M = .232, SD = .520), Hispanic / Latino (M = .219, SD = .525), Caucasian (M = .182, SD = .465), Other (M = .240, SD = .476).

Adolescents who identified their ethnicity as Native Hawaiian / Pacific Islander (M = 6.000, SD = .000) also endorsed more externalizing behaviors when compared to American Indian / Alaskan Native (M =3.400, SD = 2.408), Asian (M = 1.000, SD = 0.000), Black / African American (M = 2.136, SD = 1.754), Hispanic / Latino (M = 2.821, SD = 2.000), Caucasian (M = 3.679, SD = 1.867), Other (M = 2.857, SD = 2.368). (See table 2)

Table 2

Endorsement of Key Variables by Total sample and Gender

| Sex | | Externalizing Behavior | Internalizing Behavior | Total Risky Behavior | Passive Suicidal Ideation | Active Suicidal Ideation | Total Suicidal Ideation |
|---|---|---|---|---|---|---|---|
| Female | Mean | 2.426 | .241 | 2.722 | 3.057 | 1.105 | 4.155 |
| | N | 54 | 108 | 54 | 105 | 105 | 103 |
| | Std. D | 2.034 | .490 | 2.201 | 3.050 | 1.802 | 4.493 |
| Male | Mean | 2.554 | .230 | 2.797 | 1.827 | .489 | 2.232 |
| | N | 184 | 226 | 182 | 219 | 217 | 211 |
| | Std. D | 1.949 | .517 | 2.112 | 2.445 | 1.202 | 3.248 |
| Total | Mean | 2.525 | .234 | 2.779 | 2.225 | .689 | 2.863 |
| | N | 238 | 334 | 236 | 324 | 322 | 314 |
| | Std. D | 1.965 | .508 | 2.128 | 2.714 | 1.452 | 3.805 |

Table 3

Endorsement of Key Variables by Ethnicity

| Ethnicity | | Externalizing Behavior | Internalizing Behavior | Total Risky Behavior | Passive Suicidal Ideation | Active Suicidal Ideation | Total Suicidal Ideation |
|---|---|---|---|---|---|---|---|
| American Indian or Alaskan Native | Mean | 3.400 | .333 | 3.600 | .750 | .125 | .875 |
| | N | 5 | 9 | 5 | 8 | 8 | 8 |
| | Std. D | 2.408 | .500 | 2.302 | 1.165 | .354 | 1.458 |
| Asian | Mean | 1.0000 | .0000 | 1.0000 | 2.0000 | .0000 | 2.0000 |
| | N | 1 | 1 | 1 | 1 | 1 | 1 |
| | Std. D | . | . | . | . | . | . |
| Black or African-American | Mean | 2.136 | .232 | 2.393 | 2.240 | .695 | 2.846 |
| | N | 147 | 198 | 145 | 191 | 187 | 182 |
| | Std. D | 1.754 | .520 | 1.966 | 2.763 | 1.425 | 3.801 |
| Hispanic or Latino | Mean | 2.821 | .219 | 3.071 | 2.537 | .781 | 3.400 |
| | N | 28 | 41 | 28 | 41 | 41 | 40 |
| | Std. D | 2.000 | .525 | 2.124 | 2.776 | 1.589 | 3.875 |
| Native Hawaiian or Pacific Islander | Mean | 6.000 | .667 | 7.000 | 2.667 | .000 | 2.667 |
| | N | 2 | 3 | 2 | 3 | 3 | 3 |
| | Std. D | .000 | .577 | .000 | .577 | .000 | .577 |
| White | Mean | 3.679 | .182 | 3.821 | 2.807 | 1.152 | 3.903 |
| | N | 28 | 33 | 28 | 31 | 33 | 31 |
| | Std. D | 1.867 | .465 | 1.982 | 3.092 | 1.873 | 4.650 |
| Other | Mean | 2.857 | .240 | 3.143 | 1.820 | .460 | 2.280 |
| | N | 28 | 50 | 28 | 50 | 50 | 50 |
| | Std. D | 2.368 | .476 | 2.460 | 2.396 | 1.216 | 3.429 |
| Total | Mean | 2.536 | .233 | 2.789 | 2.233 | .694 | 2.876 |
| | N | 239 | 335 | 237 | 325 | 323 | 315 |
| | Std. D | 1.968 | .507 | 2.129 | 2.709 | 1.452 | 3.801 |

Hypothesis One

A series of Pearson Correlations and simple linear regressions were conducted in order to determine the relationship between all possible variables (i.e. Gender, Age, Ethnicity, Family Functioning, Problem-solving and Risky behaviors) and Total Suicidal Ideation scores. Age ($r = -.033$, $n = 314$, $p = .560$) and Problem-solving scores ($r = -.021$, $n = 281$, $p = .724$) did not significantly correlate with Total Suicidal Ideation scores. However, Total Risky Behaviors displayed a significant positive relationship ($r = .208$, $n = 219$, $p = 0.002$) and Gender displayed a significant negative relationship with Total Suicidal Ideation scores ($r = -.238$, $n = 314$ $p = 0.000$) (See Table 4). An independent-samples t-test was conducted to compare total suicidal ideation scores in males and females. Overall, there was a significant different in the total suicidal ideation scores of females ($M=4.155$, $SD=4.493$) and males ($M=2.232$, $SD=3.248$); $t(312) = 4.322$, $p = .000$

Table 4

Correlation Coefficients between Problem Solving Scores, Age, Gender, Risk Behaviors and Total Suicidal Ideation Scores (SIQ-Jr.).

|  |  | Total Suicidal Ideation | Total Risky Behaviors | Age(years) | Gender | Problem-Solving |
|---|---|---|---|---|---|---|
| Total Suicidal Ideation | Pearson Correlation | 1 | .208 | -.033 | -.238 | -.021 |
|  | Sig. (2-tailed) |  | .002 | .560 | .000 | .724 |
|  | N | 316 | 219 | 314 | 314 | 281 |
| Total Risky Behaviors | Pearson Correlation | .208 | 1 | .128 | .015 | -.182 |
|  | Sig. (2-tailed) | .002 |  | .049 | .822 | .008 |
|  | N | 219 | 239 | 236 | 236 | 211 |
| Age(years) | Pearson Correlation | -.033 | .128 | 1 | .277 | -.131 |
|  | Sig. (2-tailed) | .560 | .049 |  | .000 | .023 |
|  | N | 314 | 236 | 340 | 338 | 298 |
| Gender | Pearson Correlation | -.238 | .015 | .277 | 1 | -.199 |
|  | Sig. (2-tailed) | .000 | .822 | .000 |  | .001 |
|  | N | 314 | 236 | 338 | 347 | 297 |
| Problem-solving | Pearson Correlation | -.021 | -.182 | -.131 | -.199 | 1 |
|  | Sig. (2-tailed) | .724 | .008 | .023 | .001 |  |
|  | N | 281 | 211 | 298 | 297 | 300 |

In order to examine the relationship between family relationship and ethnicity with Total Suicidal Ideation Scores, two simple linear regression models were conducted. In order to obtain meaningful results, the family functioning variable was dummy coded so that the okay, good and great family relationship groups were each contrasted with having a poor relationship or no relationship with their family.  The results for block one of the simple linear regression were

statistically significant, $F$ (3, 312) = 6.834, $p$ <.001, $R^2$ = .06, indicating that the covariate of family relationship was significant in predicting Total suicidal ideation scores and were meaningfully different from each other (Table 5). In order to examine the relationship between ethnicity and total suicidal ideation, the African American group was used as the reference group. Due to small number of adolescents identifying their ethnicity as Asian, American Indian or Alaskan Native and Native Hawaiian or Pacific Islander. These groups were combined to form the group Other. The Caucasian and Hispanic / Latino group were large enough and were also contrasted with the African American groups. The results for block one of the simple linear regression were not statistically significant, Ethnicity F (3, 312) = 1.67, p =.135, indicating that the covariate of ethnicity was not significant in predicting Total suicidal ideation scores (Table 6).

Table 5

Linear Regression with Family Functioning Predicting Total Suicidal Ideation Scores

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 5.242 | .644 | | 8.146 | .000 |
| | Okay Family | -1.642 | .869 | -.144 | -1.889 | .060 |
| | Good Family | -2.516 | .722 | -.326 | -3.486 | .001 |
| | Great Family | -3.155 | .730 | -.400 | -4.322 | .000 |

Table 6

Linear Regression with Ethnicity Predicting Total Suicidal Ideation Scores

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 2.831 | .280 | | 10.123 | .000 |
| | Hispanic | .569 | .660 | .050 | .862 | .389 |
| | Caucasian | 1.073 | .735 | .084 | 1.460 | .145 |
| | Other | -.718 | .556 | -.075 | -1.291 | .198 |

As ethnicity and problem-solving were not significantly correlated with suicidal ideation, they were not included as covariates in the following regression analyses. In contrast, risky behaviors, family functioning and gender all displayed a significant correlation with total suicidal ideation scores. Therefore, all of these factors were included in the regression model to determine their role in predicting suicidal ideation.

Hierarchical Linear Regressions

In order to determine the relationships between risky behaviors and suicidal ideation, a series of hierarchical linear regressions were performed. The hierarchical linear regression is the appropriate statistical analysis to perform when the aim is to evaluate the predictive effect a series of predictor variables have on a single criterion variable, while, if necessary or desirable, individually assessing the effects that covariates have on the relationship (Field, 2013). In a hierarchical linear regression, the predictors are entered into the model in blocks to account for the variability that each set of predictors explains. The order of entry was formulated to reflect entering

distant predictors first (e.g., demographics) followed by proximal predictors (e.g., risky behaviors). In each of these hierarchical linear regressions, the first block included the covariate of gender, the second block included the covariate of family relationship, and the third block included the independent variable(s) of interest, the covariate of either internalizing, externalizing or total risky behavior scores. Dummy coding was utilized in order to effectively use the variable of family relationship in the regressions. Family relationship was coded into "ok", "good", and "great", with "no or poor relationship" as the reference category. In this case, dummy coding was preferable because it does assume a linear association between the response options and the outcome variables. Since it does not make the linearity assumption, it is more consistent with how these variables work together. Prior to each analysis, the assumptions of hierarchical linear regression were assessed for each regression's final model (i.e., the model including all three blocks of variables). Hierarchical linear regression operates on the assumptions that the data are normally distributed, are homoscedastic in terms of the regression line, and are essentially devoid of multicollinearity.

Hypothesis Two

**Gender, family functioning and total risky behavior as predictors of total suicidal ideation scores.** The assumption of homoscedasticity was assessed through examination of a residuals scatterplot (Figure 1). The plot showed a linear trend and no distinct pattern, so the assumption was met (Field, 2009). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 2), which showed that the data did deviate greatly from the normality line in a visually evident way. As such, the assumption was not met. However, Stevens (2012) stated that normality of a sample's distribution approaches normality when sample

sizes are sufficiently large (i.e., $n > 30$) due to the central limit theorem. This assumption is not commonly met in the social sciences and is a limitation of this study's outcome in terms of risky behavior. To better understand the influence of each observation, Cook's distances were calculated, though none approached the upper limit of 1, with the highest value only reaching 0.07 (ID = 11307). The assumption of absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is no multicollinearity present in the data (Field, 2013) (see Table 7).
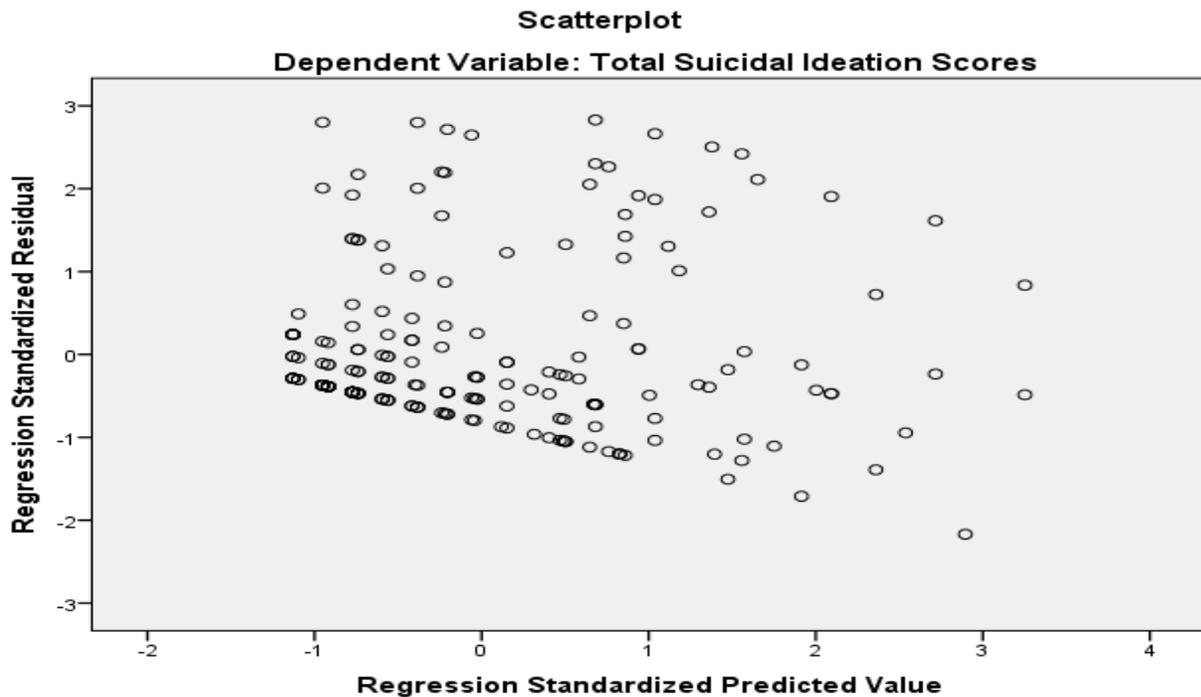


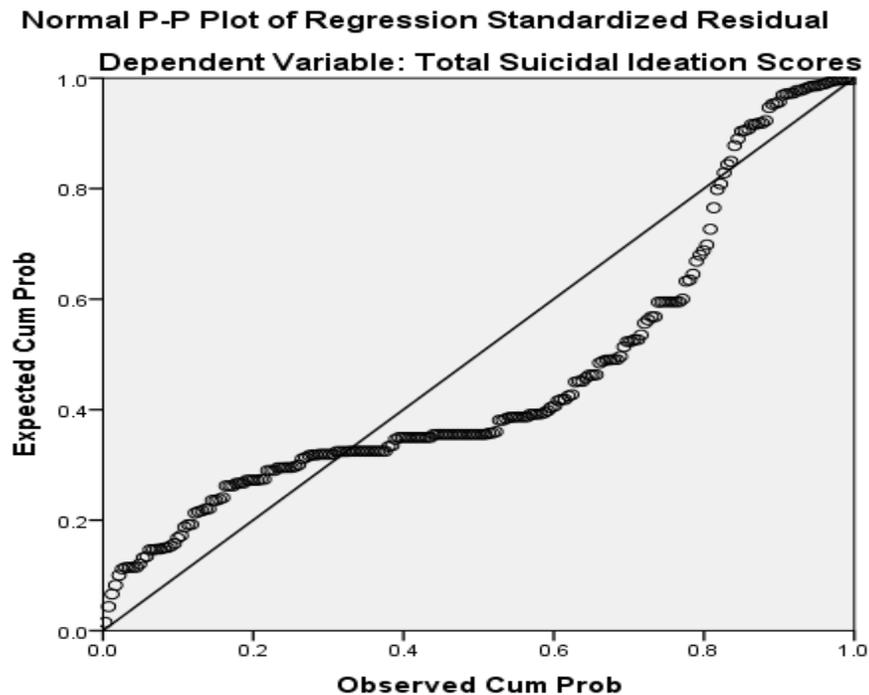*Figure 1.* Scatterplot for Regression 1.

*Figure 2.* Normal P-P Plot for Regression 1.

The results for block one of the hierarchical linear regression were statistically significant, $F(1, 215) = 24.57$, $p < .001$, $R^2 = .10$, indicating that the covariate of gender does have a predictive effect on total suicidal ideation scores. The coefficient of determination, $R^2$, reflects that approximately 10% of the variability in total suicidal ideation scores can be explained by gender alone. Examination of the coefficient suggested that if the participant is a male, the model predicts total suicidal ideation scores that are 3.1 units lower than those of females. This is consistent with findings from previous research.

The results for block two of the hierarchical linear regression were statistically significant as well, $F(4, 212) = 10.01$, $p < .001$, $R^2 = .16$, indicating that collectively, the combined covariates of gender and family relationships significantly predict total suicidal ideation scores. The coefficient of determination, $R^2$, reflects that approximately 16% of the variability in total suicidal

ideation scores can be explained by the combined variables of family relationship and gender.  The change in $R^2$ of .06 indicated that an additional 6% of the variance in total suicidal ideation scores were explained by family relationship beyond the effect of gender. This $R^2$ change was significant F (3, 212) = 4.73, p = .003.

Examination of the coefficients revealed that gender was still an individually significant predictor in the presence of family relationships ($B$ = -2.73, $p$ = .000), indicating that the model predicted that males still have total suicidal ideation scores approximately 2.73 units lower than females after accounting for family relationships.  A good family relationship was a significant predictor of total suicidal ideation scores ($B$ = -2.76, $p$ = .002), indicating that, when compared to no family relationship, good family relationships had total suicidal ideation scores approximately 2.76 units lower.  A great family relationship was similarly predictive ($B$ = -3.07, $p$ < .001); when compared to no relationship; great family relationships had total suicidal ideation scores approximately 3.07 units lower.  An okay family relationship, however, was not a significant predictor of total suicidal ideation when compared to no family relationship ($p$ = .225).

The results for block three of the model were significant as well, $F$ (5, 211) = 9.44, $p$ < .001, $R^2$ = .18.  The coefficient of determination indicates that, collectively, gender, family relationships, and risky behaviors account for 18% of the variability in total suicidal ideation scores.  Based on the change in $R^2$ of .02, risky behaviors accounted for 2% of the variability in total suicidal ideation scores beyond the influence of the gender or family relationship covariates. The significance level of this $R^2$ change was F (1,211) = 6.17, $p$ = .014, meaning that the addition of risky behaviors significantly contributed to the regression's predictive ability.

Upon further examination, gender remained an individually significant predictor of total suicidal ideation scores ($B$ = -2.83, $p$ = .000), with the model predicting males to report total

suicidal ideation scores 2.83 units lower than females.  An okay family relationship was again not

a significant predictor when compared to no family relationships ($p = .315$).  However, good ($B =$

-2.34, $p = .009$) and great ($B = -2.4$, $p < .010$) family relationships were still significant

predictors.  When compared to no relationship, having a good relationship predicted total suicidal

ideation scores 2.34 units lower, and having a great relationship predicted a total suicidal ideation

score 2.4 units lower.  Finally, risky behavior scores were also an individually significant predictor

when added to the model ($B = .32$, $p < .001$), suggesting that as risky behaviors increased by one

unit, total suicidal ideation scores tended to increase by .32 units.  See Table 7 for the full results

of this regression.

Table 7

*Hierarchical Linear Regression with Gender, Family Functioning and Total Risky Behaviors*

*Predicting Total Suicidal Ideation Scores*

| Block | Source | $b$ | $SE$ | $\beta$ | $T$ | $P$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -3.10 | 0.625 | -.320 | -4.957 | < .000 | -.32 | 1.00 | .10 |
| 2 | Gender | -2.73 | 0.62 | -.28 | -4.41 | .000 | -.29 | 1.03 | .16 |
| | OK Family Relationship | -1.34 | 1.11 | -.10 | -1.22 | .225 | -.08 | 1.78 | |
| | Good Family Relationship | -2.76 | 0.89 | -.33 | -3.10 | .002 | -.21 | 2.78 | |
| | Great Family Relationship | -3.07 | 0.90 | -.36 | -3.42 | .001 | -.23 | 2.82 | |
| 3 | Gender | -2.83 | 0.61 | -.29 | -4.61 | .000 | -.30 | 1.03 | .18 |
| | OK Family Relationship | -1.10 | 1.10 | -.08 | -1.01 | .315 | -.07 | 1.79 | |
| | Good Family Relationship | -2.34 | 0.89 | -.28 | -2.62 | .009 | -.18 | 2.88 | |
| | Great Family Relationship | -2.40 | 0.93 | -.28 | -2.59 | .010 | -.18 | 3.09 | |
| | Risky Behaviors | 0.32 | 0.13 | .16 | 2.48 | .014 | .17 | 1.11 | |

Note:  Overall model fit for block 3: $F (5, 211) = 9.44$, $p < .001$, R2 = .18

Hypothesis Three

Gender, family functioning and internalizing risky behavior as predictors of total suicidal ideation scores. The assumption of homoscedasticity was assessed through examination of a residuals scatterplot (see Figure 3). The plot showed a linear trend and no distinct pattern, so the assumptions were met (Field, 2009). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 4), which showed a slight deviation from the normality line. As such, the assumption was not met, and Cook's distances were calculated to understand the influence of each observation. The highest Cook's distance was .06, which was well below the value of 1, which would indicate no cause for concern.

The assumption of absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is no multicollinearity present in the data (see Table 8). A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable, internalizing risky behavior on total suicidal ideation scores and allowed its effect to be parsed out from the effects of the covariates.
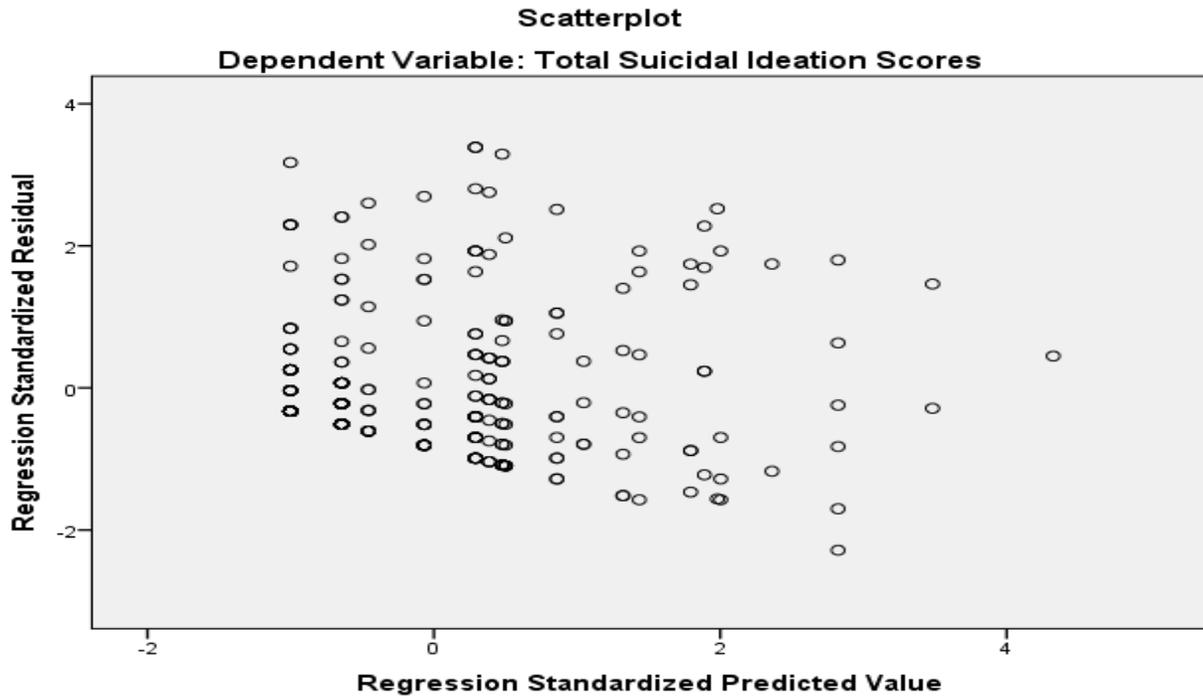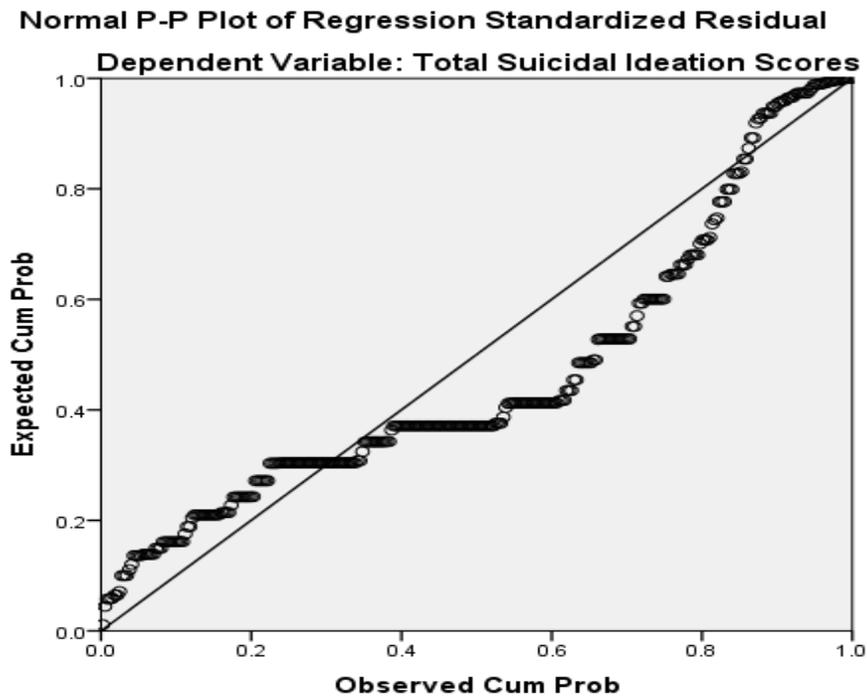
*Figure 3.* Scatterplot for Regression 2.



*Figure 4.* Normal P-P Plot for Regression 2.

The results for block one of the hierarchical linear regression were statistically significant, $F(1, 307) = 18.03$, $p < .001$, $R^2 = .06$, indicating that the covariate of gender does have a predictive effect on total suicidal ideation. The coefficient of determination, $R^2$, suggests that approximately 6% of the variability in total suicidal ideation scores can be explained by the gender alone. Examination of the coefficient suggested that if the participant is a male, the model predicts suicidal ideation scores that are 1.91 units lower than those from females.

The results for block two of the hierarchical linear regression were statistically significant as well, $F(4, 304) = 8.814$, $p < .001$, $R^2 = .10$, indicating that collectively, the combined variables of gender and family relationships do significantly predict total suicidal ideation scores. The coefficient of determination, $R^2$, reflects that approximately 10% of the variability in total suicidal ideation can be explained by the combined variables of family relationship and gender. The change in $R^2$ of .04 indicated that an additional 4% of the variance in total suicidal ideation scores were explained by family relationship beyond the effect of gender. This $R^2$ change was significant $F(3, 304) = 5.48$, $p = .001$.

Examination of the coefficients revealed that gender was still an individually significant predictor in the presence of family relationships ($B = -1.72$, $p = .000$), indicating that the model predicted that males have total suicidal ideation scores approximately 1.72 units lower than females after accounting for family relationships. A good family relationship was a significant predictor of total suicidal ideation scores ($B = -2.42$, $p = .001$), indicating that, when compared to no family relationship, good family relationships had total suicidal ideation scores approximately 2.42 units lower. A great family relationship was similarly predictive ($B = -2.89$, $p < .000$); when compared to no relationship, great family relationships had total suicidal ideation scores

approximately 2.89 units lower. An okay family relationship was also a significant predictor of total suicidal ideation when compared to no family relationship ($B = -1.87$, $p < .030$).

The results for block three of the model were significant as well, $F(5, 303) = 16.10$, $p < .001$, $R^2 = .21$. The coefficient of determination indicates that, collectively, gender, family relationships, and internalizing behaviors account for 21% of the variability in total suicidal ideation scores. Based on the change in $R^2$ of .11, internalizing risky behaviors accounted for 11% of the variability in total suicidal ideation beyond the influence of gender or family relationship. This change in the $R^2$ had a significance level of F $(1,303) = 40.66$, p $< .001$, indicating that the addition of internalizing risky behaviors was a significant contributor to the predictive ability of this regression. As the overall model was significant, the individual predictors were examined further.

Again, gender remained an individually significant predictor of total suicidal ideation ($B = -1.64$, $p = .000$), with the model predicting males to exhibiting total suicidal ideation scores 1.64 units lower than females. An okay family relationship was not a significant predictor when compared to no family relationships ($p = .069$). However, good ($B = -1.81$, $p = .008$) and great ($B = -2.43$, $p < .001$) family relationships were still significant predictors. When compared to no relationship, having a good relationship predicted total suicidal ideation scores 1.81 units lower, and having a great relationship predicted a total suicidal ideation score 2.43 units lower. Finally, the internalizing risky behavior score was also an individually significant predictor when added to the model ($B = 2.63$, $p < .001$), indicating that as internalizing behaviors increased by one-unit, total suicidal ideation increased by 2.63 units. See Table 8 for the full results of this regression.

Table 8

*Hierarchical Linear Regression with Gender, Family Functioning and Internalizing Risk*

*Behavior Predicting Total Suicidal Ideation Scores*

| Block | Source | $B$ | $SE$ | $\beta$ | $T$ | $p$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -1.91 | 0.45 | -.24 | -4.25 | $<.001$ | -.24 | 1.00 | .06 |
| | Gender | -1.72 | 0.45 | -.21 | -3.84 | $<.001$ | -.22 | 1.03 | .10 |
| 2 | OK Family Relationship | -1.87 | 0.86 | -.16 | -2.17 | .030 | -.12 | 1.94 | |
| | Good Family Relationship | -2.42 | 0.71 | -.31 | -3.39 | .001 | -.19 | 2.86 | |
| | Great Family Relationship | -2.89 | 0.73 | -.36 | -3.98 | $<.001$ | -.22 | 2.81 | |
| | Gender | -1.64 | 0.42 | -.20 | -3.89 | $<.001$ | -.22 | 1.03 | .21 |
| | OK Family Relationship | -1.48 | 0.81 | -.13 | -1.82 | 0.07 | -.10 | 1.95 | |
| 3 | Good Family Relationship | -1.81 | 0.68 | -.23 | -2.66 | .008 | -.15 | 2.91 | |
| | Great Family Relationship | -2.43 | 0.69 | -.31 | -3.54 | $<.001$ | -.20 | 2.84 | |
| | Internalizing Behaviors | 2.63 | 0.41 | .33 | 6.38 | $<.001$ | .34 | 1.02 | |

Note:  Overall model fit for block 3: $F (5, 303) = 16.103$, $p < .001$, R2 = .21

**Gender, family functioning and externalizing risky behavior as predictors of total suicidal ideation scores.** In the third hierarchical linear regression, the criterion variable again was total suicidal ideation scores. A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable, externalizing risky behaviors on total suicidal ideation scores, and allowed its effect to be parsed out from the effects of the covariates.

The first predictor—gender—was entered into block 1 of the model. Next, family relationship was entered into block 2.  For the final block, externalizing risky behavior scores were added to the model.  As the prior two blocks are identical to the previously performed regression, only block 3 will be reported in this section.  Though the specific numbers may differ for blocks 1

and 2, this is because of the limited sample size of participants who had externalizing risky behavior scores, as only those with a variable for this predictor could be included in the overall model. For the sake of avoiding disconfirming results based on this methodological limitation, blocks 1 and 2 were not assessed in detail, and findings were assumed to be correct in regression 1, as this analysis used a larger sample size. However, for consistency, the actual $R^2$ of each block in this analysis will be used, and particular details of each variable in block 3 will be addressed.

Prior to the main analysis, the assumptions of the final regression model of this analysis were assessed. The assumption of homoscedasticity was assessed through examination of a scatterplot (see Figure 5). The plot showed no distinct pattern, so the assumption was met (Field, 2009). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 6), which showed that the data somewhat deviated from the normality line. Similar to the previous regression, Cook's distances were calculated, and the highest value was .06, which was sufficiently less than the value of 1, indicating no cause for concern. The assumption of absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is no multicollinearity present in the data (see Table 9).
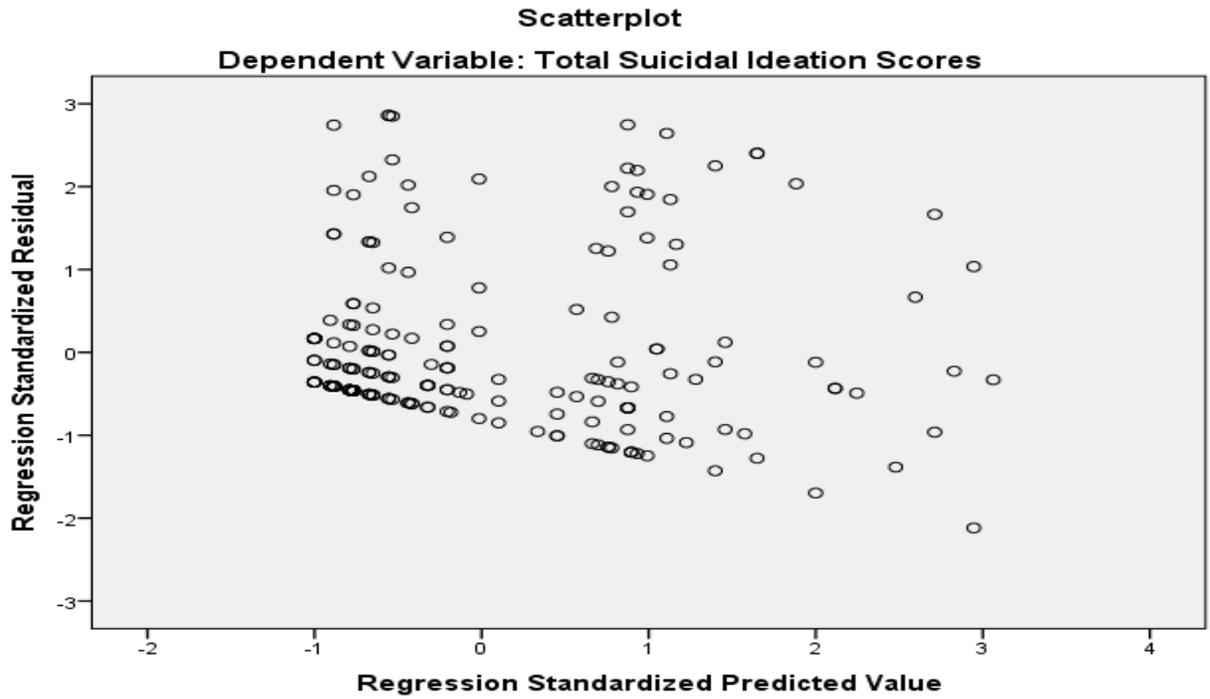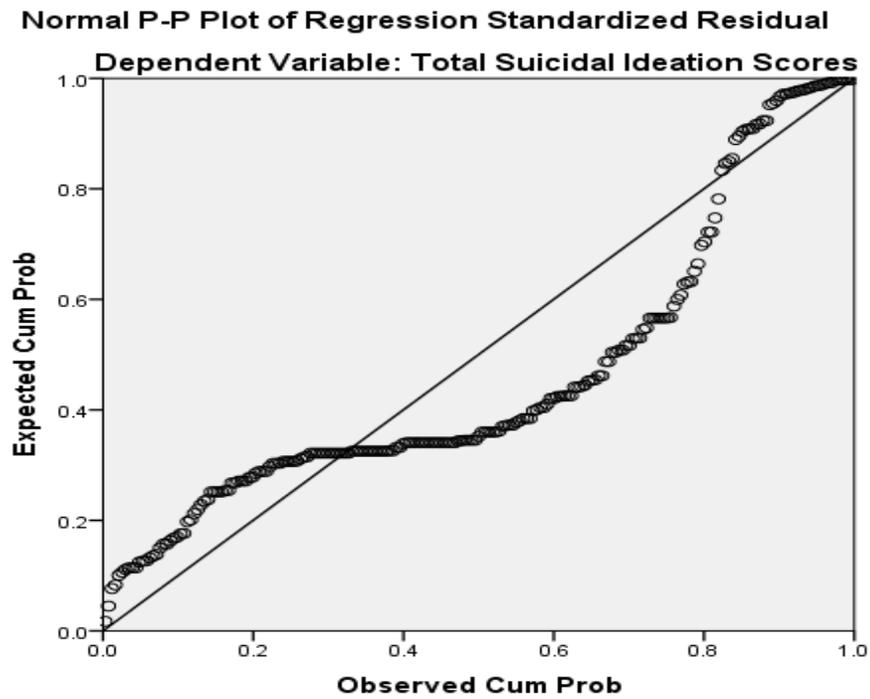
*Figure 5.* Scatterplot for Regression 3.



*Figure 6.* Normal P-P Plot for Regression 3.

The results for block three of this model were significant, $F$ (5, 213) = 8.66, $p < .001$, $R^2 =$ .17. Examination of each block's coefficient of determination indicated that gender accounted for approximately 10% of variance in total suicidal ideation scores, while the addition of family relationship predicted an additional 6% of total suicidal ideation scores above and beyond gender. The $R^2$ of the final block was .17. This coefficient of determination indicates that, collectively, gender, family relationships, and externalizing behaviors account for 17% of the variability in total suicidal ideation scores. In comparison to the $R^2$ of .15 in step 2, step 3 of this regression indicated that externalizing risky behaviors accounted for just 1% more variability in total suicidal ideation scores than gender and family relationship. Correspondingly, the significance level for the change $F$ (1, 213) = 2.032, $p = .155$ was not significant, meaning that externalizing risky behaviors did not contribute to the predictive ability of the model in a significant way. However, as the overall model was significant, the individual predictors were examined.

Gender remained an individually significant predictor of total suicidal ideation scores ($B = -2.82$, $p < .001$), with the model indicating that males exhibit total suicidal ideation scores 2.82 units lower than females. An okay family relationship was again not a significant predictor when compared to no family relationship ($p = .274$). However, good ($B = -2.52$, $p = 0.05$) and great ($B = -2.68$, $p = .005$) family relationships were still significant predictors. When compared to no relationship, having a good relationship predicted a total suicidal ideation scores score approximately 2.52 units lower, and having a great relationship predicted a total suicidal ideation scores score approximately 2.68 units lower. Although it increased the $R^2$ coefficient of determination slightly, externalizing behavior scores did not individually predict total suicidal ideation scores when added to the model ($p = .155$). See Table 9 for the full results of this regression.

Table 9

*Hierarchical Linear Regression with Gender, Family Functioning and Externalizing Risk*

*Behavior Predicting Total Suicidal Ideation Scores*

| Block | Source | $B$ | $SE$ | B | $t$ | $P$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -3.12 | 0.62 | -.32 | -5.02 | < .001 | -.32 | 1.00 | .10 |
| 2 | Gender | -2.74 | 0.62 | -.28 | -4.45 | < .001 | -.29 | 1.04 | .16 |
|  | OK Family Relationship | -1.34 | 1.10 | -.10 | -1.22 | .224 | -.08 | 1.78 | |
|  | Good Family Relationship | -2.76 | 0.88 | -.33 | -3.12 | .002 | -.21 | 2.80 | |
|  | Great Family Relationship | -3.10 | 0.89 | -0.37 | -3.48 | .001 | -.23 | 2.85 | |
| 3 | Gender | -2.82 | 0.62 | -.29 | -4.57 | < .001 | -.30 | 1.04 | .17 |
|  | OK Family Relationship | -1.21 | 1.10 | -.09 | -1.10 | .274 | -.08 | 1.80 | |
|  | Good Family Relationship | -2.52 | 0.90 | -.30 | -2.81 | 0.05 | -.19 | 2.89 | |
|  | Great Family Relationship | -2.68 | 0.94 | -.32 | -2.87 | .005 | -.19 | 3.16 | |
|  | Externalizing Risky Behaviors | 0.20 | 0.14 | .10 | 1.43 | .155 | .10 | 1.14 | |

Note:  Overall model fit for block 3: F (5, 221) = 8.27, p < .001, R2 = .16

Hypothesis Four

**Gender, family functioning and internalizing risky behavior as predictors of total passive suicidal ideation scores.** A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable itself, internalizing risky behavior on total passive suicidal ideation scores, and allowed its effect to be parsed out from the effects of the covariates. The assumption of homoscedasticity was assessed

through examination of a residuals scatterplot (see Figure 7). The plot showed a linear trend and

no distinct pattern, so the assumptions were met (Field, 2013). The assumption of normality was

assessed through a Normal P-P Plot of the standardized residuals (see Figure 8), which showed

that the data did deviate from the normality line. As such, the assumption was not met, so Cook's

distances were calculated to determine each observation's influence. None of the distances

surpassed .05, indicating that there were no overly influential observations. The assumption of

absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF

scores were below 10, indicating that there is no multicollinearity present in the data (see Table
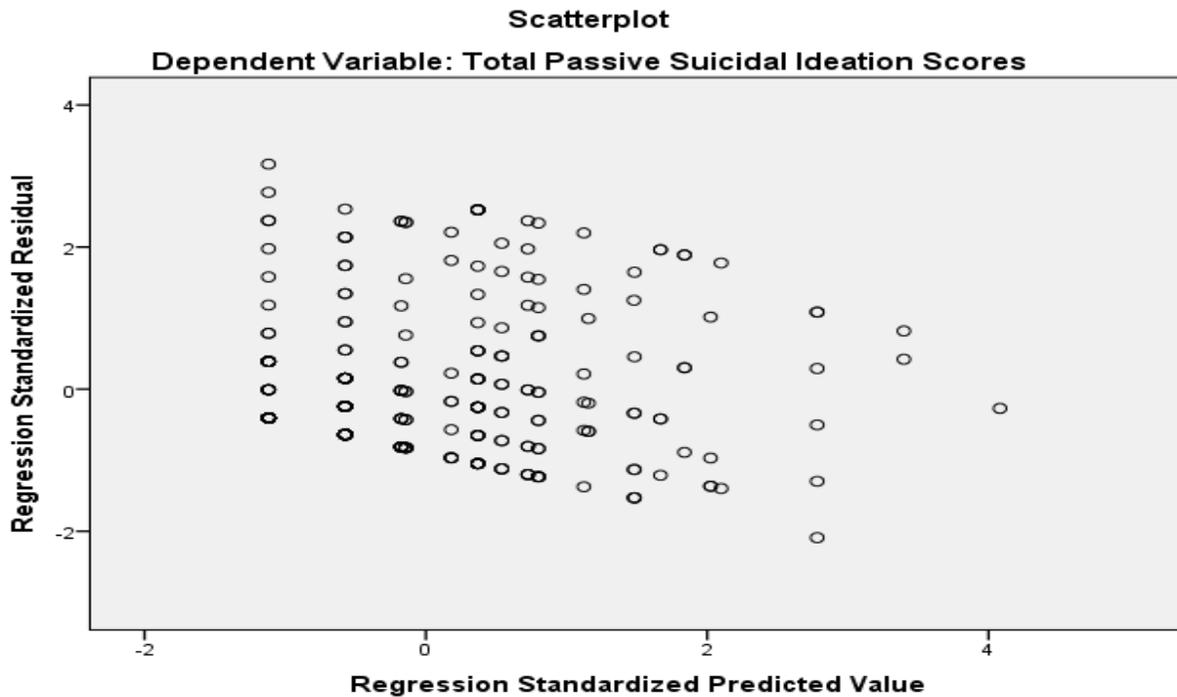
10).



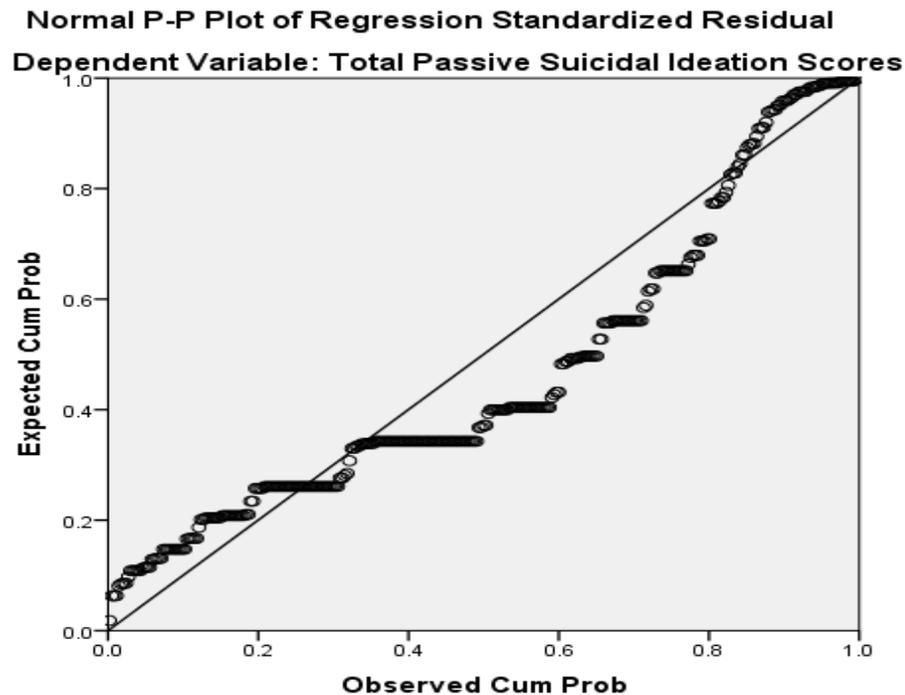*Figure 7.* Scatterplot for Regression 4.

*Figure 8.* Normal P-P Plot for Regression 4.

The results for block one of the hierarchical linear regression were statistically significant, $F(1, 317) = 14.73$, $p < .001$, $R^2 = .04$, indicating that the covariate of gender does have a predictive effect on passive suicidal ideation. The coefficient of determination, $R^2$, suggests that approximately 4% of the variability in passive suicidal ideation can be explained by gender alone. Examination of the coefficient indicated that if the participant is a male, the model predicts passive suicidal ideation scores that are 1.22 units lower than those of females.

The results for block two of the hierarchical linear regression were statistically significant as well, $F(4, 314) = 8.27$, $p < .001$, $R^2 = .10$, indicating that collectively, the combined variables of gender and family relationship do significantly predict passive suicidal ideation. The coefficient of determination, $R^2$, reflects that approximately 10% of the variability in passive suicidal ideation can be explained by the combined variables of family relationship and gender. The change in $R^2$

of .06 indicated that an additional 6% of the variance in passive suicidal ideation was explained by family relationship beyond the effect of gender. This $R^2$ change was significant F (3, 314) = 5.89, p = .001.

Examination of the coefficients revealed that gender was still an individually significant predictor in the presence of family relationships ($B$ = -1.05, $p$ = .001), indicating that the model predicted that males have total passive suicidal ideation scores approximately 1.05 units lower than females after accounting for family relationships. A good family relationship was a significant predictor of total passive suicidal ideation scores ($B$ = -1.51, $p$ = .003), indicating that, when compared to no family relationship, good family relationships had total passive suicidal ideation scores approximately 1.51 units lower. A great family relationship was similarly predictive ($B$ = -2.06, $p$ < .001); when compared to no relationship, great family relationships were associated with total passive suicidal ideation scores approximately 2.06 units lower. An okay family relationship was not a significant predictor of passive suicidal ideation when compared to no family relationship ($p$ = .124).

The results for block three of the model were significant as well, $F$ (5, 313) = 11.89, $p$ < .001, $R^2$ = .16. The coefficient of determination indicates that, collectively, gender, family relationships, and internalizing behaviors account for 16% of the variability in total passive suicidal ideation scores. Based on the change in $R^2$ of .06, internalizing risky behaviors accounted for 6% of the variability in total passive suicidal ideation scores beyond the influence of gender and family relationship. Because the overall model was significant, the individual predictors were examined further. This change in $R^2$ was significant F (1, 313) = 23.95, $p$ < .001., indicating that the addition of internalizing risky behaviors was a significant contributor to the predictive ability of this regression.

Again, gender remained an individually significant predictor of passive suicidal ideation ($B = -1.03$, $p = .001$), with the model indicating that males exhibit passive suicidal ideation scores 1.03 units lower than females. An okay family relationship was again not a significant predictor when compared to no family relationship ($p = .212$). However, good ($B = -1.21$, $p = .015$) and great ($B = -1.81$, $p < .001$) family relationships were still significant predictors. When compared to no family relationship, having a good relationship resulted in a total passive suicide ideation score 1.21 units lower, and having a great relationship predicted a passive suicidal ideation score 1.81 units lower. Finally, the internalizing risky behavior score was also an individually significant predictor when added to the model ($B = 1.42$, $p < .001$), indicating that as internalizing behaviors increased by one-unit, passive suicidal ideation score tended to increase by 1.42 units. See Table 10 for the full results of this regression.

Table 10

*Hierarchical Linear Regression with Gender, Family Functioning and Internalizing Risk Behavior Predicting Total Passive Suicidal Ideation Scores.*

| Block | Source | $B$ | $SE$ | $\beta$ | $t$ | $p$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -1.22 | 0.32 | -.21 | -3.84 | < .001 | -.30 | 1.00 | .04 |
| | Gender | -1.05 | 0.32 | -.18 | -3.97 | .001 | -.26 | 1.03 | .10 |
| 2 | OK Family Relationship | -0.95 | 0.62 | -.12 | -1.54 | .124 | .06 | 1.94 | |
| | Good Family Relationship | -1.51 | 0.51 | -.27 | -2.97 | .003 | -.19 | 2.94 | |
| | Great Family Relationship | -2.06 | 0.52 | -.36 | -3.98 | < .001 | -.23 | 2.88 | |
| | Gender | -1.03 | 0.31 | -.18 | -3.37 | .001 | -.28 | 1.03 | .16 |
| | OK Family Relationship | -0.74 | 0.60 | -.09 | -1.25 | .212 | -.05 | 1.95 | |
| 3 | Good Family Relationship | -1.21 | 0.50 | -.22 | -2.45 | .015 | -.16 | 2.98 | |
| | Great Family Relationship | -1.81 | 0.50 | -.32 | -3.60 | < .001 | -.18 | 2.92 | |
| | Internalizing Risky Behaviors | 1.42 | 0.29 | .26 | 4.89 | < .001 | .15 | 1.02 | |

Note:  Overall model fit for block 3: F (5, 313) = 11.89, p < .001, R2 = .16

**Gender, family functioning and externalizing risky behavior as predictors of total passive suicidal ideation scores.** In this hierarchical linear regression, the criterion variable again corresponded to passive suicidal ideation. A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable, externalizing risky behavior on total passive suicidal ideation scores and allowed its effect to be parsed out from the effects of the covariates. The first predictor—gender—was entered into block 1 of the model. Next, family relationship was entered into block 2. For the final block, externalizing risky behavior scores were added to the model. As the prior two blocks are identical to the previously performed regression, only block 3 will be reported in this section. Though the specific numbers may differ for blocks 1 and 2, this is because of the limited sample size of participants who had externalizing risky behavior scores, as only those with a variable for this predictor could be included in the overall model. For the sake of avoiding disconfirming results based on this methodological limitation, blocks 1 and 2 were not assessed in detail, and findings were assumed to be correct in regression 1, as this analysis used a larger sample size. However, for consistency, the actual $R^2$ of each block in this analysis will be used, and particular details of each variable in block 3 will be addressed.

Prior to the main analysis, the assumptions of the final regression model of this analysis were assessed. The assumption of homoscedasticity was assessed through examination of a scatterplot (see Figure 9). The plot showed no distinct pattern, so the assumption was met (Field, 2009). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 10), which showed that the data did not follow the normality line. Similar to the previous regression, Cook's distances indicated that none of the observations were overly

influential, as all were below .05. The assumption of absence of multicollinearity was assessed

through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is

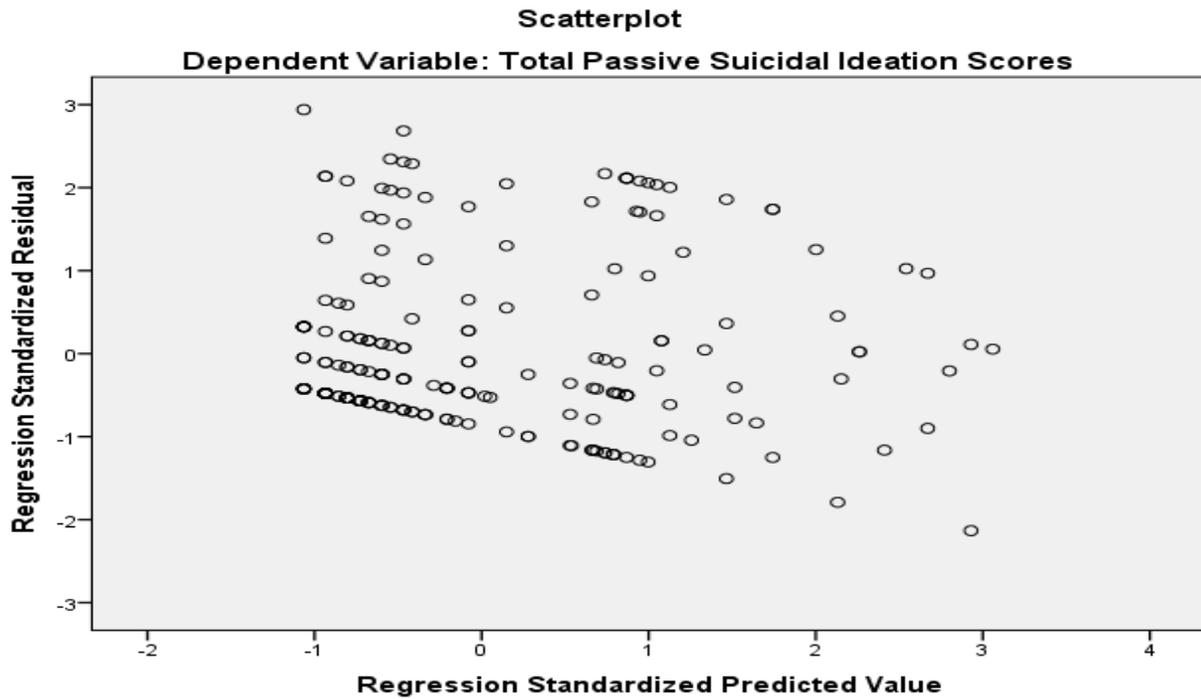no multicollinearity present in the data (see Table 11).



*Figure 9.* Scatterplot for Regression 5.

**Normal P-P Plot of Regression Standardized Residual**
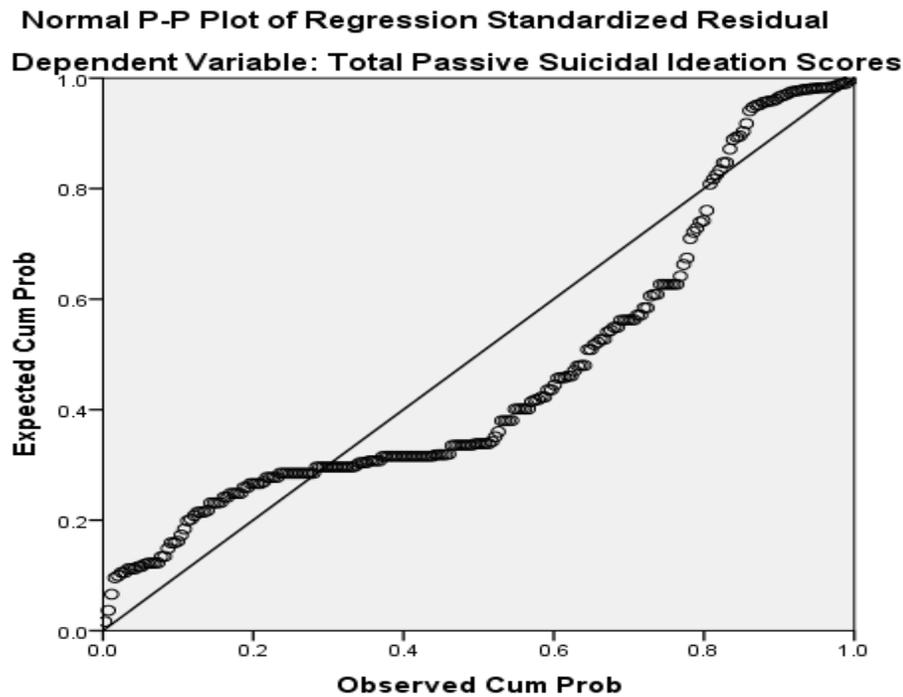**Dependent Variable: Total Passive Suicidal Ideation Scores**

*Figure 10.* Normal P-P Plot for Regression 5.

The results for block three of this model were significant, $F (5, 221) = 8.27, p < .001, R^2 = .16$. Examination of each block's coefficient of determination indicated that gender accounted for approximately 9% of variance in passive suicidal ideation, while the addition of family relationship predicted an additional 6% of passive scores beyond gender. The $R^2$ of the final block was .16. This coefficient of determination indicates that, collectively, gender, family relationships, and externalizing risky behaviors account for 16% of the variability in total passive suicidal ideation scores. In comparison to the $R^2$ of .15 in step 2, step 3 of this regression indicated that externalizing risky behaviors accounted for just 1% more variability in passive suicidal ideation than gender or family relationship. Results indicated that the change in $R^2$ was not significant for this last step $F (1, 221) = 2.34, p = .128$, suggesting that the addition of externalizing risky behaviors was not a

significant contributor to the regression. As the overall model was significant, the individual

predictors were still examined.

Gender remained an individually significant predictor of passive suicidal ideation ($B$ = -

1.82, $p$ < .001), with the model predicting males to exhibit passive suicidal ideation 1.82 units

lower than females. An okay family relationship was again not a significant predictor when

compared to no family relationship ($p$ = .427). However, good ($B$ = -1.62, $p$ = 0.01) and great ($B$

= -1.86, $p$ = .005) family relationships were still significant predictors. When compared to no

relationship, having a good relationship predicted a passive suicidal ideation score approximately

1.62 units lower, and having a great relationship predicted a passive suicidal ideation score

approximately 1.86 units lower. Although it increased the $R^2$ coefficient of determination slightly,

externalizing behavior scores did not individually predict passive suicidal ideation when added to

the model ($p$ = .128). See Table 11 for the full results of this regression.

Table 11

*Hierarchical Linear Regression with Gender, Family Functioning and Externalizing Risk Behavior Predicting Total Passive Suicidal Ideation Scores.*

| Block | Source | $B$ | $SE$ | B | $t$ | $p$ | $r^2_{part}$ | VIF | $R^2$ |
|-------|--------|-----|------|---|-----|-----|--------------|-----|-------|
| 1 | Gender | -2.06 | 0.44 | -.30 | -4.74 | < .001 | -.30 | 1.00 | .09 |
| 2 | Gender | -1.77 | 0.43 | -.26 | -4.10 | < .001 | -.27 | 1.04 | .15 |
|   | OK Family Relationship | -0.72 | 0.78 | -.08 | -0.93 | .355 | -.06 | 1.79 | |
|   | Good Family Relationship | -1.80 | 0.62 | -.31 | -2.90 | .004 | -.19 | 2.49 | |
|   | Great Family Relationship | -2.17 | 0.63 | -0.37 | -3.47 | .001 | -.23 | 2.93 | |
| 3 | Gender | -1.82 | 0.43 | -.27 | -4.23 | < .001 | -.27 | 1.04 | .16 |
|   | OK Family Relationship | -0.62 | 0.76 | -.07 | -0.80 | .427 | -.05 | 1.80 | |
|   | Good Family Relationship | -1.62 | 0.63 | -.28 | -2.58 | 0.11 | -.17 | 2.99 | |
|   | Great Family Relationship | -1.86 | 0.66 | -.32 | -2.83 | .005 | -.19 | 3.25 | |
|   | Externalizing Behaviors | 0.15 | 0.10 | .10 | 1.53 | .128 | .10 | 1.14 | |

Note:  Overall model fit for block 3: F (5, 221) = 8.27, p < .001, R2 = .16

**Gender, family functioning and internalizing risky behavior as predictors of total active suicidal ideation scores.** In this hierarchical linear regression, the criterion variable corresponds to active suicidal ideation. A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable itself, internalizing risky behavior on total active suicidal ideation scores and allowed its effect to be parsed out from the effects of the other covariates.

Prior to the main analysis, the assumptions of this model were assessed. The assumption of homoscedasticity was assessed through examination of a scatterplot (see Figure 11). The plot showed no distinct pattern, so the assumption was met (Field, 2013). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 12), which showed that the data deviated from the normality line. As such, the assumption was not met. However, Cook's distances did not surpass .10, indicating that none of the observations were overly influential. The assumption of absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is no multicollinearity present in the data (see Table 12).
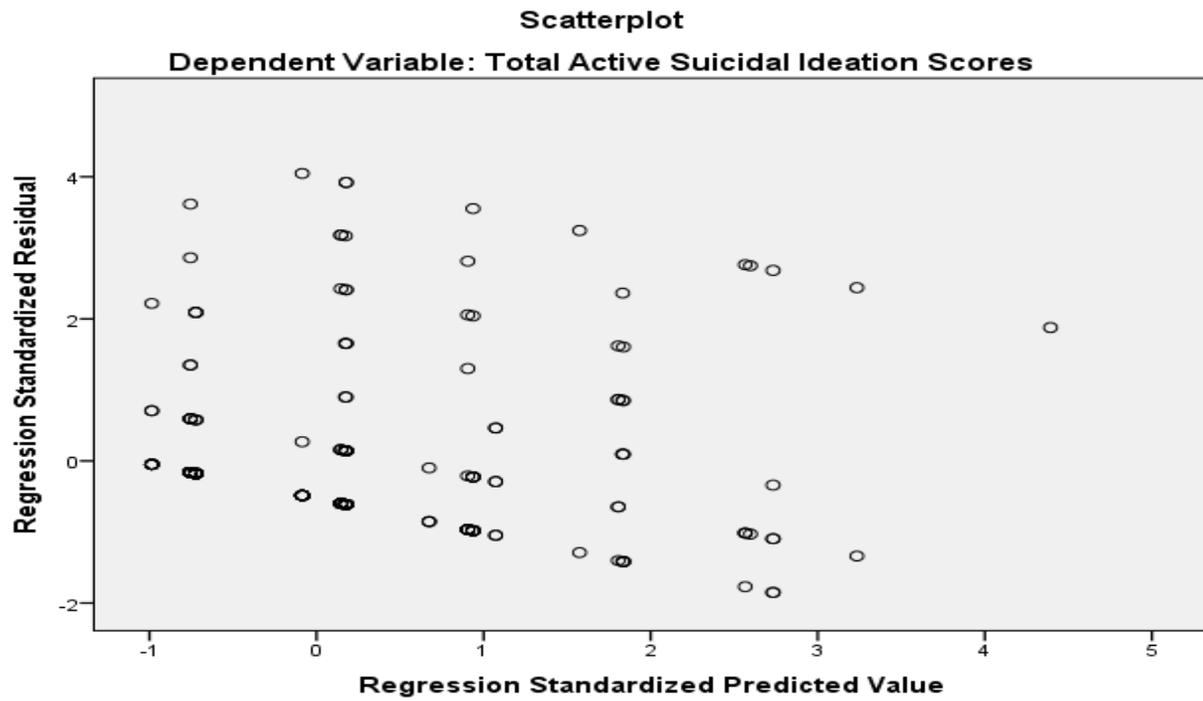
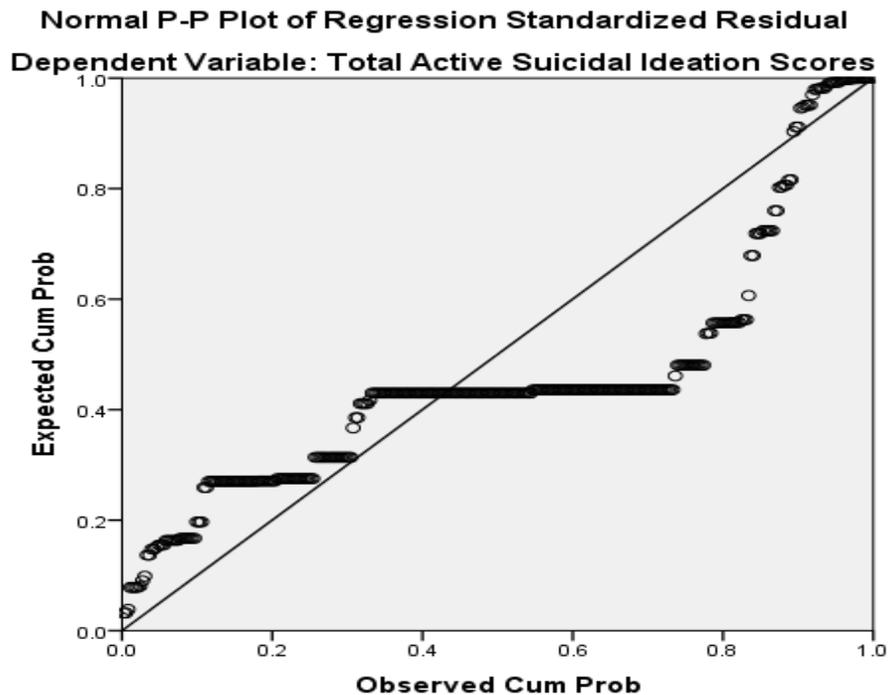*Figure 11.* Scatterplot for Regression 6.

**Normal P-P Plot of Regression Standardized Residual**
**Dependent Variable: Total Active Suicidal Ideation Scores**

*Figure 12.* Normal P-P Plot for Regression 6.

The results for block one of the hierarchical linear regression were significant, $F$ (1, 315) = 12.66, $p < .001$, $R^2 = .04$, indicating that the covariate of gender does have a predictive effect on active suicidal ideation. The coefficient of determination suggests that approximately 4% of the variability in total active suicidal ideation scores can be explained by gender. Examination of the coefficients suggests that active suicidal ideation scores are approximately 0.61 units lower among males than females.

The results for block two of the hierarchical linear regression were statistically significant as well, $F$ (4, 312) = 5.69, $p < .001$, $R^2 = .07$, indicating that the combined variables of gender and family relationships do significantly predict active suicidal ideation. The coefficient of determination reflects that approximately 6% of the variability in active suicidal ideation can be explained by the combined variables of family relationship and gender. Comparison between

block 1 and 2 indicated that the change is $R^2$ of .03 indicated that family relationship explained 3% more of the variance in active suicidal ideation scores than gender alone. This $R^2$ change was significant F (3, 312) = 3.27, p = .022.

Examination of the coefficients revealed that gender was still an individually significant predictor in the presence of family relationships ($B = -.60$, $p = .001$), indicating that the model predicted that males would have active suicidal ideation 0.60 units lower than females.  Unlike the previous models, and ok family relationship was a significant predictor of active suicidal ideation when compared to no family relationship ($B = -0.91$, $p = .007$).  A good family relationship was a significant predictor of active suicidal ideation ($B = -0.81$, $p = .004$), indicating that, when compared to no relationship, good family relationships predicted a .81 units decrease in active suicidal ideation.  A great family relationship was also significantly predictive ($B = -0.76$, $p = .008$); when compared to no relationship, a great family relationship corresponded with a 0.76 unit decrease in active suicidal ideation.

The results for block three of the model were significant as well, $F$ (5, 311) = 14.84, $p <$ .001, $R^2 = .19$. The coefficient of determination indicates that, collectively, gender, family relationships, and internalizing behaviors account for 19% of the variability in active suicidal ideation. Because the overall model was significant, the individual predictors were examined.  In comparison with block 2, an $R^2$ increase of .12 was observed, corresponding with 12% of the variability in active suicidal ideation scores being predicted by internalizing risk behaviors beyond the influence of gender or family relationship. This change in $R^2$ was significant F (1,311) = 48.02, $p < .001$, indicating that the variable of internalizing risk behaviors was a significant contributor to the regression's predictive ability.

Again, gender remained an individually significant predictor of active suicidal ideation in the final model ($B$ = -0.58, $p < .001$), with the model indicating that males exhibit 0.58 units lower on active suicidal ideation than females.  An okay ($B$ = -0.74, $p$ = .018), good ($B$ = -0.57, $p$ = .028), and great ($B$ = -0.59, $p$ = .025) family relationship all still maintained significance as predictors.  When compared to no relationship, having an okay relationship corresponded with a 0.74 unit lower active suicidal ideation score, having a good relationship corresponded with 0.57 unit lower active suicidal ideation score, and having a great relationship corresponded with 0.59 unit lower active suicidal ideation score.  The internalizing behavior score was also an individually significant predictor when added to the model ($B$ = 1.07, $p < .001$), indicating that as internalizing behaviors increased by one-unit, active suicidal ideation also increased by 1.07 units.  See Table 12 for the full results of this regression.

Table 12

*Hierarchical Linear Regression with Gender, Family Functioning and Internalizing Risk Behaviors Predicting Total Active Suicidal Ideation Scores.*

| Block | Source | $B$ | $SE$ B | $t$ | $p$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -.0.61 | 0.17 | -.20 | -3.56 | < .001 | -.20 | 1.00 | .04 |
| 2 | Gender | -0.60 | 0.17 | -.20 | -3.50 | < .001 | -.19 | 1.04 | .07 |
|  | OK Family Relationship | -0.91 | 0.33 | -.21 | -2.72 | .007 | -.15 | 1.96 | |
|  | Good Family Relationship | -0.81 | 0.28 | -.27 | -2.93 | .004 | -.16 | 2.92 | |
|  | Great Family Relationship | -0.76 | 0.28 | -.25 | -2.68 | .008 | -.15 | 2.87 | |
| 3 | Gender | -0.58 | 0.16 | -.19 | -3.59 | < .001 | -.20 | 1.04 | .19 |
|  | OK Family Relationship | -0.74 | 0.31 | -.17 | -2.39 | 0.18 | -.13 | 1.98 | |
|  | Good Family Relationship | -0.57 | 0.26 | -.19 | -2.21 | .028 | -.12 | 2.97 | |
|  | Great Family Relationship | -0.59 | 0.26 | -.20 | -2.25 | .025 | -.13 | 2.89 | |
|  | Internalizing Behaviors | 1.07 | 0.15 | .36 | 6.93 | < .001 | .37 | 1.02 | |

Note: Overall model fit for block 3: $F(5, 311)$ = 14.84, $p < .001$, R2 = .19.

**Gender, family functioning and total externalizing risky behaviors as predictors of total active suicidal ideation.** In this final hierarchical linear regression, the criterion variable corresponded to active suicidal ideation. A series of three blocks were calculated to examine the predictive influence of the covariate of gender (in block 1), and the covariate of family relationship (in block 2). The final step (block 3) showed the influence of the independent variable, externalizing risky behaviors on total active suicidal ideation, and allowed its effect to be parsed out from the effects of the other covariates.

The first predictor—gender—was entered into block 1 of the model. Next, family relationship was entered into block 2. Externalizing risky behaviors was added to the model in block 3. As blocks 1 and 2 are the same as what were entered into blocks 1 and 2 of the previous regression, only block 3 is reported in the narrative below. Though the specific numbers may differ for blocks 1 and 2, this is because of the limited sample size of participants who had externalizing risky behavior scores, as only those with a variable for this predictor could be included in the overall model. For the sake of avoiding disconfirming results based on this methodological limitation, blocks 1 and 2 were not assessed in detail, and findings were assumed to be correct in regression 3, as this analysis used a larger sample size. However, for consistency, the actual $R^2$ of each block in this analysis will be used, and particular details of each variable in block 3 will be addressed.

Prior to the main analysis, the assumptions of this model were assessed. The assumption of homoscedasticity was assessed through examination of a scatterplot (see Figure 13). The plot showed no distinct pattern, so the assumption was met (Stevens, 2009). The assumption of normality was assessed through a Normal P-P Plot of the standardized residuals (see Figure 14), which showed that the data deviated from the normality line. As such, the assumption was not

met. However, as with the previous regressions, Cook's distances did not surpass a value of 1; with a maximum distance of .09, none of the observations were overly influential. The assumption of absence of multicollinearity was assessed through variance inflation factors (VIFs). All VIF scores were below 10, indicating that there is no multicollinearity present in the data (see Table 13).
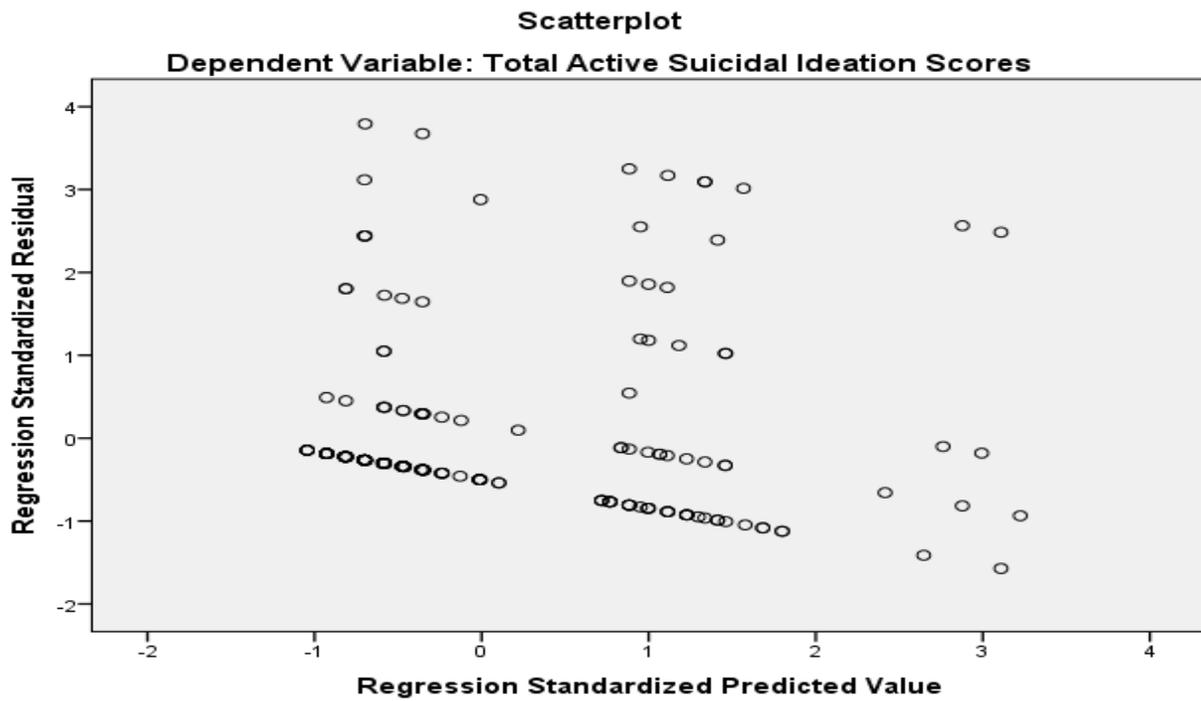


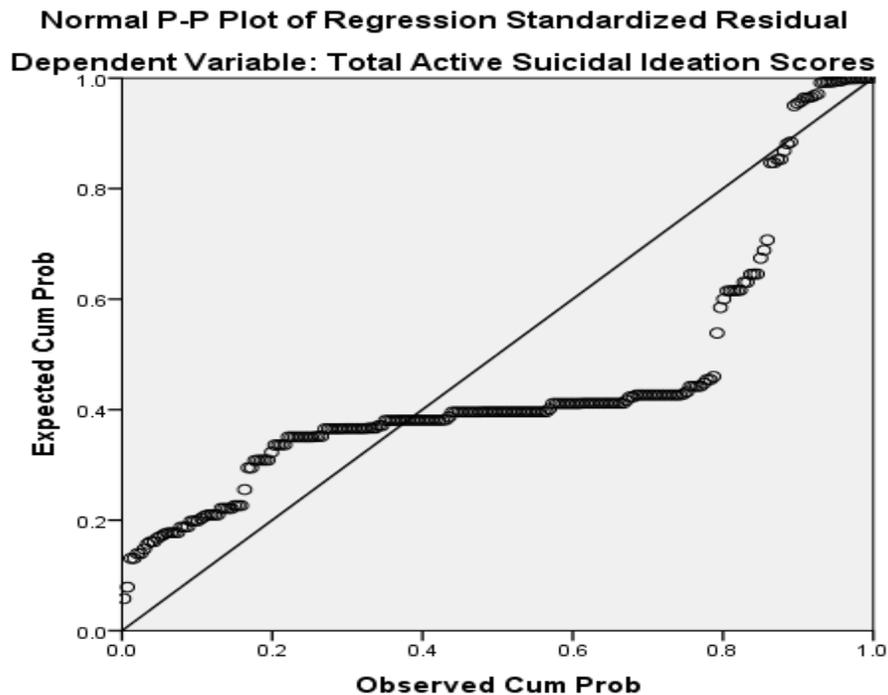*Figure 13.* Scatterplot for Regression 7.

*Figure 14.* Normal P-P Plot for Regression 7.

The results for block three of the model were significant, $F$ (5, 218) = 5.27, $p$ < .001, $R^2$ = .11. The coefficient of determination indicated that, collectively, gender, family relationships, and externalizing risky behaviors account for 11% of the variability in active suicidal ideation. In comparison, gender predicted approximately 7% of the variation in active scores, family relationships accounted for an additional 3%, and externalizing behaviors only accounted for an additional 1% of the variance in active scores. As the overall model was significant, the individual predictors were examined. This increase in $R^2$ was not significant F (1, 218) = 1.23, $p$ = .268, indicating that the addition of externalizing risk behaviors did not improve the regressions predictive ability in any significant way.

In the final model, gender was an individually significant predictor of active suicidal ideation ($B$ = -0.92, $p$ < .001), with the model indicating that males exhibit total active suicidal

ideation scores approximately 0.92 units lower than females.  An okay family relationship was not a significant predictor of active scores ($p$ = .154), while good ($B$ = -0.84, $p$ = .017), and great ($B$ = -0.72, $p$ = .047) family relationships were still significant predictors.  When compared to no relationship, having a good relationship corresponded to active scores 0.84 units lower, and having a great relationship corresponded with active scores 0.72 units lower than those with no relationship.  The externalizing behavior score was not an individually significant predictor of active suicidal ideation when added to the model ($p$ = .268). Table 13 presents the full results of this regression.

Table 13

*Hierarchical Linear Regression with Gender, Family Functioning and Externalizing Risk Behavior Predicting Total Active Suicidal Ideation Scores*

| Block | Source | $B$ | $SE$ | B | $T$ | $p$ | $r^2_{part}$ | VIF | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gender | -0.98 | 0.24 | -.27 | -4.15 | < .001 | -.27 | 1.00 | .07 |
| | Gender | -0.90 | 0.24 | -.25 | -3.77 | < .001 | -.25 | 1.04 | .10 |
| | OK Family Relationship | -0.65 | 0.42 | -.13 | -1.54 | 0.125 | -.10 | 1.81 | |
| 2 | Good Family Relationship | -0.91 | 0.34 | -.29 | -2.65 | 0.009 | -.18 | 2.85 | |
| | Great Family Relationship | -0.84 | 0.35 | -.27 | -2.44 | 0.015 | -.16 | 2.90 | |
| | Gender | -0.92 | 0.24 | -.25 | -3.86 | < .001 | -.25 | 1.05 | .11 |
| | OK Family Relationship | -0.61 | 0.43 | -.12 | -1.43 | 0.154 | -.10 | 1.83 | |
| | Good Family Relationship | -0.84 | 0.35 | -.26 | -2.41 | 0.017 | -.16 | 2.94 | |
| 3 | Great Family Relationship | -0.72 | 0.36 | -.24 | -2.00 | 0.047 | -.13 | 3.19 | |
| | Externalizing Behaviors | 0.06 | 0.05 | .08 | 1.11 | 0.268 | .08 | 1.12 | |

Note:  Overall model fit for block 3: $F(5, 218)$ = 5.27, $p < .001$, R2 = .11.

## Chapter V

## Discussion

The goal of the current research study was to explore the relationship between suicidal ideation and risky behavior use among adolescents while considering other variables such as gender, ethnicity, problem-solving ability, and perceived family functioning. The specific questions posed were: (1) Does gender, ethnicity, problem-solving ability, family relationships and risky behavior exhibit a significant relationship with suicidal ideation? (2) Does engagement in risky behaviors predict an increase in suicidal ideation total scores above and beyond the other predictors? (3) Do different types of risky behaviors contribute uniquely to the variance in total suicidal ideation scores and (4) Do different types of risky behaviors predict different forms of suicidal ideators (active vs passive).

The results revealed that gender, family relationships, and risky behaviors were significantly correlated with suicidal ideation. Ethnicity and problem-solving ability, on the other hand, failed to demonstrate a significant relationship with suicidal ideation. Both gender and family relationships exhibited a negative relationship with suicidal ideation. Males tended to report less suicidal ideation than females. In addition, adolescents who reported more negative family relationships also reported increased suicidal ideation. In contrast, risky behavior use was positively correlated with suicidal ideation.

Several hierarchical regressions were utilized to examine these relationships further. In general, gender accounted for 4-10% of the variance in active, passive and total suicidal ideation scores. Positive family relationships accounted for 3-6% of the total variance in active, passive and total suicidal ideations scores above and beyond gender alone. Lastly, risky behavior

accounted for an additional 1-6% of the variance in active, passive and total suicidal ideation scores. Upon examining this relationship closer, internalizing behaviors which consisted of weight/eating restrictive behaviors and self-harm behaviors consistently predicted a significant increase in passive, active, and total suicidal ideation scores even after controlling for gender and family relationships. In contrast, externalizing behaviors such as alcohol/drug use, risky sexual activity, and physical fighting failed to predict a significant increase in passive, active or total suicidal ideation scores.

Hypothesis One

The first hypothesis in this study anticipated that there would be a significant relationship between gender, ethnicity, problem-solving ability, perceived family functioning, risky behavior use, and suicidal ideation. Unfortunately, both ethnicity and problem-solving ability failed to show a significant relationship with suicidal ideation.

A number of studies have also found that ethnicity had no significant correlation to suicidal ideation (Beck et al., 1985; Dubow, Kausch, Blum, Reed, & Bush, 1989; Garrison, Addy, Jackson, McKeown, & Waller, 1991a; Garrison et al., 1993b; Sorenson & Rutter, 1991; Yi, Sung, & Min, 2011). However, other studies have found significant differences depending on ethnicity or race (Garrison, Addy, Jackson, McKeown, & Waller, 1991b; Harkavy Friedman, Asnis, Boeck, & DiFiore, 1987; Lester & Anderson, 1992; Roberts & Chen, 1995; Vega, Gil, Warheit, Apospori, & Zimmerman, 1993). Therefore, more research needs to be conducted to clarify the relationship between ethnicity and suicidal ideation. One important factor that needs to be considered is how strongly the adolescent identifies with their culture and how they perceive themselves within the community they are part of. It can be assumed that adolescents who are assimilated within the

community may deal with similar stressors to other adolescents around them, irrespective of ethnicity. However, those adolescents who feel more alienated from their community due to their ethnic identity may experience additional stressors which increases their risk for suicidal ideation.

In the current study the large majority of adolescents failed to report a clinically significant level of suicidal ideation which may have made it more difficult to detect the relationship between ethnicity and suicidal ideation. Furthermore, some of the adolescents may have underreported their level of suicidal ideation due to concerns regarding confidentiality and general comfort level, further impacting the ability to find a significant relationship.

In the current study, problem-solving ability was also not significantly correlated with suicidal ideation. However, there is research which suggests that adolescents with poor problem-solving skills may view suicide as a solution to their problems (Kienhorst, De Wilde, Diekstra, & Wolters, 1995). Research has demonstrated that adolescents who reported previous suicide attempts also reported poorer problem-solving skills (McDermut, Miller, Solomon, Ryan, & Keitner, 2001; Negron, Piacentini, Graae, Davies, & Shaffer, 1997). Using the current sample, Johns (2009) found that although knowledge of the problem-solving skill process increased after participation in a problem-skills group, suicidal ideation scores failed to decrease. She found that although many of the adolescents learned the strategies and knew the correct solution, they were still less likely to implement it in real life. Given this fact, it is not surprising that their suicidal ideation scores would remain the same. This is an area of research that needs to be explored further. Additional research studies should focus on understanding the barriers that prevent an adolescent from using their problem-solving skills effectively and implementing a healthy solution.

In contrast, gender was significantly correlated with suicidal ideation. In general, being male was associated with a lower report of suicidal ideation. This finding has been consistently demonstrated in many different research studies (Blumenthal, 1990; Borges & Simoes-Barbosa, 2008; Bridge et al., 2006; Canetto & Lester, 1995; Giaconia et al., 1995; Khan & Reza, 1998; King, 1997; King, Hovey, Brand, Wilson, & Ghaziuddin, 1997; Kirkpatrick-Smith, Rich, Bonner, & Jans, 1992; Lewinsohn, Seeley, Hibbard, Rohde, & Sack, 1996; Paykel, Myers, Lindenthal, & Tanner, 1974; Simons & Murphy, 1985; Steele & Doey, 2007; Steer, Kumar, & Beck, 1993; Stewart, Lam, Betson, & Chung, 1999; Tousignant, Seshadri, & Raj, 1998; Zhang & Jin, 1996). In fact, it is estimated that adolescent females in the United States may be 1.5 to 2 times more likely to report suicidal ideation than adolescent males (King, 1997; Reinherz et al., 1995). This finding may be partly explained by gender-specific patterns in coping mechanisms, underlying psychopathology, risky behavior engagement, and societal norms concerning the gender-appropriate response to negative events and emotions.

One theory posits that men and women may exhibit different coping mechanisms. Women have been found to use more emotional or avoidance-distraction strategies such as sexual promiscuity, watching television, listening to music, shopping, singing, online chatting, engaging in conversation with others, venting, and eating as their preferred coping strategies. Men, on the other hand, have been found to utilize more problem-solving strategies and unhealthy emotional distraction strategies such as physical activity, smoking, playing online or mobile games, reading a book, drinking alcoholic beverages, using drugs, and engaging in physical fighting (Baker & Berenbaum, 2007; Brems & Johnson, 1989; Frances & Blumenthal, 1992; Goodwin, 2006; Hanninen & Aro, 1996; Horwitz, Hill, & King, 2011; Kim, Han, Trksak, & Lee, 2014; King et al.,

2001; Levy & Deykin, 1989; Rosenberg & Latimer, 1966; Shaffer, Garland, Gould, Fisher, & Trautman, 1988; Sugawara et al., 2012; Vannatta, 1997).

Aside from coping strategies, men and women also exhibit different types of underlying psychopathology. Females are more likely to meet criteria for an internalizing disorder such as anxiety disorder, depressive disorder or an eating disorder. It is hypothesized that these disorders are primarily self-destructive in which, the pain is turned inward. In contrast, males are more likely to meet criteria for externalizing disorders which may lead them to turn their pain outward and exhibit a higher external level of destructiveness. Examples of these disorders are substance use disorders, conduct disorder, paraphilia and explosive disorder (Allgood-Merten, Lewinsohn, & Hops, 1990; Beautrais, 2002; Blair-West, Cantor, Mellsop, & Eyeson-Annan, 1999; Bolton, Belik, Enns, Cox, & Sareen, 2008; Bridge et al., 2006; Canetto, 1991, 1997; Clark, Sommerfeldt, Schwarz, Hedeker, & Watel, 1990; Gore, Aseltine, & Colton, 1992; Tondo et al., 1999). Therefore, it is possible that the measures we use to assess suicidality are more beneficial for identifying at-risk females than at-risk males. It is also possible that internalizing and externalizing disorders pose different future risks. For females, it may lead to more suicidal ideation and attempts whereas, for males, it may result in more dangerous and impulsive behavior which ultimately leads to more completed suicide attempts.

Gender socialization may also explain the different rates in suicidal ideation reports among males and females. For example, one study found that males are less likely to admit experiencing suicidal ideation due to a fear of social disapproval. In addition, males and women differ in their reasons for not attempting suicide. In general, males report more fear of social disapproval over being suicidal whereas females report a greater fear of death and injury (Kirkpatrick-Smith et al., 1992). White and Stillion (1988) found that males who admitted to suicidal ideation or attempts

were judged as less masculine and were labeled as seeming weaker, indecisive, unsuccessful, and overly emotional.  This may cause some males to keep their suicidal feelings to themselves.

Researchers have also found that it is considered more acceptable for males to kill themselves.  A number of studies found that males were rated as better adjusted, less wrong, less foolish, and less weak than females (Deluty, 1989; Lewis & Shepeard, 1992; Linehan, 1973).  Overall, it was concluded that social norms may consider suicide to be masculine while self-harming behavior and suicidal ideation may be considered feminine (Canetto, 1997; Scourfield, Jacob, Smalley, Prior, & Greenland, 2007).  Ultimately, this may impact an individuals' self-report of suicidal ideation and it may also influence their selection of suicidal behaviors based on what they feel are socially acceptable responses to their negative emotions (Scourfield et al., 2007).

The gender-role socialization theory posits that men and women are socialized to deal with their negative emotions differently.  Females are thought to be raised to establish relationships with others and may be directed toward being more dependent, emotional, and indecisive. They are expected to vent their emotions, express their stress through rumination, rely on others for support, and accept weakness and dependence on external sources.  This leads to help-seeking and less aggressive behaviors (Beautrais, 2002; Gould et al., 2004; Rich, Kirkpatrick-Smith, Bonner, & Jans, 1992; Rickwood, Deane, Wilson, & Ciarrochi, 2005; Smalley, Scourfield, & Greenland, 2005). In contrast, males are raised to exude independence, success, and strength.  Therefore, they are expected to approach their problems with stoicism and to express their frustration and negative emotions through aggressive and maladaptive behaviors rather than help-seeking behaviors (Bettridge & Favreau, 1995; Langhinrichsen-Rohling, Sanders, Crane, & Monson, 1998; Stillion, White, Edwards, & McDowell, 1989; Straiton, Roen, & Hjelmeland, 2012).  These include

handling their problems alone, using drugs and alcohol, considering suicide as a solution, and keeping suicidal thoughts secret (Gould et al., 2004). Lastly, men and women may differ in their level of emotional competence and ability to recognize and verbalize their feelings. Research has demonstrated that women are more likely than man to recognize their own distress and discuss it with others (Beautrais, 2002; Rickwood et al., 2005).

Family functioning also exhibited a significant relationship with suicidal ideation. On average, adolescents who reported having a positive (good, great) relationship with their family also reported lower suicidal ideation scores. A number of research studies have established that a significant number of adolescents contemplate suicide due to family-related factors and dysfunction. Adolescents who report being dissatisfied with their family were more likely to report suicidal ideation during the last year (Beautrais, 2000; Bridge et al., 2006; Kidd et al., 2006; Kim, Jackson, Conrad, & Hunter, 2008; Melhem et al., 2007; Steele & Doey, 2007). Negative familial characteristics and circumstances can have a significant negative impact on an adolescent's well-being and can lead to an increase in suicidal ideation. These include parental absence/unavailability, lack of cohesion, lack of familial warmth, poor familial communication, conflict within the family, disturbed mother-child relationships, high parental expectations, abuse or neglect, and overt family pathology or substance abuse (Adams et al., 1994; Garber, Little, Hilsman, & Weaver, 1998; Grob, Klein, & Eisen, 1983; Henry et al., 1993; Hollis, 1996; Miklowitz & Taylor, 2006; Portes, Sandhu, & Longwell-Grice, 2002).

Adolescents who reported distanced relationships with their parents tended to report worse relationships with other significant people, more self-harming behavior, a longer duration of suicidal thoughts, and more serious suicidal thoughts ("I want to die"). They concluded that patients with detached parental relationships often exhibited more intense suicidal behavior and

experienced prolonged suicidal ideations in comparison with other individuals (Hedeland, Teilmann, Jørgensen, Thiesen, & Andersen, 2016). In addition, adolescents who reported multiple suicide attempts tended to perceive their parents as less caring and felt they were less able to ask their parents for support (Groholt, Ekeberg, & Haldorsen, 2006). As expected, research has identified a number of protective familial factors. In general, the greater the number of supportive family members, parental supervision, activities engaged in with family, and perceived satisfaction and connectedness, and the warmer or more supportive the environment, the less likely the adolescents were to report suicidal ideation (Bearman & Moody, 2004; Borowsky et al., 2001; Borowsky et al., 1999; Connor & Rueter, 2006; Cummins, Ireland, Resnick, & Blum, 1999; Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Garrison et al., 1991b; Morano, Cisler, & Lemerond, 1993; Resnick et al., 1997; Seguin, Lynch, Labelle, & Gagnon, 2004; Velez & Cohen, 1988). Furthermore, adolescents who come from an intact, traditional family structure tend to display the least risk for suicidal ideation (Agerbo, Nordentoft, & Mortensen, 2002; Christiansen, Larsen, Agerbo, Bilenberg, & Stenager, 2013; Velez & Cohen, 1988). Positive family functioning and family connectedness are also associated with decreases in other risk factors for suicide, such as smoking, alcohol use, sexual activity, and violence (Fulkerson et al., 2006). These factors have been linked to increases in depression, suicidal ideation, and attempts.

Lastly, risky behavior was found to be positively correlated with suicidal ideation. As risky behaviors increased so did the reported level of suicidal ideation. This will be explored further in the following section.

Hypothesis Two

The second hypothesis aimed to investigate whether engagement in any risky behaviors predicted an increase in total suicidal ideation scores above and beyond the other predictors. An initial hierarchical regression demonstrated that gender and family relationships accounted for 16% of the variance in total suicidal ideation scores. However, total risky behavior use accounted for an additional 2% of the variance above and beyond these variables. Males reported total suicidal ideation scores 2.83 units lower than females. In addition, individuals who reported having good or great family relationships predicted total suicidal ideation scores 2.34 units lower and 2.4 units lower, respectively. Finally, risky behavior scores were also an individually significant predictor when added to the model ($B = .32$, $p < .001$), suggesting that, as risky behaviors increased by 1 unit, total suicidal ideation scores tended to increase by .32 units.

The finding that adolescents who reported engaging in risky behaviors also have higher total suicidal scores is consistent with research literature (Afifi et al., 2007; Beautrais, 2003; Cho et al., 2007; Ellis & Trumpower, 2008; Gould et al., 2003; Gray et al., 2002; Husky et al., 2013; King et al., 2001). A number of factors have been found to intensify the magnitude of this relationship. Adolescents who engage in risky behavior at a younger age tend to report more depressive symptoms and suicidal behavior as compared to their peers who rarely engage in risky behaviors (Cho et al., 2007). Participation in multiple risky behaviors also significantly and negatively impacted an adolescent's mental health status and increases the likelihood of suicidal ideation and attempts (Flisher et al., 2000a; Hallfors et al., 2004). Many studies have concluded that depression mediates the relationship between risky and suicidal behavior (Brooks et al., 2002). This link has been established between depression and smoking (Breslau et al., 1998; Bronisch et al., 2008; Deykin et al., 1987; Goodwin et al., 2013; Hanna et al., 2001; Hintikka et

al., 2009a; Oquendo et al., 2004; Saules et al., 2004) alcohol use (Poulin et al., 2005; Reifman & Windle, 1995; Schilling et al., 2009; Swahn & Bossarte, 2007; Wang & Patten, 2001), sexual activity (Grello et al., 2003; Kosunen et al., 2003; Lehrer et al., 2006; Mendle et al., 2013; Monahan & Lee, 2008; Shulman et al., 2009; Vrangalova & Savin-Williams, 2011; Welsh et al., 2003) and drug use (Bardone et al., 1996; Brooks et al., 2002; Deykin et al., 1987; Georgiades & Boyle, 2007; Hayatbakhsh et al., 2007; Keyes et al., 2008; MacDonald et al., 2009; Neighbors et al., 1992; Patton et al., 2002; Poulin et al., 2005; Rasic et al., 2013). Individuals who engage in risky behaviors and suicidal ideation have been found to exhibit more impulsivity and sensation seeking (Ortin, Lake, Kleinman, & Gould, 2012; Perez, 2005; Simon & Crosby, 2000). Lastly, adolescents who engage in risky behaviors on a regular basis may also slowly acquire the capability to harm themselves.

Joiner's interpersonal-psychological theory of suicide hypothesizes that through repeated exposure, the individual becomes habituated to the fear of death and develops a pain tolerance, resulting in a greater capability for suicide. This makes it possible for individuals to engage in increasingly more dangerous, injurious or damaging behavior". So far, several studies have supported this finding (Brown et al., 2000; Joiner Jr et al., 2009; Joiner et al., 2005a; Joiner et al., 2009; Nock et al., 2006; Orbach et al., 1997; Orbach et al., 1996; Smith et al., 2013; Van Orden, 2008).

Hypotheses Three and Four

Due to these encouraging results, further analyses were conducted in order to examine whether different types of risky behaviors (internalizing vs externalizing) exhibited different interactions with certain forms of suicidal ideation (passive versus active).

The results revealed that internalizing behavior (eating-restrictive behavior and self-harm) consistently accounted for approximately 6-12% of the variance in passive, active, and total suicidal ideation scores above and beyond gender and family relationships. In contrast, upon closer examination, externalizing behavior (alcohol use, drug use, sexual activity, fighting, and smoking) accounted for 1% of the variance in passive, active, and total suicidal ideation scores above and beyond gender and family relationships. Therefore, externalizing behavior failed to predict a significant increase in all forms of suicidal ideation.

The fact that internalizing behavior such as self-harm behavior and eating-restrictive behavior are significantly related to suicidal ideation is consistent with the literature (Brausch & Gutierrez, 2010; Carvalho et al., 2015; Hamza, Stewart, & Willoughby, 2012; Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999; Hawton et al., 2002; Martin, Swannell, Hazell, Harrison, & Taylor, 2010; Nock et al., 2006; Whitlock, Eckenrode, & Silverman, 2006; Zetterqvist, Lundh, Dahlstrom, & Svedin, 2013). Several explanations have been proposed to explain this relationship. Firstly, it has been proposed that self-harm behavior and suicidal ideation or behavior may exist on a continuum. Therefore, non-suicidal self-injury may first occur to cope with an underlying negative emotional state. In the short term, self-harm behaviors may provide temporary relief from their negative emotions. As a result, their self-harm behaviors increase, and then subsequent feelings of depression and suicidal ideation develop when they are no longer able to establish relief from their pain (Victor, Styer, & Washburn, 2015). Another explanation for the correlation between self-harm behavior and suicidal ideation may be that they both share the same underlying causes or triggers. For example, they may both serve as coping strategies for dealing with external stressors that the adolescent is trying to escape (Muehlenkamp & Gutierrez, 2004; Victor et al., 2015). Following this, an increase in the number of significant stressors an adolescent

experiences may lead to an increase in both self-harm behavior and suicidal ideation (De Leo &
Heller, 2004; Jacobson, Marrocco, Kleinman, & Gould, 2011; Nixon, Cloutier, & Jansson, 2008).

Adolescents who report a history of non-suicidal self-injurious behavior are also more
likely to experience higher levels of psychological distress.  Research has established that
adolescents who engage in self-mutilative behavior are significantly more likely to report severe
depressive symptoms, express anger, and engagement in other risky and reckless behaviors than
adolescents without a history of self-mutilative behaviors (Guertin, Lloyd-Richardson, Spirito,
Donaldson, & Boergers, 2001). In addition, they have been found to be to be more aggressive and
irritable (Stanley et al., 2001).  They may also be more likely to meet criteria for a diagnosis of
depression, personality disorders, substance use, and disordered eating (Andover & Gibb, 2010;
Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010; Eichen et al., 2016; Evren, Sar,
Evren, & Dalbudak, 2008; Gerson & Stanley, 2002). Not surprisingly, these factors have been
continually found to be associated with an increase in both suicidal ideation and attempts.

Finally, Joiner's interpersonal-psychological theory (Joiner et al., 2005a) of suicidal
behavior suggests that self-harm behavior may also help an adolescent acquire the capability for
suicide.  As a function of the self-harming behavior, the adolescent may develop an increased
tolerance for pain and less fear of death which further reinforces the continuation and worsening
of the behavior (Anestis & Joiner, 2011; Boxer, 2010; Franklin, Hessel, & Prinstein, 2011; Joiner
et al., 2005a; Joiner et al., 2009; Nademin et al., 2008; Nock et al., 2006; Van Orden, 2008).

Aside from self-harming behavior, unhealthy weight control behaviors also predicted an
increase in suicidal ideation.  Research has consistently shown a positive relationship between
unhealthy weight control behaviors, depressive symptoms, and suicidal ideation (Brausch &
Gutierrez, 2009; Bulik et al., 2008; Capitaine, Rodgers, & Chabrol, 2011; Dennard & Richards,

2013; Farrow & Fox, 2011; Liechty & Lee, 2013; Miotto, De Coppi, Frezza, & Preti, 2003; Neumark-Sztainer, Story, Dixon, & Murray, 1998; Pompili, Mancinelli, Girardi, Ruberto, & Tatarelli, 2004; Utter et al., 2012). This has been found to be true for both extreme and less extreme weight control methods (Crow, Eisenberg, Story, & Neumark-Sztainer, 2008b). In fact, adolescent females who report significant symptoms of an eating disorder report significantly more suicide attempts than females who do not report any weight control behaviors. Females with anorexia may be 23 times more at risk while bulimic adolescents may be 15% to 40 times more likely than the general adolescent population (Miotto et al., 2003; Neumark-Sztainer et al., 1998).

Adolescents who engage in unhealthy or extreme weight control behaviors have also been found to engage in other risky behaviors such as smoking, drug use, and binge drinking all of which, increases their risk for depression and suicidal ideation or attempts (Crow, Eisenberg, Story, & Neumark-Sztainer, 2008a; Crow et al., 2008b; Piran & Robinson, 2006). It has been found that weight control methods may lead to feelings of failure, shame, and guilt, which contribute to depressive symptoms and suicidal ideation (Stice, Hayward, Cameron, Killen, & Taylor, 2000).

Adolescents who are constantly dissatisfied with their bodies and focused on weight control may experience repeated failure which can lead to feelings of hopeless, guilt, unhappiness, and low self-esteem (Brausch & Gutierrez, 2009). In the past, adolescents with disordered eating have been found to suffer from low levels of self-esteem and are very critical of their behaviors and outward appearances. Engaging in weight control behavior may enable them to temporarily escape. However, in the long run it may lead to higher levels of shame, self-focus, and negative feelings (Heatherton & Baumeister, 1991; Heron, Scott, Sliwinski, & Smyth, 2014; Sanftner, Barlow, Marschall, & Tangney, 1995). In general, heightened self-focus may be dangerous in

individuals with disordered eating if they become aware of the fact that they are not able to meet their unrealistic expectations for weight loss (Blackburn, Johnston, Blampied, Popp, & Kallen, 2006).

Adolescents who report a great dissatisfaction with their bodies may also show a greater propensity towards self-harm behavior because they develop a strong hatred and indifference toward their bodies. Furthermore, they begin to see their bodies as separate from themselves, making it easier to engage in self-harming and self-destructive behaviors (Brausch & Muehlenkamp, 2007; Orbach, 1996).

Adolescents reporting eating disorder symptoms and weight control behavior also tend to report reduced interpersonal and psychosocial functioning (Bardone-Cone et al., 2010; Bohn et al., 2008; Fairburn, Cooper, Shafran, Bohn, & Hawker, 2008; Joiner et al., 2005a; Rieger et al., 2010; Van Orden et al., 2010). Overall, they tend to report more social disconnection and loneliness. In addition, they report less social support, poorer-quality relationships, and not as much pleasure from social interactions which increases the likelihood that they will experience an increase in depression and suicidal ideation (Brausch & Decker, 2014; Fairburn, Cooper, Doll, & Welch, 1999; Harney, Fitzsimmons-Craft, Maldonado, & Bardone-Cone, 2014; Harrison, Mountford, & Tchanturia, 2014; Tiller et al., 1997).

Joiner's interpersonal-psychological theory has also been used to explain the relationships between weight control behaviors and suicidality. This theory suggests that suicidal ideation may occur when the individual feels a sense of burdensomeness and thwarted belongingness. In general, adolescents with eating disorders may feel like burdens due to the attention and treatment they require (Crow, 2014; Dodd, Smith, & Bodell, 2014; Sepulveda et al., 2014). Furthermore, they may alienate themselves from others because they feel that they are not good enough or

different from their peers (Fairburn et al., 2008; Mussweiler, Rüter, & Epstude, 2004). Lastly, adolescents who engage in disordered eating, such as severely restricting their calories or purging, increase their exposure to painful events and may be more likely to acquire the capability for engaging in suicidal behavior (Selby, Connell, & Joiner, 2010a; Smith et al., 2013; Zuromski & Witte, 2015).

Self-harm behavior has also been found to be associated with disordered eating. Many adolescents who present for treatment of non-suicidal self-injury report a history of disordered eating as well (Bridge et al., 2006; Favaro & Santonastaso, 1998; Hawton et al., 2002; Jacobson & Gould, 2007; Lewinsohn, 1996; Matsumoto et al., 2008; Nock et al., 2008; Rodham et al., 2004; Seo & Lee, 2013; Swahn et al., 2009). In fact, the prevalence of eating disorders among adolescents who engage in self-harm behavior may range between 13.6 and 68.1% (Favazza et al., 1989; Paul, Schroeter, Dahme, & Nutzinger, 2002; Svirko & Hawton, 2007). A recent study suggested that female adolescents who report a previous history of suicide attempts, self-mutilative behavior, and the use unhealthy weight loss methods may comprise a unique group of females who are more impulsive and suffer from more serious forms of psychopathology (Laakso, Hakko, Rasanen, Riala, & Workgroup, 2013; Pompili et al., 2007; Zaitsoff & Grilo, 2010). In general, they may also serve similar functions. For example, adolescents who engage in both self- harm behavior and eating-restrictive behavior may be motivated by the desire to escape, avoid, numb, or distract themselves from their negative emotions (Buckholdt, Parra, & Jobe-Shields, 2014; Chapman, Gratz, & Brown, 2006; Herpertz et al., 1997; Klonsky, 2009; Lavender & Anderson, 2010; Lavender, Gratz, & Tull, 2011; Lillis, Hayes, & Levin, 2011; Nock & Prinstein, 2005; Rawal, Park, & Williams, 2010; Serpell, Treasure, Teasdale, & Sullivan, 1999; Skegg, 2005; Suyemoto, 1998). Furthermore, some of the defining features of eating disorders, such as laxative use,

vomiting, and binge eating may be similar to self -harm behavior in the sense that they are both self-damaging, cause physical consequences, and increase suicidality (St Germain & Hooley, 2012).

The fact that externalizing behavior was not a significant predictor of suicidal ideation is surprising. As mentioned above, most research has consistently demonstrated strong associations between various types of risky behaviors, depression and suicidal behavior. However, a small number of studies have failed to find an association between risk-taking and suicidal behavior (Alexander et al., 1990; Clark et al., 1990; Garrison et al., 1993a; Neumark-Sztainer et al., 1997; Stanton et al., 2003) In addition, a number of studies have established that the relationship between self-injury and suicidal ideation and behavior may be stronger than the relationship between other risk behaviors and suicidality (Borowsky, Taliaferro, & McMorris, 2013; Hamza et al., 2012; Whitlock et al., 2013).

There are also several limitations that must be considered when interpreting these findings. Firstly, approximately 56.7% of our sample was African American, followed by 12.3% Hispanic/Latino, and 9.5 white/Caucasian. Furthermore, 62.8% of the sample were recruited from the Broward County Juvenile Justice Probation Department and FOSI, an alternative day school in Broward County for students faced with legal difficulties. It is probable, therefore, that this sample represents a unique subset of the adolescent population. In general, the sample consisted primarily of those considered part of ethnic minority groups in the Unites States of America. In addition, these adolescents were originally recruited because they exhibited one or more risk factors for suicide (e.g., risky behaviors, truancy, legal difficulties, family dysfunction, and poor problem-solving skills). However, given their background and environment, it is possible that their engagement in externalizing risky behaviors does not predict suicidal ideation because it does

not elicit distress.  Perhaps, externalizing behaviors such as drinking, smoking, and drug use are seen as "normal" behaviors within the context of their everyday environment and therefore failed to predict their total scores on the SIQ-JR.  Whereas smoking and drinking may be seen as part of "normal" adolescent behavior, self-harm and disordered eating falls further along the spectrum and is associated with more serious underlying pathology.  Therefore, it seems appropriate that adolescents who endorsed the self-harm and disordered eating items would also be more likely to exhibit higher total suicidal ideation scores.

Another possibility is that the adolescents in this study did not feel comfortable disclosing their level of distress and/or downplayed their feelings when responding to the self-report measures.  A large number of the participants in this study were already involved with the juvenile justice system and could have been worried about the ramifications of their responses.  Although, self-report measures provide important information, they are also reliant on an individual's perception and willingness to disclose personal opinions.

It has been proposed that self-disclosure regarding suicidal ideation may differ by race (Sue, 1990).  For example, a study conducted by Morrison & Downey (2000) found that ethnic minorities do not disclose suicidal ideation as willingly as non-minority populations.  As a result, a high number of ethnic minority students were deemed "hidden ideators" since a formal suicide risk assessment by a counselor was required in order to detect their symptoms.  Other studies have shown that ethnic minorities may be reluctant to disclose their suicidal thoughts to counselors whose race differs from their own (Everett, Proctor, & Cartmell, 1983; Everett et al., 2000; Laval, Gomez, & Ruiz, 1983; Sue, 1990; Vontress, 1971).  It has further been suggested that an individual's reasons for living may differ by race as well.  Using the Reasons for Living Inventory,

African American students reported greater levels of moral objections towards suicide and more

coping strategies to buffer against suicide (Ellis & Range, 1991; Morrison & Downey, 2000).

Aside from ethnicity, adolescents in general may have difficulty accurately recalling their

engagement in risky behaviors or may purposely under- or over-report some behaviors because

they believe that they are acting in line with social norms (Brener, Billy, & Grady, 2003). It has

been suggested that both a cognitive and situational perspective can be used to explain potential

validity issues.  The cognitive perspective proposes that there are 4 steps in the question-answer

process: (1) comprehension, (2) retrieval, (3) decision-making, and (4) response generation.  It is

hypothesized that an error may occur at each of these stages, resulting in a biased or incorrect

response (Cannell, Miller, & Oksenberg, 1981; Eisenhower, Mathiowetz, & Morganstein, 1991;

Means, 1992; Means, Habina, Swan, & Jack, 1992).

The situational perspective proposes that external environmental factors may influence

how the adolescent responds. For example, their perception of the level of confidentiality and what

responses are socially desirable may influence or bias their responses (Alexander, Somerfield,

Ensminger, Johnson, & Kim, 1993; DeMaio, 1984; Sudman & Bradburn, 1974; Winters,

Stinchfield, Henly, & Schwartz, 1990).

Research has established that individuals are less accurate in their responding when the

question refers to longer reference periods (i.e year vs month vs week) (Bachman & O'Malley),

1981; Bailey, Flewelling, & Rachal, 1992; Engels, Knibbe, & Drop, 1997; Johnson & Mott, 2001;

Shillington & Clapp, 2000). There is also evidence that suggests that the more complex the recall

task, the less reliable the reporting. For example, the question of whether an individual used a

substance if easier than remembering the frequency of their use (Bailey et al., 1992; Means et al.,

1992; O'malley, Bachman, & Johnston, 1983; Stanton, McClelland, Elwood, Ferry, & Silva,

1996). In the past, when an individual's prevalence of smoking was checked via objective measures, it was determined that individuals underreported their smoking habits to different degrees (Aguinis, Pierce, & Quigley, 1993).

Current Limitations and Future Directions

One limitation of the current study is the measures utilized. Unfortunately, only one of the measures, The Suicide Ideation Questionnaire–Jr., has been standardized and researched using various different population samples. The HRTA has yet to be formally validated. It has, however, been widely used as part of the Youth Risk Behavior Survey. Numerous studies have used these questions as a way of determining an individual's level of engagement in risky behaviors. Therefore, it has become a benchmark among researchers for determining which risky behaviors are most commonly seen within an adolescent sample. Despite the popularity of the HRTA questions, the wording of the questions may have led to accidental errors in responding. For example, most of the questions ask the participant whether he or she has engaged in a risky activity during the past 90 days.

This poses at least three possible problems. Firstly, it does not capture risky behavior before this time period; therefore, it only provides a snapshot of the adolescent's behavior, which may not reflect a typical three-month period. Secondly, it is possible, that in terms of recall, three months is too long. Previous research studies have concluded that the more complex the recall task, the harder it is to respond accurately. Within three months, it is possible that individuals who engage in risky behavior regularly may not remember each occasion, leading to an underreporting of their behavior. Lastly, some of the questions involve a spectrum of related activities. Therefore, endorsing this question means that you are automatically endorsing more serious behavior. For

example, the question related to drug use asks: "During the past 3 months (90 days), about how many times have you used any mind-altering substances, including marijuana, cocaine, heroin, inhalants, and/or prescription medications not prescribed for you?". The responses range from 0 times to 90 or more times. Unfortunately, someone who has only tried marijuana once may not want to respond truthfully to this question since it also involves other drug possibilities. Therefore, in the future, studies should focus on utilizing questions that allow the adolescent to specify the exact behavior and frequency over both a recent duration as well as throughout their lifetime. This will provide a better sense of how risky the adolescent's behavior has been for an extended period of time. Furthermore, it would be useful to get the adolescents' consent to seek out additional information from as many resources as possible (i.e. family members, teachers, and community organizations involved).

It is also prudent to mention that perceived family functioning was measured using only one general question, asking the adolescents how they would describe the relationship with their parents. Responses ranged from no relationship to great – no problems. However, as mentioned above, family functioning consists of a number of different variables. For example, the structure of the family unit and the mental health history of the parents has been shown to influence an adolescent's behavior and mental health status. A questionnaire designed to assess different variables related to perceived family functioning could be useful in predicting both suicidal ideation and engagement in risky behaviors.

For the purposes of this study, the Suicide Ideation Questionnaire-JR was used as the primary measure in assessing the adolescents' levels of suicidal risk. It was also used to classify adolescents into active and passive categories. Unfortunately, this left room for interpretation since some of the items were hard to label. For example, "I thought about death" may apply to

both groups and represent more serious pathology or passive suicidal ideation. In contrast, "I thought about when I would kill myself" is more clearly serious and active suicidal ideation. In the future, more research should be conducted to see whether clearer measures can be used to describe active versus passive suicidal ideators. The results of the current research study confirm that there do seem to be differences among these groups, but the whole picture is yet to be determined. In future studies, it would also be useful to include other measures which may explain or illuminate the relationship between risky behaviors and suicidal ideation. For instance, depression and impulsivity have been shown to be positively related to both engagement in risky behavior and suicidal ideation. Therefore, it may have allowed us to better capture and explain the relationship.

This leads to another possible limitation which involves the characteristics of the sample population. The majority of the adolescents that participated in this study (62.8%) were recruited from either the Broward County Juvenile Justice Probation Department or FOSI, an alternative day school in Broward County. Therefore, most of the student were already deemed at-risk and were also facing legal difficulties due to their previous behavior. In light of this, the adolescents in this study may have been hesitant to reveal the true extent of their risky behavior because of the potential consequences. Our sample was also comprised primarily ethnic minorities (56.7% African American and 12.3% Hispanic/Latino. While the results provide us with useful information, it may not be representative of the general adolescent population. Therefore, future research should focus on replicating these results using a more random and diverse sample.

Lastly, when examining or analyzing the data, some of the data that was collected was incomplete or unusable due to missing information. In our case, 15.6% of the sample had missing data and, as a result, these participants needed to be excluded from the study. According to Kang

(2013), this leads to several concerns: (1) it reduces statistical power, (2) it reduces the representativeness of the sample, and (3) it can cause bias in the estimation of the factors. It is suggested that future studies ensure that the facilitators are specially trained to examine each measure for missing data after it is completed. Then, if the information is missing, the individual can be asked to add the necessary information. In addition, the participants should also be educated on the importance of responding to each question and the implications of missing data in order to encourage full completion.

Clinical Implications

The findings from this study can be used to strengthen and improve current screening, prevention and treatment programs. One of the most common screening tools is the Columbia SuicideScreen questionnaire (Shaffer et al., 2004) which helps to determine an individual's risk factors for suicide. It is comprised of 11 questions that asses the individual's number of prior suicide attempts, prevalence of suicidal ideation, presence of a negative mood (i.e. unhappy, sad, irritable, withdrawn, worried, nervous) and their engagement in risky behaviors such as using drugs and alcohol. It has been shown to be very effective in accurately identifying students at risk for suicide (Scott et al., 2010). Despite the success using this measure, the findings from the current study suggest that internalizing behaviors (i.e. self-harm and eating disordered behavior) may be more helpful than externalizing behaviors (i.e. drugs and alcohol) in predicting future suicidal ideation. In this study, endorsement of self-harm and eating disordered behaviors consistently contributed to and uniquely predicted the variance in passive, active and total suicidal ideation scores. In contrast, drug use, alcohol consumption, smoking, fighting, and risky sexual activity failed to uniquely predict the variance in passive, active and total suicidal ideation scores.

Therefore, these results suggest that it may be beneficial to include internalizing behaviors as part of any adolescent suicide screening measure.

Identifying adolescents who report internalizing behaviors is also important because they may be may be more likely to report active suicidal ideation. In the current study, the endorsement of internalizing behaviors predicted and accounted for the largest percentage of variance in active suicidal ideation scores when compared to both passive and total suicidal ideation scores. Therefore, adolescents who are engaging in self-harm and eating disordered behavior may represent a unique group that is especially at risk for future suicide attempts.

Significant gender differences were seen in the passive, active and general suicidal ideation scores. Being male, consistently predicted lower scores on all the measures of suicidal ideation. This suggests that screening methods may need to be modified depending on the gender of the teenager. For example, since males do not appear to score high on the current measures of suicidal ideation it may be more effective to assess a male's overall behavioral pattern such as their engagement in risky behaviors or access to lethal means to determine their overall level of risk. It may also be that face to face, screenings are more necessary for males since it provides them with the ability to express their concerns in subtle ways a trained professional may be able to identify. In contrast, females tend to naturally score higher on these measures which makes it easier to identify them and provide treatment options to them.

The Signs of Suicide (SOS) Program is a school-based prevention program which is comprised of a screening and educational component.  As part of the educational component, students are taught how to recognize and acknowledge the signs depression and suicidality in themselves and their peers. The second part, is a self-screening component where students are encouraged to complete the Columbia Depression Scale (CDS) which helps them identify and

evaluate their own depressive symptoms and suicidal thoughts. The goal is to encourage and empower the adolescent and their peers to seek help and intervene when necessary (Aseltine & DeMartino2004). In the short term, the SOS program has been effective at improving knowledge, promoting adaptive attitudes and reducing self-reported suicide attempts. However, it is less effective at reducing suicidal ideation and promoting help-seeking behaviors (Aseltine & Demartino, 2004; Katz et al., 2013; Schilling, Lawless, Buchanan & Aseltine, 2014; Schilling, Aseltine & James, 2016). This program relies heavily on the premise that suicide is a consequence of depression and adolescents are more likely to seek help from friends if they are considering suicide which is why their peers need to be educated. The results from the current study suggest that it may be useful to teach students to not only look for overt signs of depression, but also less obvious warning signs such as whether the adolescent is engaging in internalizing behaviors or if their family relationships are strained. Self-harm and eating disordered behavior predicted the largest increase in suicidal ideation when compared to other risky behaviors and this awareness may help identify at-risk adolescents earlier. In addition, how an adolescent describes their family functioning may also have important ramifications. Adolescents who report having poor or no relationship with their families may be significantly more at risk for developing suicidal ideation. Therefore, it may be useful to incorporate this information into the educational component of prevention programs like the SOS program.

Lastly, the results obtained from this study can be used to inform intervention and treatment. When a clinician is conducting their initial assessment, it is important that they gather information related to an adolescent's level, frequency and type of engagement in risky behavior. As mentioned previously, an adolescent who is engaging in self-harm or eating disordered behavior is more likely to report or develop suicidal ideation. On the other hand, externalizing

behaviors which may be more obvious are not necessarily a warning sign of future suicidality. Although, this must be decided in connection with the entire clinical picture. As part of treatment, the adolescent would benefit from treatment interventions that are designed to reduce their maladaptive behaviors. This may be done by understanding the role these behaviors have in helping the adolescent cope with their negative emotions and replacing them with more adaptive and helpful coping skills. For example, cognitive behavioral therapy helps people learn how to cope with and change their negative automatic thoughts which then leads to better coping skills. It also encourages adolescents to increase their engagement in positive behaviors that will help reduce anxiety and depression.

Another important finding from this study, highlights the importance of an adolescent's perception of their family environment. Good or great family relationships consistently predicted lower passive, active and total suicidal ideations scores. In contrast, poor and no family relationship consistently predicted higher passive, active and total suicidal ideation scores. An okay relationship only had a positive effect on suicidal ideation scores when the adolescent endorsed active suicidal ideation items. Therefore, it is essential that intervention programs aim to improve the perception the adolescent has of their relationship with their family members. This means that even if the family unit appears to be positively functioning to the clinician, it is the adolescent's perception that must be used as an indicator of how well the family is functioning. Establishing the primary reasons for their negative perception and poor family relationships is imperative to helping them improve the status of their mental health. Adolescents who do not feel close to their family, may feel isolated and unable to talk to anyone about their depressive symptoms or suicidal thoughts. As a result, they may be more likely to resort to negative coping strategies such as engaging in internalizing and externalizing behavior.

Conclusion

The goal of this study was to further examine the relationship between ethnicity, problem-solving skills, gender, risky behavior, perceived family functioning, and suicidal ideation among an adolescent population. As expected, adolescents who reported having positive relationships with their families also exhibited lower scores on passive, active, and total suicidal ideation. Males reported lower levels of all forms of suicidal ideation when compared to females. However, neither ethnicity nor problem-solving skills exhibited a significant positive relationship with total suicidal ideation scores and were omitted from the analyses.

In terms of risky behaviors, engagement in internalized behaviors such as self-injurious and weight-monitoring/eating-restrictive behavior predicted an increase in passive, active, and total suicidal ideation scores. In contrast, engagement in externalizing behaviors such as smoking, substance use, and risky sexual activity failed to predict an increase in passive, active and total suicidal ideation scores. Future research, should aim to address the limitations of this study and build upon the results by using a more representative sample, utilizing measures that have been standardized within an adolescent sample, and seeking out additional information from several supplementary resources. In addition, these findings can be used to improve existing screening and prevention programs by adding questions designed to measure internalizing risky behaviors and family functioning. These additional questions may help identify at-risk adolescents sooner and provide them with the necessary support to help decrease their suicidality.

**References**

Abela, J. R., Brozina, K., & Haigh, E. P. (2002). An examination of the response styles theory of depression in third-and seventh-grade children: A short-term longitudinal study. *Journal of Abnormal Child Psychology, 30*(5), 515-527.

Abrantes, A. M., Lee, C. S., MacPherson, L., Strong, D. R., Borrelli, B., & Brown, R. A. (2009). Health risk behaviors in relation to making a smoking quit attempt among adolescents. *J Behav Med, 32*(2), 142-149. doi:10.1007/s10865-008-9184-1

Achenbach, T. M., & Edelbrock, C. (1991). Child behavior checklist. *Burlington (Vt), 7*.

Achenbach, T. M., & Rescorla, L. (2001). ASEBA school-age forms & profiles: Aseba Burlington, VT.

Acierno, R., Kilpatrick, D. G., Resnick, H., Saunders, B., De Arellano, M., & Best, C. (2000). Assault, PTSD, family substance use, and depression as risk factors for cigarette use in youth: findings from the National Survey of Adolescents. *J Trauma Stress, 13*(3), 381-396. doi:10.1023/A:1007772905696

Adambegan, M., Wagner, G., Nader, I. W., Fernandez-Aranda, F., Treasure, J., & Karwautz, A. (2012). Internalizing and externalizing behaviour problems in childhood contribute to the development of anorexia and bulimia nervosa—A study comparing sister pairs. *European Eating Disorders Review, 20*(2), 116-120.

Adams, D. M., Overholser, J. C., & Lehnert, K. L. (1994). Perceived family functioning and adolescent suicidal behavior. *J Am Acad Child Adolesc Psychiatry, 33*(4), 498-507. doi:10.1097/00004583-199405000-00008

Afifi, T. O., Cox, B. J., & Katz, L. Y. (2007). The associations between health risk behaviours and suicidal ideation and attempts in a nationally representative sample of young adolescents. *Can J Psychiatry, 52*(10), 666-674. doi:10.1177/070674370705201007

Agerbo, E., Nordentoft, M., & Mortensen, P. B. (2002). Familial, psychiatric, and socioeconomic risk factors for suicide in young people: nested case-control study. *BMJ, 325*(7355), 74.

Aguinis, H., Pierce, C. A., & Quigley, B. M. (1993). Conditions Under Which a Bogus Pipeline Procedure Enhances the Validity of Self-Reported Cigarette Smoking: A Meta-Analytic Review. *Journal of Applied Social Psychology, 23*(5), 352-373.

Aimé, A., Craig, W. M., Pepler, D., Jiang, D., & Connolly, J. (2008). Developmental pathways of eating problems in adolescents. *International Journal of Eating Disorders, 41*(8), 686-696.

Alexander, C. S., Kim, Y. J., Ensminger, M., Johnson, K. E., Smith, B. J., & Dolan, L. J. (1990). A measure of risk taking for young adolescents: Reliability and validity assessments. *J Youth Adolesc, 19*(6), 559-569. doi:10.1007/BF01537176

Alexander, C. S., Somerfield, M. R., Ensminger, M. E., Johnson, K. E., & Kim, Y. J. (1993). Consistency of adolescents' self-report of sexual behavior in a longitudinal study. *Journal of Youth and Adolescence, 22*(5), 455-471.

Allgood-Merten, B., Lewinsohn, P. M., & Hops, H. (1990). Sex differences and adolescent depression. *J Abnorm Psychol, 99*(1), 55-63.

Andover, M. S., & Gibb, B. E. (2010). Non-suicidal self-injury, attempted suicide, and suicidal intent among psychiatric inpatients. *Psychiatry research, 178*(1), 101-105.

Andrews, J. A., & Lewinsohn, P. M. (1992). Suicidal attempts among older adolescents: prevalence and co-occurrence with psychiatric disorders. *J Am Acad Child Adolesc Psychiatry, 31*(4), 655-662. doi:10.1097/00004583-199207000-00012

Anestis, M. D., & Joiner, T. E. (2011). Examining the role of emotion in suicidality: negative urgency as an amplifier of the relationship between components of the interpersonal-psychological theory of suicidal behavior and lifetime number of suicide attempts. *J Affect Disord, 129*(1-3), 261-269. doi:10.1016/j.jad.2010.08.006

Aseltine Jr, R. H., & DeMartino, R. (2004). An outcome evaluation of the SOS suicide prevention program. *American Journal of Public Health*, *94*(3), 446-451.

Baca-Garcia, E., Diaz-Sastre, C., Garcia Resa, E., Blasco, H., Braquehais Conesa, D., Oquendo, M. A., . . . de Leon, J. (2005). Suicide attempts and impulsivity. *Eur Arch Psychiatry Clin Neurosci, 255*(2), 152-156. doi:10.1007/s00406-004-0549-3

Baca-Garcia, E., Perez-Rodriguez, M. M., Oquendo, M. A., Keyes, K. M., Hasin, D. S., Grant, B. F., & Blanco, C. (2011). Estimating risk for suicide attempt: Are we asking the right questions?: Passive suicidal ideation as a marker for suicidal behavior. *Journal of affective disorders, 134*(1), 327-332.

Bachman, J. G., & O'MALLEY, P. M. (1981). When four months equal a year: Inconsistencies in student reports of drug use. *Public Opinion Quarterly, 45*(4), 536-548.

Bae, S., Ye, R., Chen, S., Rivers, P. A., & Singh, K. P. (2005). Risky behaviors and factors associated with suicide attempt in adolescents. *Arch Suicide Res, 9*(2), 193-202. doi:10.1080/13811110590904034

Baertschi, M., Costanza, A., Richard-Lepouriel, H., Pompili, M., Sarasin, F., Weber, K., & Canuto, A. (2017). The application of the interpersonal-psychological theory of suicide to a sample of Swiss patients attending a psychiatric emergency department for a non-lethal suicidal event. *Journal of affective disorders, 210*, 323-331.

Bagge, C. L., Lee, H. J., Schumacher, J. A., Gratz, K. L., Krull, J. L., & Holloman, G., Jr. (2013). Alcohol as an acute risk factor for recent suicide attempts: a case-crossover analysis. *J Stud Alcohol Drugs, 74*(4), 552-558.

Bailey, S. L., Flewelling, R. L., & Rachal, J. V. (1992). The characterization of inconsistencies in self-reports of alcohol and marijuana use in a longitudinal study of adolescents. *Journal of Studies on Alcohol, 53*(6), 636-647.

Baker, J. P., & Berenbaum, H. (2007). Emotional approach and problem-focused coping: A comparison of potentially adaptive strategies. *Cognition and Emotion, 21*(1), 95-118.

Bardone-Cone, A. M., Harney, M. B., Maldonado, C. R., Lawson, M. A., Robinson, D. P., Smith, R., & Tosh, A. (2010). Defining recovery from an eating disorder: Conceptualization, validation, and examination of psychosocial functioning and psychiatric comorbidity. *Behav Res Ther, 48*(3), 194-202. doi:10.1016/j.brat.2009.11.001

Bardone, A. M., Moffitt, T. E., Caspi, A., Dickson, N., & Silva, P. A. (1996). Adult mental health and social outcomes of adolescent girls with depression and conduct disorder. *Development and psychopathology, 8*(4), 811-829.

Bearman, P. S., & Moody, J. (2004). Suicide and friendships among American adolescents. *Am J Public Health, 94*(1), 89-95.

Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence, 35*(2), 217-229.

Bearman, S. K., & Stice, E. (2008). Testing a gender additive model: The role of body image in adolescent depression. *Journal of Abnormal Child Psychology, 36*(8), 1251-1263.

Beautrais, A. L. (2000). Risk factors for suicide and attempted suicide among young people. *Australian & New Zealand Journal of Psychiatry, 34*(3), 420-436.

Beautrais, A. L. (2002). Gender issues in youth suicidal behaviour. *Emerg Med (Fremantle), 14*(1), 35-42.

Beautrais, A. L. (2003). Suicide and serious suicide attempts in youth: a multiple-group comparison study. *Am J Psychiatry, 160*(6), 1093-1099. doi:10.1176/appi.ajp.160.6.1093

Beautrais, A. L., Joyce, P. R., & Mulder, R. T. (1996). Risk factors for serious suicide attempts among youths aged 13 through 24 years. *J Am Acad Child Adolesc Psychiatry, 35*(9), 1174-1182. doi:10.1097/00004583-199609000-00015

Beautrais, A. L., Joyce, P. R., & Mulder, R. T. (1998). Psychiatric illness in a New Zealand sample of young people making serious suicide attempts. *N Z Med J, 111*(1060), 44-48.

Bechara, A., Damasio, H., Tranel, D., & Anderson, S. W. (1998). Dissociation of working memory from decision making within the human prefrontal cortex. *Journal of neuroscience, 18*(1), 428-437.

Bechara, A., Dolan, S., Denburg, N., Hindes, A., Anderson, S. W., & Nathan, P. E. (2001). Decision-making deficits, linked to a dysfunctional ventromedial prefrontal cortex, revealed in alcohol and stimulant abusers. *Neuropsychologia, 39*(4), 376-389.

Beck, A. T., Kovacs, M., & Weissman, A. (1975). Hopelessness and suicidal behavior. An overview. *JAMA, 234*(11), 1146-1149.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: the Scale for Suicide Ideation. *Journal of Consulting and Clinical Psychology, 47*(2), 343.

Beck, A. T., & Steer, R. (1987). Manual for the revised Beck depression inventory. *San Antonio, TX: Psychological Corporation.*

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: a 10-year prospective study of patients hospitalized with suicidal ideation. *Am J Psychiatry, 142*(5), 559-563. doi:10.1176/ajp.142.5.559

Beck, R. W., Morris, J., & Lester, D. (1974). Suicide notes and risk of future suicide. *JAMA, 228*(4), 495-496.

Bender, T. W., Gordon, K. H., Bresin, K., & Joiner, T. E., Jr. (2011). Impulsivity and suicidality: the mediating role of painful and provocative experiences. *J Affect Disord, 129*(1-3), 301-307. doi:10.1016/j.jad.2010.07.023

Bennum, I., & Phil, M. (1983). Depression and Hostility in Self-Mutilation. *Suicide and Life-Threatening Behavior, 13*(2), 71-84.

Bettridge, B. J., & Favreau, O. E. (1995). The dependency needs and perceived availability and adequacy of relationships in female adolescent suicide attempters. *Psychology of Women Quarterly, 19*(4), 517-530.

Biglan, A., & Cody, C. (2003). Preventing multiple problem behaviors in adolescence. *Reducing adolescent risk: Toward an integrated approach*, 125-131.

Birckmayer, J., & Hemenway, D. (1999). Minimum-age drinking laws and youth suicide, 1970-1990. *Am J Public Health, 89*(9), 1365-1368.

Bjärehed, J., Wångby-Lundh, M., & Lundh, L. G. (2012). Nonsuicidal self-injury in a community sample of adolescents: Subgroups, stability, and associations with psychological difficulties. *Journal of Research on Adolescence, 22*(4), 678-693.

Blackburn, S., Johnston, L., Blampied, N., Popp, D., & Kallen, R. (2006). An application of escape theory to binge eating. *European Eating Disorders Review, 14*(1), 23-31.

Blair-West, G. W., Cantor, C. H., Mellsop, G. W., & Eyeson-Annan, M. L. (1999). Lifetime suicide risk in major depression: sex and age determinants. *J Affect Disord, 55*(2-3), 171-178.

Blumenthal, S. J. (1990). Youth suicide: risk factors, assessment, and treatment of adolescent and young adult suicidal patients. *Psychiatr Clin North Am, 13*(3), 511-556.

Bohn, K., Doll, H. A., Cooper, Z., O'Connor, M., Palmer, R. L., & Fairburn, C. G. (2008). The measurement of impairment due to eating disorder psychopathology. *Behav Res Ther, 46*(10), 1105-1110. doi:10.1016/j.brat.2008.06.012

Bolton, J. M., Belik, S. L., Enns, M. W., Cox, B. J., & Sareen, J. (2008). Exploring the correlates of suicide attempts among individuals with major depressive disorder: findings from the national epidemiologic survey on alcohol and related conditions. *J Clin Psychiatry, 69*(7), 1139-1149.

Borges, G., Walters, E. E., & Kessler, R. C. (2000). Associations of substance use, abuse, and dependence with subsequent suicidal behavior. *Am J Epidemiol, 151*(8), 781-789.

Borges, M. T., & Simoes-Barbosa, R. H. (2008). [Cigarette as "companion": a critical gender approach to women's smoking]. *Cad Saude Publica, 24*(12), 2834-2842.

Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: risks and protectors. *Pediatrics, 107*(3), 485-493.

Borowsky, I. W., Resnick, M. D., Ireland, M., & Blum, R. W. (1999). Suicide attempts among American Indian and Alaska Native youth: risk and protective factors. *Arch Pediatr Adolesc Med, 153*(6), 573-580.

Borowsky, I. W., Taliaferro, L. A., & McMorris, B. J. (2013). Suicidal thinking and behavior among youth involved in verbal and social bullying: risk and protective factors. *J Adolesc Health, 53*(1 Suppl), S4-12. doi:10.1016/j.jadohealth.2012.10.280

Boxer, P. (2010). Variations in risk and treatment factors among adolescents engaging in different types of deliberate self-harm in an inpatient sample. *J Clin Child Adolesc Psychol, 39*(4), 470-480. doi:10.1080/15374416.2010.486302

Brausch, A. M., & Decker, K. M. (2014). Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. *J Abnorm Child Psychol, 42*(5), 779-789. doi:10.1007/s10802-013-9822-0

Brausch, A. M., & Gutierrez, P. M. (2009). The role of body image and disordered eating as risk factors for depression and suicidal ideation in adolescents. *Suicide Life Threat Behav, 39*(1), 58-71. doi:10.1521/suli.2009.39.1.58

Brausch, A. M., & Gutierrez, P. M. (2010). Differences in non-suicidal self-injury and suicide attempts in adolescents. *J Youth Adolesc, 39*(3), 233-242. doi:10.1007/s10964-009-9482-0

Brausch, A. M., & Muehlenkamp, J. J. (2007). Body image and suicidal ideation in adolescents. *Body Image, 4*(2), 207-212. doi:10.1016/j.bodyim.2007.02.001

Brems, C., & Johnson, M. E. (1989). Problem-solving appraisal and coping style: The influence of sex-role orientation and gender. *The Journal of Psychology, 123*(2), 187-194.

Brener, N. D., Billy, J. O., & Grady, W. R. (2003). Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *J Adolesc Health, 33*(6), 436-457.

Brener, N. D., Hassan, S. S., & Barrios, L. C. (1999). Suicidal ideation among college students in the United States. *J Consult Clin Psychol, 67*(6), 1004-1008.

Brent, D. A. (1987). Correlates of the medical lethality of suicide attempts in children and adolescents. *J Am Acad Child Adolesc Psychiatry, 26*(1), 87-91. doi:10.1097/00004583-198701000-00017

Brent, D. A. (1995). Risk factors for adolescent suicide and suicidal behavior: mental and substance abuse disorders, family environmental factors, and life stress. *Suicide Life Threat Behav, 25 Suppl*, 52-63.

Brent, D. A., Baugher, M., Bridge, J., Chen, T., & Chiappetta, L. (1999). Age- and sex-related risk factors for adolescent suicide. *J Am Acad Child Adolesc Psychiatry, 38*(12), 1497-1505. doi:10.1097/00004583-199912000-00010

Brent, D. A., Holder, D., Kolko, D., Birmaher, B., Baugher, M., Roth, C., . . . Johnson, B. A. (1997). A clinical psychotherapy trial for adolescent depression comparing cognitive, family, and supportive therapy. *Arch Gen Psychiatry, 54*(9), 877-885.

Brent, D. A., Kolko, D. J., Allan, M. J., & Brown, R. V. (1990). Suicidality in affectively disordered adolescent inpatients. *J Am Acad Child Adolesc Psychiatry, 29*(4), 586-593. doi:10.1097/00004583-199007000-00012

Breslau, N., Peterson, E. L., Schultz, L. R., Chilcoat, H. D., & Andreski, P. (1998). Major depression and stages of smoking. A longitudinal investigation. *Arch Gen Psychiatry, 55*(2), 161-166.

Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *J Child Psychol Psychiatry, 47*(3-4), 372-394. doi:10.1111/j.1469-7610.2006.01615.x

Bronisch, T., Hofler, M., & Lieb, R. (2008). Smoking predicts suicidality: findings from a prospective community study. *J Affect Disord, 108*(1-2), 135-145. doi:10.1016/j.jad.2007.10.010

Brook, J. S., Adams, R., Balka, E., & Johnson, E. (2002). Early adolescent marijuana use: Risks for the transition to young adulthood. *Psychological medicine, 32*(1), 79-91.

Brooks, T. L., Harris, S. K., Thrall, J. S., & Woods, E. R. (2002). Association of adolescent risk behaviors with mental health symptoms in high school students. *J Adolesc Health, 31*(3), 240-246.

Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: a 20-year prospective study. *J Consult Clin Psychol, 68*(3), 371-377.

Brown, L. K., Overholser, J., Spirito, A., & Fritz, G. K. (1991). The correlates of planning in adolescent suicide attempts. *J Am Acad Child Adolesc Psychiatry, 30*(1), 95-99. doi:10.1097/00004583-199101000-00014

Buckholdt, K. E., Parra, G. R., & Jobe-Shields, L. (2014). Intergenerational Transmission of Emotion Dysregulation Through Parental Invalidation of Emotions: Implications for Adolescent Internalizing and Externalizing Behaviors. *J Child Fam Stud, 23*(2), 324-332. doi:10.1007/s10826-013-9768-4

Bulik, C. M., Sullivan, P. F., Tozzi, F., Furberg, H., Lichtenstein, P., & Pedersen, N. L. (2006). Prevalence, heritability, and prospective risk factors for anorexia nervosa. *Archives of general psychiatry, 63*(3), 305-312.

Bulik, C. M., Thornton, L., Pinheiro, A. P., Plotnicov, K., Klump, K. L., Brandt, H., . . . Kaye, W. H. (2008). Suicide attempts in anorexia nervosa. *Psychosom Med, 70*(3), 378-383. doi:10.1097/PSY.0b013e3181646765

Burrow-Sanchez, J. (2006). Understanding adolescent substance abuse: Prevalence, risk factors, and clinical implications. *Journal of Counseling & Development, 84*(3), 283–290. doi:10.1002/j.1556-6678.2006.tb00407.x

Butler, G. K., & Montgomery, A. M. (2004). Impulsivity, risk taking and recreational 'ecstasy' (MDMA) use. *Drug Alcohol Depend, 76*(1), 55-62. doi:10.1016/j.drugalcdep.2004.04.003

Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry, 36*(1), 113-149.

Canetto, S. S. (1991). Gender roles, suicide attempts, and substance abuse. *J Psychol, 125*(6), 605-620. doi:10.1080/00223980.1991.10543323

Canetto, S. S. (1997). Meanings of gender and suicidal behavior during adolescence. *Suicide Life Threat Behav, 27*(4), 339-351.

Canetto, S. S., & Lester, D. (1995). Gender and the primary prevention of suicide mortality. *Suicide Life Threat Behav, 25*(1), 58-69.

Cannell, C. F., Miller, P. V., & Oksenberg, L. (1981). Research on interviewing techniques. *Sociological methodology, 12*, 389-437.

Capitaine, M., Rodgers, R. F., & Chabrol, H. (2011). Unwanted sexual experiences, depressive symptoms and disordered eating among college students. *Eat Behav, 12*(1), 86-89. doi:10.1016/j.eatbeh.2010.11.003

Carlat, D. J., & Camargo Jr, C. A. (1991). Review of bulimia nervosa in males. *The American journal of psychiatry, 148*(7), 831.

Carlat, D. J., Camargo Jr, C. A., & Herzog, D. B. (1997). Eating disorders in males: A report on 135 patients. *The American journal of psychiatry, 154*(8), 1127.

Carvalho, C. B., Nunes, C., Castilho, P., da Motta, C., Caldeira, S., & Pinto-Gouveia, J. (2015). Mapping non suicidal self-injury in adolescence: Development and confirmatory factor analysis of the Impulse, Self-harm and Suicide Ideation Questionnaire for Adolescents (ISSIQ-A). *Psychiatry Res, 227*(2-3), 238-245. doi:10.1016/j.psychres.2015.01.031

Cashwell, C. S., & Vacc, N. A. (1996). Family functioning and risk behaviors: Influences on adolescent delinquency. *The School Counselor, 44*(2), 105-114.

Caspi, A., Henry, B., McGee, R. O., Moffitt, T. E., & Silva, P. A. (1995). Temperamental origins of child and adolescent behavior problems: From age three to age fifteen. *Child development, 66*(1), 55-68.

Chabrol, H., Chauchard, E., & Girabet, J. (2008). Cannabis use and suicidal behaviours in high-school students. *Addictive behaviors, 33*(1), 152-155.

Chabrol, H., Rodgers, R., & Rousseau, A. (2007). Relations between suicidal ideation and dimensions of depressive symptoms in high-school students. *J Adolesc, 30*(4), 587-600. doi:10.1016/j.adolescence.2006.07.003

Chambers, R. A., & Potenza, M. N. (2003). Neurodevelopment, impulsivity, and adolescent gambling. *Journal of Gambling Studies, 19*(1), 53-84.

Chapman, A. L., Gratz, K. L., & Brown, M. Z. (2006). Solving the puzzle of deliberate self-harm: The experiential avoidance model. *Behaviour research and therapy, 44*(3), 371-394.

Cherpitel, C. J. (1993). Alcohol and injuries: a review of international emergency room studies. *Addiction, 88*(7), 923-937.

Cho, H., Hallfors, D. D., & Iritani, B. J. (2007). Early initiation of substance use and subsequent risk factors related to suicide among urban high school students. *Addict Behav, 32*(8), 1628-1639. doi:10.1016/j.addbeh.2006.11.017

Choquet, M., & Menke, H. (1990). Suicidal thoughts during early adolescence: prevalence, associated troubles and help-seeking behavior. *Acta Psychiatr Scand, 81*(2), 170-177.

Christiansen, E., Larsen, K. J., Agerbo, E., Bilenberg, N., & Stenager, E. (2013). Incidence and risk factors for suicide attempts in a general population of young people: a Danish register-based study. *Aust N Z J Psychiatry, 47*(3), 259-270. doi:10.1177/0004867412463737

Claes, L., Klonsky, E. D., Muehlenkamp, J., Kuppens, P., & Vandereycken, W. (2010). The affect-regulation function of nonsuicidal self-injury in eating-disordered patients: which affect states are regulated? *Compr Psychiatry, 51*(4), 386-392. doi:10.1016/j.comppsych.2009.09.001

Clark, D. C., Sommerfeldt, L., Schwarz, M., Hedeker, D., & Watel, L. (1990). Physical recklessness in adolescence. Trait or byproduct of depressive/suicidal states? *J Nerv Ment Dis, 178*(7), 423-433.

Cloninger, C. R., Sigvardsson, S., & Bohman, M. (1988). Childhood personality predicts alcohol abuse in young adults. *Alcoholism: clinical and experimental research, 12*(4), 494-505.

Cole, D. A. (1989). Psychopathology of adolescent suicide: hopelessness, coping beliefs, and depression. *J Abnorm Psychol, 98*(3), 248-255.

Colom, R., Abad, F. J., Quiroga, M. Á., Shih, P. C., & Flores-Mendoza, C. (2008). Working memory and intelligence are highly related constructs, but why? *Intelligence, 36*(6), 584-606.

Conner, K. R., Hesselbrock, V. M., Schuckit, M. A., Hirsch, J. K., Knox, K. L., Meldrum, S., . . .
Soyka, M. (2006). Precontemplated and impulsive suicide attempts among individuals with
alcohol dependence. *J Stud Alcohol, 67*(1), 95-101.

Connor, J. J., & Rueter, M. A. (2006). Parent-child relationships as systems of support or risk for
adolescent suicidality. *J Fam Psychol, 20*(1), 143-155. doi:10.1037/0893-3200.20.1.143

Control, C. f. D. (2014). Prevention (CDC).(2014). *Violence prevention at CDC*.

Control, C. f. D., & Prevention. (2013). Web-based Injury Statistics Query and Reporting System
(WISQARS)[Online].(2013, 2011) National Center for Injury Prevention and Control,
CDC (producer).

Corcoran, J., Dattalo, P., Crowley, M., Brown, E., & Grindle, L. . (2011). A systematic review of
psychosocial interventions for suicidal adolescents. . *Children and Youth Services Review,
33*(11), 2112–2118. doi:dx.doi.org/10.1016/j.childyouth.2011.06.017

Cordova, D., Heinze, J., Mistry, R., Hsieh, H.-F., Stoddard, S., Salas-Wright, C. P., & Zimmerman,
M. A. (2014). Family functioning and parent support trajectories and substance use and
misuse among minority urban adolescents: A latent class growth analysis. *Substance use
& misuse, 49*(14), 1908-1919.

Corso, P. S., Mercy, J. A., Simon, T. R., Finkelstein, E. A., & Miller, T. R. (2007). Medical costs
and productivity losses due to interpersonal and self-directed violence in the United States.
*Am J Prev Med, 32*(6), 474-482. doi:10.1016/j.amepre.2007.02.010

Crawford, A. M., Pentz, M. A., Chou, C.-P., Li, C., & Dwyer, J. H. (2003). Parallel developmental
trajectories of sensation seeking and regular substance use in adolescents. *Psychology of
Addictive Behaviors, 17*(3), 179.

Crawford, M. J., Thomas, O., Khan, N., & Kulinskaya, E. (2007). Psychosocial interventions following self-harm: systematic review of their efficacy in preventing suicide. *Br J Psychiatry, 190*, 11-17. doi:10.1192/bjp.bp.106.025437

Crosby, A. E., Cheltenham, M. P., & Sacks, J. J. (1999). Incidence of suicidal ideation and behavior in the United States, 1994. *Suicide and Life-Threatening Behavior, 29*(2), 131-140.

Cross, D., Westen, D., & Bradley, B. (2011). Personality subtypes of adolescents who attempt suicide. *The Journal of nervous and mental disease, 199*(10), 750-756.

Crow, S. (2014). Treatment of Binge Eating Disorder. *Curr Treat Options Psychiatry, 1*(4), 307-314. doi:10.1007/s40501-014-0023-4

Crow, S., Eisenberg, M. E., Story, M., & Neumark-Sztainer, D. (2008a). Are body dissatisfaction, eating disturbance, and body mass index predictors of suicidal behavior in adolescents? A longitudinal study. *J Consult Clin Psychol, 76*(5), 887-892. doi:10.1037/a0012783

Crow, S., Eisenberg, M. E., Story, M., & Neumark-Sztainer, D. (2008b). Suicidal behavior in adolescents: relationship to weight status, weight control behaviors, and body dissatisfaction. *Int J Eat Disord, 41*(1), 82-87. doi:10.1002/eat.20466

Crumley, F. E. (1990). Substance abuse and adolescent suicidal behavior. *JAMA, 263*(22), 3051-3056.

Cummins, J.-R. C., Ireland, M., Resnick, M. D., & Blum, R. W. (1999). Correlates of physical and emotional health among Native American adolescents. *Journal of adolescent health, 24*(1), 38-44.

Cyranowski, J. M., Frank, E., Young, E., & Shear, M. K. (2000). Adolescent onset of the gender difference in lifetime rates of major depression: a theoretical model. *Archives of general psychiatry, 57*(1), 21-27.

D'Zurilla, T. J., Chang, E. C., Nottingham, E. J. t., & Faccini, L. (1998). Social problem-solving deficits and hopelessness, depression, and suicidal risk in college students and psychiatric inpatients. *J Clin Psychol, 54*(8), 1091-1107.

Daniel, S. S., & Goldston, D. B. (2009). Interventions for suicidal youth: a review of the literature and developmental considerations. *Suicide Life Threat Behav, 39*(3), 252-268. doi:10.1521/suli.2009.39.3.252

Darke, S., & Ross, J. (2002). Suicide among heroin users: rates, risk factors and methods. *Addiction, 97*(11), 1383-1394.

De Leo, D., & Heller, T. S. (2004). Who are the kids who self-harm? An Australian self-report school survey. *Med J Aust, 181*(3), 140-144.

Dellava, J. E., Thornton, L. M., Hamer, R. M., Strober, M., Plotnicov, K., Klump, K. L., . . . Halmi, K. A. (2010). Childhood anxiety associated with low BMI in women with anorexia nervosa. *Behaviour research and therapy, 48*(1), 60-67.

Deluty, R. H. (1989). Factors affecting the acceptability of suicide. *OMEGA-Journal of Death and Dying, 19*(4), 315-326.

DeMaio, T. J. (1984). Social desirability and survey. *Surveying subjective phenomena, 2*, 257.

Dennard, E. E., & Richards, C. S. (2013). Depression and coping in subthreshold eating disorders. *Eat Behav, 14*(3), 325-329. doi:10.1016/j.eatbeh.2013.05.011

Derouin, A., & Bravender, T. (2004). Living on the edge: The current phenomenon of self-mutilation in adolescents. *MCN: The American Journal of Maternal/Child Nursing, 29*(1), 12-18.

Deykin, E. Y., Levy, J. C., & Wells, V. (1987). Adolescent depression, alcohol and drug abuse. *Am J Public Health, 77*(2), 178-182.

Dodd, D., Smith, A., & Bodell, L. (2014). Restraint feeds stress: The relationship between eating disorder symptoms, stress generation, and the interpersonal theory of suicide. *Eat Behav, 15*(4), 567-573. doi:10.1016/j.eatbeh.2014.08.004

Dorpat, T. L., & Boswell, J. W. (1963). An evaluation of suicidal intent in suicide attempts. *Comprehensive Psychiatry, 4*(2), 117-125.

Dougherty, D. M., Mathias, C. W., Marsh, D. M., Papageorgiou, T. D., Swann, A. C., & Moeller, F. G. (2004). Laboratory measured behavioral impulsivity relates to suicide attempt history. *Suicide Life Threat Behav, 34*(4), 374-385. doi:10.1521/suli.34.4.374.53738

Dour, H. J., Cha, C. B., & Nock, M. K. (2011). Evidence for an emotion-cognition interaction in the statistical prediction of suicide attempts. *Behav Res Ther, 49*(4), 294-298. doi:10.1016/j.brat.2011.01.010

Dubow, E. F., Kausch, D. F., Blum, M. C., Reed, J., & Bush, E. (1989). Correlates of suicidal ideation and attempts in a community sample of junior high and high school students. . *Journal of Clinical Child Psychology, 18*, 158–166.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., . . . Chyen, D. (2012). Youth risk behavior surveillance—United States, 2011. *Morbidity and Mortality Weekly Report: Surveillance Summaries, 61*(4), 1-162.

Eichen, D. M., Kass, A. E., Fitzsimmons-Craft, E. E., Gibbs, E., Trockel, M., Barr Taylor, C., & Wilfley, D. E. (2016). Non-suicidal self-injury and suicidal ideation in relation to eating and general psychopathology among college-age women. *Psychiatry Res, 235*, 77-82. doi:10.1016/j.psychres.2015.11.046

Eisenberg, M. E., Sieving, R. E., Bearinger, L. H., Swain, C., & Resnick, M. D. (2006). Parents' communication with adolescents about sexual behavior: A missed opportunity for prevention? *Journal of Youth and Adolescence, 35*(6), 893-902.

Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., . . . Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child development, 72*(4), 1112-1134.

Eisenhower, D., Mathiowetz, N. A., & Morganstein, D. (1991). Recall error: Sources and bias reduction techniques. *Measurement errors in surveys*, 125-144.

Ekeroth, K., Engström, I., Hägglöf, B., & Broberg, A. (2003). Self-reported competencies and problems among Swedish girls with eating disorders and a control sample, using the Youth Self-Report. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 8*(4), 274-281.

Eklund, J. M., & Klinteberg, B. a. (2005). Personality Characteristics as Risk Indications of Alcohol Use and Violent Behavior in Male and Female Adolescents. *Journal of Individual Differences, 26*(2), 63.

Ellickson, P. L., Tucker, J. S., & Klein, D. J. (2001). High-risk behaviors associated with early smoking: results from a 5-year follow-up. *J Adolesc Health, 28*(6), 465-473.

Ellis, J. B., & Range, L. M. (1991). Differences between Blacks and Whites, women and men, in reasons for living. *Journal of Black Studies, 21*(3), 341-347.

Ellis, T. E., & Trumpower, D. (2008). Health-risk behaviors and suicidal ideation: a preliminary study of cognitive and developmental factors. *Suicide Life Threat Behav, 38*(3), 251-259. doi:10.1521/suli.2008.38.3.251

Engels, R. C., Knibbe, R. A., & Drop, M. J. (1997). Inconsistencies in adolescents' self-reports of initiation of alcohol and tobacco use. *Addictive behaviors, 22*(5), 613-623.

Escobedo, L. G., Reddy, M., & DuRant, R. H. (1997). Relationship between cigarette smoking and health risk and problem behaviors among US adolescents. *Arch Pediatr Adolesc Med, 151*(1), 66-71.

Evans, E., Hawton, K., & Rodham, K. (2004). Factors associated with suicidal phenomena in adolescents: a systematic review of population-based studies. *Clin Psychol Rev, 24*(8), 957-979. doi:10.1016/j.cpr.2004.04.005

Everett, F., Proctor, N., & Cartmell, B. (1983). Providing psychological services to American Indian children and families. *Professional Psychology: Research and Practice, 14*(5), 588.

Everett, S. A., Malarcher, A. M., Sharp, D. J., Husten, C. G., & Giovino, G. A. (2000). Relationship between cigarette, smokeless tobacco, and cigar use, and other health risk behaviors among U.S. high school students. *J Sch Health, 70*(6), 234-240.

Evren, C., Sar, V., Evren, B., & Dalbudak, E. (2008). Self-mutilation among male patients with alcohol dependency: the role of dissociation. *Compr Psychiatry, 49*(5), 489-495. doi:10.1016/j.comppsych.2008.02.006

Fairburn, C., Cooper, Z., Shafran, R., Bohn, K., & Hawker, D. (2008). Clinical perfectionism, core low self-esteem and interpersonal problems. *Cognitive behavior therapy and eating disorders*, 197-220.

Fairburn, C. G., Cooper, Z., Doll, H. A., & Welch, S. L. (1999). Risk factors for anorexia nervosa: three integrated case-control comparisons. *Arch Gen Psychiatry, 56*(5), 468-476.

Fairburn, C. G., Cowen, P. J., & Harrison, P. J. (1999). Twin studies and the etiology of eating disorders. *Int J Eat Disord, 26*(4), 349-358.

Farrell, A. D., Danish, S. J., & Howard, C. W. (1992). Relationship between drug use and other problem behaviors in urban adolescents. *J Consult Clin Psychol, 60*(5), 705-712.

Farrow, C. V., & Fox, C. L. (2011). Gender differences in the relationships between bullying at school and unhealthy eating and shape-related attitudes and behaviours. *Br J Educ Psychol, 81*(Pt 3), 409-420. doi:10.1348/000709910X525804

Favaro, A., & Santonastaso, P. (1998). Impulsive and compulsive self-injurious behavior in bulimia nervosa: prevalence and psychological correlates. *J Nerv Ment Dis, 186*(3), 157-165.

Favaro, A., & Santonastaso, P. (2000). Self-injurious behavior in anorexia nervosa. *The Journal of nervous and mental disease, 188*(8), 537-542.

Favazza, A. R. (1998). The coming of age of self-mutilation. *The Journal of nervous and mental disease, 186*(5), 259-268.

Favazza, A. R., DeRosear, L., & Conterio, K. (1989). Self-mutilation and eating disorders. *Suicide Life Threat Behav, 19*(4), 352-361.

Favazza, A. R., & Simeon, D. (1995). Self-mutilation.

Fehon, D. C., Grilo, C. M., & Lipschitz, D. S. (2005). A comparison of adolescent inpatients with and without a history of violence perpetration: impulsivity, PTSD, and violence risk. *J Nerv Ment Dis, 193*(6), 405-411.

Fellows, L. K., & Farah, M. J. (2003). Ventromedial frontal cortex mediates affective shifting in humans: evidence from a reversal learning paradigm. *Brain, 126*(8), 1830-1837.

Fellows, L. K., & Farah, M. J. (2005). Dissociable elements of human foresight: a role for the ventromedial frontal lobes in framing the future, but not in discounting future rewards. *Neuropsychologia, 43*(8), 1214-1221.

Felts, W. M., Chernier, T., & Barnes, R. (1992). Drug use and suicide ideation and behavior among North Carolina public school students. *American Journal of Public Health, 82*(6), 870-872.

Fergusson, D. M., & Horwood, L. J. (1997). Early onset cannabis use and psychosocial adjustment in young adults. *Addiction, 92*(3), 279-296.

Fergusson, D. M., Horwood, L. J., & Swain-Campbell, N. (2002). Cannabis use and psychosocial adjustment in adolescence and young adulthood. *Addiction, 97*(9), 1123-1135.

Ferreiro, F., Seoane, G., & Senra, C. (2011). A prospective study of risk factors for the development of depression and disordered eating in adolescents. *Journal of Clinical Child & Adolescent Psychology, 40*(3), 500-505.

Fichter, M., Daser, C., & Postpischil, F. (1986). Anorexic syndromes in the male *Anorexia Nervosa and Bulimic Disorders* (pp. 305-313): Elsevier.

Field, A. (2009). *Discovering statistics using SPSS*: Sage publications.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*: sage.

Field, T., Diego, M., & Sanders, C. E. (2001). Adolescent suicidal ideation. *Adolescence, 36*(142), 241-248.

Flannery, W. P., Sneed, C. D., & Marsh, P. (2003). Toward an empirical taxonomy of suicide ideation: A cluster analysis of the Youth Risk Behavior Survey. *Suicide and Life-Threatening Behavior, 33*(4), 365-372.

Flisher, A. J., Kramer, R. A., Hoven, C. W., King, R. A., Bird, H. R., Davies, M., . . . Regier, D. A. (2000a). Risk behavior in a community sample of children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(7), 881-887.

Flisher, A. J., Kramer, R. A., Hoven, C. W., King, R. A., Bird, H. R., Davies, M., . . . Shaffer, D. (2000b). Risk behavior in a community sample of children and adolescents. *J Am Acad Child Adolesc Psychiatry, 39*(7), 881-887. doi:10.1097/00004583-200007000-00017

Forbush, K., & Watson, D. (2013). The structure of common and uncommon mental disorders. *Psychological medicine, 43*(1), 97-108.

Forbush, K. T., South, S. C., Krueger, R. F., Iacono, W. G., Clark, L. A., Keel, P. K., . . . Watson, D. (2010). Locating eating pathology within an empirical diagnostic taxonomy: evidence from a community-based sample. *Journal of abnormal psychology, 119*(2), 282.

Forcano, L., Álvarez, E., Santamaría, J. J., Jimenez-Murcia, S., Granero, R., Penelo, E., . . . Ulman, F. (2011). Suicide attempts in anorexia nervosa subtypes. *Comprehensive Psychiatry, 52*(4), 352-358.

Foster, T. (2001). Dying for a drink. Global suicide prevention should focus more on alcohol use disorders. *BMJ, 323*(7317), 817-818.

Fowler, R. C., Rich, C. L., & Young, D. (1986). San Diego Suicide Study. II. Substance abuse in young cases. *Arch Gen Psychiatry, 43*(10), 962-965.

Frances, A., & Blumenthal, S. (1992). Personality as a predictor of youthful suicide. *Risk factors for youth suicide*, 144-155.

Franklin, J. C., Hessel, E. T., & Prinstein, M. J. (2011). Clarifying the role of pain tolerance in suicidal capability. *Psychiatry Res, 189*(3), 362-367. doi:10.1016/j.psychres.2011.08.001

Frick, P. J., Lilienfeld, S. O., Ellis, M., Loney, B., & Silverthorn, P. (1999). The association between anxiety and psychopathy dimensions in children. *Journal of Abnormal Child Psychology, 27*(5), 383-392.

Fulkerson, J. A., Story, M., Mellin, A., Leffert, N., Neumark-Sztainer, D., & French, S. A. (2006). Family dinner meal frequency and adolescent development: relationships with developmental assets and high-risk behaviors. *J Adolesc Health, 39*(3), 337-345. doi:10.1016/j.jadohealth.2005.12.026

Fulwiler, C., Forbes, C., Santangelo, S. L., & Folstein, M. (1997). Self-mutilation and suicide attempt: distinguishing features in prisoners. *Journal of the American Academy of Psychiatry and the Law Online, 25*(1), 69-77.

Garber, J., Little, S., Hilsman, R., & Weaver, K. R. (1998). Family predictors of suicidal symptoms in young adolescents. *J Adolesc, 21*(4), 445-457. doi:10.1006/jado.1998.0161

García-Alba, C. (2004). Anorexia and depression: depressive comorbidity in anorexic adolescents. *The Spanish Journal of Psychology, 7*(1), 40-52.

Garnefski, N., Kraaij, V., & van Etten, M. (2005). Specificity of relations between adolescents' cognitive emotion regulation strategies and internalizing and externalizing psychopathology. *Journal of Adolescence, 28*(5), 619-631.

Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*(2), 15-34.

Garrison, C. Z., Addy, C. L., Jackson, K. L., McKeown, R. E., & Waller, J. L. (1991a). The CES-D as a screen for depression and other psychiatric disorders in adolescents. *J Am Acad Child Adolesc Psychiatry, 30*(4), 636-641. doi:10.1097/00004583-199107000-00017

Garrison, C. Z., Addy, C. L., Jackson, K. L., McKeown, R. E., & Waller, J. L. (1991b). A longitudinal study of suicidal ideation in young adolescents. *J Am Acad Child Adolesc Psychiatry, 30*(4), 597-603. doi:10.1097/00004583-199107000-00011

Garrison, C. Z., Addy, C. L., McKeown, R. E., Cuffe, S. P., Jackson, K. L., & Waller, J. L. (1993a). Nonsuicidal physically self-damaging acts in adolescents. *Journal of Child and Family Studies, 2*(4), 339-352.

Garrison, C. Z., McKeown, R. E., Valois, R. F., & Vincent, M. L. (1993b). Aggression, substance use, and suicidal behaviors in high school students. *Am J Public Health, 83*(2), 179-184.

Geller, B., Reising, D., Leonard, H. L., Riddle, M. A., & Walsh, B. T. (1999). Critical review of tricyclic antidepressant use in children and adolescents. *J Am Acad Child Adolesc Psychiatry, 38*(5), 513-516. doi:10.1097/00004583-199905000-00012

Georgiades, K., & Boyle, M. H. (2007). Adolescent tobacco and cannabis use: young adult outcomes from the Ontario Child Health Study. *J Child Psychol Psychiatry, 48*(7), 724-731. doi:10.1111/j.1469-7610.2007.01740.x

Gerson, J., & Stanley, B. (2002). Suicidal and self-injurious behavior in personality disorder: controversies and treatment directions. *Current Psychiatry Reports, 4*(1), 30-38.

Giaconia, R. M., Reinherz, H. Z., Silverman, A. B., Pakiz, B., Frost, A. K., & Cohen, E. (1995). Traumas and posttraumatic stress disorder in a community population of older adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 34*(10), 1369-1380.

Gibb, B. E., Andover, M. S., & Miller, I. W. (2009). Depressive characteristics of adult psychiatric inpatients with a history of multiple versus one or no suicide attempts. *Depress Anxiety, 26*(6), 568-574. doi:10.1002/da.20412

Gibbs, D. (2010). *Assessing suicidal cognitions in adolescents: Establishing the reliability and validity of the Suicide Cognitions Scale*: The University of Toledo.

Gjerde, P. F., Block, J., & Block, J. H. (1988). Depressive symptoms and personality during late adolescence: Gender differences in the externalization-internalization of symptom expression. *Journal of abnormal psychology, 97*(4), 475.

Glowinski, A. L., Bucholz, K. K., Nelson, E. C., Fu, Q., Madden, P. A., Reich, W., & Heath, A. C. (2001). Suicide attempts in an adolescent female twin sample. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(11), 1300-1307.

Goldney, R. D., Smith, S., Winefield, A., Tiggeman, M., & Winefield, H. (1991). Suicidal ideation: its enduring nature and associated morbidity. *Acta Psychiatrica Scandinavica, 83*(2), 115-120.

Goldston, D. B., Daniel, S. S., Reboussin, B. A., Reboussin, D. M., Frazier, P. H., & Harris, A. E. (2001). Cognitive risk factors and suicide attempts among formerly hospitalized adolescents: a prospective naturalistic study. *J Am Acad Child Adolesc Psychiatry, 40*(1), 91-99. doi:10.1097/00004583-200101000-00021

Goldston, D. B., Daniel, S. S., Reboussin, B. A., Reboussin, D. M., Kelley, A. E., & Frazier, P. H. (1998). Psychiatric diagnoses of previous suicide attempters, first-time attempters, and repeat attempters on an adolescent inpatient psychiatry unit. *Journal of the American Academy of Child & Adolescent Psychiatry, 37*(9), 924-932.

Gonzalez, V. M., & Hewell, V. M. (2012). Suicidal ideation and drinking to cope among college binge drinkers. *Addict Behav, 37*(8), 994-997. doi:10.1016/j.addbeh.2012.03.027

Goodwin, R. D. (2006). Association between coping with anger and feelings of depression among youths. *Am J Public Health, 96*(4), 664-669. doi:10.2105/AJPH.2004.049742

Goodwin, R. D., Perkonigg, A., Hofler, M., & Wittchen, H. U. (2013). Mental disorders and smoking trajectories: a 10-year prospective study among adolescents and young adults in the community. *Drug Alcohol Depend, 130*(1-3), 201-207. doi:10.1016/j.drugalcdep.2012.11.009

Gore, S., Aseltine, R. H., Jr., & Colton, M. E. (1992). Social structure, life stress and depressive symptoms in a high school-aged population. *J Health Soc Behav, 33*(2), 97-113.

Gorman-Smith, D., Tolan, P. H., Henry, D. B., & Florsheim, P. (2000). Patterns of family functioning and adolescent outcomes among urban African American and Mexican American families. *Journal of Family Psychology, 14*(3), 436.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*: Stanford University Press.

Gould, M. S., Greenberg, T., Velting, D. M., & Shaffer, D. (2003). Youth suicide risk and preventive interventions: a review of the past 10 years. *J Am Acad Child Adolesc Psychiatry, 42*(4), 386-405. doi:10.1097/01.CHI.0000046821.95464.CF

Gould, M. S., King, R., Greenwald, S., Fisher, P., Schwab-Stone, M., Kramer, R., . . . Shaffer, D. (1998). Psychopathology associated with suicidal ideation and attempts among children and adolescents. *J Am Acad Child Adolesc Psychiatry, 37*(9), 915-923. doi:10.1097/00004583-199809000-00011

Gould, M. S., Velting, D., Kleinman, M., Lucas, C., Thomas, J. G., & Chung, M. (2004). Teenagers' attitudes about coping strategies and help-seeking behavior for suicidality. *J Am Acad Child Adolesc Psychiatry, 43*(9), 1124-1133. doi:10.1097/01.chi.0000132811.06547.31

Graber, J. A., Brooks-Gunn, J., Paikoff, R. L., & Warren, M. P. (1994). Prediction of eating problems: An 8-year study of adolescent girls. *Developmental psychology, 30*(6), 823.

Gray, D., Achilles, J., Keller, T., Tate, D., Haggard, L., Rolfs, R., . . . McMahon, W. M. (2002). Utah youth suicide study, phase I: government agency contact before death. *J Am Acad Child Adolesc Psychiatry, 41*(4), 427-434. doi:10.1097/00004583-200204000-00015

Grello, C. M., Welsh, D. P., Harper, M. S., & Dickson, J. W. (2003). Dating and sexual relationship trajectories and adolescent functioning. *Adolescent and Family Health, 3*, 103–112.

Grob, M. C., Klein, A. A., & Eisen, S. V. (1983). The role of the high school professional in identifying and managing adolescent suicidal behavior. *J Youth Adolesc, 12*(2), 163-173. doi:10.1007/BF02088311

Groholt, B., Ekeberg, O., & Haldorsen, T. (2006). Adolescent suicide attempters: what predicts future suicidal acts? *Suicide Life Threat Behav, 36*(6), 638-650. doi:10.1521/suli.2006.36.6.638

Groleger, U., Tomori, M., & Kocmur, M. (2003). Suicidal ideation in adolescence--an indicator of actual risk? *Isr J Psychiatry Relat Sci, 40*(3), 202-208.

Grover, K. E., Green, K. L., Pettit, J. W., Monteith, L. L., Garza, M. J., & Venta, A. (2009). Problem solving moderates the effects of life event stress and chronic stress on suicidal behaviors in adolescence. *J Clin Psychol, 65*(12), 1281-1290. doi:10.1002/jclp.20632

Grunbaum, J. A., Basen-Engquist, K., & Pandey, D. (1998). Association between violent behaviors and substance use among Mexican-American and non-Hispanic white high school students. *J Adolesc Health, 23*(3), 153-159.

Grunbaum, J. A., Kann, L., Kinchen, S. A., Williams, B., Ross, J. G., Lowry, R., & Kolbe, L. (2002). Youth risk behavior surveillance—United States, 2001. *Journal of School Health, 72*(8), 313-328.

Guertin, T., Lloyd-Richardson, E., Spirito, A., Donaldson, D., & Boergers, J. (2001). Self-mutilative behavior in adolescents who attempt suicide by overdose. *J Am Acad Child Adolesc Psychiatry, 40*(9), 1062-1069. doi:10.1097/00004583-200109000-00015

Haines, J., & Williams, C. L. (1997). Coping and problem solving of self-mutilators. *Journal of Clinical Psychology, 53*(2), 177-186.

Hair, E. C., Park, M. J., Ling, T. J., & Moore, K. A. (2009). Risky behaviors in late adolescence: co-occurrence, predictors, and consequences. *J Adolesc Health, 45*(3), 253-261. doi:10.1016/j.jadohealth.2009.02.009

Hallfors, D. D., Waller, M. W., Bauer, D., Ford, C. A., & Halpern, C. T. (2005). Which comes first in adolescence--sex and drugs or depression? *Am J Prev Med, 29*(3), 163-170. doi:10.1016/j.amepre.2005.06.002

Hallfors, D. D., Waller, M. W., Ford, C. A., Halpern, C. T., Brodish, P. H., & Iritani, B. (2004). Adolescent depression and suicide risk: association with sex and drug behavior. *Am J Prev Med, 27*(3), 224-231. doi:10.1016/j.amepre.2004.06.001

Halliwell, E., & Harvey, M. (2006). Examination of a sociocultural model of disordered eating among male and female adolescents. *British Journal of Health Psychology, 11*(2), 235-248.

Hamilton, M. (1960). A rating scale for depression. *Journal of neurology, neurosurgery, and psychiatry, 23*(1), 56.

Hamza, C. A., Stewart, S. L., & Willoughby, T. (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: a review of the literature and an integrated model. *Clin Psychol Rev, 32*(6), 482-495. doi:10.1016/j.cpr.2012.05.003

Hanna, E. Z., & Grant, B. F. (1999). Parallels to early onset alcohol use in the relationship of early onset smoking with drug use and DSM-IV drug and depressive disorders: findings from the National Longitudinal Epidemiologic Survey. *Alcohol Clin Exp Res, 23*(3), 513-522.

Hanna, E. Z., Yi, H. Y., Dufour, M. C., & Whitmore, C. C. (2001). The relationship of early-onset regular smoking to alcohol use, depression, illicit drug use, and other risky behaviors during early adolescence: results from the youth supplement to the third national health and nutrition examination survey. *J Subst Abuse, 13*(3), 265-282.

Hanninen, V., & Aro, H. (1996). Sex differences in coping and depression among young adults. *Soc Sci Med, 43*(10), 1453-1460.

Harden, K. P., & Mendle, J. (2011). Adolescent sexual activity and the development of delinquent behavior: the role of relationship context. *J Youth Adolesc, 40*(7), 825-838. doi:10.1007/s10964-010-9601-y

Harkavy Friedman, J. M., Asnis, G. M., Boeck, M., & DiFiore, J. (1987). Prevalence of specific suicidal behaviors in a high school sample. *Am J Psychiatry, 144*(9), 1203-1206. doi:10.1176/ajp.144.9.1203

Harney, M. B., Fitzsimmons-Craft, E. E., Maldonado, C. R., & Bardone-Cone, A. M. (2014). Negative affective experiences in relation to stages of eating disorder recovery. *Eat Behav, 15*(1), 24-30. doi:10.1016/j.eatbeh.2013.10.016

Harris, K. M., Duncan, G. J., & Boisjoly, J. (2002). Evaluating the role of "nothing to lose" attitudes on risky behavior in adolescence. *Social Forces, 80*(3), 1005-1039. doi:http://dx.doi.org/10.1353/sof.2002.0008

Harrison, A., Mountford, V. A., & Tchanturia, K. (2014). Social anhedonia and work and social functioning in the acute and recovered phases of eating disorders. *Psychiatry Res, 218*(1-2), 187-194. doi:10.1016/j.psychres.2014.04.007

Harter, S. (1986). The self-perception profile for adolescents, manual. *Denver (CO): University of Denver*.

Haw, C., Hawton, K., Houston, K., & Townsend, E. (2001). Psychiatric and personality disorders in deliberate self-harm patients. *The British journal of psychiatry, 178*(1), 48-54.

Hawton, K., Casanas, I. C. C., Haw, C., & Saunders, K. (2013). Risk factors for suicide in individuals with depression: a systematic review. *J Affect Disord, 147*(1-3), 17-28. doi:10.1016/j.jad.2013.01.004

Hawton, K., Kingsbury, S., Steinhardt, K., James, A., & Fagg, J. (1999). Repetition of deliberate self-harm by adolescents: the role of psychological factors. *J Adolesc, 22*(3), 369-378. doi:10.1006/jado.1999.0228

Hawton, K., Rodham, K., Evans, E., & Weatherall, R. (2002). Deliberate self harm in adolescents: self report survey in schools in England. *BMJ, 325*(7374), 1207-1211.

Hayatbakhsh, M. R., Najman, J. M., Jamrozik, K., Mamun, A. A., Alati, R., & Bor, W. (2007). Cannabis and anxiety and depression in young adults: a large prospective study. *J Am Acad Child Adolesc Psychiatry, 46*(3), 408-417. doi:10.1097/chi.0b013e31802dc54d

Hazell, P., & Lewin, T. (1993). Friends of adolescent suicide attempters and completers. *J Am Acad Child Adolesc Psychiatry, 32*(1), 76-81.

Heatherton, T. F., & Baumeister, R. F. (1991). Binge eating as escape from self-awareness. *Psychol Bull, 110*(1), 86-108.

Hedeland, R. L., Teilmann, G., Jørgensen, M. H., Thiesen, L. R., & Andersen, J. (2016). Risk factors and characteristics of suicide attempts among 381 suicidal adolescents. *Acta paediatrica, 105*(10), 1231-1238.

Henry, B., Feehan, M., McGee, R., Stanton, W., Moffitt, T. E., & Silva, P. (1993). The importance of conduct problems and depressive symptoms in predicting adolescent substance use. *J Abnorm Child Psychol, 21*(5), 469-480.

Henry, B., & Moffitt, T. E. (1997). Neuropsychological and neuroimaging studies of juvenile delinquency and adult criminal behavior.

Herba, C. M., Ferdinand, R. F., & Verhulst, F. (2007). Long-term associations of childhood suicide ideation. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(11), 1473-1481.

Heron, K. E., Scott, S. B., Sliwinski, M. J., & Smyth, J. M. (2014). Eating behaviors and negative affect in college women's everyday lives. *Int J Eat Disord, 47*(8), 853-859. doi:10.1002/eat.22292

Herpertz, S., Sass, H., & Favazza, A. (1997). Impulsivity in self-mutilative behavior: psychometric and biological findings. *J Psychiatr Res, 31*(4), 451-465.

Hills, A. L., Afifi, T. O., Cox, B. J., Bienvenu, O. J., & Sareen, J. (2009). Externalizing psychopathology and risk for suicide attempt: cross-sectional and longitudinal findings from the Baltimore Epidemiologic Catchment Area Study. *The Journal of nervous and mental disease, 197*(5), 293-297.

Hills, A. L., Cox, B. J., McWilliams, L. A., & Sareen, J. (2005). Suicide attempts and externalizing psychopathology in a nationally representative sample. *Comprehensive Psychiatry, 46*(5), 334-339.

Hilt, L. M., Cha, C. B., & Nolen-Hoeksema, S. (2008). Nonsuicidal self-injury in young adolescent girls: Moderators of the distress-function relationship. *Journal of Consulting and Clinical Psychology, 76*(1), 63.

Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: causal relationships and underlying mechanisms. *Psychological bulletin, 111*(1), 127.

Hintikka, J., Koivumaa-Honkanen, H., Lehto, S. M., Tolmunen, T., Honkalampi, K., Haatainen, K., & Viinamaki, H. (2009a). Are factors associated with suicidal ideation true risk factors? A 3-year prospective follow-up study in a general population. *Soc Psychiatry Psychiatr Epidemiol, 44*(1), 29-33. doi:10.1007/s00127-008-0401-6

Hintikka, J., Tolmunen, T., Rissanen, M., Honkalampi, K., Kylmä, J., & Laukkanen, E. (2009b). Mental disorders in self-cutting adolescents. *Journal of adolescent health, 44*(5), 464-467.

Hjelmeland, H., & Groholt, B. (2005). A comparative study of young and adult deliberate self-harm patients. *Crisis, 26*(2), 64-72. doi:10.1027/0227-5910.26.2.64

Ho, T. P., Leung, P. W., Hung, S. F., Lee, C. C., & Tang, C. P. (2000). The mental health of the peers of suicide completers and attempters. *J Child Psychol Psychiatry, 41*(3), 301-308.

Hoffmann, J. P., & Johnson, R. A. (1998). A national portrait of family structure and adolescent drug use. *Journal of Marriage and the Family*, 633-645.

Hollis, C. (1996). Depression, family environment, and adolescent suicidal behavior. *J Am Acad Child Adolesc Psychiatry, 35*(5), 622-630. doi:10.1097/00004583-199605000-00017

Hopwood, C. J., & Grilo, C. M. (2010). Internalizing and externalizing personality dimensions and clinical problems in adolescents. *Child Psychiatry & Human Development, 41*(4), 398-408.

Horton, S. E., Hughes, J. L., King, J. D., Kennard, B. D., Westers, N. J., Mayes, T. L., & Stewart, S. M. (2016). Preliminary examination of the interpersonal psychological theory of suicide in an adolescent clinical sample. *Journal of Abnormal Child Psychology, 44*(6), 1133-1144.

Horwitz, A. G., Hill, R. M., & King, C. A. (2011). Specific coping behaviors in relation to adolescent depression and suicidal ideation. *J Adolesc, 34*(5), 1077-1085. doi:10.1016/j.adolescence.2010.10.004

Howard, M. O., & Jenson, J. M. (1999). Inhalant use among antisocial youth: prevalence and correlates. *Addict Behav, 24*(1), 59-74.

Husky, M. M., Guignard, R., Beck, F., & Michel, G. (2013). Risk behaviors, suicidal ideation and suicide attempts in a nationally representative French sample. *J Affect Disord, 151*(3), 1059-1065. doi:10.1016/j.jad.2013.08.035

Izard, C. E., Libero, D. Z., Putnam, P., & Haynes, O. M. (1993). Stability of emotion experiences and their relations to traits of personality. *Journal of personality and social psychology, 64*(5), 847.

Jacobson, C. M., & Gould, M. (2007). The epidemiology and phenomenology of non-suicidal self-injurious behavior among adolescents: a critical review of the literature. *Arch Suicide Res, 11*(2), 129-147. doi:10.1080/13811110701247602

Jacobson, C. M., Marrocco, F., Kleinman, M., & Gould, M. S. (2011). Restrictive emotionality, depressive symptoms, and suicidal thoughts and behaviors among high school students. *J Youth Adolesc, 40*(6), 656-665. doi:10.1007/s10964-010-9573-y

Johns, E. S. (2010). *Teaching problem-solving to improve family functioning and to decrease suicidality*: Nova Southeastern University.

Johnson, T. P., & Mott, J. A. (2001). The reliability of self-reported age of onset of tobacco, alcohol and illicit drug use. *Addiction, 96*(8), 1187-1198.

Johnston, L., O'Malley, P. M., & Bachman, J. G. (2000). Monitoring the Future national survey results on adolescent drug use: Overview of key findings, 1999.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). Monitoring the Future national survey results on drug use, 1975-2005. Volume I: Secondary school students.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). Monitoring the Future national survey results on drug use, 1975-2011. Volume I: Secondary school students.

Joiner Jr, T. E., Van Orden, K. A., Witte, T. K., & Rudd, M. D. (2009). *The interpersonal theory of suicide: Guidance for working with suicidal clients*: American Psychological Association.

Joiner, T. E., Jr., Brown, J. S., & Wingate, L. R. (2005a). The psychology and neurobiology of suicidal behavior. *Annu Rev Psychol, 56*, 287-314. doi:10.1146/annurev.psych.56.091103.070320

Joiner, T. E., Jr., Conwell, Y., Fitzpatrick, K. K., Witte, T. K., Schmidt, N. B., Berlim, M. T., . . . Rudd, M. D. (2005b). Four studies on how past and current suicidality relate even when "everything but the kitchen sink" is covaried. *J Abnorm Psychol, 114*(2), 291-303. doi:10.1037/0021-843X.114.2.291

Joiner, T. E., Jr., Van Orden, K. A., Witte, T. K., Selby, E. A., Ribeiro, J. D., Lewis, R., & Rudd, M. D. (2009). Main predictions of the interpersonal-psychological theory of suicidal

behavior: empirical tests in two samples of young adults. *J Abnorm Psychol, 118*(3), 634-646. doi:10.1037/a0016500

Jordan, J. R. (2001). Is suicide bereavement different? A reassessment of the literature. *Suicide Life Threat Behav, 31*(1), 91-102.

Joyner, K., & Udry, J. R. (2000). You don't bring me anything but down: adolescent romance and depression. *J Health Soc Behav, 41*(4), 369-391.

Kaminer, Y., Burleson, J. A., Goldston, D. B., & Burke, R. H. (2006). Suicidal ideation among adolescents with alcohol use disorders during treatment and aftercare. *Am J Addict, 15 Suppl 1*, 43-49. doi:10.1080/10550490601006154

Kandel, D. B., Raveis, V. H., & Davies, M. (1991). Suicidal ideation in adolescence: Depression, substance use, and other risk factors. *J Youth Adolesc, 20*(2), 289-309. doi:10.1007/BF01537613

Kane, T. A., Loxton, N. J., Staiger, P. K., & Dawe, S. (2004). Does the tendency to act impulsively underlie binge eating and alcohol use problems? An empirical investigation. *Personality and Individual Differences, 36*(1), 83-94.

Kang, H. (2013). The prevention and handling of the missing data. *Korean journal of anesthesiology, 64*(5), 402-406.

Kashani, J. H., Goddard, P., & Reid, J. C. (1989). Correlates of suicidal ideation in a community sample of children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*(6), 912-917.

Katz, C., Bolton, S. L., Katz, L. Y., Isaak, C., Tilston-Jones, T., Sareen, J., & Swampy Cree Suicide Prevention Team. (2013). A systematic review of school-based suicide prevention programs. *Depression and anxiety*, *30*(10), 1030-1045.

Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., Masters, K., & Group, P. F. C. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *American Journal of Psychiatry, 161*(12), 2215-2221.

Keane, E. M., Dick, R. W., Bechtold, D. W., & Manson, S. M. (1996). Predictive and concurrent validity of the Suicidal Ideation Questionnaire among American Indian adolescents. *Journal of Abnormal Child Psychology, 24*(6), 735-747.

Keel, P. K., Klump, K. L., Leon, G. R., & Fulkerson, J. A. (1998). Disordered eating in adolescent males from a school-based sample. *International Journal of Eating Disorders, 23*(2), 125-132.

Keiley, M. K., Lofthouse, N., Bates, J. E., Dodge, K. A., & Pettit, G. S. (2003). Differential risks of covarying and pure components in mother and teacher reports of externalizing and internalizing behavior across ages 5 to 14. *Journal of Abnormal Child Psychology, 31*(3), 267-283.

Kelly, D. B., Rollings, A. L., & Harmon, J. G. (2005). Chronic self-destructiveness, hopelessness, and risk-taking in college students. *Psychol Rep, 96*(3 Pt 1), 620-624. doi:10.2466/pr0.96.3.620-624

Kennedy, S. H., Kaplan, A. S., Garfinkel, P. E., Rockert, W., Toner, B., & Abbey, S. E. (1994). Depression in anorexia nervosa and bulimia nervosa: discriminating depressive symptoms and episodes. *Journal of psychosomatic research, 38*(7), 773-782.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of general psychiatry, 56*(7), 617-626.

Keyes, K. M., Martins, S. S., & Hasin, D. S. (2008). Past 12-month and lifetime comorbidity and poly-drug use of ecstasy users among young adults in the United States: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Drug Alcohol Depend, 97*(1-2), 139-149. doi:10.1016/j.drugalcdep.2008.04.001

Khan, M. M., & Reza, H. (1998). Gender differences in nonfatal suicidal behavior in Pakistan: significance of sociocultural factors. *Suicide Life Threat Behav, 28*(1), 62-68.

Kidd, S., Henrich, C. C., Brookmeyer, K. A., Davidson, L., King, R. A., & Shahar, G. (2006). The social context of adolescent suicide attempts: interactive effects of parent, peer, and school social relations. *Suicide Life Threat Behav, 36*(4), 386-395. doi:10.1521/suli.2006.36.4.386

Kienhorst, I. C., De Wilde, E. J., Diekstra, R. F., & Wolters, W. H. (1995). Adolescents' image of their suicide attempt. *J Am Acad Child Adolesc Psychiatry, 34*(5), 623-628. doi:10.1097/00004583-199505000-00014

Kim, K. L., Jackson, Y., Conrad, S. M., & Hunter, H. L. (2008). Adolescent report of interparental conflict: The role of threat and self-blame appraisal on adaptive outcome. *Journal of Child and Family Studies, 17*(5), 735-751.

Kim, S. M., Han, D. H., Trksak, G. H., & Lee, Y. S. (2014). Gender differences in adolescent coping behaviors and suicidal ideation: findings from a sample of 73,238 adolescents. *Anxiety Stress Coping, 27*(4), 439-454. doi:10.1080/10615806.2013.876010

Kim, Y. J., Moon, S. S., & Kim, M. J. (2011). Physical and psycho-social predictors of adolescents' suicide behaviors. *Child and Adolescent Social Work Journal, 28*(6), 421-438.

King, Segal, H. G., Naylor, M., & Evans, T. (1993). Family functioning and suicidal behavior in adolescent inpatients with mood disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 32*(6), 1198-1206.

King, C. A. (1997). Suicidal behavior in adolescence. In R. W. Maris, M. M. Silverman, & S. S. Canetto (Eds.), *Review of suicidology, 1997. Review of suicidology, 1997* (pp. 61-95). New York, NY, US: Guilford Press.

King, C. A., Hovey, J. D., Brand, E., Wilson, R., & Ghaziuddin, N. (1997). Suicidal adolescents after hospitalization: parent and family impacts on treatment follow-through. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(1), 85-93.

King, R. A., Schwab-Stone, M., Flisher, A. J., Greenwald, S., Kramer, R. A., Goodman, S. H., . . . Gould, M. S. (2001). Psychosocial and risk behavior correlates of youth suicide attempts and suicidal ideation. *J Am Acad Child Adolesc Psychiatry, 40*(7), 837-846. doi:10.1097/00004583-200107000-00019

Kirkpatrick-Smith, J., Rich, A. R., Bonner, R., & Jans, F. (1992). Psychological vulnerability and substance abuse as predictors of suicide ideation among adolescents. *OMEGA-Journal of Death and Dying, 24*(1), 21-33.

Klingberg, T., Fernell, E., Olesen, P. J., Johnson, M., Gustafsson, P., Dahlström, K., . . . Westerberg, H. (2005). Computerized training of working memory in children with ADHD-a randomized, controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(2), 177-186.

Klonsky, E. D. (2009). The functions of self-injury in young adults who cut themselves: clarifying the evidence for affect-regulation. *Psychiatry Res, 166*(2-3), 260-268. doi:10.1016/j.psychres.2008.02.008

Kosunen, E., Kaltiala-Heino, R., Rimpela, M., & Laippala, P. (2003). Risk-taking sexual behaviour and self-reported depression in middle adolescence--a school-based survey. *Child Care Health Dev, 29*(5), 337-344.

Kotila, L., & Lonnqvist, J. (1988). Adolescent suicide attempts: sex differences predicting suicide. *Acta Psychiatr Scand, 77*(3), 264-270.

Kovacs, M., Goldston, D., & Gatsonis, C. (1993). Suicidal behaviors and childhood-onset depressive disorders: a longitudinal investigation. *J Am Acad Child Adolesc Psychiatry, 32*(1), 8-20. doi:10.1097/00004583-199301000-00003

Krahn, D., Piper, D., King, M., Olson, L., Kurth, C., & Moberg, D. P. (1996). Dieting in sixth grade predicts alcohol use in ninth grade. *Journal of Substance Abuse, 8*(3), 293-301.

Laakso, E., Hakko, H., Rasanen, P., Riala, K., & Workgroup, S.-. (2013). Suicidality and unhealthy weight control behaviors among female underaged psychiatric inpatients. *Compr Psychiatry, 54*(2), 117-122. doi:10.1016/j.comppsych.2012.06.012

Langhinrichsen-Rohling, J., Sanders, A., Crane, M., & Monson, C. M. (1998). Gender and history of suicidality: are these factors related to U.S. college students' current suicidal thoughts, feelings, and actions? *Suicide Life Threat Behav, 28*(1), 127-142.

Laval, R. A., Gomez, E. A., & Ruiz, P. (1983). A language minority: Hispanic Americans and mental health care. *American Journal of Social Psychiatry*.

Lavender, J. M., & Anderson, D. A. (2010). Contribution of emotion regulation difficulties to disordered eating and body dissatisfaction in college men. *Int J Eat Disord, 43*(4), 352-357. doi:10.1002/eat.20705

Lavender, J. M., Gratz, K. L., & Tull, M. T. (2011). Exploring the relationship between facets of mindfulness and eating pathology in women. *Cogn Behav Ther, 40*(3), 174-182. doi:10.1080/16506073.2011.555485

Lehrer, J. A., Shrier, L. A., Gortmaker, S., & Buka, S. (2006). Depressive symptoms as a longitudinal predictor of sexual risk behaviors among US middle and high school students. *Pediatrics, 118*(1), 189-200. doi:10.1542/peds.2005-1320

LeMaster, P. L., Beals, J., Novins, D. K., & Manson, S. M. (2004). The prevalence of suicidal behaviors among Northern Plains American Indians. *Suicide and Life-Threatening Behavior, 34*(3), 242-254.

Lemerise, E. A., & Arsenio, W. F. (2000). An integrated model of emotion processes and cognition in social information processing. *Child development, 71*(1), 107-118.

Leon, G. R., Fulkerson, J. A., Perry, C. L., Keel, P. K., & Klump, K. L. (1999). Three to four year prospective evaluation of personality and behavioral risk factors for later disordered eating in adolescent girls and boys. *Journal of Youth and Adolescence, 28*(2), 181-196.

Lester, D., & Anderson, D. (1992). Depression and suicidal ideation in African-American and Hispanic American high school students. *Psychol Rep, 71*(2), 618. doi:10.2466/pr0.1992.71.2.618

Levinson, M., & Neuringer, C. (1971). Problem solving behavior in suicidal adolescents. *Journal of Consulting and Clinical Psychology, 37*, 433-436. doi:http://dx.doi.org/10.1037/h0031985

Levy, J. C., & Deykin, E. Y. (1989). Suicidality, depression, and substance abuse in adolescence. *Am J Psychiatry, 146*(11), 1462-1467. doi:10.1176/ajp.146.11.1462

Lewinsohn, P. M., & Clarke, G. N. (1999). Psychosocial treatments for adolescent depression. *Clin Psychol Rev, 19*(3), 329-342.

Lewinsohn, P. M., Clarke, G. N., Seeley, J. R., & Rohde, P. (1994). Major depression in community adolescents: age at onset, episode duration, and time to recurrence. *Journal of the American Academy of Child & Adolescent Psychiatry, 33*(6), 809-818.

Lewinsohn, P. M., Rohde, P., & Seeley, J.R. . (1996). Adolescent suicidal ideation attempts: Prevalence, risk factors, and clinical implications. *Clinical Psychology: Science and Practice, 3*(1), 25-46. doi:10.1111/j.1468-2850.1996.tb00056.x

Lewinsohn, P. M., Seeley, J. R., Hibbard, J., Rohde, P., & Sack, W. H. (1996). Cross-sectional and prospective relationships between physical morbidity and depression in older adolescents. *J Am Acad Child Adolesc Psychiatry, 35*(9), 1120-1129. doi:10.1097/00004583-199609000-00009

Lewis, R. J., & Shepeard, G. (1992). Inferred characteristics of successful suicides as function of gender and context. *Suicide and Life-Threatening Behavior, 22*(2), 187-196.

Li, X. Y., Xu, D., Phillips, M., Ji, H. Y., Xu, Y. C., & He, F. S. (2003). [Comparison of the characteristics of suicide attempters treated in general hospitals with and without prior suicide attempts]. *Zhonghua Nei Ke Za Zhi, 42*(12), 861-864.

Liechty, J. M., & Lee, M. J. (2013). Longitudinal predictors of dieting and disordered eating among young adults in the U.S. *Int J Eat Disord, 46*(8), 790-800. doi:10.1002/eat.22174

Light, J. M., Grube, J. W., Madden, P. A., & Gover, J. (2003). Adolescent alcohol use and suicidal ideation: a nonrecursive model. *Addict Behav, 28*(4), 705-724.

Lilienfeld, S. O. (2003). Comorbidity between and within childhood externalizing and internalizing disorders: Reflections and directions. *Journal of Abnormal Child Psychology, 31*(3), 285-291.

Lillis, J., Hayes, S. C., & Levin, M. E. (2011). Binge eating and weight control: the role of experiential avoidance. *Behav Modif, 35*(3), 252-264. doi:10.1177/0145445510397178

Linden, M., & Barnow, S. (1997). The wish to die in very old persons near the end of life: a psychiatric problem? Results from the Berlin Aging Study. *International Psychogeriatrics, 9*(3), 291-307.

Linehan, M. M. (1973). Suicide and attempted suicide: study of perceived sex differences. *Percept Mot Skills, 37*(1), 31-34. doi:10.2466/pms.1973.37.1.31

Linehan, M. M., Goodstein, J. L., Nielsen, S. L., & Chiles, J. A. (1983). Reasons for staying alive when you are thinking of killing yourself: the reasons for living inventory. *J Consult Clin Psychol, 51*(2), 276-286.

Lock, J., Reisel, B., & Steiner, H. (2001). Associated health risks of adolescents with disordered eating: How different are they from their peers? Results from a high school survey. *Child psychiatry and human development, 31*(3), 249-265.

Loeber, R., & Keenan, K. (1994). Interaction between conduct disorder and its comorbid conditions: Effects of age and gender. *Clinical psychology review, 14*(6), 497-523.

Lowry, R., Crosby, A. E., Brener, N. D., & Kann, L. (2014). Suicidal thoughts and attempts among US high school students: Trends and associated health-risk behaviors, 1991–2011. *Journal of adolescent health, 54*(1), 100-108.

Lucey, C. F., & Lam, S. K. Y. (2012). Predicting suicide risks among outpatient adolescents using the Family Environment Scale: Implications for practice and research. *International Journal for the Advancement of Counselling, 34*(2), 107-117. doi:10.1007/s10447-011-9140-6

Lynam, D., Moffitt, T., & Stouthamer-Loeber, M. (1993). Explaining the relation between IQ and delinquency: Class, race, test motivation, school failure, or self-control? *Journal of abnormal psychology, 102*(2), 187.

Lynch, C. O. (2001). Risk and protective factors associated with adolescent sexual activity. *Adolescent and Family Health, 2*, 99–107.

MacDonald, R., Taylor, J., & Clarke, D. (2009). The relationship between early suicide behaviors and mental health: results from a nine-year panel study. *J Adolesc, 32*(5), 1159-1172. doi:10.1016/j.adolescence.2009.01.012

Madden, G. J., Petry, N. M., Badger, G. J., & Bickel, W. K. (1997). Impulsive and self-control choices in opioid-dependent patients and non-drug-using control participants: drug and monetary rewards. *Exp Clin Psychopharmacol, 5*(3), 256-262.

Martin, C. S., Lynch, K. G., Pollock, N. K., & Clark, D. B. (2000). Gender differences and similarities in the personality correlates of adolescent alcohol problems. *Psychology of Addictive Behaviors, 14*(2), 121.

Martin, G., Swannell, S. V., Hazell, P. L., Harrison, J. E., & Taylor, A. W. (2010). Self-injury in Australia: a community survey. *Med J Aust, 193*(9), 506-510.

Matsumoto, T., Azekawa, T., Itami, A., & Takeshima, T. (2008). [Risk factors of near-fatal deliberate self-harm behavior in self-cutting patients: a three-year follow-up study at a psychiatric clinic]. *Seishin Shinkeigaku Zasshi, 110*(6), 475-487.

May, C. N., Overholser, J. C., Ridley, J., & Raymond, D. (2015). Passive suicidal ideation: A clinically relevant risk factor for suicide in treatment-seeking veterans. *Illness, Crisis & Loss, 23*(3), 261-277.

McCarthy, B., & Casey, T. (2008). Love, sex, and crime: Adolescent romantic relationships and offending. *American Sociological Review, 73*(6), 944-969 doi:10.1177/000 312240807300604

McCarthy, B., & Grodsky, E. (2011). Sex and school: Adolescent sexual intercourse and education. *Social Problems, 58*(2), 213-234. doi:10.1525/sp.2011.58.2.213

McCarty, C. A., Wymbs, B. T., Mason, W. A., King, K. M., McCauley, E., Baer, J., & Vander Stoep, A. (2013). Early adolescent growth in depression and conduct problem symptoms as predictors of later substance use impairment. *J Abnorm Child Psychol, 41*(7), 1041-1051. doi:10.1007/s10802-013-9752-x

McDermott, B., Forbes, D., Harris, C., McCormack, J., & Gibbon, P. (2006). Non-eating disorders psychopathology in children and adolescents with eating disorders: implications for malnutrition and symptom severity. *Journal of psychosomatic research, 60*(3), 257-261.

McDermut, W., Miller, I. W., Solomon, D., Ryan, C. E., & Keitner, G. I. (2001). Family functioning and suicidality in depressed adults. *Compr Psychiatry, 42*(2), 96-104. doi:10.1053/comp.2001.21220

McGarvey, E. L., Clavet, G. J., Mason, W., & Waite, D. (1999). Adolescent inhalant abuse: environments of use. *Am J Drug Alcohol Abuse, 25*(4), 731-741.

McGee, R., Williams, S., & Nada-Raja, S. (2005). Is cigarette smoking associated with suicidal ideation among young people? *Am J Psychiatry, 162*(3), 619-620. doi:10.1176/appi.ajp.162.3.619

McGue, M., & Iacono, W. G. (2005). The association of early adolescent problem behavior with adult psychopathology. *Am J Psychiatry, 162*(6), 1118-1124. doi:10.1176/appi.ajp.162.6.1118

McGue, M., Iacono, W. G., & Krueger, R. (2006). The association of early adolescent problem behavior and adult psychopathology: A multivariate behavioral genetic perspective. *Behavior genetics, 36*(4), 591-602.

Means, B. (1992). Cognitive research on response error in survey questions on smoking.

Means, B., Habina, K., Swan, G. E., & Jack, L. (1992). *Cognitive research on response error in survey questions on smoking*. Retrieved from Hyattsville, MD

Melhem, N. M., Brent, D. A., Ziegler, M., Iyengar, S., Kolko, D., Oquendo, M., . . . Mann, J. J. (2007). Familial pathways to early-onset suicidal behavior: familial and individual antecedents of suicidal behavior. *Am J Psychiatry, 164*(9), 1364-1370. doi:10.1176/appi.ajp.2007.06091522

Mendle, J., Ferrero, J., Moore, S. R., & Harden, K. P. (2013). Depression and adolescent sexual activity in romantic and nonromantic relational contexts: a genetically-informative sibling comparison. *J Abnorm Psychol, 122*(1), 51-63. doi:10.1037/a0029816

Meneese, W. B., & Yutrzenka, B. A. (1990). Correlates of suicidal ideation among rural adolescents. *Suicide Life Threat Behav, 20*(3), 206-212.

Metha, A., Chen, E., Mulvenon, S., & Dode, I. (1998). A theoretical model of adolescent suicide risk. *Archives of Suicide Research, 4*(2), 115-133. doi:10.1023/A:1009624919469

Michael, K., & Ben-Zur, H. (2007). Risk-taking among adolescents: associations with social and affective factors. *J Adolesc, 30*(1), 17-31. doi:10.1016/j.adolescence.2005.03.009

Miklowitz, D. J., & Taylor, D. O. (2006). Family-focused treatment of the suicidal bipolar patient. *Bipolar Disord, 8*(5 Pt 2), 640-651. doi:10.1111/j.1399-5618.2006.00320.x

Miller-Johnson, S., Lochman, J. E., Coie, J. D., Terry, R., & Hyman, C. (1998). Comorbidity of conduct and depressive problems at sixth grade: Substance use outcomes across adolescence. *Journal of Abnormal Child Psychology, 26*(3), 221-232.

Miller, King, C. A., Shain, B. N., & Naylor, M. W. (1992). Suicidal adolescents' perceptions of their family environment. *Suicide and Life-Threatening Behavior, 22*(2), 226-239.

Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual review of neuroscience, 24*(1), 167-202.

Miller, M., Borges, G., Orozco, R., Mukamal, K., Rimm, E. B., Benjet, C., & Medina-Mora, M. E. (2011). Exposure to alcohol, drugs and tobacco and the risk of subsequent suicidality: findings from the Mexican Adolescent Mental Health Survey. *Drug Alcohol Depend, 113*(2-3), 110-117. doi:10.1016/j.drugalcdep.2010.07.016

Milos, G., Spindler, A., Hepp, U., & Schnyder, U. (2004). Suicide attempts and suicidal ideation: links with psychiatric comorbidity in eating disorder subjects. *General hospital psychiatry, 26*(2), 129-135.

Miotto, P., De Coppi, M., Frezza, M., & Preti, A. (2003). Eating disorders and suicide risk factors in adolescents: an Italian community-based study. *J Nerv Ment Dis, 191*(7), 437-443. doi:10.1097/01.NMD.0000081590.91326.8B

Mitchell, K. S., Wolf, E. J., Reardon, A. F., & Miller, M. W. (2014). Association of eating disorder symptoms with internalizing and externalizing dimensions of psychopathology among men and women. *International Journal of Eating Disorders, 47*(8), 860-869.

Moffitt, T. E., Caspi, A., Dickson, N., Silva, P., & Stanton, W. (1996). Childhood-onset versus adolescent-onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. *Development and psychopathology, 8*(2), 399-424.

Monahan, K. C., & Lee, J. M. (2008). Adolescent sexual activity: Links between relational context and depressive symptoms. *Journal of Youth and Adolescence, 37*, 917–927. doi:10.1007/s10964-007-9256-5

Morano, C. D., Cisler, R. A., & Lemerond, J. (1993). Risk factors for adolescent suicidal behavior: loss, insufficient familial support, and hopelessness. *Adolescence, 28*(112), 851-865.

Morgan, M. J., Impallomeni, L. C., Pirona, A., & Rogers, R. D. (2006). Elevated impulsivity and impaired decision-making in abstinent Ecstasy (MDMA) users compared to polydrug and drug-naive controls. *Neuropsychopharmacology, 31*(7), 1562-1573. doi:10.1038/sj.npp.1300953

Morrison, L. L., & Downey, D. L. (2000). Racial differences in self-disclosure of suicidal ideation and reasons for living: implications for training. *Cultur Divers Ethnic Minor Psychol, 6*(4), 374-386.

Muehlenkamp, J. J., & Gutierrez, P. M. (2004). An investigation of differences between self-injurious behavior and suicide attempts in a sample of adolescents. *Suicide Life Threat Behav, 34*(1), 12-23.

Mufson, L., Weissman, M. M., Moreau, D., & Garfinkel, R. (1999). Efficacy of interpersonal psychotherapy for depressed adolescents. *Arch Gen Psychiatry, 56*(6), 573-579.

Muratori, F., Viglione, V., Maestro, S., & Picchi, L. (2004). Internalizing and externalizing conditions in adolescent anorexia. *Psychopathology, 37*(2), 92-97.

Musci, R. J., Hart, S. R., & Ialongo, N. (2014). Internalizing antecedents and consequences of binge-eating behaviors in a community-based, urban sample of African American females. *Prevention science, 15*(4), 570-578.

Mussweiler, T., Rüter, K., & Epstude, K. (2004). The ups and downs of social comparison: mechanisms of assimilation and contrast. *Journal of personality and social psychology, 87*(6), 832.

Nademin, E., Jobes, D. A., Pflanz, S. E., Jacoby, A. M., Ghahramanlou-Holloway, M., Campise, R., . . . Johnson, L. (2008). An investigation of interpersonal-psychological variables in air force suicides: a controlled-comparison study. *Arch Suicide Res, 12*(4), 309-326. doi:10.1080/13811110802324847

Negron, R., Piacentini, J., Graae, F., Davies, M., & Shaffer, D. (1997). Microanalysis of adolescent suicide attempters and ideators during the acute suicidal episode. *J Am Acad Child Adolesc Psychiatry, 36*(11), 1512-1519. doi:10.1016/S0890-8567(09)66559-X

Neighbors, B., Kempton, T., & Forehand, R. (1992). Co-occurrence of substance abuse with conduct, anxiety, and depression disorders in juvenile delinquents. *Addict Behav, 17*(4), 379-386.

Neumark-Sztainer, D., Falkner, N., Story, M., Perry, C., Hannan, P. J., & Mulert, S. (2002). Weight-teasing among adolescents: correlations with weight status and disordered eating behaviors. *International journal of obesity, 26*(1), 123.

Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. *Journal of adolescent health, 39*(2), 244-251.

Neumark-Sztainer, D., Story, M., Dixon, L. B., & Murray, D. M. (1998). Adolescents engaging in unhealthy weight control behaviors: are they at risk for other health-compromising behaviors? *Am J Public Health, 88*(6), 952-955.

Neumark-Sztainer, D., Story, M., French, S. A., Hannan, P. J., Resnick, M. D., & Blum, R. W. (1997). Psychosocial concerns and health-compromising behaviors among overweight and nonoverweight adolescents. *Obes Res, 5*(3), 237-249.

Newman, D. L., Moffitt, T. E., Caspi, A., & Silva, P. A. (1998). Comorbid mental disorders: implications for treatment and sample selection. *Journal of abnormal psychology, 107*(2), 305.

Nickerson, A. B., & Slater, E. D. (2009). School and community violence and victimization as predictors of suicidal behavior for adolescents. *School Psychology Review, 38*, 218-232.

Nixon, M. K., Cloutier, P., & Jansson, S. M. (2008). Nonsuicidal self-harm in youth: a population-based survey. *CMAJ, 178*(3), 306-312. doi:10.1503/cmaj.061693

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., . . . Williams, D. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *Br J Psychiatry, 192*(2), 98-105. doi:10.1192/bjp.bp.107.040113

Nock, M. K., Joiner, T. E., Jr., Gordon, K. H., Lloyd-Richardson, E., & Prinstein, M. J. (2006). Non-suicidal self-injury among adolescents: diagnostic correlates and relation to suicide attempts. *Psychiatry Res, 144*(1), 65-72. doi:10.1016/j.psychres.2006.05.010

Nock, M. K., & Prinstein, M. J. (2005). Contextual features and behavioral functions of self-mutilation among adolescents. *J Abnorm Psychol, 114*(1), 140-146. doi:10.1037/0021-843X.114.1.140

Nolen-Hoeksema, S., & Harrell, Z. A. (2002). Rumination, depression, and alcohol use: Tests of gender differences. *Journal of Cognitive Psychotherapy, 16*(4), 391-404.

Nolen-Hoeksema, S., Parker, L. E., & Larson, J. (1994). Ruminative coping with depressed mood following loss. *Journal of personality and social psychology, 67*(1), 92.

Nottelmann, E. D., & Jensen, P. S. (1995). Comorbidity of disorders in children and adolescents *Advances in clinical child psychology* (pp. 109-155): Springer.

O'Carroll, P. W., Berman, A. L., Maris, R. W., Moscicki, E. K., Tanney, B. L., & Silverman, M. M. (1996). Beyond the Tower of Babel: a nomenclature for suicidology. *Suicide and Life-Threatening Behavior, 26*(3), 237-252.

O'malley, P. M., Bachman, J. G., & Johnston, L. D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18*(6), 805-824.

Ohring, R., Graber, J. A., & Brooks-Gunn, J. (2002). Girls' recurrent and concurrent body dissatisfaction: Correlates and consequences over 8 years. *International Journal of Eating Disorders, 31*(4), 404-415.

Oland, A. A., & Shaw, D. S. (2005). Pure versus co-occurring externalizing and internalizing symptoms in children: The potential role of socio-developmental milestones. *Clinical Child and Family Psychology Review, 8*(4), 247-270.

Oquendo, M. A., Galfalvy, H., Russo, S., Ellis, S. P., Grunebaum, M. F., Burke, A., & Mann, J. J. (2004). Prospective study of clinical predictors of suicidal acts after a major depressive episode in patients with major depressive disorder or bipolar disorder. *Am J Psychiatry, 161*(8), 1433-1441. doi:10.1176/appi.ajp.161.8.1433

Orbach, I. (1996). The role of the body experience in self-destruction. *Clinical Child Psychology and Psychiatry, 1*(4), 607-619.

Orbach, I., Mikulincer, M., King, R., Cohen, D., & Stein, D. (1997). Thresholds and tolerance of physical pain in suicidal and nonsuicidal adolescents. *J Consult Clin Psychol, 65*(4), 646-652.

Orbach, I., Palgi, Y., Stein, D., Har-Even, D., Lotem-Peleg, M., Asherov, J., & Elizur, A. (1996). Tolerance for physical pain in suicidal subjects. *Death Stud, 20*(4), 327-341. doi:10.1080/07481189608252786

Ortin, A., Lake, A. M., Kleinman, M., & Gould, M. S. (2012). Sensation seeking as risk factor for suicidal ideation and suicide attempts in adolescence. *J Affect Disord, 143*(1-3), 214-222. doi:10.1016/j.jad.2012.05.058

Patalay, P., Sharpe, H., & Wolpert, M. (2015). Internalising symptoms and body dissatisfaction: untangling temporal precedence using cross-lagged models in two cohorts. *Journal of Child Psychology and Psychiatry, 56*(11), 1223-1230.

Patterson, G. R., & Stoolmiller, M. (1991). Replications of a dual failure model for boys' depressed mood. *Journal of Consulting and Clinical Psychology, 59*(4), 491.

Patton, G. C., Coffey, C., Carlin, J. B., Degenhardt, L., Lynskey, M., & Hall, W. (2002). Cannabis use and mental health in young people: cohort study. *BMJ, 325*(7374), 1195-1198.

Paul, T., Schroeter, K., Dahme, B., & Nutzinger, D. O. (2002). Self-injurious behavior in women with eating disorders. *American Journal of Psychiatry, 159*(3), 408-411.

Paxton, S. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Prospective predictors of body dissatisfaction in adolescent girls and boys: A five-year longitudinal study. *Developmental psychology, 42*(5), 888.

Paykel, E. S., Myers, J. K., Lindenthal, J. J., & Tanner, J. (1974). Suicidal feelings in the general population: a prevalence study. *Br J Psychiatry, 124*(0), 460-469.

Pearlstein, T. (2002). Eating disorders and comorbidity. *Archives of Women's mental Health, 4*(3), 67-78.

Pedersen, W. (2008). Does cannabis use lead to depression and suicidal behaviours? A population-based longitudinal study. *Acta Psychiatr Scand, 118*(5), 395-403. doi:10.1111/j.1600-0447.2008.01259.x

Pena, J. B., Matthieu, M. M., Zayas, L. H., Masyn, K. E., & Caine, E. D. (2012). Co-occurring risk behaviors among White, Black, and Hispanic US high school adolescents with suicide attempts requiring medical attention, 1999-2007: implications for future prevention initiatives. *Soc Psychiatry Psychiatr Epidemiol, 47*(1), 29-42. doi:10.1007/s00127-010-0322-z

Peñas-Lledó, E., Jiménez-Murcia, S., Granero, R., Penelo, E., Agüera, Z., Alvarez-Moya, E., & Fernández-Aranda, F. (2010). Specific eating disorder clusters based on social anxiety and novelty seeking. *Journal of anxiety disorders, 24*(7), 767-773.

Perez, V. W. (2005). The relationship between seriously considering, planning, and attempting suicide in the youth risk behavior survey. *Suicide Life Threat Behav, 35*(1), 35-49. doi:10.1521/suli.35.1.35.59267

Perle, J. G., Levine, A. B., Odland, A. P., Ketterer, J. L., Cannon, M. A., & Marker, C. D. (2013). The association between internalizing symptomology and risky behaviors. *Journal of Child & Adolescent Substance Abuse, 22*(1), 1-24.

Peter, T., & Roberts, L. W. (2010). 'Bad' boys and 'sad' girls? Examining internalizing and externalizing effects on parasuicides among youth. *J Youth Adolesc, 39*(5), 495-503. doi:10.1007/s10964-009-9498-5

Pfeiffer, P. N., Brandfon, S., Garcia, E., Duffy, S., Ganoczy, D., Kim, H. M., & Valenstein, M. (2014). Predictors of suicidal ideation among depressed veterans and the interpersonal theory of suicide. *Journal of affective disorders, 152*, 277-281.

Pike, K., Hilbert, A., Wilfley, D. E., Fairburn, C., Dohm, F.-A., Walsh, B., & Striegel-Moore, R. (2008). Toward an understanding of risk factors for anorexia nervosa: a case-control study. *Psychological medicine, 38*(10), 1443-1453.

Pillay, A. L., & Wassenaar, D. R. (1997). Family dynamics, hopelessness and psychiatric disturbance in parasuicidal adolescents. *Australian & New Zealand Journal of Psychiatry, 31*(2), 227-231.

Pinto, A., Whisman, M. A., & McCoy, K. J. (1997). Suicidal ideation in adolescents: Psychometric properties of the suicidal ideation questionnaire in a clinical sample. *Psychological Assessment, 9*(1), 63.

Piran, N., & Robinson, S. R. (2006). Associations between disordered eating behaviors and licit and illicit substance use and abuse in a university sample. *Addict Behav, 31*(10), 1761-1775. doi:10.1016/j.addbeh.2005.12.021

Pompili, M., Girardi, P., Innamorati, M., Tatarelli, G., Ruberto, A., Ferrari, V., & Tatarelli, R. (2007). Body uneasiness and suicide risk in a non-clinical sample of university students. *Arch Suicide Res, 11*(2), 193-202. doi:10.1080/13811110600896392

Pompili, M., Mancinelli, I., Girardi, P., Ruberto, A., & Tatarelli, R. (2004). Suicide in anorexia nervosa: a meta-analysis. *Int J Eat Disord, 36*(1), 99-103. doi:10.1002/eat.20011

Portes, P. R., Sandhu, D. S., & Longwell-Grice, R. (2002). Understanding adolescent suicide: a psychosocial interpretation of developmental and contextual factors. *Adolescence, 37*(148), 805-814.

Poulin, C., Hand, D., Boudreau, B., & Santor, D. (2005). Gender differences in the association between substance use and elevated depressive symptoms in a general adolescent population. *Addiction, 100*(4), 525-535. doi:10.1111/j.1360-0443.2005.01033.x

Quick, V., & Byrd-Bredbenner, C. (2013). Disturbed eating behaviours and associated psychographic characteristics of college students. *Journal of Human Nutrition and Dietetics, 26*(s1), 53-63.

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.

Rasic, D., Weerasinghe, S., Asbridge, M., & Langille, D. B. (2013). Longitudinal associations of cannabis and illicit drug use with depression, suicidal ideation and suicidal attempts among Nova Scotia high school students. *Drug Alcohol Depend, 129*(1-2), 49-53. doi:10.1016/j.drugalcdep.2012.09.009

Raue, P. J., Meyers, B. S., Rowe, J. L., Heo, M., & Bruce, M. L. (2007). Suicidal ideation among elderly homecare patients. *International Journal of Geriatric Psychiatry, 22*(1), 32-37.

Rawal, A., Park, R. J., & Williams, J. M. (2010). Rumination, experiential avoidance, and dysfunctional thinking in eating disorders. *Behav Res Ther, 48*(9), 851-859. doi:10.1016/j.brat.2010.05.009

Rector, R. E., Johnson, K. A., & Noyes, L. R. (2003). Sexually Active Teenagers Are More Likely To Be Depressed and To Attempt Suicide. A Report of the Heritage Center for Data Analysis.

Reifman, A., & Windle, M. (1995). Adolescent suicidal behaviors as a function of depression, hopelessness, alcohol use, and social support: a longitudinal investigation. *Am J Community Psychol, 23*(3), 329-354.

Reinherz, H., Giaconia, R., & Paradis, A. (2007). Family matters: The importance of family social support, feeling valued, and family cohesion in promoting positive adolescent development. *American Journal of Community Psychology, 39*, 269-286.

Reinherz, H. Z., Giaconia, R. M., Silverman, A. B., Friedman, A., Pakiz, B., Frost, A. K., & Cohen, E. (1995). Early psychosocial risks for adolescent suicidal ideation and attempts. *J Am Acad Child Adolesc Psychiatry, 34*(5), 599-611. doi:10.1097/00004583-199505000-00012

Reinherz, H. Z., Tanner, J. L., Berger, S. R., Beardslee, W. R., & Fitzmaurice, G. M. (2006). Adolescent suicidal ideation as predictive of psychopathology, suicidal behavior, and compromised functioning at age 30. *Am J Psychiatry, 163*(7), 1226-1232. doi:10.1176/appi.ajp.163.7.1226

Renaud, J., Brent, D. A., Birmaher, B., Chiappetta, L., & Bridge, J. (1999). Suicide in adolescents with disruptive disorders. *J Am Acad Child Adolesc Psychiatry, 38*(7), 846-851. doi:10.1097/00004583-199907000-00014

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., . . . Udry, J. R. (1997). Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *JAMA, 278*(10), 823-832.

Rew, L., Thomas, N., Horner, S. D., Resnick, M. D., & Beuhring, T. (2001). Correlates of recent suicide attempts in a triethnic group of adolescents. *J Nurs Scholarsh, 33*(4), 361-367.

Reynolds, W. M. (1987). Suicidal ideation questionnaire (SIQ). *Odessa, FL: Psychological Assessment Resources*.

Reynolds, W. M. (1988). *SIQ, Suicidal ideation questionnaire: Professional manual*: Psychological Assessment Resources.

Reynolds, W. M., & Mazza, J. J. (1999). Assessment of suicidal ideation in inner-city children and young adolescents: reliability and validity of the Suicidal Ideation Questionnaire-JR. *School Psychology Review, 28*(1), 17.

Rich, A. R., Kirkpatrick-Smith, J., Bonner, R. L., & Jans, F. (1992). Gender differences in the psychosocial correlates of suicidal ideation among adolescents. *Suicide Life Threat Behav, 22*(3), 364-373.

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-journal for the Advancement of Mental health, 4*(3), 218-251.

Rieger, E., Van Buren, D. J., Bishop, M., Tanofsky-Kraff, M., Welch, R., & Wilfley, D. E. (2010). An eating disorder-specific model of interpersonal psychotherapy (IPT-ED): Causal pathways and treatment implications. *Clinical psychology review, 30*(4), 400-410.

Roberts, R. E., & Chen, Y. W. (1995). Depressive symptoms and suicidal ideation among Mexican-origin and Anglo adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*

*34*, 81–90.

Rodham, K., Hawton, K., & Evans, E. (2004). Reasons for deliberate self-harm: comparison of self-poisoners and self-cutters in a community sample of adolescents. *J Am Acad Child Adolesc Psychiatry, 43*(1), 80-87. doi:10.1097/00004583-200401000-00017

Rosenberg, H. J., Jankowski, M. K., Sengupta, A., Wolfe, R. S., Wolford, G. L., & Rosenberg, S. D. (2005). Single and multiple suicide attempts and associated health risk factors in New Hampshire adolescents. *Suicide Life Threat Behav, 35*(5), 547-557. doi:10.1521/suli.2005.35.5.547

Rosenberg, P., & Latimer, R. (1966). Suicide attempts by children. *Mental Hygiene*.

Ross, S., & Heath, N. L. (2003). Two Models of Adolescent Self-Mutilation. *Suicide and Life-Threatening Behavior, 33*(3), 277-287.

Rowe, C. L., Liddle, H. A., & Dakof, G. A. (2001). Classifying clinically referred adolescent substance abusers by level of externalizing and internalizing symptoms. *Journal of Child & Adolescent Substance Abuse, 11*(2), 41-65.

Rudolph, K. D., Hammen, C., & Burge, D. (1994). Interpersonal functioning and depressive symptoms in childhood: Addressing the issues of specificity and comorbidity. *Journal of Abnormal Child Psychology, 22*(3), 355-371.

Rueter, M. A., Holm, K. E., McGeorge, C. R., & Conger, R. D. (2008). Adolescent suicidal ideation subgroups and their association with suicidal plans and attempts in young adulthood. *Suicide Life Threat Behav, 38*(5), 564-575. doi:10.1521/suli.2008.38.5.564

Saigh, P. A., Yasik, A. E., Oberfield, R. A., Halamandaris, P. V., & McHugh, M. (2002). An analysis of the internalizing and externalizing behaviors of traumatized urban youth with and without PTSD. *Journal of abnormal psychology, 111*(3), 462.

Sanftner, J. L., Barlow, D. H., Marschall, D. E., & Tangney, J. P. (1995). The relation of shame and guilt to eating disorder symptomatology. *Journal of Social and Clinical Psychology, 14*(4), 315-324.

Sansone, R. A., & Levitt, J. L. (2002). Self-harm behaviors among those with eating disorders: An overview. *Eating Disorders, 10*(3), 205-213.

Saules, K. K., Pomerleau, C. S., Snedecor, S. M., Mehringer, A. M., Shadle, M. B., Kurth, C., & Krahn, D. D. (2004). Relationship of onset of cigarette smoking during college to alcohol use, dieting concerns, and depressed mood: results from the Young Women's Health Survey. *Addict Behav, 29*(5), 893-899. doi:10.1016/j.addbeh.2004.02.015

Schilling, E. A., Aseltine, R. H., Jr., Glanovsky, J. L., James, A., & Jacobs, D. (2009). Adolescent
    alcohol use, suicidal ideation, and suicide attempts. *J Adolesc Health, 44*(4), 335-341.
    doi:10.1016/j.jadohealth.2008.08.006

Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS suicide prevention program: Further
    evidence of efficacy and effectiveness. *Prevention science*, *17*(2), 157-166.

Schilling, E. A., Lawless, M., Buchanan, L., & Aseltine Jr, R. H. (2014). "Signs of Suicide" shows
    promise as a middle school suicide prevention program. *Suicide and Life-Threatening
    Behavior*, *44*(6), 653-667.

Schulberg, H. C., Lee, P. W., Bruce, M. L., Raue, P. J., Lefever, J. J., Williams, J. W., . . . Nutting,
    P. A. (2005). Suicidal ideation and risk levels among primary care patients with
    uncomplicated depression. *The Annals of Family Medicine, 3*(6), 523-528.

Scott, M., Wilcox, H., Huo, Y., Turner, J. B., Fisher, P., & Shaffer, D. (2010). School-based
    screening for suicide risk: balancing costs and benefits. *American journal of public
    health*, *100*(9), 1648-1652

Scourfield, J., Jacob, N., Smalley, N., Prior, L., & Greenland, K. (2007). Young people's gendered
    interpretations of suicide and attempted suicide. *Child & Family Social Work, 12*(3), 248-
    257.

Seguin, M., Lynch, J., Labelle, R., & Gagnon, A. (2004). Personal and family risk factors for
    adolescent suicidal ideation and attempts. *Arch Suicide Res, 8*(3), 227-238.
    doi:10.1080/13811110490444379

Selby, E. A., Connell, L. D., & Joiner, T. E. (2010a). The pernicious blend of rumination and
    fearlessness in non-suicidal self-injury. *Cognitive Therapy and Research, 34*(5), 421-428.

Selby, E. A., Smith, A. R., Bulik, C. M., Olmsted, M. P., Thornton, L., McFarlane, T. L., . . .
Joiner, T. E., Jr. (2010b). Habitual starvation and provocative behaviors: two potential
routes to extreme suicidal behavior in anorexia nervosa. *Behav Res Ther, 48*(7), 634-645.
doi:10.1016/j.brat.2010.03.016

Seo, D.-C., & Lee, C. G. (2013). The effect of perceived body weight on suicidal ideation among
a representative sample of US adolescents. *Journal of behavioral medicine, 36*(5), 498-
507.

Sepulveda, A. R., Anastasiadou, D., Pellegrin, Y., Andrés, P., Graell, M., Carrobles, J. A., &
Morandé, G. (2014). Impact of caregiving experience on mental health among caregivers:
a comparison of eating disorder patients with purging and non-purging behaviors. *Eating
and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 19*(1), 31-39.

Seroczynski, A. D., Bergeman, C., & Coccaro, E. F. (1999). Etiology of the impulsivity/aggression
relationship: genes or environment? *Psychiatry research, 86*(1), 41-57.

Serpell, L., Treasure, J., Teasdale, J., & Sullivan, V. (1999). Anorexia nervosa: friend or foe? *Int
J Eat Disord, 25*(2), 177-186.

Shaffer, D., Garland, A., Gould, M., Fisher, P., & Trautman, P. (1988). Preventing teenage suicide:
a critical review. *J Am Acad Child Adolesc Psychiatry, 27*(6), 675-687.
doi:10.1097/00004583-198811000-00001

Shaffer, D., Gould, M. S., Fisher, P., Trautman, P., Moreau, D., Kleinman, M., & Flory, M. (1996).
Psychiatric diagnosis in child and adolescent suicide. *Arch Gen Psychiatry, 53*(4), 339-
348.

Shaffer, D., Scott, M., Wilcox, H., Maslow, C., Hicks, R., Lucas, C. P., ... & Greenwald, S. (2004).
The Columbia SuicideScreen: Validity and reliability of a screen for youth suicide and

depression. *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*(1), 71-79.

Shamosh, N. A., DeYoung, C. G., Green, A. E., Reis, D. L., Johnson, M. R., Conway, A. R., . . . Gray, J. R. (2008). Individual differences in delay discounting: relation to intelligence, working memory, and anterior prefrontal cortex. *Psychological science, 19*(9), 904-911.

Shepard, S. (1996). Parental support, family life events and teen suicide attempt.

Shillington, A. M., & Clapp, J. D. (2000). Self-report stability of adolescent substance use: are there differences for gender, ethnicity and age? *Drug & Alcohol Dependence, 60*(1), 19-27.

Shulman, S., Walsh, S. D., Weisman, O., & Schelyer, M. (2009). Romantic contexts, sexual behavior, and depressive symptoms among adolescent males and females. *Sex Roles, 61*, 850-863. doi:10.1007/s11199-009-9691-8

Siemen, J. R., Warrington, C. A., & Mangano, E. L. (1994). Comparison of the Millon Adolescent Personality Inventory and the Suicide Ideation Questionnaire-Junior with an adolescent inpatient sample. *Psychological reports, 75*(2), 947-950.

Simon, T. R., & Crosby, A. E. (2000). Suicide planning among high school students who report attempting suicide. *Suicide Life Threat Behav, 30*(3), 213-221.

Simon, T. R., Swann, A. C., E., P. K., B., P. L., M., K., & O'Carroll, P. W. (2002). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior, 32*(S1), 49-59.

Simons, R. L., & Murphy, P. I. (1985). Sex differences in the causes of adolescent suicide ideation. *J Youth Adolesc, 14*(5), 423-434. doi:10.1007/BF02138837

Skegg, K. (2005). Self-harm. *Lancet, 366*(9495), 1471-1483. doi:10.1016/S0140-6736(05)67600-3

Skinner, H. H., Haines, J., Austin, S. B., & Field, A. E. (2012). A prospective study of overeating, binge eating, and depressive symptoms among adolescent and young adult women. *Journal of adolescent health, 50*(5), 478-483.

Slane, J. D., Burt, S. A., & Klump, K. L. (2010). The road less traveled: Associations between externalizing behaviors and eating pathology. *International Journal of Eating Disorders, 43*(2), 149-160.

Slavin-Mulford, J., Sinclair, S. J., Malone, J., Stein, M., Bello, I., & Blais, M. A. (2013). External correlates of the Personality Assessment Inventory higher order structures. *J Pers Assess, 95*(4), 432-434. doi:10.1080/00223891.2013.767820

Smalley, N., Scourfield, J., & Greenland, K. (2005). Young people, gender and suicide: A review of research on the social context. *Journal of Social Work, 5*(2), 133-154.

Smith, J. M., Alloy, L. B., & Abramson, L. Y. (2006). Cognitive vulnerability to depression, rumination, hopelessness, and suicidal ideation: multiple pathways to self-injurious thinking. *Suicide Life Threat Behav, 36*(4), 443-454. doi:10.1521/suli.2006.36.4.443

Smith, P. N., Wolford-Clevenger, C., Mandracchia, J. T., & Jahn, D. R. (2013). An exploratory factor analysis of the Acquired Capability for Suicide Scale in male prison inmates. *Psychol Serv, 10*(1), 97-105. doi:10.1037/a0030817

Sorenson, S. B., & Rutter, C. M. (1991). Transgenerational patterns of suicide attempt. *J Consult Clin Psychol, 59*(6), 861-866; discussion 867-873.

Sourander, A., Helstelä, L., Haavisto, A., & Bergroth, L. (2001). Suicidal thoughts and attempts among adolescents: a longitudinal 8-year follow-up study. *Journal of affective disorders, 63*(1), 59-66.

Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience & Biobehavioral Reviews, 24*(4), 417-463.

Speckens, A. E., & Hawton, K. (2005). Social problem solving in adolescents with suicidal behavior: a systematic review. *Suicide Life Threat Behav, 35*(4), 365-387. doi:10.1521/suli.2005.35.4.365

Spirito, A., Hart, K., Overholser, J., & Halverson, J. (1990). Social skills and depression in adolescent suicide attempters. *Adolescence, 25*(99), 543-552.

Spokas, M., Wenzel, A., Brown, G. K., & Beck, A. T. (2012). Characteristics of individuals who make impulsive suicide attempts. *J Affect Disord, 136*(3), 1121-1125. doi:10.1016/j.jad.2011.10.034

Spriggs, A. L., & Halpern, C. T. (2008). Sexual debut timing and depressive symptoms in emerging adulthood. *Journal of Youth and Adolescence, 37*(9), 1085-1096.

St Germain, S. A., & Hooley, J. M. (2012). Direct and indirect forms of non-suicidal self-injury: evidence for a distinction. *Psychiatry Res, 197*(1-2), 78-84. doi:10.1016/j.psychres.2011.12.050

Stanley, B., Gameroff, M. J., Michalsen, V., & Mann, J. J. (2001). Are suicide attempters who self-mutilate a unique population? *Am J Psychiatry, 158*(3), 427-432. doi:10.1176/appi.ajp.158.3.427

Stanton, C., Spirito, A., Donaldson, D., & Boergers, J. (2003). Risk-taking behavior and adolescent suicide attempts. *Suicide Life Threat Behav, 33*(1), 74-79.

Stanton, W. R., McClelland, M., Elwood, C., Ferry, D., & Silva, P. A. (1996). Prevalence, reliability and bias of adolescents' reports of smoking and quitting. *Addiction, 91*(11), 1705-1714.

Steele, M. M., & Doey, T. (2007). Suicidal behaviour in children and adolescents. part 1: etiology and risk factors. *Can J Psychiatry, 52*(6 Suppl 1), 21S-33S.

Steer, R. A., Kumar, G., & Beck, A. T. (1993). Self-reported suicidal ideation in adolescent psychiatric inpatients. *J Consult Clin Psychol, 61*(6), 1096-1099.

Stevens, J. P. (2009). *Applied Multivariate Statistics for the Social Sciences, Fifth Edidition*. New York, NY: Taylor and Francis Group.

Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*: Routledge.

Stevens, P., & Griffin, J. (2001). Youth High-Risk Behaviors: Survey and Results. *Journal of Addictions & Offender Counseling, 22*(1), 31-46.

Stewart, S. M., Lam, T., Betson, C., & Chung, S. (1999). Suicide ideation and its relationship to depressed mood in a community sample of adolescents in Hong Kong. *Suicide and Life-Threatening Behavior, 29*(3), 227-240.

Stice, E. (1994). Review of the evidence for a sociocultural model of bulimia nervosa and an exploration of the mechanisms of action. *Clinical psychology review, 14*(7), 633-661.

Stice, E., Akutagawa, D., Gaggar, A., & Agras, W. S. (2000). Negative affect moderates the relation between dieting and binge eating. *International Journal of Eating Disorders, 27*(2), 218-229.

Stice, E., Hayward, C., Cameron, R. P., Killen, J. D., & Taylor, C. B. (2000). Body-image and eating disturbances predict onset of depression among female adolescents: a longitudinal study. *J Abnorm Psychol, 109*(3), 438-444.

Stillion, J. M., White, H., Edwards, P. J., & McDowell, E. E. (1989). Ageism and sexism in suicide attitudes. *Death Studies, 13*(3), 247-261.

Stivers, C. (1988). Parent-adolescent communication and its relationship to adolescent depression and suicide proneness. *Adolescence, 23*(90), 291.

Straiton, M. L., Roen, K., & Hjelmeland, H. (2012). Gender roles, suicidal ideation, and self-harming in young adults. *Arch Suicide Res, 16*(1), 29-43. doi:10.1080/13811118.2012.640613

Sudman, S., & Bradburn, N. M. (1974). *Response effects in surveys: A review and synthesis*: Aldine.

Sue, D. W. (1990). Culture-specific strategies in counseling: A conceptual framework. *Professional Psychology: Research and Practice, 21*(6), 424.

Sugawara, N., Yasui-Furukori, N., Sasaki, G., Umeda, T., Takahashi, I., Danjo, K., . . . Nakaji, S. (2012). Relationships between suicidal ideation and the dimensions of depressive symptoms among middle-aged population in Japan. *J Affect Disord, 136*(3), 819-823. doi:10.1016/j.jad.2011.09.034

Suominen, K., Henriksson, M., Suokas, J., Isometsä, E., Ostamo, A., & Lönnqvist, J. (1996). Mental disorders and comorbidity in attempted suicide. *Acta Psychiatrica Scandinavica, 94*(4), 234-240.

Suyemoto, K. L. (1998). The functions of self-mutilation. *Clin Psychol Rev, 18*(5), 531-554.

Svirko, E., & Hawton, K. (2007). Self-injurious behavior and eating disorders: the extent and nature of the association. *Suicide Life Threat Behav, 37*(4), 409-421. doi:10.1521/suli.2007.37.4.409

Swahn, M. H., & Bossarte, R. M. (2007). Gender, early alcohol use, and suicide ideation and attempts: findings from the 2005 youth risk behavior survey. *J Adolesc Health, 41*(2), 175-181. doi:10.1016/j.jadohealth.2007.03.003

Swahn, M. H., Reynolds, M. R., Tice, M., Miranda-Pierangeli, M. C., Jones, C. R., & Jones, I. R. (2009). Perceived overweight, BMI, and risk for suicide attempts: findings from the 2007 Youth Risk Behavior Survey. *J Adolesc Health, 45*(3), 292-295. doi:10.1016/j.jadohealth.2009.03.006

Szanto, K., Reynolds, C. F., Frank, E., Stack, J., Fasiczka, A. L., Miller, M., . . . Kupfer, D. J. (1996). Suicide in elderly depressed patients: is active vs. passive suicidal ideation a clinically valid distinction? *The American Journal of Geriatric Psychiatry, 4*(3), 197-207.

Talbott, E., & Fleming, J. (2003). The role of social contexts and special education in the mental health problems of urban adolescents. *The Journal of Special Education, 37*(2), 111-123.

Tarrier, N., Taylor, K., & Gooding, P. (2008). Cognitive-behavioral interventions to reduce suicide behavior: a systematic review and meta-analysis. *Behav Modif, 32*(1), 77-108. doi:10.1177/0145445507304728

Tellerman, J. S. (2001). The Solutions Unlimited Now—SUN (sm) Program: Psychodynamic/Cognitive Structured Groups for Teens, Pre-Teens, and Families. *Journal of Child and Adolescent Group Therapy, 11*(4), 117-134.

Tiller, J. M., Sloane, G., Schmidt, U., Troop, N., Power, M., & Treasure, J. L. (1997). Social support in patients with anorexia nervosa and bulimia nervosa. *Int J Eat Disord, 21*(1), 31-38.

Tondo, L., Baldessarini, R. J., Hennen, J., Minnai, G. P., Salis, P., Scamonatti, L., . . . Mannu, P. (1999). Suicide attempts in major affective disorder patients with comorbid substance use disorders. *J Clin Psychiatry, 60 Suppl 2*, 63-69; discussion 75-66, 113-116.

Tousignant, M., Seshadri, S., & Raj, A. (1998). Gender and suicide in India: a multiperspective approach. *Suicide Life Threat Behav, 28*(1), 50-61.

Tozzi, F., Thornton, L. M., Mitchell, J., Fichter, M. M., Klump, K. L., Lilenfeld, L. R., . . . Bulik, C. M. (2006). Features associated with laxative abuse in individuals with eating disorders. *Psychosomatic medicine, 68*(3), 470-477.

Tuckman, J., & Youngman, W. F. (1968). A scale for assessing suicide risk of attempted suicides. *Journal of Clinical Psychology, 24*(1), 17-19.

Utter, J., Denny, S., Percival, T., Crengle, S., Ameratunga, S., Dixon, R., . . . Hall, A. (2012). Prevalence of weight-related concerns and behaviours among New Zealand young people. *Journal of paediatrics and child health, 48*(11), 1021-1028.

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*, 187-196. doi:10.2174/1573400054065541

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner Jr, T. E. (2010). The interpersonal theory of suicide. *Psychological review, 117*(2), 575.

Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner Jr., 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

Vannatta, R. A. (1997). Adolescent Gender Differences in Suicide-Related Behaviors. *Journal of Youth and Adolescence, 26*(5), 559–568. doi:10.1023/A:1024581906057

Vega, W. A., Gil, A., Warheit, G., Apospori, E., & Zimmerman, R. (1993). The relationship of drug use to suicide ideation and attempts among African American, Hispanic, and white non-Hispanic male adolescents. *Suicide Life Threat Behav, 23*(2), 110-119.

Vega, W. A., Zimmerman, R. S., Warheit, G. J., Apospori, E., & Gil, A. G. (1993). Risk factors for early adolescent drug use in four ethnic and racial groups. *Am J Public Health, 83*(2), 185-189.

Velez, C. N., & Cohen, P. (1988). Suicidal behavior and ideation in a community sample of children: maternal and youth reports. *J Am Acad Child Adolesc Psychiatry, 27*(3), 349-356. doi:10.1097/00004583-198805000-00014

Verdejo-García, A., Lawrence, A. J., & Clark, L. (2008). Impulsivity as a vulnerability marker for substance-use disorders: review of findings from high-risk research, problem gamblers and genetic association studies. *Neuroscience & Biobehavioral Reviews, 32*(4), 777-810.

Verona, E., & Javdani, S. (2011). Dimensions of adolescent psychopathology and relationships to suicide risk indicators. *Journal of Youth and Adolescence, 40*(8), 958-971.

Verona, E., Sachs-Ericsson, N., & Joiner Jr, T. E. (2004). Suicide attempts associated with externalizing psychopathology in an epidemiological sample. *American Journal of Psychiatry, 161*(3), 444-451.

Victor, S. E., Styer, D., & Washburn, J. J. (2015). Characteristics of nonsuicidal self-injury associated with suicidal ideation: evidence from a clinical sample of youth. *Child Adolesc Psychiatry Ment Health, 9*, 20. doi:10.1186/s13034-015-0053-8

Vontress, C. E. (1971). Racial differences: Impediments to rapport. *Journal of Counseling Psychology, 18*(1), 7.

Vrangalova, Z., & Savin-Williams, R. C. (2011). Adolescent sexuality and positive well-being: a group-norms approach. *J Youth Adolesc, 40*(8), 931-944. doi:10.1007/s10964-011-9629-7

Wagner, K. D., Ritt-Olson, A., Chou, C.-P., Pokhrel, P., Duan, L., Baezconde-Garbanati, L., . . . Unger, J. B. (2010). Associations between family structure, family functioning, and substance use among Hispanic/Latino adolescents. *Psychology of Addictive Behaviors, 24*(1), 98.

Waller, M. W., Hallfors, D. D., Halpern, C. T., Iritani, B. J., Ford, C. A., & Guo, G. (2006). Gender differences in associations between depressive symptoms and patterns of substance use and risky sexual behavior among a nationally representative sample of U.S. adolescents. *Arch Womens Ment Health, 9*(3), 139-150. doi:10.1007/s00737-006-0121-4

Wan, L., Baldridge, R. M., Colby, A. M., & Stanford, M. S. (2009). Enhanced intensity dependence and aggression history indicate previous regular ecstasy use in abstinent polydrug users. *Prog Neuropsychopharmacol Biol Psychiatry, 33*(8), 1484-1490. doi:10.1016/j.pnpbp.2009.08.007

Wang, J., & Patten, S. B. (2001). A prospective study of sex-specific effects of major depression on alcohol consumption. *Can J Psychiatry, 46*(5), 422-425. doi:10.1177/070674370104600507

Waschbusch, D. A. (2002). A meta-analytic examination of comorbid hyperactive-impulsive-attention problems and conduct problems. *Psychological bulletin, 128*(1), 118.

Waschbusch, D. A., Pelham, W. E., Jennings, J. R., Greiner, A. R., Tarter, R. E., & Moss, H. B. (2002). Reactive aggression in boys with disruptive behavior disorders: Behavior, physiology, and affect. *Journal of Abnormal Child Psychology, 30*(6), 641-656.

Weber, B., Metha, A., & Nelsen, E. (1997). Relationships among multiple suicide ideation risk factors in college students. *Journal of College Student Psychotherapy, 11*(3), 49-64.

Wei, S., Yan, H., Chen, W., Liu, L., Bi, B., Li, H., . . . Dong, G. (2013). Gender-specific differences among patients treated for suicide attempts in the emergency departments of four general hospitals in Shenyang, China. *General hospital psychiatry, 35*(1), 54-58.

Welch, S. S., & Linehan, M. M. (2002). High-risk situations associated with parasuicide and drug use in borderline personality disorder. *Journal of Personality Disorders, 16*(6), 561.

Welsh, D. P., Grello, C. M., & Harper, M. S. (2003). When love hurts: Depression and adolescent romantic relationships.

White, H., & Stillion, J. M. (1988). Sex differences in attitudes toward suicide: Do males stigmatize males? *Psychology of Women Quarterly, 12*(3), 357-366.

Whitlock, F. A., & Broadhurst, A. D. (1969). Attempted suicide and the experience of violence. *J Biosoc Sci, 1*(4), 353-368.

Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics, 117*(6), 1939-1948. doi:10.1542/peds.2005-2543

Whitlock, J., Muehlenkamp, J., Eckenrode, J., Purington, A., Baral Abrams, G., Barreira, P., & Kress, V. (2013). Nonsuicidal self-injury as a gateway to suicide in young adults. *J Adolesc Health, 52*(4), 486-492. doi:10.1016/j.jadohealth.2012.09.010

Williams, C., & Lyons, C. M. (1976). Family interaction and adolescent suicidal behaviour: A preliminary investigation. *Australian and New Zealand Journal of Psychiatry, 10*(3), 243-252.

Williams, C. L., Davidson, J. A., & Montgomery, I. (1980). Impulsive suicidal behavior. *J Clin Psychol, 36*(1), 90-94.

Williams, C. T., & Latkin, C. A. (2005). The role of depressive symptoms in predicting sex with multiple and high-risk partners. *J Acquir Immune Defic Syndr, 38*(1), 69-73.

Williamson, D. A., White, M. A., York-Crowe, E., & Stewart, T. M. (2004). Cognitive-behavioral theories of eating disorders. *Behavior Modification, 28*(6), 711-738.

Willoughby, T., Chalmers, H., Busseri, M. A., Bosacki, S., Dupont, D. Marini, Z., Rose-Krasnor, L., Sadava, S., Ward, A & Woloshyn, V. . (2007). Adolescent non-involvement in multiple risk behaviors: An indicator of successful development? *Applied Developmental Science, 11*(2), 89-103. doi:doi:10.1080/10888690701384954

Wilson, K. G., Stelzer, J., Bergman, J. N., Kral, M. J., Inayatullah, M., & Elliott, C. A. (1995). Problem solving, stress, and coping in adolescent suicide attempts. *Suicide Life Threat Behav, 25*(2), 241-252.

Windle, R., & Windle, M. . (1997). An investigation of adolescents' substance use behaviors, depressed affect, and suicidal behaviors. *Journal of Child Psychology and Psychiatry, 38*(8), 921–929. doi:10.1111/j.1469-7610.1997.tb01611.x

Windle, R. C., & Windle, M. (1997). An investigation of adolescents' substance use behaviors, depressed affect, and suicidal behaviors. *Journal of Child Psychology and Psychiatry, 38*(8), 921-929.

Winters, K. C., Stinchfield, R. D., Henly, G. A., & Schwartz, R. H. (1990). Validity of adolescent self-report of alcohol and other drug involvement. *International Journal of the Addictions, 25*(sup11), 1379-1395.

WISQARS, C. (2010). Atlanta, GA: US Department of Health and Human Services, CDC; 2010. *Available at. Accessed October, 18.*

Withers, L. E., & Kaplan, D. W. (1987). Adolescents who attempt suicide: A retrospective clinical chart review of hospitalized patients. *Professional Psychology: Research and Practice, 18*(4), 391.

Witte, T. K., Merrill, K. A., Stellrecht, N. E., Bernert, R. A., Hollar, D. L., Schatschneider, C., & Joiner, T. E., Jr. (2008). "Impulsive" youth suicide attempters are not necessarily all that impulsive. *J Affect Disord, 107*(1-3), 107-116. doi:10.1016/j.jad.2007.08.010

Wojnar, M., Ilgen, M. A., Czyz, E., Strobbe, S., Klimkiewicz, A., Jakubczyk, A., . . . Brower, K. J. (2009). Impulsive and non-impulsive suicide attempts in patients treated for alcohol dependence. *J Affect Disord, 115*(1-2), 131-139. doi:10.1016/j.jad.2008.09.001

Wonderlich, S. A., Connolly, K. M., & Stice, E. (2004). Impulsivity as a risk factor for eating disorder behavior: Assessment implications with adolescents. *International Journal of Eating Disorders, 36*(2), 172-182.

Wong, S. S., Ang, R. P., & Huan, V. S. (2007). Externalizing problems, internalizing problems, and suicidal ideation in Singaporean adolescents: Sex differences. *Current Psychology: Developmental• Learning• Personality• Social, 25*(4), 231.

Wu, P., Hoven, C. W., Liu, X., Cohen, P., Fuller, C. J., & Shaffer, D. (2004). Substance use, suicidal ideation and attempts in children and adolescents. *Suicide Life Threat Behav, 34*(4), 408-420. doi:10.1521/suli.34.4.408.53733

Wyder, M., & De Leo, D. (2007). Behind impulsive suicide attempts: indications from a community study. *J Affect Disord, 104*(1-3), 167-173. doi:10.1016/j.jad.2007.02.015

Yi, J. K., Sung, S. M., & Min, J. K. (2011).

Physical and Psycho-Social Predictors of Adolescents' Suicide Behaviors. *Child and Adolescent Social Work Journal, 28*(6), 421-438. doi:10.1007/s10560-011-0241-1

Yip, P. S., Chi, I., Chiu, H., Chi Wai, K., Conwell, Y., & Caine, E. (2003). A prevalence study of suicide ideation among older adults in Hong Kong SAR. *International Journal of Geriatric Psychiatry, 18*(11), 1056-1062.

Zaider, T. I., Johnson, J. G., & Cockell, S. J. (2000). Psychiatric comorbidity associated with eating disorder symptomatology among adolescents in the community. *International Journal of Eating Disorders, 28*(1), 58-67.

Zaitsoff, S. L., & Grilo, C. M. (2010). Eating disorder psychopathology as a marker of psychosocial distress and suicide risk in female and male adolescent psychiatric inpatients. *Compr Psychiatry, 51*(2), 142-150. doi:10.1016/j.comppsych.2009.03.005

Zetterqvist, M., Lundh, L. G., Dahlstrom, O., & Svedin, C. G. (2013). Prevalence and function of non-suicidal self-injury (NSSI) in a community sample of adolescents, using suggested DSM-5 criteria for a potential NSSI disorder. *J Abnorm Child Psychol, 41*(5), 759-773. doi:10.1007/s10802-013-9712-5

Zhang, J., & Jin, S. (1996). Determinants of suicide ideation: a comparison of Chinese and American college students. *Adolescence, 31*(122), 451-467.

Zouk, H., Tousignant, M., Seguin, M., Lesage, A., & Turecki, G. (2006). Characterization of impulsivity in suicide completers: clinical, behavioral and psychosocial dimensions. *J Affect Disord, 92*(2-3), 195-204. doi:10.1016/j.jad.2006.01.016

Zuromski, K. L., & Witte, T. K. (2015). Fasting and acquired capability for suicide: a test of the

    interpersonal-psychological theory of suicide in an undergraduate sample. *Psychiatry Res,*

    *226*(1), 61-67. doi:10.1016/j.psychres.2014.11.059

Zweig, J. M., Phillips, S. D., & Lindberg, L. D. (2002). Predicting adolescent profiles of risk:

    looking beyond demographics. *J Adolesc Health, 31*(4), 343-353.

## Appendix A

## Suicide Ideation Questionnaire –JR (SIQ-Jr)

Listed below are a number of sentences about thoughts that people sometimes have. Please indicate which of these thoughts you have had in the past month. Please circle only one response that best describes your own thoughts.

| Almost everyday | Couple of times a week | About a once week | Couple a times month | About a once month | I had this thought a before, but not in the past month | I have never had this thought |
|---|---|---|---|---|---|---|
| 6 | 5 | 4 | 3 | 2 | 1 | 0 |

1. I thought it would be better if I was not alive     6 5 4 3 2 1 0
2. I thought about killing myself     6 5 4 3 2 1 0
3. I thought about how I would kill myself     6 5 4 3 2 1 0
4. I thought about when I would kill myself     6 5 4 3 2 1 0
5. I thought about people dying     6 5 4 3 2 1 0
6. I thought about death     6 5 4 3 2 1 0
7. I thought about what to write in a suicide note     6 5 4 3 2 1 0
8. I thought about writing a will     6 5 4 3 2 1 0
9. I thought about telling people I plan to kill myself     6 5 4 3 2 1 0
10. I thought about how people would feel if I killed myself 6 5 4 3 2 1 0
11. I wished I were dead     6 5 4 3 2 1 0
12. I thought that killing myself would solve my problems     6 5 4 3 2 1 0
13. I thought that others would be happier if I was dead     6 5 4 3 2 1 0
14. I wished that I had never been born     6 5 4 3 2 1 0
15. I thought that no one cared if I lived or died     6 5 4 3 2 1 0

**Appendix B**

**Health Risk-Taking Assessment (HRTA)**

These questions are about behaviors that may affect your health. Please read every question and answer honestly. The information you provide will be used to develop better health education for young people. If you are currently in a residential facility, please answer for the time period just before you entered the facility.

1. During the past 3 months (90 days), how many times did you drive a car when you had been drinking alcohol or ride in a car driven by someone who had been drinking alcohol?

   a. 0 times
   b. 1 time
   c. 2 or 3 times
   d. 4 or 5 times
   e. 6 or more times

2. During the past 3 months (90 days), how many days did you carry a weapon such as a gun or knife?

   a. 0 days
   b. 1 day
   c. 2 or 3 days
   d. 4 or 5 days
   e. 6 or more days

3. During the past 3 months (90 days), how many times were you in a physical fight?

   a. 0 times
   b. 1 time
   c. 2 or 3 times
   d. 4 or 5 times
   e. 6 or 7 times
   f. 8 or 9 times
   g. 10 or 11 times
   h. 12 or more times

4. During the past 3 months (90 days), on how many days did you smoke cigarettes or use

   other tobacco products such as chewing tobacco, dip, or snuff?

   a. 0 days
   b. 1 or 2 days
   c. 3 to 5 days
   d. 6 to 9 days
   e. 10 to 19 days
   f. 20 to 29 days
   g. 30 days or more

5. During the past 3 months (90 days), on about how many days have you had at least one

   drink of alcohol?

   a. 0 days
   b. 1 or 2 days
   c. 3 to 9 days
   d. 10 to 19 days
   e. 20 to 39 days
   f. 40 to 89 days
   g. Every day

6. During the past 3 months (90 days), about how many times have you used any mind altering

   substances, including marijuana, cocaine, heroin, inhalants, and/or prescription

   medications not prescribed for you?

   a. 0 times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 to 89 times
   g. 90 or more times (at least once a day on average)

7. In the past 3 months (90 days), did you skip any meals, vomit, or take diet pills,

   powders, or liquids to keep from gaining weight? (Do not include meal replacement

   products such as Slim Fast)

   a. Yes
   b. No

8. The last time you were involved in any type of sexual activity, did you or your partner use

   a condom?

   a. I have never been involved in any type of sexual activity.
   b. Yes
   c. No

9. During the past 3 months (90 days), about how many times did you cut yourself or

   otherwise try to hurt yourself on purpose?

   a.  0 times
   b. 1 or 2 times
   c.  3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 to 89 times
   g. 90 or more times (at least once a day on average)

**Appendix C**

**Problem-Solving Skills Test (PSST)**

Please select the answer that you believe best describes what you should do.

1. If you have an argument or conflict with another person, the first step in handling it

   should be:

    A. brainstorming for possible solutions.
    B. telling the other person why they're wrong.
    C. choosing a good solution to the problem.
    D. recognizing that you have a problem.
    E. pushing them away.

2. One helpful way to solve a problem is to:

    A. talk about it with friends and family.
    B. work it out myself.
    C. do nothing because most problems just go away.
    D. punch and yell into a pillow.
    E. find out who is to blame and punish them.

3. If I were at a party and someone offered me drugs, I should:

    A. join in if other people were doing it.
    B. invite friends to try them too.
    C. try to hide from the person who offered them.
    D. identify that as a problem and try to get help in solving it.
    E. accuse the person of being a "druggie" and turn him/her in to the cops.

4. A very important part of the brainstorming process is:

    A. making sure that only good ideas are suggested.
    B. explaining to others why their ideas won't work.
    C. not evaluating the ideas until brainstorming is finished.
    D. limiting the number of ideas to no more than five.
    E. only considering the best ideas.

5. Having a group help with solving problems:

    A. is a bad idea because people need to solve their own problems.
    B. is a good way to come up with better solutions.

C. is likely to confuse the person with the problem.
D. takes too much time and isn't worth it.
E. just embarrasses the person with the problem.

6. If someone stole something from me, I should:

A. fight to get it back.
B. steal something from them.
C. find a way to get revenge.
D. ask an adult for help.
E. just forget about it because it would cause trouble.

7. The best way to get along with other people is to

A. do whatever they say.
B. make sure that they do what you say.
C. make them afraid of you.
D. keep quiet and not let them know who you really are.
E. discuss problems and compromise.

Thank you for completing this survey!

**Appendix D**

**SUN Group Member Survey**

ID # _____

These questions are about you and your background. They will be used to describe the types of people completing this survey. The information will not be utilized to identify you or to find out your name. No names or other identifying information will ever be reported. Please circle the letter of the response which most closely applies to you.

1. How old are you? _____

2. Which are you?
      a. Female
      b. Male

3. In what grade are you? _____

4. How do you describe yourself?
      a. American Indian or Alaskan Native
      b. Asian
      c. Black or African American
      d. Hispanic or Latino
      e. Native Hawaiian or Pacific Islander
      f. White
      g. Other

5. How would you describe your relationship with your parents (or legal guardians)?

      a. Great – no problems
      b. Good – some small problems
      c. Okay – lots of problems, but no really big ones
      d. Poor – lots of big problems
      e. No relationship – don't see them or don't want to see them at all

**Appendix E**

**Florida Initiative for Suicide Prevention, Inc (FISP)**

**SUN Program Facilitator Job Description**

Duties will include:

1. Facilitating no less than one complete group consisting of ten (10) sessions for each group assigned at a specific time at one location.
2. Attending one day of training prior to facilitating groups with the SUN Program training staff.
3. Submitting a pre-evaluation form explaining their expectations of their accomplishments with the groups.
4. Finalizing time schedules according to FISP directions for programs and meeting with program managers on site.
5. Meeting with SUN Group parents at least once either at a group meeting or individually before the first group session. The meeting is for the purpose of educating parents about how the group functions and their responsibility to support and encourage their children's participation.
6. Presenting group program agenda and administer pre-surveys at first group meeting.
7. Presenting the program with use of SUN trained modalities.
8. Keeping daily notes of each meeting at each location for individual group members and the group as a whole.
9. Provide group inspiration project ideas to encourage participation in the SUN process where necessary to keep children interested.
10. Inform proper authorities when a child is in imminent danger or risk.
11. Administer the post-evaluation to groups at last meeting.
12. Hold a pizza party for the final meeting to solidify the process.
13. Fill out the post-evaluation for the facilitator and write a final report.
14. Submit receipt for purchases made for groups, i.e. pizza as part of monthly invoice.
15. Facilitator should have liability insurance.
16. Attend all Facilitators Meetings.

FISP will provide:
1. Training, supervision, and support
2. All program materials.
3. Hourly salary of $35.00 per hour for each two hours of group facilitation with participants.
4. The facilitator will be paid monthly.
5. Reimbursement for misc. supplies used at meetings only with presentation of receipts and approval of such expenditure. A $60 allotment is allowed per group of ten sessions for snacks and the ending pizza party.

**Appendix F**

**Sample Icebreakers/Activities**

General goals for everyone to have fun and get to know each other.
1. Facilitator attitude is the key and please introduce yourself and state how glad you are to there to lead these activities that they will enjoy and may later want to share.
2. Facilitators need to display a positive attitude
3. Activities are designed to be minimally physical but please let everyone know that if they need to sit out an activity due to the physical demand of that activity that will be fine but try to keep them as involved as possible and nearby and adding suggestions and processing with the group

Have you ever
Supplies: Bandanas and tape
 • Form a circle and have each person stand on their bandana or duct tape with one person in the middle with no bandana or duct tape
• The person in the middle says "have you ever…" and makes a statement that is true for themselves.
• If it is true for other people in the group, they need to find a new bandana to stand on, and it can't be the same bandana they were just on, OR either of the bandanas that were
adjacent to their own. (therefore you must move more than one space over from the one
you're moving from) The person in the middle moves quickly to take one of the vacated
spots.
• The new person in the middle than says "have you ever…."
• At the beginning questions are light, clean, and fun… you can add more interesting facts too! However, they must be workplace appropriate.

Warp speed
 Supplies: Tennis ball or beanie and a stopwatch or watch with a second hand.
• Group stands in a circle with one person holding the ball
• The ball needs to be thrown to each person in the circle once, ending with the person
who started.
• After the ball is thrown, ask about how long it took for the ball to reach everyone and ask how much quicker they think you can do it in.
• Once they meet the goal, ask if they can go faster and any ideas to achieve that new time goal.
• Continue doing this for a few rounds.
• Discussion at the end-ask the participants how they were able to finish the task faster (by working together, communicating, etc.) and discuss what happened when someone
presented an idea (it was encouraged and tried).

**Appendix G**

**FISP SUN Session Implementation Protocol**

All prerequisite trainings and clearances required by FISP and the partner agency or location must be acquired before the first group meeting. The following steps and forms must be addressed by the facilitator in the following order:

1. Prior to the start of the first group, label all of the surveys with the participant ID as outlined in the rubric on creating participant IDs. Make sure to label every page of the survey with the participant ID.
2. Welcome the group and introduce yourself.
3. Introduce the program with the brochure and stress the ten-steps of problem-solving.
4. Make sure the consent or permission forms are signed by the parent and the participant and explain what the research is about.
5. Have each participant fill out a Confidential Data Follow-up Sheet.
6. Facilitator will explain the survey to the participants and read the full survey to the participants. This will ensure that participants who have difficulties with reading do not feel stressed or exposed. Make sure to provide each participant with the survey that corresponds to their ID number. READ THE SURVEY OUT LOUD.
7. Explain that confidentiality is a rule, not an option. Then, invite the group members to decide on some other rules regarding how they will treat and help each other during the group.
8. Explain the purpose of the group and how the group works.
    a. Explain that a snack will be provided during each group and that there will be a pizza party at the end.
    b. Emphasize the necessity of attendance, and those that attend at least 8 sessions will receive a certificate of completion.
9. Use Ice Breakers to engage the group, to help them get to know each other, and to build trust.
10. Immediately AFTER EACH SESSION complete member and group reports.
11. After the fifth session submit all pre-surveys, member and group reports, and invoices for the first five weeks.
    a. Each facilitator can spend up to $50 per group of 10 sessions for enhancements.
12. After the tenth Session submit the post-survey, member and group notes, and the final invoice.

**Appendix H**

**FISP SUN Program Research ID Number Rubric**


ALL Paper work requiring ID numbers will use ID assigned when the Participant attends the first session and fills out the Pre-Survey!

Alphabetize attendance sheet and put ID Number on Pre-Survey for all group members prior to handing them. Ensure that the surveys are dispensed to the correct the group member.

1. Is a letter
          Sun Group     = S                    = S

2. 3 digits - place group list in alphabetical order
          John Jones     = 001
          Sue Smith      = 002          = S002
          Sally Stone    = 003

3. Location:
          FOSI =                    1
          St. Stephens =            2
          Camelot =                 3                    = S0023
          Boys & Girls Club =   4
          Detention Center =    5
          YMCA =                    6
          Hispanic Unity =      7

4. Initials of the Facilitator
          e.g., Jamie Jones = JJ          = S0023JJ

5. Facilitator Group Number - (This is number assigned to the facilitator by FISP when a facilitator is hired)
          e.g., Jamie Jones = #15          = S0023JR15

6. The date the survey is completed in six figures
          e.g., January 2, 2007 = 010207 = S0023JR15010207


This ID Number indicates:

A SUN Group participant Sue Smith is a group at Camelot facilitated by Jamie Jones whose

facilitator Group number is 15 and the survey was completed on Jan. 2, 2007.

**Appendix I**

**SUN Program Report Protocol and Report Forms**

Member Reports:

 Each member report should include:
1. Member's willingness to participate.
       2. The problems discussed by the member.
       3. Member's ability to express the problems.
       4. Member's cooperation and adherence to group rules.
       5. Member's willingness to help other group members.
       6. Member's ability to accept help from facilitator and other members.
       7. Changes in member's behaviors.
       8. Member's ability to brainstorm options.
       9. Member's attitude toward other group members.
       10. Specific needs of individual member.

Session Reports

Each Session report should include:
       1. Members' interaction as a group.
       2. The problems discussed by the group.
       3. Modalities used to encourage participation.
       4. Group's cooperation and adherence to group rules.
       5. Group's willingness to help other group members.
       6. Group's ability to accept help from facilitator and each other.
       7. Changes in Group behaviors.
       8. Group's ability to brainstorm options.
       9. Group's ability to bond.
       10. Group's ability to be empathic.

Five Week and Final Reports

       1. Address progress of each member and group as a whole.
       2. Address problems in group and possible solutions.
       3. Address what methods work and those that do not.
       4. Address suggestions for improvement of process.

**Appendix J**

**SUN Group Facilitator Session Report**

| Group Facilitator | Group type | Group Location | Date & Time | Session # |
|---|---|---|---|---|
|  |  |  |  |  |

Number of participants in attendance: _____

 Group Members ID#'s 1._____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____
8. _____ 9. _____ 10. _____

1. Rate the participant's interactions within the group as a whole.
        a. Very Interactive
        b. Moderately Interactive
        c. Not Very Interactive
        d. No Interaction at all

2. Indicate the problems or curriculum elements discussed by the group.
        a. Family
        b. Drugs/Alcohol
        c. Friends
        d. Gangs
        e. Illegal Activities
        f. School/Learning Difficulties
        g. Other (explain) _____

3. Describe the modalities used to encourage group participation.
        a. Food/Snacks/Candy
        b. Verbal Encouragement
        c. Art
        d. Group Encouragement
        e. Games
        f. Other (describe) _____

4. Describe the groups' cooperation and adherence to group rules.
        a. Very Cooperative
        b. Moderately Cooperative
        c. Somewhat Cooperative
        d. Not at All Cooperative

5. Describe the groups' willingness to help other group members.
        a. Very Helpful

    b. Moderately Helpful
    c. Somewhat Helpful
    d. Not at all Helpful

6. Describe the groups' ability to accept help from the facilitator and each other.
    a. Very Accepting
    b. Moderately Accepting
    c. Somewhat Accepting
    d. Not at all Accepting

7. Rate the amount of behavioral changes within the group since the last session.
    a. Big Change
    b. Moderate Change
    c. Small Change
    d. No Change
    e. Explain _____

8. Rate the groups' ability to brainstorm options and/or implement curriculum to improve problems.
    a. Very Able
    b. Moderately Able
    c. Somewhat Able
    d. Not at all Able

9. Rate the groups' ability to bond.
    a. The group is extremely close.
    b. The group is moderately close.
    c. The group gets along okay.
    d. The group is not bonded at all.

10. Rate the groups' ability to be empathetic.
    a. The group is very empathetic.
    b. The group is moderately empathetic.
    c. The group is somewhat empathetic.
    d. The group is not empathetic at all.

11. Rate how the group implemented the SUN 10 steps of problem solving.
    a. Very Well
    b. Moderately Well
    c. Somewhat Well
    d. Not at all

12. Which of the SUN 10 steps of problem solving did the session discuss and how well was it implemented (explain):

_____
_____
_____

13. Please provide any additional pertinent information:

_____
_____
_____
_____

**Appendix K**

**Facilitator Protocol for Suicidal Alert Signs Shown by SUN Group Participants**

At all times during the group sessions, participants will be monitored by group facilitators for potential self-injurious or suicidal behaviors as well as for threats of harming others, including monitoring of responses to survey data produced by the participants. Any individuals exhibiting or threatening such behaviors, as well as those whose responses to the survey data indicate that they may be at risk, will be referred by the group facilitators to the individual designated to handle such matters by the facility in which the group sessions take place. It shall be the responsibility of this individual to make an appropriate referral to a licensed mental health professional for any necessary risk/threat assessment at the facility where the group sessions take place or to a private practitioner for such assessment at the parents' or legal guardians' expense (or the participant's own expense if he/she is an adult). It shall be the responsibility of the facility or the licensed mental health professional to contact/inform the parent or legal guardian if he/she deems it appropriate. FISP, NSU, and SPARE do not provide and are not responsible for providing services to participants other than the group training sessions.