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Teaching Problem-Solving to Improve Family Functioning and Decrease Suicidality

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**TEACHING PROBLEM-SOLVING TO IMPROVE FAMILY FUNCTIONING AND TO
DECREASE SUICIDALITY**

by

Erin Shae Johns

A Dissertation Presented to the School of Psychology
of Nova Southeastern University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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DISSERTATION APPROVAL SHEET

This dissertation was submitted by Erin Johns under the direction of the Chairperson of the dissertation committee listed below. It was submitted to the Center for Psychological Studies 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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TEACHING PROBLEM-SOLVING TO IMPROVE FAMILY FUNCTIONING AND TO DECREASE SUICIDALITY

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Abstract

Suicide is a leading cause of death among adolescents and young adults. Numerous risk factors have been identified in the literature, including poor problem-solving skills, poor family functioning, excessive risk-taking behaviors, legal difficulties, and school difficulties. Deficits in problem-solving skills and poor family functioning are typically reported together, indicating a relationship between the two. However, no previous studies have identified this relationship. The purpose of this study was to identify possible relationships between two known risk factors and suicidal ideation, to determine whether problem-solving skills taught in the experimental groups reduce suicidal ideation and improve perceptions of family relationships, and to establish if knowledge of problem-solving skills acts as a mediator between family functioning and suicidal ideation. Archival data of 285 adolescents who participated in up to 10 sessions dedicated to teaching the process of solving problems were analyzed. There was an unusually high attrition rate (64%), and so in some analyses, only data from 85 adolescents was reported. One empirically-validated questionnaire and three additional questionnaires were utilized to assess suicidal ideation, perception of family functioning, risky behaviors, and knowledge of steps in problem-solving. Knowledge of the problem solving process was shown to significantly improve over the course of the group. Although there were not significant improvements in suicidal ideation or family functioning, the change in scores was in the predicted direction. The

results also found significant correlations between family functioning and problem solving and family functioning and suicidal ideation; however, no significant relationship was found between problem solving and suicidal ideation. Additionally, there were many significant correlations found between the outcome measures and many of the risk factors for suicide. Lastly, a mediator effect of problem-solving on the relationship between family functioning and suicidal ideation was found at pre-test only.

CHAPTER I

Statement of the Problem

Suicide is a leading cause of death among adolescents and young adults. Numerous risk factors have been identified in the literature, including poor problem-solving skills (Adams, Overholser, & Lehnert, 1994; Kidd et al., 2006; Kienhorst, De Wilde, Diekstra, & Wolters, 1995; McDermut, Miller, Solomon, Ryan, & Keitner, 2001; Miklowitz & Taylor, 2006), poor family functioning (Adams et al., 1994; Kidd et al., 2006; Miklowitz & Taylor, 2006), excessive risk-taking behaviors (Brent, Baugher, Bridge, Chen, & Chiappetta, 1999; Brooks, Harris, Thrall, & Woods, 2002; Hacker, Suglia, Fried, Rappaport, & Cabral, 2006; Orpinas, Basen-Engquist, Grunbaum, & Parcel, 1995; Woods et al., 1997), legal difficulties (Groholt, Ekeberg, & Haldorsen, 2006) and academic challenges (Beautrais, Joyce, & Mulder, 1997; Garland & Zigler, 1993). Adolescents who demonstrate one or more of these risk factors have a greater likelihood of attempting suicide than their peers without these risk factors.

In addition to the aforementioned risk factors, deficits in problem-solving skills and family functioning are typically reported together as risk factors for adolescent suicide, indicating a relationship between the two. However, there is no formal research to support this relationship in the literature. In a study by Carris, Sheeber, & Howe (1998), a mediational model was utilized to determine the problem solving, family rigidity, and suicidal ideation. Although their results were significant, they utilized an adult sample. Furthermore, many of the theories for explaining suicide, including the social learning, psychosocial, family systems, and ecological theories of adolescent suicide, also implicate a relationship between deficits in problem-solving and poor family functioning. Once again, no data exist to confirm this association.

Families play a considerable role in the development of children and adolescents. As development progresses, children look to their families to learn how to interact with others. Moreover, children look at their families as models of right and wrong, appropriate and inappropriate behavior, consequences (both positive and negative) for behavior, and communication skills. When children perceive their families as close, and when lines of communication are open, adolescents are more likely to approach their family members with their problems. However, if parents have not modeled appropriate problem-solving skills and when the lines of communication are not functional, adolescents may turn to maladaptive means of solving their problems, such as alcohol, drugs, or suicide.

Considering the importance of families in modeling appropriate problem-solving skills for adolescents, it is important to evaluate the literature linking family functioning and problem-solving skills. However, due to the lack of conclusive data linking the two, this study aims to identify the relationships between these two known risk factors and suicidal ideation, to determine whether problem-solving skills taught in the experimental groups reduce suicidal ideation and improve perceptions of family relationships, and to establish if knowledge of problem-solving skills acts as a mediator between family functioning and suicidal ideation. Furthermore, correlations between family functioning and suicidality, problem-solving skills and suicidality, and risk behaviors and suicidality have all been well-documented in the literature. Therefore, this study will further explore these relationships as well.

CHAPTER II

Review of the Literature

Suicide remains a growing problem in the United States among adolescents. Suicide is the third leading cause of death for adolescents and the second leading cause of death for college students, accounting for approximately 12.9% of deaths in these age groups annually. In 2005, 16.9% of U.S. high school students reported that they had seriously considered attempting suicide during the 12 months preceding their completion of the Youth Risk Behavior Surveillance Survey (YRBSS), and more than 8% of students surveyed reported that they had actually attempted suicide one or more times during the same period (CDC, 2007; Eaton et al., 2006). Research conducted by Hacker and colleagues (2006) found that 7.5% of ninth graders and 6.6% of eleventh graders reported having attempted to die by suicide one or more times during the year previous to the study. Despite the high incidence of suicide and suicide attempts, some research indicates that the actual rate of adolescent suicide is even higher than reported. According to Garland and Zigler (1993), statistics on suicide may be an underestimate due to underreporting, and many accidental or undetermined causes of death are actually suicides. Among youth ages 15 to 24, there is one suicide for every 100 to 200 attempts (CDC, 2007; 2002). Approximately one in 10 adolescent girls and one in 25 adolescent boys attempt suicide each year. Although teenage females attempt suicide at rates far higher than those of teenage males, adolescent boys die by suicide at a much higher rate. This difference is explained by higher suicidal intent, use of more violent and lethal methods, higher prevalence of substance abuse, and greater vulnerability to legal problems among males (Brent et al., 1999; Gould, Fisher, Parides, Flory, & Shaffer, 1996; Rich, Ricketts, Fowler, & Young, 1988; Shaffer et al., 1996).

Consistent with the incidence nationally, in 2006 suicide was the third leading cause of death among adolescents living in Florida (Coalition, 2008). Additionally, teens were hospitalized for suicide attempts at a rate higher than any other age group in Florida. Between the years 1999 and 2003, death by suicide was the 7th leading cause of death for males of all age groups, while death by suicide was the 17th leading cause of death for females of all age groups (SPRC, 2008). The Florida Suicide Prevention Coalition reported on their website that the majority of deaths by suicide in adolescents occur in the home just before parents return from work (Coalition, 2008). Additionally, according to the 2005 Youth Risk Behavior Surveillance Survey, 27.3% of Florida adolescents felt sad or hopeless, 14.5% of Florida youth had seriously considered attempting suicide, 11.6% of Florida adolescents had created a plan for suicide, 8.5% of Florida teens had attempted suicide, and 2.7% of Florida youth made a suicide attempt that required hospitalization (CDC, 2006a). As evidenced by the high rate of deaths by suicide, more suicide prevention efforts are needed in the state of Florida as well as in the country as a whole.

Cultural Considerations

When considering the prevalence of and risk factors for suicide, it is essential to look at culturally-based correlates of suicide within minority groups. Specifically, it is necessary to review the cultural considerations of the study participants to understand better the results of this study. Broward County Florida, the location of this study, has a diverse population. In 2006, the U.S. Census Bureau reported the composition of Broward County residents to be as follows: White persons not of Hispanic origin (49.7%), Black (25.3%), Persons of Hispanic or Latino origin (22.8%), Asian (3.0%), American Indian or Alaska Native (0.4%), and Native Hawaiian (0.1%). Furthermore, 1.3% of the population reported two or more races (Bureau, 2006).

Youth suicide rates are higher for Caucasian youth than for African American youth. Additionally, Native Americans generally have the highest rates of suicide, whereas Asian Americans usually have the lowest rates (Anderson, 2002; Gould, Greenberg, Velting, & Shaffer, 2003). Typically, minorities have a tendency to under-utilize mental health services and are less inclined to seek help following suicide attempts. African American and Hispanic adolescents are less likely than Caucasian youth to access psychological intervention for mental health problems prior to suicidal behaviors (Freedenthal, 2007). Therefore, statistics for these minority groups may be even more underreported than for others. Furthermore, due to culture-specific perceptions of suicide, the presentation of suicidal ideation may vary across cultures. For example, suicidal adolescents in one culture may evidence symptoms of depression, whereas those in other cultures may display somatic complaints, externalizing behaviors, and/or risky actions. Even within the same culture, these behaviors and symptoms may vary among adolescents. Despite the variations in presentation of suicidal behavior, however, deficits in problem-solving have been found in multiple ethnic groups (Chance, Kaslow, Summerville, & Wood, 1998).

As with the nature of suicidal ideation, rates of suicide also vary across cultures. According to (Goldston et al., 2008), there is a significant difference in the rates of suicide among the lowest risk group (African American females) and the highest risk group (American Indian/Alaska Native males). Additionally, Hispanic/Latino females have the highest rates of suicide attempts among all cultures within the United States (Eaton et al., 2006). While suicide is the third leading cause of death for all adolescents, it is the second leading cause of death for American Indian and Native Alaskan adolescents (CDC, 2006a). Suicide rates among minority groups from highest to lowest are as follows: American Indian/Alaska Native males, White

males, American Indian/Alaskan Native females, Latino males, African American males, Asian American/Pacific Islander males, White females, Asian American/Pacific Islander females, Latino females, and African American females (Goldston et al., 2008). Goldston et al. (2008) further suggest that suicide attempts are low among African American and Caucasian adolescent males.

The literature posits many reasons for the variations in suicide rates across cultures. Many cultures focus more on collectivistic identity as opposed to individual identity as in the majority culture in the United States. According to Gaines et al. (1997), African Americans and other ethnic and racial minority groups express higher levels of collectivism, which are mediated by their ethnic and racial identities. Particularly among African Americans, the emphasis on social support, cultural cohesion, and family involvement are indicative of lower suicide rates (Gibbs, 1997). Due to the emphasis on collectivism, it is hypothesized that African Americans typically display aggression outwardly rather than inwardly (Gibbs, 1997; Gould et al., 2003; Shaffer, Gould, & Hicks, 1994), indicating that they are more likely to harm others than themselves. Furthermore, it has been reported that African Americans and other minorities have a less accepting attitude toward suicide and, therefore, attempt suicide less often (Goldsmith et al., 2002; Joe, Romer, & Jamieson, 2007; Neeleman, Wessely, & Lewis, 1998). Additionally, Nisbet (1996) suggests that the protective factors of familial and community supports contribute to the low rates of suicide among African American females (Nisbet, 1996). The emphasis on cultural collectivism/identity as opposed to individual identity is viewed as a resiliency factor for African American and other minority youth.

However, this emphasis also poses additional stressors on minority youth who live in the United States, particularly those of Asian and Hispanic descent. These adolescents are conflicted

by living in two different cultures: the collectivist culture of their race/ethnicity and the North American culture which emphasizes the individual. In South Florida, approximately 30% of these families report speaking languages other than English within the home (Bureau, 2006). Further, these cultures place demands on the adolescent to maintain interdependent family roles which pose conflicts as they strive to acculturate into the American society. Despite these conflicts, obligations to family, family closeness, and strong relationships with parents are identified as resiliency factors for Hispanic/Latino adolescents (Locke & Newcomb, 2005; Zayas, Lester, Cabassa, & Fortuna, 2005).

Family is also important in Asian cultures, but if adolescents have brought shame on themselves or their families, suicide is considered an acceptable and even honorable way to handle such difficulties (Goldston et al., 2008). The high rate of suicide among Asians is likely due to the acceptance of suicide as honorable in this culture (Joe et al., 2007). Family also plays a significant, yet different, role in suicide among American Indian and Native Alaskan youth, especially ones living on reservations in remote locations. Due to the high rates of suicide of this population in general, these adolescents are exposed to death by suicide of family members and peers more frequently, and, therefore, contagion is prevalent. Family members and peers who die by suicide also model for these adolescents that suicide is an acceptable way to handle problems.

It is essential to consider cultural factors when developing and implementing suicide prevention programs for youth. Specifically, this paper reviews the cultural considerations due to the diverse demographics of South Florida, which was the location of subject recruitment for this research. It is also important to consider cultural variations when interpreting the results of this current research, as different cultures view family relationships, suicide, and problem-solving diversely. Therefore, culture may have affected subject ratings of these variables.

Theories of Suicide

There are many theories which attempt to explain adolescent suicidal behavior. These theories include biological, psychological (mental illness), social learning, psychosocial, family systems, and ecological perspectives. Although these theories interact to explain adolescent suicidal behavior, the main focus of this section will be on social learning, psychosocial, family systems, and ecological theories of adolescent suicide. These theories best account for the role of family and problem-solving on adolescent suicidal behavior, and, therefore, are essential to this paper. Furthermore, these theories lead to the hypothesis developed for this study regarding the impact of perceived family functioning on adolescent suicidal behavior.

According to social learning theory, adolescents learn that suicide is an acceptable solution to a problem from watching family members, peers, or celebrities model suicidal behavior or die by suicide. Considering that the central contexts for adolescents include family, school, friendships, romantic relationships, and peer groups (Bearman & Moody, 2004), this theory accounts for the importance of these systems in adolescent suicidal ideation. Adolescents imitate the behavior of family members and friends when trying to solve their problems. Although the biological theory of suicide postulates a genetic link among familial suicides, such a link can also be explained by social learning theory and imitation of suicidal behaviors. According to Burns and Patton (2000), it is unclear whether family history of suicidal behavior reflects an inherited predisposition to impulsivity or learned patterns of behavior. In addition to emphasizing modeling behaviors of others, social learning theory also recognizes that family and peers may unwittingly encourage suicidal behavior by giving increased attention to suicidal gestures, thereby reinforcing a maladaptive coping style (Henry, Stephenson, Hanson, & Hargett, 1993).

In a study on the long-term impact of exposure to suicide, results suggested that a peer's suicide has an inhibitory effect on personal suicidal behavior, due to experiencing the devastation that the suicide causes, minimizing the effects of social learning theory (Brent, Moritz, Bridge, Perper, & Canobbio, 1996). However, the results of this study have not been confirmed by other investigators. Furthermore, other research has shown that contagion is more likely when there is a significant amount of media coverage. In fact, media coverage of suicides appears to lead to subsequent completed suicides among adolescents (Gould, 2001; Gould et al., 2003; Schmidtke & Schaller, 2000; Stack, 2003). Given the large numbers of suicides attributed to contagion and the growing population of survivors of suicide (those who have lost a friend or family member to suicide), postvention protocols have been developed to provide outreach following a suicide.

The psychosocial model of suicide is derived from Erik Erikson's theory of development (Erikson, 1968). Within this model, adolescent suicide occurs when identity formation is thwarted (Portes, Sandhu, & Longwell-Grice, 2002). The role of the family is especially important as pre-adolescents and adolescents attempt to master the stages of development as described by Erikson. According to Portes et al. (2002), suicidal behavior occurs when stress, cognitive immaturity, and lack of emotional bonding interact and overwhelm an individual's ability to cope and to reason clearly. Consistent with the risk factors for suicide described below, lack of parental support and alienation from and within the family have been identified as key risk factors for adolescent suicide (Grob, Klein, & Eisen, 1983). Additionally, parental absence/unavailability, poor familial communication, conflict within the family, high parental expectations, and overt family pathology are all considered to be risk factors for suicide based upon psychosocial theory (Portes et al., 2002). Essentially, this model maintains that family plays an important role in identity formation for adolescents. If the family is dysfunctional, the

adolescent has difficulty developing a functional identity, a developmental deficiency which can lead to depression and suicidal ideation. Additionally, self-harm/suicide potentially could be the identity the adolescent chooses (Henry et al., 1993). This model is especially important in minority and immigrant adolescents as discussed above. These adolescents are conflicted between forming an individual identity and embracing the collectivistic identities of their respective cultures.

Similar to the psychosocial theory of suicide, family systems theory suggests that family dysfunction is an explanation for adolescent suicide. The suicidal adolescent may serve as a rallying point in the dysfunctional family by helping the family to avoid other painful issues (Landau-Stanton & Stanton, 1985). Because the suicidal adolescent and his/her struggles serve as the focus of the family, the problems and causes of family dysfunction are often ignored. Dysfunctional families often lack functional communication, which in turns contributes to adolescent suicidal ideation. Additionally, the relationships between family members are weak, and adolescents perceive a lack of support from the family. Family systems theory can also account for resiliency factors among adolescents. For example, among African Americans, the emphasis on family relationships and loyalty can serve as a protective factor for their culture.

According to the ecological theory of adolescent suicide, adolescents interact within a number of systems: organism level, microsystem, mesosystem, and exosystem. For the purpose of this paper, only the organism level and microsystem will be discussed. The organism level refers to the individual characteristics of the adolescent. These characteristics can include coping style, internalizing/externalizing behaviors, depression, anxiety, substance use, and perfectionism and are often considered to be risk factors for suicide. The adolescent also belongs to a microsystem, which includes the adolescent's family, peer group, school, and/or work. Similar to

the theories described above, it is especially important to look at the family's role in the adolescent's microsystem. Several family factors have been identified as contributing to suicide in adolescents: loss of a family member, feeling ignored by parents, economic insecurity, parental substance use, depression/suicide attempts in family members, high parental expectations, residential mobility, ineffective family communication and interaction patterns, sibling conflict, abuse/neglect, and observing violence (Henry et al., 1993). Research has shown that female suicide attempters reported a lack of nurturance by their parents (Stephens, 1986). This is particularly relevant given the necessity for two incomes in today's society, leading more parents to work longer hours away from home. As parents work longer hours outside of the home, family activities and family meals become less prevalent or non-existent. Furthermore, the rituals developed by families during mealtimes and the repeated behaviors over time can build a sense of unity, identity, and connectedness that may be particularly important during adolescent development (Fulkerson et al., 2006). Additionally, these family mealtimes have been found to increase resiliency factors in teens. For example, Bearman and Moody (2004) reported that adolescent boys and girls were more likely to have suicidal thoughts if they engaged in fewer activities with their parents. This research indicates that if families spend more time together participating in joint activities and family meals, suicidal ideation may decrease among adolescents. Due to rigid interaction patterns within the family, adolescents have been discouraged from trying new roles and hence causing higher levels of conflict and lower levels of effective communication in decision-making (Henry et al., 1993; Williams & Lyons, 1976). Additionally, in a study by McKenry and colleagues (1982), both adolescents and their parents rated low levels of satisfaction with the family relationship (Henry et al., 1993; McKenry, Tishler, & Kelley, 1982). In conclusion, dysfunctional families, which is defined by poor conflict

management, ineffective communication patterns, as well as poor familial relationships, all contribute to adolescent suicidality.

As the research illustrates, family relationships play a key role in adolescent suicidal ideation, attempts, and completions. While the role of family in suicide is theorized differently in all the models, the overall implications are the same. Poor family functioning, poor communication, lack of problem-solving/poor conflict management, and lack of nurturance are all important areas to researched when investigating the problem of adolescent suicide. Although each of these categories deserves to be studied independently, the current research looked at the broad category of perceived familial relationships and the relationship with suicidal ideation. Additionally, this research aimed to identify the role of problem-solving skills on family relationships.

Warning Signs and Risk Factors

Many researchers have attempted to identify specific warning signs and risk factors for suicide. Risk factors are likely to be common, pre-date the onset of serious suicidal behavior and have strong associations with suicide or suicidal behavior (Burns & Patton, 2000). Warning signs have been defined as things that occur within the minutes, hours, or days before a suicide attempt, and a risk factor as something that has occurred further in the past that makes a person more susceptible to a future suicide attempt (Rudd et al., 2006). Given this definition, there still remain disagreements as to what are the actual warning signs and risk factors for suicide. Mandrusiak and colleagues (2006) reviewed the warning signs on the internet and found that 50% of the warning signs listed on each site were unique to the website itself. This study also examined the American Association of Suicidology (AAS) website and found that 70% of the warning signs listed by AAS were utilized by other sites (Mandrusiak et al., 2006). This research

highlights the inconsistency among the warning signs and risk factors for suicide. Additionally, adolescents who attempt suicide impulsively may not exhibit warning signs at all.

Although there is little agreement on specific warning signs or risk factors, it still remains important to explore risk factors and warning signs impacting adolescents; specifically the factors utilized by this study to deem adolescents at risk. Increasing numbers of severity of risk factors may predict more severe outcomes (Brent et al., 1986; McKeown et al., 1998). The following have all been identified as risk factors affecting youth: access to a gun or other lethal means, risky behaviors such as fighting, unprotected sexual activity, drug and alcohol use, school attendance, contact with the legal system, impulsive behavior, poor problem-solving skills, and poor family functioning. Each of these risk factors will be discussed in further detail and were considered in subject recruitment. Additionally, each of the risk factors was assessed for correlations with family functioning and problem-solving skills.

Impulsive suicide acts. The literature suggests that there are two different types of suicidal adolescents: impulsive and depressed (McKeown et al., 1998). When compared with adolescents who are depressed and hopeless, adolescents who act impulsively may not exhibit suicidal behavior or ideation prior to making a suicide attempt. Males have been identified as ranking higher on measures of impulsivity than females, which is a significant risk factor for suicide (Joe et al., 2007). Adolescents who are impulsive and aggressive tend to make suicide attempts that are of variable intent and severity, whereas adolescents who are depressed and hopeless tend to make serious, planned attempts that have high suicidal intent and severity (Borst & Noam, 1993; Brent, 1987). Adolescents who have impulsively attempted suicide have been noted to have only contemplated suicide within the hours prior to the attempt (Hawton & Catalan, 1987; Kienhorst et al., 1995). Furthermore, Kienhorst and colleagues (1995) contend

that impulsive suicidal behavior would not allow for the possibility of intervention, other than treating the impulsivity itself. Although impulsive adolescents may not exhibit suicidal ideation prior to making an attempt, and the intent and severity of suicide attempts vary among these adolescents, risky behaviors and other conduct problems may be displayed prior to suicidal activity in impulsive suicide attempters (Borst & Noam, 1993).

Access to Firearms. Access to a firearm or other lethal means is reported to be one of the biggest risk factors for suicide. Firearms are the most frequent means of completing suicide, followed by hanging (Garland & Zigler, 1993). Brent and colleagues indicated that access to firearms was the one variable that significantly impacted suicide in adolescents with no apparent psychopathology (Brent, Perper, Moritz, Baugher, & Allman, 1993). Especially in impulsive suicides, access to firearms can be particularly dangerous. An adolescent who has never thought of suicide is at higher risk for suicide simply because of access to a gun. This study also found that the presence of a gun in the home contributed significantly to adolescent suicide, regardless of how the gun was stored (i.e., loaded vs. unloaded, locked away vs. unlocked). Another study conducted by Shah, Hoffman, Wake, and Marine (2000) reported that 67% of adolescents who died by suicide with a firearm used a gun obtained from their homes, and the majority used a gun that was not locked away. Researchers have theorized that African American male suicides have increased significantly due to increased access to firearms (Goldston et al., 2008). It is interesting to note that for every homicide that occurred out of self-protection in all ethnic groups, there were 37 suicides (Brent, 2001). This suggests that guns purchased for self-protection are more likely to be harmful to the self or a family member. By restricting access to firearms, an impulsive suicide attempt may be delayed due to lack of means. Increased weapons restriction on college campuses may have contributed to Silverman and colleagues' finding of decreased

suicide rates (Silverman, Meyer, Sloane, Raffel, & Pratt, 1997). However, increased restrictions on firearms will only prevent death by suicide until another lethal mean is found (Gould et al., 2003).

Risk-Taking Behaviors. Risky behaviors such as engaging in physical fights with peers, tobacco use, not wearing a seatbelt, and unsafe sexual practices (such as not wearing a condom) are all associated with increased risk of suicide (Brent et al., 1999; Brooks et al., 2002; Hacker et al., 2006; Orpinas et al., 1995; Woods et al., 1997). Additionally, these risky behaviors have also been associated with higher levels of depression, which is a precursor of suicide (Brooks et al., 2002). According to Garland et al. (1993), an adolescent is less likely to be at extreme risk for suicide without engaging in less risky behaviors first. Similarly, a “continuum of self-destructiveness” in adolescents has been postulated which includes a spectrum of risk behaviors ranging from more covert behaviors such as substance use and unsafe sex to more overt behaviors such as self-mutilation and suicide attempts (Holinger, 1979; Jessor, 1991, 1998; R. A. King et al., 2001). Furthermore, correlations have been demonstrated between suicidal ideation and less-risky behaviors such as use of tobacco and engaging in unsafe sexual practices to more risky behaviors such as single-vehicle car crashes and involvement in criminal behavior in a manner that provokes law enforcement officers to fire a weapon – sometimes referred to as “suicide by cop” (Barrios, Everett, Simon, & Brener, 2000). This provides further support for the existence of a progression of risky behaviors which leads to suicide. Risky behaviors are especially prominent among those who are identified as impulsive. For example, substance and alcohol use have been shown to increase impulsivity which leads to suicidal behaviors (Groholt, Ekeberg, Wichstrom, & Haldorsen, 1998; Rossow & Wichstrom, 1994). However, substance abuse has been demonstrated to convey a much higher risk for suicide when it is co-morbid with

an affective disorder, such as depression (Brent, Perper, Moritz, Allman et al., 1993). King and colleagues (2001) report that onset of sexual intercourse, smoking marijuana, drinking alcohol, smoking more than one cigarette per day, and having been in a fight in which there was punching or kicking all lead to increased risk for suicidal ideation, attempts, and completions. Given these risk factors, it is wise to measure risk-taking behaviors in addition to suicidal ideation and depression in adolescents.

Legal Difficulties. In addition to risk-taking behaviors, adolescents who demonstrate poor impulse control may have more contact with the legal system. In a study of completed suicides, Brent and colleagues (1993) found that those who completed suicide were more likely than matched community controls to be exposed to legal or disciplinary problems and to have had access to a loaded gun. In addition, it was found that youth who experience legal and disciplinary problems appear to be vulnerable to suicide (Groholt et al., 2006). In a review of the literature, Beuatrais, Joyce, and Mulder (1997) found that case-control analysis suggested that legal problems had one of the strongest associations with suicide attempt risk and occurred commonly among young people who made serious suicide attempts.

One complaint about most suicide prevention programs is that the prevention efforts do not reach the adolescents most at risk of suicide, considering that the majority of these interventions occur in the school. Incarcerated and runaway youths, as well as school dropouts, have extremely high rates of suicide (Garland & Zigler, 1993; Memory, 1989; Stiffman, 1989). Therefore, this research intended to study the incarcerated population as well as adolescents in special schools and after-care settings.

School Problems. Difficulties in school, including grade failure and non-attendance, have been found to increase the risk for suicide. Perceived school failure and school difficulties

significantly increased the risk for suicide among adolescents (Beautrais et al., 1997; Garland & Zigler, 1993). Additionally, Garland and Zigler (1993) reported that adolescents were likely to be absent from school in the days preceding their suicide attempt. A study of suicide attempts in ninth and eleventh graders reported similar findings. Specifically, the study found that school failure is especially significant in predicting suicide attempts among truant teens (Beautrais et al., 1997; Hacker et al., 2006). Further research by Fulkerson et al. (2006) identified motivation and engagement in school as important factors in suicidal ideation. Therefore, poor school attendance is not a risk factor by itself, but the adolescent's sense of belonging and participation in school may predict suicidal behavior. In addition to poor attendance and alienation from school, gifted and/or perfectionistic adolescents are at increased risk for suicide. Often, these adolescents feel as though there is pressure to be perfect and have high levels of academic achievement, leading to a sense of failure and low self-esteem when they are unable to achieve perfection (Henry et al., 1993).

Family Dysfunction. As stated previously, poor family functioning is a significant risk factor for adolescent suicide. Family functioning is such an important risk factor for suicide that many theories incorporate family functioning into the causes/theories of suicidal behavior. A study of adolescent suicide ideators and attempters revealed that 43% of suicide ideators and 56% of suicide attempters reported fighting with a parent as the precipitator of their suicidal behavior (Negron, Piacentini, Graae, Davies, & Shaffer, 1997). Research has demonstrated that family dysfunction is a more potent risk factor for suicide than lack of family intactness. Furthermore, research has shown that divorce is not a long-term risk factor for suicide if there is adequate parental care (McKeown et al., 1998; Tousignant, Bastien, & Hamel, 1993).

High family stress and conflict, poor parent-child communication, and perceptions of low family support have been found to be associated with completed suicides and suicide attempts in community and clinical settings (Miklowitz & Taylor, 2006). This suggests that family functioning is significant among adolescents with a diagnosed mental illness (clinical setting) as well as in adolescents without documented mental illness (community). Additionally, adolescents who perceived their families as lacking cohesion and having high levels of conflict, are at greater risk for suicide (Adams et al., 1994). Furthermore, lack of familial warmth, family discord, and disturbed mother-child relationships have been found to make independent contributions to the risk of suicidal behavior (Hollis, 1996). Moreover, family dysfunction has been found to influence adolescent suicidality significantly in both normative and clinical populations, to distinguish between suicidal adolescents and normative as well as clinical controls, and to impact rates of suicidal ideation and behavior (Kidd et al., 2006).

Gould et al. (2003) found that average patient ratings were significantly higher (suggestive of more impairment) than corresponding family member ratings on global functioning, communication, and problem-solving. This research suggests that it is not the communication and problem-solving patterns as viewed by the entire family that are most important, but the perception of these by the adolescent. Similarly, another study reported that adolescents' perceptions of parent-child communication are related to their suicide proneness (Adams et al., 1994; Stivers, 1988). Therefore, as adolescents perceive worse communication and weaker relationships with their parents, their likelihood of attempting suicide increases. This is further reported in a study of suicide re-attempters. Repeat suicide attempters perceived their mothers and fathers as less caring and were less likely to ask their parents for support when in trouble than non-repeat suicide attempters (Groholt et al., 2006). Given the high risk of eventual

completed suicide following a suicide attempt and greater risk for subsequent attempts when perceived family support is minimal, this is an important area of future prevention initiatives. Groholt et al. (2006) further report that family therapy could be useful to decrease adolescents' perceptions of parents as not caring and to reduce the risk of future suicide attempts.

Considering that family dysfunctionality is highly correlated with suicidal thoughts, attempts, and completions among adolescents, it is logical that positive family functioning is a protective or resiliency factor against suicide. Fulkerson et al. (2006) also found that positive family functioning and family connectedness are associated with decreases in other risk factors for suicide, such as smoking, alcohol use, sexual activity, and violence. Therefore, increasing family functioning will also decrease the number and severity of other risk factors for suicide. In a study of suicide among gay, lesbian, and bisexual adolescents, those who reported higher levels of family connectedness were 50% less likely to report suicidal ideation than those who reported low levels of family connectedness (Eisenberg & Resnick, 2006). Furthermore, this study indicated that family connectedness accounted for a much greater proportion of the variance in suicidal behaviors than sexual orientation or any other protective/risk factor for suicide. In a study on parent-child relationships as support or risk for adolescent suicide, it was reported that if parents consistently provide their adolescents with warmth and support, they may be protecting them from emotional distress and suicidal behaviors (Connor & Rueter, 2006).

Poor Problem-Solving Skills. Suicide has been described as a permanent solution to a temporary problem (Caruso, 2009). Poor problem-solving skills, independently and when co-occurring with poor family functioning, are major risk factors for adolescent suicide. Kienhorst et al. (1995) surveyed adolescent suicide attempters to gather information regarding the perception of the suicide attempt. Surprisingly, this study found adolescents reported feelings of

relief and calm prior to their suicide attempt. It is likely these calm feelings were associated with the adolescents' decisions to solve their (internal) problems by attempting suicide (Kienhorst et al., 1995). This research further indicated that the suicide was perceived as a method to stop pain or to escape situations that seemed unbearable, further supporting the necessity for enhancement of problem-solving skills in at-risk adolescents. According to Goldsmith et al. (2002), an attitude of acceptance toward suicide plays an important role in viewing suicide as a solution to life problems. Therefore, adolescents need to be taught that suicide is not an acceptable solution to problems and provided with strategies and techniques to deal more effectively with stressors.

Adolescents who have made suicide attempts reported significantly fewer problem-solving skills than those adolescents who evidenced suicidal ideation without a suicide attempt, (McDermut et al., 2001). Furthermore, Negron et al. (1997) reported that only a small minority of both ideators and attempters were able to generate feasible solutions to deal with the problems that precipitated their suicidal thoughts/behaviors. Additionally, both ideators and attempters demonstrated similar deficits in problem-solving skills. Therefore, increasing problem-solving facility in adolescents may enable them to generate feasible and healthy solutions to their problems rather than considering or attempting suicide. Research conducted by Miklowitz (2006) revealed that communication and problem-solving skills can assist parents in selectively reinforcing adaptive, non-suicidal behaviors in adolescents. Moreover, Cole (1989) reported that problem-solving skills training and self-efficacy enhancement for adolescents may be the most effective suicide prevention technique (Cole, 1989).

Suicidal adolescents describe their families as lacking the ability to adapt to change and lacking effective problem-solving strategies (Adams et al., 1994; C. A. King, Segal, & Naylor, 1992). Esposito and Clum (2003) further described the link between families and problem-

solving in their research. Results suggested that when adolescents lack confidence in their problem-solving ability and perceive family relationships to be poor, stressors may be appraised as harmful and suicide maybe considered a means of coping (Esposito & Clum, 2003). These data suggest that increasing confidence in problem-solving abilities may be a resiliency factor in adolescence, particularly for those who have poor relationships with family members.

Furthermore, these researchers determined that perceptions of poor family relationships, low social support, and poor problem-solving confidence are indicative of stress and suicidality. This research further supports the concept that perception is more important than actual functioning in predicting suicidality. Consistent with social-learning theory, Hollis (1996) contended that poor family relationships results in limited opportunities for learning social problem-solving skills.

Hypotheses

Hypothesis One

This study is designed to test a number of hypotheses. The first hypothesis of this study can be broken into three parts and contends the following: A) knowledge of problem-solving skills is expected to increase significantly after completion of the 10-week experimental condition, B) perceived family functioning is hypothesized to increase significantly after completion of the 10-week experimental condition, and C) suicidal ideation is expected to decrease significantly after completion of the 10-week experimental condition. All differences between variables of the first hypothesis will be assessed for significance utilizing simple correlated T-tests.

Hypothesis Two

Given that poor family functioning, as perceived by adolescents, and poor problem-solving skills are two identified risk factors for suicidal ideation, the second hypothesis of this

study seeks to elucidate the relationships among the variables of family functioning, problem-solving skills and suicidal ideation. Researchers, such as Adams et al. (1994) and Esposito and Clum (2003), discuss family functioning and facility in solving problems as acting together as risk factors for suicide; however, there is no literature to date that explicitly reports this correlation. Thus, the second hypothesis purports: A) a significant, negative correlation will be found between family functioning and suicidal ideation, B) a significant, positive correlation will be found between family functioning and initial knowledge of the problem-solving process, and C) a significant, negative correlation will be found between suicidal ideation and knowledge of the problem-solving process. All tests of significance will use Spearman's rho correlations.

Hypothesis Three

The third hypothesis of this study was designed to examine the relationship of problem-solving skills to family functioning and suicidal ideation. Specifically, the purpose of this investigation is to determine if knowledge of problem-solving skills is a mediator of family functioning and suicidal ideation. Consequently, two more hypotheses are proposed: A) perception of family functioning will predict problem-solving knowledge, B) suicidal ideation and problem-solving together will, in turn, predict suicidal ideation, and C) when family functioning and problem-solving are combined as predictors for suicidal ideation, the relationship between problem-solving and suicidal ideation will no longer be significant. This will provide support for problem-solving knowledge as a mediator of family functioning on suicidal ideation. Logistic regressions will be utilized to determine the aforementioned relationships.

CHAPTER III

Methods

The Florida Initiative for Suicide Prevention (FISP, now also called the Florida Initiative for Solving Problems), a non-profit agency, was created in 2001 by Harry and Jackie Rosen. As part of their prevention efforts, FISP initiated problem-solving skills groups for adolescents utilizing the Solutions Unlimited Now (SUN) program which involves ten steps to problem-solving (Tellerman, 2001). FISP approached Nova Southeastern University (NSU) in Ft. Lauderdale, Florida to create a means of evaluating the effectiveness of the problem-solving groups. In order to do so, the Suicide Prevention among Adolescents: Research and Evaluation (SPARE) group was formed. SPARE, in conjunction with FISP, created surveys to evaluate the various constructs of the SUN group, such as demographics, suicidal ideation, family functioning, risk-taking behaviors, knowledge of the problem-solving process, and to standardize evaluative and training procedures.

Data collected in this investigation are intended to contribute to the growing body of literature concerning suicide prevention among adolescents, particularly those who are most at risk for suicide due to their life circumstances and past behavior. Results were comprised of data from the experimental condition, specifically data from the pre-test and post-test measures that were collected during the 10 sessions of the problem-solving skills group.

Facilitators. Group facilitators were doctoral-level trainees in clinical psychology who were selected and paid by FISP. Each facilitator was trained by FISP in accordance with the SUN program curriculum (Tellerman, 2001, as revised by FISP and SPARE). For the FISP/SUN Program facilitator job description, see Appendix A. A day-long training consisted of information regarding the background of the project, data collection, ice breakers, and activities

used in the group sessions (See Appendix B), the problem-solving model, the protocol for running groups (See Appendix C), assigning confidential ID numbers to group participants (See Appendix D), completing group and member notes (See Appendix E and F), the steps to reporting problems and suicidal ideation (See Appendix G), and opportunities to role-play leading a group and handling problems that arise. Due to the differences in the group participants based on location and the responsiveness of the group to such activities, the facilitators were given the freedom to implement icebreakers/activities of their choosing during the group sessions. Facilitators were provided with a budget of \$50.00 to buy snacks and submitted invoices for reimbursement of these costs.

Groups. Participants were recruited from the Broward County Juvenile Justice Probation Department through the Florida Ocean Sciences Institute (FOSI), The Juvenile Detention Center (JDC), Lauderhill Middle School, Coral Springs Middle School, the Boys and Girls Clubs, Hispanic Unity, and the YMCA. FOSI is an alternative day school in Broward County for students with legal difficulties, while the JDC is juvenile jail for adolescents who have legal difficulties. Lauderhill Middle School and Coral Springs Middle schools are two middle schools in Broward County with varying student populations. Boys and Girls Clubs and YMCA are afterschool recreational programs for youth. Hispanic Unity is a non-profit organization reaching out to recent immigrants to the United States. All subjects were identified and recommended by the staff of each facility and deemed at-risk due to their reckless and/or illegal behavior and/or due to other factors exhibited by the adolescent, which, in the opinion of staff members, placed them at greater risk for suicidal behavior.

FISP sent an information packet to the parents/legal guardians of all identified adolescents describing the problem-solving skills training and invited them to meet with a

representative from FISP or SPARE to obtain additional information about the study. At this meeting, the study was explained in greater detail and parents/guardians of potential participants had the opportunity to ask questions about the study and/or to contact the principal investigator. Written informed consent was obtained at this time and parents/guardians were provided with a copy of the consent form. For many of the adolescents recruited from FOSI or the JDC, the state maintains guardianship of the adolescent and provided consent for these participants. For study participants age 18 or older, consent was obtained from the study participant. Assent for participation was obtained from all adolescents ages 17 and under.

Each group consisted of 10 one-and-a-half-hour sessions that were typically held weekly unless this conflicted with the program of the host facility. Specifically, all adolescents who participated in the groups at the Juvenile Detention Center (JDC) attended the sessions daily as opposed to weekly. The experimental condition utilized the Solutions Unlimited Now (SUN) 10-step problem-solving model (Tellerman, 2001). In this model, group participants were taught to identify presenting problems in phases: (1) recognize there is a problem, (2) identify the problem, (3) bring the problem to the group, (4) have other participants pretend the problem is their own, (5) brainstorm solutions, (6) discuss the pros and cons of each solution, (7) choose a good solution, (8) plan in detail how to carry out the solution, (9) carry out the solution, and (10) report back to the group about the results of the plan. The goals of the experimental groups were to help participants learn how to put problems into words, to explain the problems to others, to recognize that there are many solutions to a given problem, to evaluate alternative problem solutions and results, and to accept that responsible others have good opinions and can help with many problem situations. In addition to teaching problem-solving skills, the groups focused on modeling and reinforcing effective social skills, behavior control, empathy, self-esteem, and

relationships with other group members. By developing these skills in addition to knowledge of and practice with the problem-solving process, it was hypothesized that the adolescents' engagement in risky behaviors and their suicidal ideation would decrease and that their perceptions of their relationships with their families would improve. Although each session sought to teach the problem-solving process, a significant amount of time during sessions one and ten was devoted to completing the pretest and post-test measures.

For the majority of analyses in this current study, control group data were not utilized. However, the SPARE project utilized reading as a control group. The structure of the control/reading-skills group was interactive, as active reading skills were taught and modeled. All aspects of the reading group depended on instruction at the level of the pre-existing reading skills of the students participating in the group. Furthermore, the main focus of the group was on developing sight reading and reading comprehension skills, such as word recognition and comprehension, textual analysis, structure, recognition of main ideas, and determination of purpose.

Measures

Each participant was asked to complete evaluation measures at the onset of the first group session and during the last session. At-risk adolescents have a limited attention span; therefore, the following measures and questions were chosen to assess the constructs of the study within a limited number of questions. Considering the different reading levels of group participants, the facilitator read the complete questionnaire to the group at the beginning of the first and last session. In addition to collecting demographic information regarding age, gender, grade in school, and race/ethnicity, four measures were completed (See Appendix H).

Suicidal Ideation Questionnaire-Junior version (SIQ-Jr.)

The Suicidal Ideation Questionnaire-Junior version (SIQ-Jr.) (Reynolds, 1988) assesses suicidal ideation among children and adolescents. Items are rated on a 7-point, Likert scale and have been used in evaluations of large-scale intervention and prevention programs. This study utilized the full version of the SIQ-Jr. due to its established reliability and validity. Internal consistency measures of reliability have been shown to be as high as 0.94. Permission to reproduce the questionnaire as part of a larger survey was obtained from the publisher.

Health Risk-Taking Assessment (HRTA)

The Health Risk-Taking Assessment (HRTA) is a face-valid, 9-item questionnaire designed specifically for this study by SPARE to assess health risk-taking behaviors among adolescents. The questionnaire obtains information regarding such issues as dieting, drug use, physical fights, and sexual activity. This questionnaire utilized 9-questions from a larger Youth Risk Behaviors Surveillance Survey (YRBSS) created by the CDC (CDC, 2006a).

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.

Family Functioning Question

Given the data on perceptions of family dysfunction as a risk factor for suicidality, the investigators included a question to measure perceived family functioning. 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.

Analyses

Hypothesis One

To evaluate the first hypothesis, one-tailed, correlated T-tests were utilized to compare pre-test with post-test scores. Specifically, family functioning, suicidal ideation, knowledge of the problem-solving process, and each of the risk factors on the HRTA at pre-test and post-test were compared statistically for changes in the predicted directions.

Hypothesis Two

In order to test the second hypothesis, Spearman's rho correlations were utilized to determine whether there is the predicted relationship among family functioning, knowledge of the problem-solving process, and suicidal ideation. Additionally, Spearman's rho was utilized to determine correlations between the risk factors for suicide and family functioning. These correlations were calculated within the pre-test data, within the post-test data, and between pre-test and post-test.

Hypothesis Three

In accordance with the Baron and Kenny (1986) method of determining whether a variable functions as a mediator, three steps were followed. First, the predicted mediator (i.e., knowledge of problem-solving) was regressed on the independent variable (i.e., family functioning). Second, the dependent variable (i.e., suicidal ideation) was regressed on family functioning (Baron & Kenny, 1986). Lastly, suicidal ideation was regressed on both family functioning and problem-solving skills.

Institutional Review Board Requirements

Institutional Review Board (IRB) approval from the Nova Southeastern University (NSU) IRB was obtained prior to the commencement of this research. This researcher received approval to utilize a de-identified, archival database for the purpose of this study.

CHAPTER IV

Results

Preliminary Analyses

Data analysis was completed utilizing the Statistical Package for the Social Sciences (SPSS) Version 16.0.

Participants

Two hundred eighty-five adolescents, ages twelve to 18 years, participated in the SPARE research project. Of the 285 adolescents, 31 adolescents were randomly assigned to the control group, and, therefore, their data were not analyzed in this study. Random assignment using a coin flip or a table of random numbers was completed by the facilities where the adolescents participated in the groups. It is important to note that there were significantly fewer participants in the reading control groups than in the experimental groups. IRB approval for the reading groups was obtained after the commencement of the SUN groups. Also, in some facilities, it was difficult to obtain permission to conduct the research as planned; therefore, not all facilities utilized the control groups. Furthermore, the data from 17 adolescents could not be identified as resulting from either the problem-solving skills group or the control group; hence, these data were also excluded from the analyses. Consequently, data from 237 adolescents who participated in a problem-solving skills group were analyzed.

Of the 237 participants, 63% ($n = 149$) did not fully complete both the pre-test and the post-test questionnaires. Only 121 adolescents completed the perceived family functioning question on both the pre- and post-test, 98 completed the Problem-solving Skills Test (PSST) on both the pre- and post-test, and 107 completed the SIQ-Jr. on both pre- and post-tests.

Ultimately, only 88 adolescents completed all measures on both the pre- and post-test. These 88 individuals were included in the analyses.

Demographics

Demographics were analyzed separately for (1) all 285 adolescents in both the problem-solving and reading groups, (2) the 237 adolescents who participated in the problem-solving groups, and (3) the 88 adolescents who completed all measures on the pre-test and the post-tests.

Demographics of 285 Adolescents

The adolescents who participated in either a SUN problem-solving skills group or a reading control group had a mean age of 14.79 years ($SD = 1.84$) and a mean grade level of 8.96 ($SD = 1.29$). Of those, 67.0% of the participants were male, 29.1% were female, and 3.9% did not indicate his or her gender. Furthermore, 53% of the sample identified themselves as Black or African American, 13.0% Hispanic or Latino, 9.5% White or Caucasian, 2.8% American Indian or Alaskan Native, 1.4% Native Hawaiian or Pacific Islander, .4% Asian, 16.5% “Other”, and 3.5% did not indicate an ethnicity. Lastly, 37.9% of the participants were enrolled at Florida Ocean and Sciences Institute (FOSI), 29.1% at the Juvenile Detention Center (JDC), 10.5% at Lauderhill Middle School, 9.5% at YMCA, 2.5% at Coral Springs Middle School, and 2.1% at St. Stephen’s School; while information about group location was missing for 8.4% of the participants.

Demographics of the SUN Groups

The 237 adolescents who participated in the SUN problem-solving skills group had a mean age of 14.92 years ($SD = 1.81$) and a mean grade level of 9.04 ($SD = 1.35$). Of those, 67.5% of the participants were male, 27.8% were female, and 4.6% did not indicate his or her gender. Furthermore, 52.3% of the sample identified themselves as Black or African American,

11.4% Hispanic or Latino, 9.7% White or Caucasian, 3.0% American Indian or Alaskan Native, 1.7% Native Hawaiian or Pacific Islander, .4% Asian, 17.3% “Other”, and 4.2% did not indicate an ethnicity. Lastly, 35.0% of the participants were enrolled at FOSI, 35.0% at the JDC, 12.7% at Lauderhill Middle School, 11.4% at YMCA, and 3.0% at Coral Springs Middle School; while information about group location was missing for 3.0% of the participants.

Demographics of the 88 Completers

The 88 adolescents who participated in the SUN problem-solving skills groups and who completed all measures on the pre-test and post-test did not differ significantly from the general group. They had a mean age of 14.47 years ($SD = 1.88$) and a mean grade level of 8.83 ($SD = 1.26$). Of those, 69.3% of the participants were male and 30.7% were female. Furthermore, 59.1% of the sample identified themselves as Black or African American, 8.0% Hispanic or Latino, 6.8% White or Caucasian, 4.5% American Indian or Alaskan Native, 1.15% Native Hawaiian or Pacific Islander, 1.1% Asian, and 19.3% “Other”. Lastly, 23.9% of the participants were enrolled at FOSI, 34.1% at the JDC, 26.1% at Lauderhill Middle School, 10.2% at YMCA, and 4.5% at Coral Springs Middle School; while information about group location was missing for 1.1% of the participants.

Hypothesis One

To test the first hypothesis, paired samples t-tests were utilized to compare the pre-test with the post-test on the outcome variables of perceived family functioning, suicidal ideation, and knowledge of the problem-solving process. As indicated in Table 1, knowledge of the problem-solving process was the only variable to change significantly from pre-test ($M = .39$, $SD = .21$) to post-test ($M = .46$, $SD = .22$), $t(97) = 3.20$, $p = .001$, indicating a significant improvement in knowledge of the problem-solving process after the completion of the 10-week

group. The mean improvement in knowledge of problem-solving was .067 with a 95% confidence interval (CI) ranging from .11 to .03. However, perceived family functioning did not significantly change from pre-test ($M = 4.11, SD = .94$) to post-test ($M = 4.12, SD = .94$), $t(120) = .12, p = .453$. The mean change in perceived family functioning was .008 with a 95% CI of -.15 to .13. In addition, suicidal ideation as measured by the SIQ-Jr. did not significantly change from pre-test ($M = 5.95, SD = 10.16$) to post-test ($M = 5.10, SD = 12.78$), $t(105) = -.69, p = .247$. The mean improvement in SIQ-Jr. scores was .85 with a 95% CI of -1.60 to 3.30, which, although not significant, was in the direction predicted. Thus, hypothesis 1A was supported, while 1B and 1C were not.

Table 1

Paired Samples T-Tests for Family Functioning, Knowledge of the Problem-Solving Process, and Suicidality

	<i>M</i>	<i>T</i>	<i>df</i>
Family functioning	.008	.118	120
Problem-solving	.067	3.20**	97
Suicidal Ideation	-.848	-.686	104

** $p < .01$, one-tailed.

Furthermore, paired samples t-tests were utilized to compare significant changes in risk factors from pre- to post-test. Of the nine risk factors measured on the HRTA, only three significantly improved from pre-test to post-test. First, use of tobacco significantly decreased from pre-test ($M = 2.08, SD = 2.18$) to post-test ($M = 1.81, SD = 1.85$), $t(119) = 1.927, p = .028$. Second, unhealthy dieting/eating restriction increased significantly from pre-test ($M = .07, SD = .25$) to post-test ($M = .14, SD = .35$), $t(118) = -2.55, p = .006$. Lastly, participating in self-injurious behaviors decreased significantly from pre-test ($M = 1.18, SD = .58$) to post-test ($M =$

.1.11, $SD = .52$), $t(119) = 2.03$, $p = .022$. This indicates that use of tobacco and participation in self-injurious behaviors significantly improved over the course of the study, while restrictive eating and unsafe dieting practices became worse. Table 2 provides a complete list of means and t-scores for the HRTA.

Table 2

Paired Samples T-Tests for the Health Risk-Taking Assessment (HRTA)

	<i>M</i>	<i>T</i>	<i>Df</i>
Drive with alcohol	.025	.279	120
Carrying a weapon	.101	1.045	118
Physical fights	.158	1.418	119
Tobacco use	.267	1.927*	119
Alcohol use	.124	1.430	120
Drug use	.161	1.555	117
Eating restriction	-.076	-2.553**	118
Sexual activity	-.012	-.217	80
Self-inflicted injury	.067	2.026*	119

* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

This hypothesis also compared the improvement in problem-solving skills of the SUN problem-solving skills groups with the reading control group. As stated previously, knowledge of the problem-solving process significantly improved from pre-test to post-test in the experimental group. However, as expected, knowledge of the problem-solving process did not significantly improve in the control group from pre-test ($M = .29$, $SD = .16$) to post-test ($M = .35$, $SD = .21$), $t(19) = -1.93$, $p = .249$. Therefore, it appears that, as planned, the control group facilitators did not teach problem-solving skills, and there was no practice effect on the PSST.

Hypothesis Two

Spearman's rho correlations were utilized to determine the relationship between (1) perceived family functioning and each of the variables on the HRTA, (2) knowledge of the problem-solving process and each of the variables on the HRTA, and (3) suicidal ideation and each of the variables on the HRTA. These correlations were calculated within subjects at pre-test and within subjects at post-test as well as across pre-test and post-test. Perceived family functioning, knowledge of the problem-solving process and suicidal ideation were also correlated with each other at pre-test, at post-test, and across pre-test and post-test.

Correlations between the Outcome Variables

At Pre-test. Perceived family functioning and knowledge of the problem-solving process were significantly and positively correlated at pre-test, $\rho = .14$, $n = 196$, one-tailed $p < .05$, indicating that high perceptions of family functioning were associated with greater knowledge of the problem-solving process (see Table 3). Perceived family functioning and suicidal ideation were significantly and negatively correlated at pre-test, $\rho = -.27$, $n = 204$, one-tailed $p < .01$, revealing that higher perceptions of family functioning were associated with lower levels of suicidal ideation. Knowledge of the problem-solving process and suicidal ideation were also significantly and negatively correlated at pre-test, $\rho = -.16$, $n = 181$, one-tailed $p < .05$, indicating that lower SIQ-Jr. scores were associated with greater knowledge of the problem-solving process.

Table 3

Pre-test Correlations between the Outcome Variables

	Family functioning	Problem-solving	Suicidal ideation
Family functioning	—	.119*	-.223**
Problem-solving		—	-.122*
Suicidal ideation			—

* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

At Post-Test. Perceived family functioning and suicidal ideation remained significantly and negatively correlated at post-test, $\rho = -.25$, $n = 123$, one-tailed $p < .01$, further indicating a consistent relationship between these variables over time. Contrary to results at pre-test, perceived family functioning was not significantly correlated with knowledge of the problem-solving process at post-test ($\rho = -.01$, $n = 116$, one-tailed $p = .464$); nor was knowledge of the problem-solving process significantly correlated with suicidal ideation at post-test ($\rho = -.12$, $n = 111$, one-tailed $p = .11$) (see Table 4).

Table 4

Post-test Correlations between the Outcome Variables

	Family functioning	Problem-solving	Suicidal ideation
Family functioning	—	-.008	-.254**
Problem-solving		—	-.116
Suicidal ideation			—

* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

Correlations between Outcome Variables and Risk Factors

At Pre-test. Perceived family functioning was significantly and negatively correlated with the following risk factors on the HRTA, as expected: driving or riding in the car with someone under the influence of alcohol ($\rho = -.15$, $n = 219$, one-tailed $p < .05$); carrying a weapon ($\rho = -.23$, $n = 219$, one-tailed $p < .01$); engaging in physical fights ($\rho = -.18$, $n = 220$, one-tailed $p < .01$); using tobacco ($\rho = -.19$, $n = 220$, one-tailed $p < .01$); using alcohol ($\rho = -.24$, $n = 222$, one-tailed $p < .01$); using drugs ($\rho = -.30$, $n = 220$, one-tailed $p < .01$); and engaging in self-injurious behaviors ($\rho = -.15$, $n = 222$, one-tailed $p < .05$) (see Table 5). These correlations indicate that adolescents who have better perceptions of family functioning tend to participate in fewer problematic risk-taking behaviors.

Similarly, knowledge of the problem-solving process was also related to many variables at pre-test. Specifically, the PSST was significantly and negatively correlated with the following, as anticipated: driving or riding in the car with someone under the influence of alcohol ($\rho = -.15$, $n = 196$, one-tailed $p < .05$); carrying a weapon ($\rho = -.26$, $n = 195$, one-tailed $p < .01$); engaging in physical fights ($\rho = -.24$, $n = 196$, one-tailed $p < .01$); using tobacco ($\rho = -.19$, $n = 196$, one-tailed $p < .01$); using alcohol ($\rho = -.14$, $n = 197$, one-tailed $p < .05$); and using drugs ($\rho = -.19$, $n = 196$, one-tailed $p < .01$) (see Table 5). This further indicates that lower scores, indicating less knowledge of problem-solving, on the PSST are associated with adolescents' participating in more risk-taking behaviors.

Lastly, results of the SIQ-Jr. at pre-test were significantly and positively correlated with the following variables as predicted: driving or riding in the car with someone under the influence of alcohol ($\rho = .15$, $n = 201$, one-tailed $p < .05$); carrying a weapon ($\rho = .17$, $n = 201$, one-tailed $p < .01$); engaging in physical fights ($\rho = .19$, $n = 202$, one-tailed $p < .01$); using

tobacco ($\rho = .16, n = 202, \text{one-tailed } p < .05$); using alcohol ($\rho = .20, n = 204, \text{one-tailed } p < .01$); using drugs ($\rho = .16, n = 202, \text{one-tailed } p < .05$); engaging in unsafe sexual practices ($\rho = -.14, n = 162, \text{one-tailed } p < .05$); and engaging in self-injurious behaviors ($\rho = .31, n = 204, \text{one-tailed } p < .01$) (see Table 5). These results reflect a tendency for adolescents with higher levels of suicidal ideation to engage in more incidents of problematic risky behavior.

Table 5

Pre-test Correlations between Outcome Variables and Risk Factors

	Family functioning	Problem-solving	Suicidal ideation
Drive with alcohol	-.145*	-.153*	.146*
Carrying a weapon	-.225**	-.260**	.165**
Physical fights	-.175**	-.235**	.188**
Tobacco use	-.191**	-.193**	.159*
Alcohol use	-.244**	-.141*	.195**
Drug use	-.230**	-.189**	.156*
Eating restriction	-.083	-.087	.084
Sexual activity	-.082	.032	-.144*
Self-inflicted injury	-.153*	-.006	.307**

* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

At Post-Test. Correlations between the risk factors on the HRTA and perceived family functioning at post-test were not as high and fewer were significant compared with those obtained at pre-test. For instance, family functioning was only significantly and negatively correlated with driving or riding in the car with someone under the influence of alcohol ($\rho = -.16, n = 132, \text{one-tailed } p < .05$); using alcohol ($\rho = -.30, n = 131, \text{one-tailed } p < .01$); dieting/eating restriction ($\rho = -.16, n = 116, \text{one-tailed } p < .05$); and engaging in self injurious

behaviors ($\rho = -.18$, $n = 115$, one-tailed $p < .05$) (see Table 6). In other words, at post-test, poorer perceived family functioning at post-test was associated with driving or riding in a car with someone under the influence, more frequent use of alcohol, dieting/eating restriction, and greater participation in self-injurious behavior.

Knowledge of the problem-solving process at post-test was significantly and negatively correlated with driving or riding in the car with someone under the influence of alcohol ($\rho = -.24$, $n = 118$, one-tailed $p < .01$); carrying a weapon ($\rho = -.26$, $n = 118$, one-tailed $p < .01$); engaging in physical fights ($\rho = -.21$, $n = 118$, one-tailed $p < .05$); using alcohol ($\rho = -.18$, $n = 117$, one-tailed $p < .05$); dieting/eating restriction ($\rho = -.15$, $n = 116$, one-tailed $p < .05$); and engaging in self-injurious behaviors ($\rho = -.18$, $n = 115$, one-tailed $p < .05$) (see Table 6). For these variables at post-test, less knowledge of the problem-solving process was associated with greater frequency of risky behaviors.

Furthermore, the SIQ-Jr. was significantly and positively correlated at post-test with driving or riding in the car with someone under the influence of alcohol ($\rho = .15$, $n = 201$, one-tailed $p < .05$); carrying a weapon ($\rho = .20$, $n = 124$, one-tailed $p < .05$); engaging in physical fights ($\rho = .25$, $n = 124$, one-tailed $p < .01$); using tobacco ($\rho = .16$, $n = 124$, one-tailed $p < .05$); using alcohol ($\rho = .21$, $n = 124$, one-tailed $p < .01$); and engaging in self-injurious behaviors ($\rho = .18$, $n = 123$, one-tailed $p < .05$) (see Table 6). These results indicate that lower scores on the SIQ-Jr. at post-test are also indicative of less participation in risk-taking behaviors.

Table 6

Pre-test Correlations between Outcome Variables and Risk Factors

	Family functioning	Problem-solving	Suicidal ideation
Drive with alcohol	-.159*	-.235**	.197*
Carrying a weapon	-.088	-.262**	.113
Physical fights	-.084	-.208*	.251**
Tobacco use	-.080	-.104	.162*
Alcohol use	-.300**	-.180*	.211**
Drug use	-.118	-.098	.097
Eating restriction	-.157*	-.157*	.129
Sexual activity	.097	.137	.019
Self-inflicted injury	-.165*	-.184*	.179*

* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

Across Pre-test and Post-test. Perceived family functioning at pre-test was significantly and positively correlated with perceived family functioning at post-test, as expected ($\rho = .66$, $n = 121$, one-tailed $p < .01$). Knowledge of the problem-solving process was also significantly and positively correlated across pre- and post-test, as anticipated ($\rho = .50$, $n = 96$, $p < .01$). Lastly, suicidal ideation, as predicted, was significantly and positively correlated across pre- and post-test ($r = .43$, $n = 104$, $p < .01$). Furthermore, all risk behaviors were significantly and positively correlated with themselves across pre- and post-test. These results indicate that the participants who completed both the pre-test and post-test assessments answered similarly across the measures, as expected. Table 7 provides a complete list of correlations across pre- and post-test.

Table 7

Correlations for the Outcome Variables and the Risk Factors Across Pre-test and Post-test

	1	2	3	4	5	6	7	8	9	10	11	12
1	.656**	-.030	-.004	-.026	-.066	-.100	-.058	-.052	-.094	-.024	.002	-.106
2	.026	.502**	-.075	-.144	-.118	-.036	-.192*	-.012	-.027	-.065	.224*	-.158
3	-.156	-.070	.430**	.160*	.167*	.103	.093	.085	.176*	.006	-.056	.192*
4	-.043	-.003	.001	.488**	.307**	.329**	.412**	.511**	.629**	-.085	.042	.006
5	-.035	-.194*	-.018	.413**	.556**	.409**	.279**	.430**	.577**	-.047	.028	.200*
6	-.033	-.235**	.237**	.357**	.455**	.648**	.157**	.334**	.330**	.103	.066	.305**
7	-.055	.005	.055	.294**	.235**	.216**	.746**	.482**	.472**	-.119	.010	.036
8	-.135	.037	.085	.484**	.402**	.395**	.407**	.492**	.607**	-.021	.159	.017
9	-.049	.050	-.052	.369**	.262**	.221**	.359**	.453**	.770**	-.144	.148	.066
10	.014	-.038	-.077	-.095	-.101	.182*	-.040	-.146	-.015	.466**	-.028	.072
11	-.031	-.084	-.029	.103	.018	-.066	-.095	.021	-.024	-.159	.411**	.045
12	-.158*	-.029	.190*	.058	.190*	.233**	-.088	.096	.183*	.189*	.158	.652**

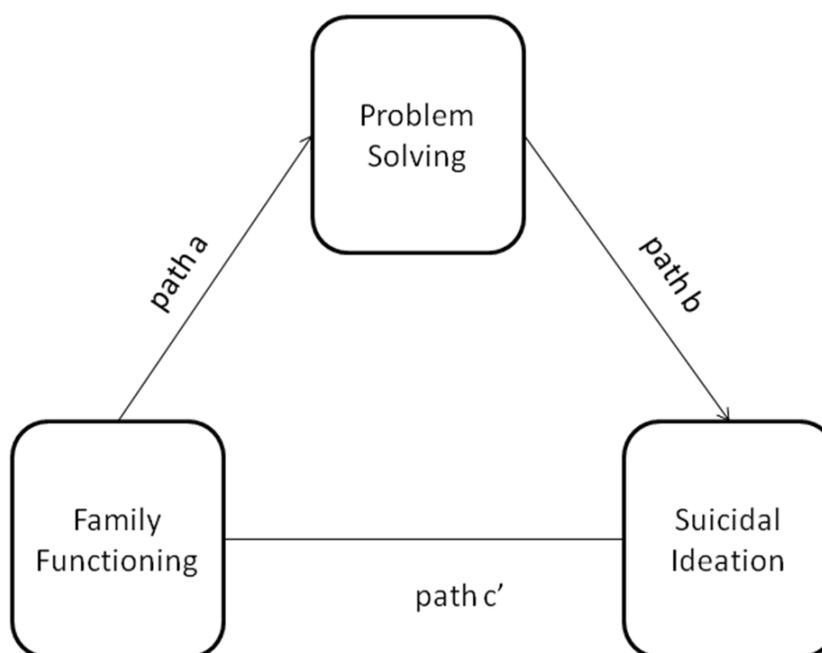
* $p > .05$, one-tailed. ** $p < .01$, one-tailed.

NOTE: Variables on the horizontal axis represent post-test variables. The variables on the vertical axis represent pre-test variables. The numbers represent the following: (1) perceived family functioning; (2) PSST; (3) SIQ-Jr.; (4) driving or riding in a car with someone under the influence of alcohol; (5) carrying a weapon; (6) engaging in physical fights; (7) using tobacco; (8) using alcohol; (9) using drugs; (10) dieting/eating restriction; (11) sexual activity; and (12) engaging in self-injurious behaviors.

Hypothesis Three

In accordance with the Frazier, Tix, and Barron (2004) and Baron and Kenny (1986) methods of determining if a variable functions as a mediator, three steps were followed. (See Figure 1 for predicted model). First, suicidal ideation was regressed on family functioning. Second, the predicted mediator (i.e., knowledge of problem-solving skills) was regressed on family functioning. Lastly, suicidal ideation was regressed on both family functioning and knowledge of problem-solving skills. Given the complexity of the study, these steps were completed in four different ways.

Figure 1. *Diagram of Predicted Paths for Hypothesis 3.*

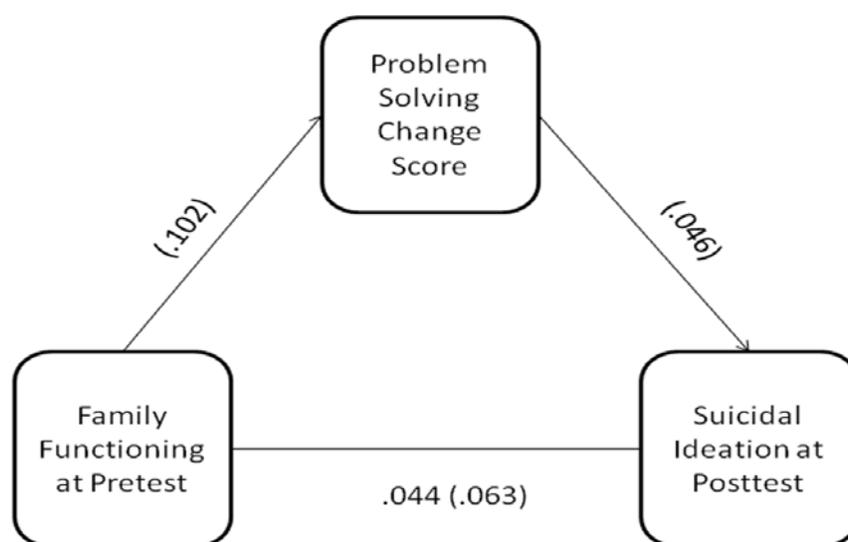


Analysis 1. In the first analysis, suicidal ideation at post-test was regressed on family functioning at pre-test with no significant results, $F(1,86) = .13, p = .72$ (see Figure 2). The predicted mediator (i.e., problem-solving change score) was also regressed on family functioning at pre-test with no significant results $F(1,86) = .91, p = .34$. Suicidal ideation at post-test was hierarchically regressed on both perceived family functioning at pre-test, $F(2,85) = .171, p = .84$,

and problem-solving skills at post-test, $F(1,86) = .181$, $p = .67$, with no significant results.

Although it was hypothesized that improvement in problem-solving skills over the course of the SUN groups would mediate the relationship between perceived family functioning prior to learning problem-solving skills and suicidal ideation after learning problem-solving skills, problem-solving was not determined to be a mediator over the course of the study.

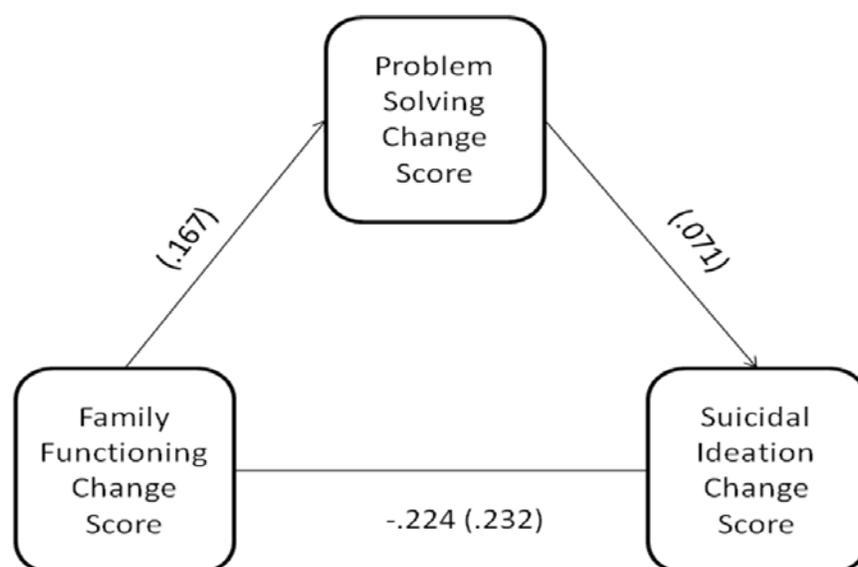
Figure 2. *Diagram of Mediation Model Using Perceived Family Functioning at Pre-test, SIQ-Jr. at Post-test, and the PSST Change Score.*



Analysis 2. Next, the change scores for all of the outcome variables were utilized to determine a mediator relationship. The goal of this analysis is to determine if increased knowledge of the problem-solving process mediated the relationship between increased family functioning and decreased suicidal ideation. In this analysis, perceived family functioning did not significantly predict suicidal ideation, $F(1,86) = 3.82$, $p = .054$. Also, perceived family functioning did not predict knowledge of the problem-solving process, $F(1,86) = 2.46$, $p = .121$. Change in suicidal ideation was also hierarchically regressed on both change in perceived family functioning, $F(2,85) = 2.42$, $p = .95$, and change in problem-solving skills, $F(1,86) = .433$, $p =$

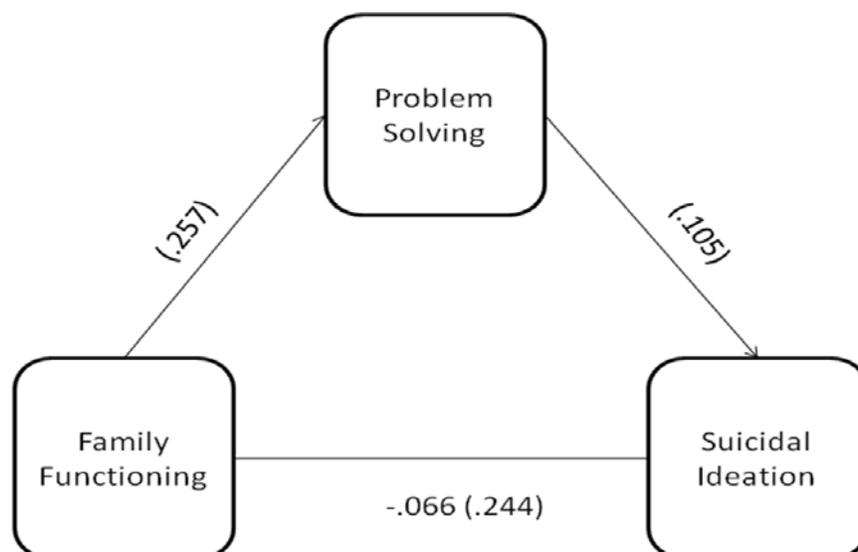
.512, with no significant results. Again, knowledge of the problem-solving process was not determined to be a mediator in this analysis (see Figure 3).

Figure 3. *Diagram of Mediation Model Using Change Scores.*



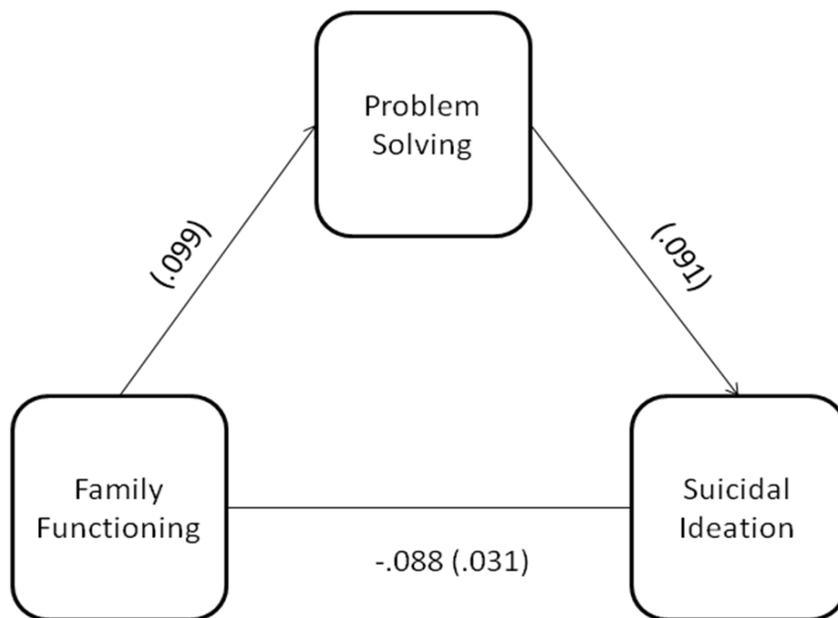
Analysis 3. All pre-test outcome variables were then utilized in the regression sequence (see Figure 4). Contrary to the prior mediator analysis, this analyses yielded significant results. Perceived family functioning significantly predicted suicidal ideation, $F(1,206) = 14.55, p < .01$, and knowledge of the problem-solving process, $F(1,197) = 5.40, p < .05$. Therefore, knowledge of the problem-solving process increased, perceived family functioning improved and suicidal ideation decreased. Lastly, suicidal ideation was significantly and hierarchically regressed on perceived family functioning, $F(2, 184) = 5.84, p < .01$, but not significantly regressed on problem-solving, $F(1,185)=2.05, p=.154$. Hence, knowledge of the problem-solving process was not established as a mediator for perceived family functioning and suicidal ideation.

Figure 4. *Diagram of Mediation Model Using Pre-test Scores.*



Analysis 4. All the outcome measures were again analyzed at post-test to determine if knowledge of the problem-solving process achieved status as a mediator. However, perceived family functioning at post-test did not significantly predict suicidal ideation, $F(1,86) = .08$, $p = .77$, nor did family functioning predict knowledge of the problem-solving process, $F(1,86) = .84$, $p = .36$. Lastly, when suicidal ideation was hierarchically regressed on perceived family functioning and knowledge of the problem-solving process, no significant results were obtained, $F(2,85) = .37$, $p = .69$ and $F(1,86) = .71$, $p = .40$ respectively. Similar to the other analyses, no mediator effect was established (see Figure 5).

Figure 5. *Diagram of Mediation Model Using Post-test Scores.*



CHAPTER V

Discussion

This study sought to identify the relationship between perceived family functioning, suicidal ideation, and knowledge of the problem-solving process for adolescents deemed at risk for suicide. Results revealed that knowledge of the problem-solving process significantly improved for those who completed the 10-week problem-solving skills group. Frequency of engagement in certain risky behaviors that have been associated with suicide (i.e., driving under the influence of alcohol or riding in the car with someone who is under the influence of alcohol, carrying a weapon, using tobacco, alcohol or drugs, engaging in unsafe sexual practices, dieting/eating restriction, or participating in self-injurious behaviors) were also assessed; however, only tobacco use and engaging in self-injurious behaviors significantly improved over the course of the study. Contrarily, dieting/eating restriction significantly increased from pre-test to post-test, indicating more frequent unhealthy eating habits. Results for each hypothesis are subsequently discussed in detail.

It is important to discuss the abnormally high attrition rate (63%) of this study. One possible explanation for the high drop-out rate is inherent in the facilities. Specifically, adolescents who participated from the JDC or FOSI may have discontinued study participation if their legal status changed (i.e., they were released from the juvenile justice system). Additionally, to ensure adolescents were not coerced to participate, it was made clear to participants that their participation was entirely voluntary and that they could stop participating at any time. Furthermore, it is unknown how many groups each participant attended; therefore, adolescents who did not complete the final survey may have simply been absent the final day of

the group. Lastly, some adolescents left a significant portion of questions blank or provided more than one response for each question, and, as a result, their data were excluded from the analysis.

Hypothesis 1

The first hypothesis in this study anticipated changes in the outcome variables (i.e., knowledge of the problem-solving process, perceived family functioning, and suicidal ideation) and each of the risky behaviors associated with suicide from pre-test to post-test. Although it was hypothesized that knowledge of the problem-solving process and family functioning would increase over the course of the study and that suicidal ideation would decrease, the only outcome variable found to change significantly was knowledge of the problem-solving process.

Adolescents correctly answered 39% of the questions on the PSST at pre-test. The percentage correct increased to 46% at post-test. Therefore, it appears that the SUN problem-solving skills curriculum is somewhat effective at teaching problem-solving skills to adolescents who are identified as being at risk for suicide. Nonetheless, at completion of the 10 weeks, participants were able to answer problem-solving questions correctly less than 50% of the time. It is suspected that a sample of adolescents not deemed at risk for suicide might acquire problem-solving knowledge more effectively, since youth who are at risk for suicidal behavior often exhibit deficits in attention, learning, and understanding of problem-solving that may exceed those of their less at-risk peers. Although it seems that problem-solving skills were taught over the course of the study, the increases in knowledge were small and there may not have been enough time given for practice and application of the skills to other life circumstances.

Over the course of the intervention, scores on the SIQ-Jr. did not significantly decrease. The scores did change in the predicted direction, however, with a pre-test mean of 5.95 and a post-test mean of 5.10. Of particular interest is that a score of greater than 31 on the SIQ-Jr. is

indicative of a potentially suicidal person (Reynolds, 1988). Therefore, neither the mean scores at pre-test nor those at post-test met the threshold for concern about suicidal ideation.

Considering that the preponderance of participants was recruited from facilities involved with the legal system, this they may have been reluctant to endorse suicidal symptoms. In addition, research has shown that adolescents involved in the legal system tend to be more impulsive than their peers, and adolescents who attempt suicide impulsively may not experience suicidal ideation prior to a suicide attempt (McKeown et al., 1998). Thus, it is possible that the adolescents in this study may have been less likely to demonstrate suicidal ideation as measured by the SIQ-Jr. even though they may be more likely to make an impulsive attempt after a substantial stressor (e.g., expulsion from school, break-up of a relationship, victimization by bullying or abuse, etc.) arises. Additionally, although adolescents with legal difficulties would be expected to have higher ratings on the scale of risk-taking behaviors, these youth reported quite low frequencies of engagement in these behaviors. Thus, while it is possible that the adolescents included in this study were simply at low risk for suicide and risk-taking behaviors, it is more likely that they were reluctant to be completely candid about their feelings and behaviors. Another possibility, of course, is that involvement in the agencies from which they were recruited helped to stabilize their lives and to reduce, at least temporarily, their risk-taking behaviors.

Perceived family functioning did not significantly improve over the course of the study. On the contrary, perception of family relationships remained stable from pre-test to post-test ($M = 4.11$ and $M = 4.12$, respectively). A mean score of 4.00 indicates that the majority of adolescents in this study perceived their family functioning to be good with only minor problems. It should be noted that the scores utilized in this analysis only reflected the responses

of adolescents who completed the family functioning question on both pre-test and post-test. Perhaps the adolescents who prematurely dropped out of the study rated family functioning as lower than those who completed the study. However, an independent samples t-test did not confirm this hypothesis. Adolescents who remained in the study ($n=85$) rated perceived family functioning as slightly worse ($M = 3.99$) than those adolescents who did not complete the study ($n=138$, $M = 4.07$).

Cultural factors and how they relate to family functioning should also be considered. Approximately 52% of the adolescents in this study reported their ethnicity to be Black or African American. Gibbs et al. (1997) reported that African American individuals place more emphasis on family relationships and cultural collectivism, lending to the possibility that the adolescents in this study do have higher levels of family functioning than their counterparts. Furthermore, 13% of the adolescents in this study indicated an ethnicity of Hispanic or Latino. Similarly, these cultures emphasize obligations to family, family closeness, and strong relationships with parents, which may account for high ratings on the family functioning variable among these participants (Locke & Newcomb, 2005; Zayas et al., 2005). African American and Hispanic adolescents ($n=150$) in this study did report higher levels of family functioning ($M = 4.13$) than did all other youth in the study ($n=73$, $M = 3.86$), however the difference was not significant when utilizing independent samples t-tests, $t(221) = -1.90$, $p = .06$.

Most of the risk factors did not show a significant improvement from pre-test to post-test. However, significant changes were not anticipated in these variables over the course of the study. For instance, due to unfamiliarity with the group and uncertainty about the consequences of their responses, many of these adolescents may have underreported their participation in risky behavior. In addition, due to the wording of the questions (i.e., “in the past 90 days”), a major

change would not be expected in a 10-week period (i.e., within 70 days). Given the time frame of most the questions, risky behaviors that were reported on the pre-test would still be relevant on the post-test. Although it was predicted that this behaviors would improve, data collected at a three-month follow up would be more likely to reflect changes in the reported risk-taking behaviors.

Hypothesis Two

The purpose of the second hypothesis was to elucidate the relationship between each of the outcome variables and reported frequencies of engaging in risky behaviors. As expected, each of the outcome variables and risky behaviors were significantly and positively correlated across pre-test and post-test measures. This indicates that the adolescents who completed the pre-test and post-test answered similarly across the two measures, reflecting both test-retest reliability of the measures themselves and consistency of self-reporting over time. Of the measures utilized in this study, only the SIQ-Jr. had previously established internal consistency measures of reliability (Chronbach's $\alpha=0.94$) and test-retest reliability over an interval of approximately 4 weeks ($r=.72$) (Reynolds, 1988). For the other measures (i.e., HRTA, PSST), internal consistency and test-retest reliability will be evaluated as part of the SPARE project. Based on the data collected during this analyses, the HRTA demonstrated acceptable reliability (Chronbach's $\alpha=0.76$). Although alpha values above .8 are preferred, the HRTA is susceptible to low alpha levels due to a limited number of questions on the scale (Pallant, 2007). Pallant (2007) reported that on scales with fewer than 10 questions, it is common to obtain low Chronbach values (i.e. .5). Similarly, the PSST did not demonstrated a Chronbach's alpha score of 0.49. These correlations demonstrate the measures to have test-retest reliability, but further analyses with a much larger and much more diverse sample are needed.

As expected, at pre-test perceived family functioning was significantly correlated with knowledge of the problem-solving process. Adolescents who expressed better perceptions of family functioning performed better on the measure of problem-solving. This is consistent with previous studies discussing the relationship between problem-solving and family relationships. , In particular, Hollis (1996) contended that poor family relationships results in limited opportunities for learning social problem-solving skills In particular, Spivack and colleagues (1976) attested that the quality of adolescents' problem solving skills were directly related quality of family relationships. Furthermore, another study reported that adolescents from families that lack cohesion and adaptability are unlikely to develop flexible and effective problem-solving skills (Carris, Sheeber & Howe, 1998).

Adolescents who reported better family functioning also indicated less suicidal ideation. Previous studies have evaluated suicidal ideation and family functioning and reported similar findings. For instance, as adolescents perceive worse communication and weak relationships with their parents, their likelihood of attempting suicide increases (Adams et al., 1994; Stivers, 1988). Moreover, in a study of suicide among gay, lesbian, and bisexual adolescents, family connectedness accounted for a much larger proportion of variance in suicidal behaviors than sexual orientation or any other protective/risk factor for suicide (Eisenberg & Resnick, 2006). Similarly, Connor and Rueter (2006) reported that parents who continue to provide their adolescent with warmth and support may be protecting their children from emotional distress and suicidal behaviors.

Knowledge of the problem-solving process and suicidal ideation were also significantly negatively correlated with each other. Previous studies reported that adolescents who have made suicide attempts demonstrated significantly poorer problem-solving skills and were unable to

generate feasible solutions to deal with the problems that precipitated their suicidal thoughts or behaviors (McDermut et al., 2001; Negron et al., 1997). These studies reporting the relationship between problem-solving skills and suicidal ideation, however, utilized a sample of adolescents who had previously made a suicide attempt and demonstrated depression and hopelessness. The present study did not select participants based on the presence of a previous suicide attempt but rather utilized a population which demonstrated more risk-taking behaviors and impulsivity, whether they had a history of attempt(s) or not.

At pre-test, family functioning was also significantly and negatively correlated with most of the risk factors for suicide, indicating that adolescents who perceived better relationships with their families reported participating in fewer risk-taking behaviors. This relationship is also confirmed in the literature; positive family functioning and family connectedness is associated with decreased risk factors for suicide, such as smoking, alcohol use, sexual activity, and violence (Fulkerson et al., 2006).

Consistent with the hypothesis, knowledge of the problem-solving process was also significantly and negatively correlated to many of the risk factors for suicide, specifically driving or riding in the car with someone under the influence of alcohol, carrying a weapon, engaging in physical fights, using tobacco, using alcohol, and using drugs. Therefore, adolescents who demonstrated less knowledge in the problem-solving process engaged in more risk-taking behaviors. The majority of the adolescents in this study (67%) had difficulties with the legal system, reiterating the relationship between risk-taking behaviors, participation in illegal activities, impulsive behavior, and lack of knowledge of the problem-solving process. For many adolescents in this study, participation in illegal/risky behaviors appears to be attributable, at least in part, to their lack of knowledge about how to solve life problems.

Furthermore, suicidal ideation was also significantly and positively correlated with all of the risky behaviors on the HRTA at pre-test except unhealthy dieting/eating restriction. Moreover, as participation in risk-taking behaviors increased, so did suicidal ideation. As previous literature indicates, a continuum of self-destructiveness in adolescents may exist in which participation in more covert behaviors such as substance use and unsafe sex leads to more overt behaviors such as self-mutilation and suicide attempts (Barrios et al., 2000; Holinger, 1979; Jessor, 1991, 1998; R. A. King et al., 2001). The current findings are also consistent with a previous study that clarified how risky behaviors are especially prominent in those who are identified as impulsive, and that onset of sexual intercourse, smoking marijuana, drinking alcohol, smoking more than one cigarette per day, and having been in a fight in which there was punching or kicking all lead to increased risk for suicide ideation, attempts, and completions (R. A. King et al., 2001).

At post-test, the outcome variables that were significantly correlated were perceived family functioning and suicidal ideation. The other variables were not correlated significantly, although the relationships were in the predicted direction. More specifically, perceived family functioning and knowledge of the problem-solving were still positively related, while perceived family functioning and suicidal ideation, as well as knowledge of the problem-solving process and suicidal ideation, were negatively related. Furthermore, the outcome variables had fewer significant correlations with the risk factors at post-test. One possible explanation for the lack of significant correlations at post-test is the decrease in sample size over the course of the study. Approximately 63% of the adolescents in this study did not complete the problem-solving skills groups and/or did not respond to the majority of questions on the post-test questionnaire. Therefore with a larger sample, it would be expected that these variables would have remained

significant over the course of the study. Considering that the magnitude of the correlation between problem-solving and suicidal ideation was identical at pre-test and post-test, a sample size issue is confirmed. Further indication that a larger sample at post-test would have yielded significant results is the verity that the relationships between the outcome variables and risk factors remained in the predicted directions. However, the magnitude of the relationship between family functioning and problem-solving decreased from pre-test to post-test, indicating a sample size issue was not the main causal factor.

Hypothesis Three

The third hypothesis of this study contended that knowledge of the problem-solving process mediated the relationship between perceived family functioning and suicidal ideation. This hypothesis sought to demonstrate that the relationship between family functioning and suicidal ideation is stronger (i.e., the correlation is stronger) when better problem-solving skills are present. Although the first step in Baron and Kenny's (1986) mediation model requires significant correlations between the predictor and outcome variables, more current methods of determining mediation do not require this step be achieved (Shrout & Bolger, 2002). Therefore, regressions were utilized even when the predictor and outcome variables were not significantly correlated.

Four combinations of variables were utilized to detect a mediator. Knowledge of the problem-solving process did not significantly mediate the relationship between perceived family functioning and suicidal ideation at pre-test; however, most of the regressions in this model were significant. Therefore, the relationship between family functioning and suicidal ideation does appear to be made stronger by the presence of problem-solving skills. Previous research suggested that increasing confidence in problem-solving may be a resiliency factor for

adolescents who demonstrate poor family relationships, and perceptions of poor family relationships, low social support, and poor problem-solving confidences are indicative of stress and suicidality (Esposito & Clum, 2003). However, no previous research has solidified the relationships among family functioning, suicidal ideation, and problem-solving skills. Hence, the results of this analysis are noteworthy.

The other three analyses did not yield significant results. Due to the high attrition rate, the number of cases analyzed in these series significantly decreased. Therefore, problem-solving could be a significant mediator in these analyses, too, if the number of participants who completed the experimental condition were higher.

Limitations and Future Research

One major limitation of this study is indicated by the large attrition rate. Considering that 63% of the initial participants were excluded from post-test analyses, several relationships that were significant at pre-test were no longer significant at post-test, mainly due to a reduced sample size. Furthermore, it is possible that the adolescents who did not complete the study or did not answer all questions were those who had underdeveloped problem-solving skills and demonstrated more risk factors for suicide. As such, their data would have been pertinent to and might have modified the final analyses.

Another important limitation of the present study is the lack of length of some measures on the questionnaires. Specifically, only one question was utilized to measure perceived family functioning, nine questions measured participation in risk-taking behaviors, and seven questions evaluated knowledge of the problem-solving process. Thus, the questions may have been too broad and/or lacking in quantity, which may have led to inaccurate or inconsistent outcomes.

Moreover, the questions regarding family functioning and risk-taking behaviors were face valid, lending to the possibility of dishonest responses on these measures.

One important caveat to the findings is the discovery that many adolescents who participated in the groups insisted that they knew the steps to the problem-solving process and knew the best actions to take to solve their problem; however, they admitted to the facilitators that they would not follow the steps or utilize the best actions when in social situations. For example, one adolescent acknowledged that he should leave a party where drugs were present to solve the problem of peer pressure to do drugs but clarified that in all likelihood he would not actually do so. Thus, even with substantial knowledge of the steps in the problem-solving process, some adolescents do not implement them! Therefore, improved problem-solving skills may be an effective suicide prevention technique for some adolescents, while a different strategy is needed for others.

Fidelity of protocol implementation is another possible limitation of this study. Although all facilitators attended training on the SUN problem-solving skills groups, facilitators were given flexibility to implement the activities, such as icebreakers and methods for teaching problem-solving, that best fit the needs of the group. Likewise, facilitators were not systematically evaluated throughout the ten weeks on fidelity of implementation. As a result, it is possible that some groups were not taught the problem-solving process to the same extent that other groups were. In addition, not all the participants who completed both pre-test and post-test attended all 10 group sessions, and this may have left gaps in their knowledge of the process.

Internal Validity Considerations

There were extraneous factors which may have contributed to the results of this study as well. Only one measure utilized in this study (the SIQ-Jr.) had been standardized using clinical

and non-clinical populations. Standardization and reliability for the question regarding perceived family functioning as well as the HRTA, and the PSST have yet to be established. As a result, these measures may have undermined the internal validity of the study to some extent. Especially when considering the HRTA, the wording of the questions (i.e., in the past 90 days) did not allow for changes in risk-taking behaviors to be observed at post-test. Therefore, a post-test during the last group session may not show a decline in risk-taking behaviors.

It is also possible that differences in the styles of facilitators may have influenced the responses adolescents gave to specific questions. Especially considering the fact that adolescents were read the questions aloud in a group, vocal fluctuations of the facilitator or the response times of others in the group may have influenced the individual responses of the adolescents. For instance, if one adolescent looked down at the questionnaire and circled an answer after the facilitator read the first response, other adolescents in the group may have circled that same response to follow suit and not because the answer was truthful for them. It is also important to consider the facilities from which the adolescents were recruited when assessing the truthfulness of responses. Specifically, adolescents recruited from FOSI were at risk for being sent to the JDC if they did not comply with the rules for the facility (i.e., abstaining from illegal behaviors). Therefore, adolescents recruited from FOSI may have been fearful of truthfully answering the questions regarding risk-taking behaviors, regardless of how much confidentiality was emphasized.

External Validity

It is questionable as to whether the results of this study can be generalized to other populations. All participants in this study were deemed at risk for suicide based on exhibiting one or more risk factors for suicide (e.g., legal difficulties, truancy, family dysfunction, poor

problem-solving skills) and because of their placement within certain facilities. Furthermore, the study was conducted only in an urban setting in South Florida, and the majority of the adolescents were ethnic minorities. Thus, these results may not generalize to adolescents who are not at risk for suicide, who demonstrate depression and hopelessness prior to suicidal ideation, who reside in other areas, or who represent other ethnicities.

Future Research

This study has illuminated many possibilities for future research. First, the current research should continue to make strong—and much needed—efforts to improve attrition rates, with the aim of obtaining a larger, more representative sample at post-test and, thus, better statistical results. Facilitators should be aware of the tendency to leave questions blank on the questionnaires and review each questionnaire carefully when it is submitted. Should questions be unanswered, the surveys can be handed back to the participants for completion. Perhaps incorporating even more incentives for group attendance is another way to maintain participation in the groups over the course of the ten weeks, although researchers should be mindful that offering incentives which are too large may constitute coercion.

Another way to obtain more conclusive findings is to consider utilizing standardized and validated measures of family functioning and impulsivity, even though these would be longer and require more time to complete. Specifically, to determine family functioning, a standardized scale such as the Family Environment Scale could be utilized (Moos & Moos, 2002). A standardized measure such as this would not only provide reliability, but it would also provide more questions without such obvious face validity. It is also essential that the scales utilized in this study obtain validity information. This can be achieved, for example, by administering the measures to a control population which is not identified as being at risk for suicide. Furthermore,

other standardized measures could be utilized, such as the Problem-Solving Inventory (PSI; Heppner, 1988), a 35-item self report instrument designed to measure problem-solving behaviors and attitudes. Since the PSI measures for attitudes towards problem-solving, this may be a useful measure to determine which adolescents will respond well the SUN group as a suicide prevention technique. Given the nature of impulsive suicide attempts, it would also be beneficial to include a measure of impulsivity in future studies.

In addition to having an adolescent complete self-report measures, future research should obtain data from the adolescent's parents or guardians to the extent feasible. This would not only assess any differences between the adolescent's views of family functioning and his or her impulsivity compared with those of the parent or guardian, but would also help to control for defensive responses on the part of the adolescent. However, it may be difficult to recruit parents willing to participate in the study, and compliance would be challenging.

Although the SPARE study attempted to utilize a three-month follow-up survey, results of that survey were not analyzed as part of this research. When looking at the HRTA, the risk factors for suicide may not have decreased over the 10-week period due to the 90-day period the questions utilized. Hence, utilization of a follow up survey would provide more time for the implementation and practice of proper problem-solving skills and, potentially, a decrease in risk-taking behaviors.

Considering the low mean scores on knowledge of the problem-solving process (i.e., participant responses indicated accurate knowledge of the problem-solving process at less than a 50% level), it would be interesting to learn how adolescents who are not at risk for suicide compare on the PSST with those who are at risk. Likewise, future studies should analyze the differences in the Family Environment Scale, a measure of impulsivity, the HRTA, and the PSST

in among many different populations, including: African American adolescents versus other races; adolescents involved in the legal system versus adolescents who are not involved in the legal system; study completers versus study non-completers; adolescents who demonstrate depression and hopelessness versus adolescents who demonstrate impulsivity; and adolescents identified at risk for suicide versus adolescents who do not demonstrate risk factors for suicide.

A final direction for future research would include the development and implementation of a more stringent protocol for group facilitators. A more stringent protocol would allow for evaluation of the fidelity of implementation of the program and would account for the differences between groups. Furthermore, given the addition of more extensive questionnaires, the number of group sessions should increase from ten to twelve. This would allow for two groups to focus solely on effective administration of pre- and post-tests as well as the potential for private administration of the measures to each adolescent. Moreover, the addition of two group sessions would help to ensure that the problem-solving model is being taught for a full ten sessions. An independent evaluator could be utilized to collect data separate from the group sessions. This would relieve facilitators of the duty of administering the questionnaires and allow for a private (one on one) administration of the rating forms. Lastly, the administration of the questionnaire could be recorded to allow for standardization.

Conclusion

This study was intended to contribute to the growing body of literature on suicide prevention. As predicted, problem-solving knowledge developed over the course of the problem-solving groups. However, this study did not demonstrate an increase in family functioning nor a decrease in suicidal ideation. Future research is necessary to address the limitations of this study and to provide more conclusive findings on effective suicide prevention techniques.

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APPENDIX A

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.
7. Provide group inspiration project ideas to encourage participation in the SUNsm process where necessary to keep children interested.
8. Inform proper authorities when a child is in imminent danger or risk.
9. Administer the post-evaluation to groups at last meeting.
10. Hold a pizza party for the final meeting to solidify the process.
11. Fill out the post-evaluation for the facilitator and write a final report.
12. Submit receipt for purchases made for groups, i.e. pizza as part of monthly invoice.
13. Facilitator should have liability insurance.
14. 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 B

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 near by 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 C

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. The 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 D

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

i.e. Jamie Jones = JJ = S0023JJ

5. Facilitator Group Number - (This is number assigned to the facilitator by FISP when a facilitator is hired)

i.e. Jamie Jones = #15 = S0023JR15

6. The date the survey is completed in six figures

i.e. 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 E

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 F

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 participants 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 G

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.

APPENDIX H**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

Pre ID _____

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?
- 0 days
 - 1 or 2 days
 - 3 to 9 days
 - 10 to 19 days
 - 20 to 39 days
 - 40 to 89 days
 - 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?
- 0 times
 - 1 or 2 times
 - 3 to 9 times
 - 10 to 19 times
 - 20 to 39 times
 - 40 to 89 times
 - 90 or more times (at least once a day on average)
7. During 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)
- Yes
 - No
8. The last time you were involved in any type of sexual activity, did you or your partner use a condom?
- I have never been involved in any type of sexual activity.
 - Yes
 - 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?
- 0 times
 - 1 or 2 times
 - 3 to 9 times
 - 10 to 19 times
 - 20 to 39 times
 - 40 to 89 times
 - 90 or more times (at least once a day on average)

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.

This thought was on my mind:

Almost everyday	Couple of times a week	About once a week	Couple times a month	About once a month	I had this thought 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

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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!

Pre ID _____

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