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Preservice Teacher Awareness of Risk Factors for Student Suicide

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PRESERVICE TEACHER AWARENESS OF RISK FACTORS FOR STUDENT
SUICIDE

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ABSTRACT

Suicide is the third leading cause of death among adolescents in the United States. Given this, it is imperative that those who have regular contact with members of the youth population be able to recognize and identify those youth who are at risk for suicide. Part of the process of identifying suicidal adolescents requires having knowledge about adolescent suicide and about those factors that place certain adolescents at greater risk for completing suicide than others. One group of professionals who are in an optimal position to detect at-risk youth is schoolteachers. Fifty-four undergraduate students who were studying to obtain teaching licensure at a large public university completed the Adolescent Suicide Behavior Questionnaire (ASBQ), an instrument that measures knowledge about adolescent suicide across five content areas (Scouller & Smith, 2002; Smith & Scoullar, 2001). Undergraduate students also completed items from the eight clinical scales of the Suicide Opinion Questionnaire (SOQ), a measure that assesses attitudes toward suicide (Domino, 2005; Domino et al., 1982, 1988-89). On average, preservice teachers scored approximately 61% of ASBQ items correctly. Preservice teachers were the most informed about the warning signs of adolescent suicide and were the least informed about demographic and statistical information related to adolescent suicide. Preservice teachers in Middle Childhood and Secondary Education answered significantly more items correctly on the ASBQ than preservice teachers in Early Childhood Education. Preservice teachers with classroom teaching experience answered

significantly more ASBQ items correctly than preservice teachers without this experience. Only 59.3% of all preservice teachers recognized that secondary school teachers are in a good position to detect the risk factors for suicide in their students. Responses to the SOQ indicated that preservice teachers were either conflicted or unsure about their attitudes toward suicide along several different attitudinal dimensions. However, preservice teachers tended to disagree with the attitudes that people have the right to take their own lives and that suicide is an aggressive act. Findings from this study point to the need for better or more education for preservice teachers in the area of adolescent suicide as they prepare for their future roles as teachers of youth.

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CHAPTER I

STATEMENT OF THE PROBLEM

The incidence of completed suicide and suicidal behavior among youths in the United States is a national public health problem. Currently, suicide is the third leading cause of death among adolescents and young adults between the ages of fifteen and twenty-four and among early adolescents between the ages of ten and fourteen (Gibbons, Hur, Bhaumik, & Mann, 2006; Walsh & Eggert, 2007; Westefeld, Kettmann, Lovmo, & Hey, 2007). The problem of adolescent suicide is further compounded when the incidence of non-lethal or nonfatal suicidal behaviors among adolescents is taken into consideration (Gould & Kramer, 2001). Suicidal ideation and unsuccessful attempts at suicide are nonfatal suicidal behaviors that are more common among adolescents than the act of completed suicide (Groholt, Ekeberg, & Haldorsen, 2006; Moskos, Achilles, & Gray, 2004).

Given the seriousness of the problem of adolescent suicide and suicidal behavior, it is important that efforts are made to prevent suicidal adolescents from ending their own lives (Eckert, Miller, Riley-Tillman, & DuPaul, 2006). Individuals who have regular contact with adolescents and/or who work with adolescents on a frequent basis may potentially play an important role in preventing adolescents at risk for suicide from

committing suicide. One group of individuals who have regular and significant contact with adolescents are schoolteachers (Hamrick, Goldman, Sapp, & Kohler, 2004; King, Price, Telljohann, & Wahl, 1999; Wastell & Shaw, 1999). Given the rates of suicide and suicidal behavior among youth, it is likely that teachers of youth will be confronted with suicidal students at some point during their teaching careers (Davidson & Range, 1997; Pagliaro, 1995). Since teachers may have either daily or nearly daily contact with the same students in their classrooms and can observe any changes in the behavior of their students, teachers are in a good position to potentially recognize or identify a student at risk for suicide (Kirchner, Yoder, Kramer, Lindsey, & Thrush, 2001; MacDonald, 2004; Westefeld et al., 2007). Identifying a potentially suicidal adolescent is often the first crucial step to suicide prevention, and teachers may serve as the first line of assistance in suicide prevention (Kirchner et al.; Pagliaro). Since identifying an adolescent at risk for suicide requires having knowledge about adolescent suicide, particularly in regards to those factors that place certain adolescents at greater risk for suicide than other adolescents, being aware of the risk factors for adolescent suicide can enhance the ability of schoolteachers to identify at-risk students (King et al.; Pagliaro; Westefeld et al.). Teachers who can recognize a student at risk for suicide can then intervene with that student to reduce that student's risk for suicide. However, despite teachers' potential role in suicide prevention and despite the importance of having knowledge about adolescent suicide and the risk factors for adolescent suicide in order to recognize a student at risk for suicide, few studies have examined teachers' knowledge about adolescent suicide and its risk factors (Chan, 2002; Hamrick et al.; King et al.; Leane & Shute, 1998; Scouller & Smith, 2002; Westefeld et al., 2007). The limited research conducted in this area suggests

that teachers and preservice teachers (i.e., those students studying to become teachers) do not have sufficient knowledge about adolescent suicide and about the risk factors for adolescent suicide. In addition, teachers do not seem to view themselves as adequately prepared to identify students at risk for suicide (King et al.; Schepp & Biocca, 1991).

Given that teachers can play an important role in potentially preventing a student from committing suicide by identifying those students who may be at risk for suicide and given the limited research that exists on teachers' knowledge about youth suicide, the purpose of the present study was to contribute to the research in this area. Namely, the present study wanted to assess knowledge about the risk factors for adolescent suicide among a sample of undergraduate education students studying to become teachers. Since these students plan on becoming teachers in the future and since most teacher education programs do not sufficiently prepare its students in the area of adolescent suicide, this study wanted to gauge how prepared preservice teachers may be to recognize students at risk for suicide when they enter into the teaching field (King et al., 1999). Findings from this study may inform teacher education programs about the need to adequately educate and train its students in the area of youth suicide. Although the present study was primarily interested in measuring preservice teachers' knowledge about the risk factors for adolescent suicide since being knowledgeable about risk factors may increase a person's ability to appropriately identify a person at risk for suicide, the present study also wanted to measure preservice teachers' knowledge about suicide across other areas under the general umbrella of adolescent suicide.

In addition to measuring preservice teachers' knowledge about adolescent suicide, the present study was interested in assessing preservice teachers' attitudes toward suicide.

Attitudes toward suicide can influence how a person responds to and treats a suicidal individual (Alston & Robinson, 1992; Anderson & Standen, 2007; Chan, 2002; Wastell & Shaw, 1999). Although a teacher may be knowledgeable about suicide and about the risk factors for suicide, his or her attitudes toward suicide may impede him or her from effectively intervening with a suicidal student and may affect how he or she evaluates the suicide risk of a student (Chan). For example, if a teacher views suicide as morally wrong and as unacceptable, this teacher may communicate this attitude in his or her interaction with a student who reveals to this teacher that he or she is having thoughts about suicide. Although this teacher may not overtly or directly communicate this attitude to the suicidal student, this teacher may communicate his or her attitude in indirect ways to the student without intending to do so (Alston & Robinson). The student may sense that this teacher is rejecting of people who commit suicide and may be reluctant to disclose to this teacher any suicidal thoughts that he or she may have again in the future.

Despite the importance of attitudes in suicide prevention, few studies have assessed the attitudes of teachers toward suicide (Chan, 2002; Davidson & Range, 1997; Davidson & Range, 1999; Leane & Shute, 1998; Wastell & Shaw, 1999). Therefore, the present study wanted to contribute to the limited research in this area by assessing preservice teachers' attitudes toward suicide.

CHAPTER II

REVIEW OF RELEVANT LITERATURE

2.1 Demographics and Statistics

First surfacing as a significant public health problem during the period of adolescence, suicide is currently the third leading cause of death among adolescents in the United States (Bae, Ye, Chen, Rivers, & Singh, 2005; Fordwood, Asarnow, Huizar, & Reise, 2007; Judge & Billick, 2004). In 2004, for example, an estimated number of 2,365 adolescents and young adults between the ages of thirteen and twenty committed suicide in the United States (Swahn & Bossarte, 2007). The suicide rate increases significantly as adolescents get older and continues to increase until the early twenties (Bridge, Goldstein, & Brent, 2006; Gould & Kramer, 2001). The suicide rate for adolescents between the ages of fifteen and nineteen is six times greater than the rate for children and young adolescents between the ages of ten and fourteen (Judge & Billick). Although there are annual estimates of the number of adolescents who die by suicide each year, the actual number of adolescent deaths from suicide may be higher than the number that is recorded because some deaths are recorded as “accidental” when the victims of these deaths actually intended to commit suicide (Bae et al.). Some methods of suicide, such as drug overdose, poisoning, and motor vehicle collisions, may be mistaken for accidents

(Comer, 2002, chap. 7). Therefore, it is difficult to obtain accurate figures on the number of adolescents who commit suicide each year.

Comparing racial and gender groups in the United States, the adolescent suicide rate is not uniform across race and across gender (Gould & Kramer, 2001; Judge & Billick, 2004). Currently, the highest adolescent suicide rate is among the Native American male population. Although the absolute number of White males who die by suicide is markedly higher than the absolute number of Native American males who die by suicide due to population differences between the two groups, the suicide rate for Native American males is much higher than for White males (Judge & Billick). Native American adolescent males between the ages of fifteen and nineteen commit suicide at a rate of 27.7 per 100,000 per year whereas the suicide rate for White adolescent males in this age group is 14.0 per 100,000 per year. After Native American adolescents, White adolescents have the second highest suicide rate in the United States. Latino/a and Asian American adolescents share the third highest suicide rate with this rate being approximately equal in the two groups. African American adolescents have the lowest suicide rate among the different racial groups, with the suicide rate for African American males between the ages of fifteen to nineteen years old being 7.3 per 100,000 and the suicide rate for African American females in this same age group being 1.3 per 100,000. In general, the suicide rate is higher for male adolescents than for female adolescents, and adolescent males are four times more likely to complete suicide than adolescent females (Bae et al., 2005). For example, in 1999, 83% of adolescents who committed suicide were male (Moskos, Achilles, & Gray, 2004). Also, whereas the suicide rate increases

exponentially for males during adolescence, the suicide rate increases only slightly for females during adolescence (Judge & Billick).

Despite racial and gender differences in the adolescent suicide rate, across race, gender, and age, firearms are the most common method of suicide among adolescents (Judge & Billick, 2004). After firearms, suicide by hanging accounts for the second greatest number of deaths by suicide among adolescents. Overdose is the third most common method of suicide for female adolescents and carbon monoxide poisoning is the third most common method of suicide for male adolescents. Geographically, adolescent suicide rates are the highest in the western states and Alaska and are the lowest in the southern, north central, and northeastern parts of the country (Gould & Kramer; Judge & Billick).

2.2 The suicide continuum

The problem of adolescent suicide in the United States becomes even more pressing when the high incidence of nonlethal suicidal behavior among adolescents is taken into account (Gould & Kramer, 2001). The phenomenon of suicidality, or all thoughts and behaviors related to purposely ending one's own life, encompasses not only completed suicide, but also suicidal ideation or thoughts and suicide attempts (Judge & Billick, 2004). Many researchers view suicidality as occurring on a continuum of increasing severity from suicidal ideation to suicide attempts to completed suicide. When compared to the incidence of suicidal ideation and suicide attempts in the adolescent population, the completion of suicide among adolescents is a relatively rare event (Moskos et al., 2004).

Suicidal ideation is at the lowest end of the suicidality continuum and is considered the least severe of non-lethal suicidal behavior (Judge & Billick, 2004). Suicidal ideation can include such acts as thinking or fantasizing about committing suicide, planning to commit suicide, practicing to commit suicide, and motivating oneself to commit suicide (Flannery, Sneed, & Marsh, 2003). The prevalence of suicidal ideation in the adolescent community is difficult to estimate since research studies attempting to gauge the incidence of suicidal ideation in this population often use different study designs (Judge & Billick). However, numerous research studies conducted over the past decade in the general population consistently estimate that approximately 20% of high school students express serious suicidal ideation within a period of twelve months (Gould & Kramer, 2001). For example, the Centers for Disease Control and Prevention annually administer the Youth Risk Behavior Surveillance Survey, a nationally representative anonymous survey of high school students in grades 9-12 in the United States (Judge & Billick). The Youth Risk Behavior Surveillance Survey for 2005 found that during the previous twelve months, 16.9% of 13,639 high school students had seriously contemplated attempting suicide (Swahn & Bossarte, 2007). It is estimated that the prevalence of suicidal ideation is almost twice as common in adolescent females than in adolescent males (Judge & Billick, 2004). For both adolescent males and adolescent females, suicidal ideation is almost always associated with a psychiatric disorder, most notably with depression. Suicidal ideation in adolescence is a predictor of future suicide attempts and as an adolescent's suicidal thoughts become more frequent, last for a longer period of time, and become more serious in intent, these thoughts become increasingly predictive of future suicide attempts.

Suicide attempts are in the middle of the suicidality continuum and occur before completed suicide (Judge & Billick, 2004). Uncommon among pre-pubertal children, suicide attempts are the strongest known risk factor for adolescent suicide (Bridge, Goldstein, & Brent, 2006; Judge & Billick). Whereas information on the prevalence of completed suicides among adolescents can be obtained from death certificates, there is no surveillance system in the United States that compiles the nationwide prevalence of adolescent suicide attempts (Gould & Kramer, 2001; Moskos et al., 2004). Nationally, Oregon is the only state that requires that all suicide attempts made by persons under the age of eighteen who are being treated at a hospital or a hospital emergency department be reported (Gould & Kramer). Therefore, it is difficult to estimate the prevalence of suicide attempts in the adolescent population (Moskos et al.). However, despite this difficulty, adolescent suicide attempts are a more frequent phenomenon than completed suicides among adolescents (Judge & Billick). In the United States, it is estimated that, on average, for every adolescent who completes suicide, there are one hundred to two hundred adolescents who make nonfatal suicide attempts (Moskos et al., 2004). In the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance Survey for 2005, 8.4% of 13,639 high school students reported attempting suicide one or more times within the past year (Swahn & Bossarte, 2007). This number is consistent with many population studies that have been conducted over the past ten years examining suicidal ideation and suicide attempts among adolescents (Gould & Kramer). Although males are four times more likely to die from suicide than females, females are three times more likely to attempt suicide than males (Bae et al., 2005; Gould & Kramer; Judge & Billick; Moskos et al.). This gender difference can be partly explained by the tendency

for males to use more lethal methods of suicide than females. Lifetime estimates of suicide attempts in adolescent females range from 1.5-10.1% whereas lifetime estimates in adolescent males range from 1.3-3.8% (Bridge et al.).

2.3 Theories of Suicide

The harsh reality of adolescent suicide is reflected in the rates of suicide and suicidal behavior among this population (Renaud, Berlim, McGirr, Tousignant, & Turecki, 2008). Given that adolescent suicide is a major public health problem in the United States and given that suicide in this population may be particularly puzzling to others since adolescents are viewed as having their whole lives ahead of them, one question that frequently arises when the topic of suicide is discussed is *why* people choose to commit suicide (Robbins, 1998, chap. 4). Theories and explanations for suicide across the age span have been proposed since the time of ancient Greece (Holmes & Holmes, 2005, chap. 2; Robbins). Presently, several academic disciplines, including sociology, psychiatry and psychology, and biology have offered explanations for suicide. Although no one theory can fully explain why people choose to end their lives, it is useful to examine individual perspectives on suicide when trying to understand why a person would possibly want to end his or her own life (Holmes & Holmes, chap. 3).

2.3.1 Sociological theories. Although developed in the late nineteenth and early twentieth centuries, Emile Durkheim's ideas about suicide continue to be influential to the present day (Holmes & Holmes, 2005, chap. 3; Robbins, 1998, chap. 4). Theorizing about suicide from a sociological perspective, Durkheim, a sociologist and a philosopher, wrote about the role of society and its influence on suicide. Instead of examining the reasons for suicide within the individual person, Durkheim focused on "studying the

suicide rates of groups and the society as a whole” (Holmes & Holmes, 2005, p. 35). Durkheim’s theory views suicide as associated with diminished social integration. According to Durkheim, a group that is cohesive will tend to have lower suicide rates among members of the group. The less integrated or cohesive a group or social unit is, the higher the suicide rate that can be expected among members of that group. For example, Durkheim believed that the religion of Catholicism was more integrated than the Protestant religion partly because the Catholic faith had more common or shared beliefs, practices, and rituals than the Protestant faith. Research comparing the suicide rates of Catholics and Protestants from as far back as the early years of the twentieth century has found that the suicide rate of Catholics has tended to be lower than that of Protestants. Durkheim also believed that the suicide rate varies inversely with the strength of family integration (Holmes & Holmes, 2005, chap. 3). For example, the suicide rate can be expected to be higher among those individuals who are divorced and among those who are single than among those individuals who are married.

Emile Durkheim distinguished between four different types of suicide, a typology that is still used today (Holmes & Holmes, 2005, chap. 3). *Anomic* suicide occurs when there is a drastic dislocation in the social order of a society or a group. When such a dislocation occurs, the suicide rate of that society or group increases (Robbins, 1998, chap. 4). With the breakdown of a society’s social order, society’s rules, regulations, norms, and values change. People who are not able to cope with such rapid and drastic change may end up committing suicide, thereby increasing the suicide rate in that society. *Altruistic* suicide occurs when a person commits suicide for the benefit of a group or to accomplish a goal of a group that that person belongs to (Holmes & Holmes). Altruistic

suicide usually occurs when a person commits suicide for a social, personal, or religious cause. According to Durkheim, societies or groups that support altruistic deaths tend to have higher suicide rates (Comer, 2002, chap. 7). Directly opposed to altruistic suicide, *egoistic* suicide occurs when an individual commits suicide for his or her own self-centered reasons (Holmes & Holmes). The center of the universe for an individual who commits egoistic suicide is that individual, and people who commit this type of suicide are often disenchanting with life. Durkheim believed that egoistic suicide is more common in people who are nonreligious, isolated, and estranged from society (Comer). The greater the number of these type of people living in a society, the higher that society's suicide rate. *Fatalistic* suicide occurs when a person lives in a social structure that is overregulated (Holmes & Holmes). With fatalistic suicide, a person feels or believes that he or she is in a situation in which there is no escape. An example of a fatalistic suicide is a married woman who commits suicide because she is being physically abused by her husband and feels that there is no other way in which she can escape her situation.

2.3.2 Biological theories. In addition to sociology, the field of biology has also offered theories of suicide (Holmes & Holmes, 2005, chap. 4; Robbins, 1998, chap. 4). One biological theory is based on the observation that suicide tends to run in families. A person's risk of attempting suicide tends to be higher if that person has a family history of suicide. In family pedigree studies, biological researchers have consistently found that the parents and close relatives of suicidal individuals have higher rates of suicide than those of non-suicidal individuals (Comer, 2002, chap. 7). Although it cannot be assumed from these findings that there is a genetic predisposition to suicide, the clustering of suicides within families supports the hypothesis that genetic influences play a role in suicide. In

addition, the results of twin and adoption studies lend support to the idea that there is some genetic influence on suicide (Comer; Robbins).

One biochemical theory that has been proposed to explain suicide is that low levels of the neurotransmitter serotonin may play a role in suicide (Comer, 2002, chap. 7; Robbins, 1998, chap. 4). Some research conducted in this area has found that low cerebrospinal fluid levels of the serotonin metabolite 5-HIAA is associated with suicidal behavior in depressed patients, particularly with patients who make more destructive suicide attempts that involve shooting or hanging (Robbins). Examinations carried out on the brains of suicide victims after death also give support to the theory that serotonin levels may be associated with suicide. Some of these postmortem examinations have found lower levels of either serotonin or 5-HIAA in the brain stems or frontal cortexes of suicide victims.

2.3.3 Psychological theories. Psychological theories of suicide encompass many different perspectives (Comer, 2002, chap. 7; Holmes & Holmes, 2005, chap. 3; Robbins, 1998, chap. 4). Writing in the late nineteenth and early twentieth centuries, psychoanalyst Sigmund Freud believed that when a person loses a loved one, whether that loss is a real or a symbolic one, that person unconsciously assimilates the lost loved one into his or her own identity. That person feels toward himself or herself the feelings that he or she had felt toward the loved one. Feelings of anger and other negative feelings felt toward the loved one may be turned into strong feelings of anger and self-hatred against oneself. These feelings of anger may eventually turn into depression. Suicide and suicidal behavior may result as an extreme expression of these feelings of self-hatred and anger. In addition, Freud also propounded later in his career that people have a basic “death

instinct,” which he called *Thanatos* (Comer). Instead of rechanneling their death instinct toward other people like most people learn to do, suicidal people channel their death instinct onto themselves.

Herbert Hendin, a psychoanalyst writing after Freud, made observations of young suicidal patients in psychiatric wards (Robbins, 1998, chap. 4). Hendin observed that many of these patients had strong feelings of guilt, the need for self-punishment, worthlessness, and self-hatred. Many of these patients attempted suicide as reparation for either real or fantasized acts that they committed that they perceived were morally wrong or were a sin. Therefore, suicide and suicide attempts may be viewed as an extreme form of self-punishment for self-perceived transgressions.

Psychologist Edwin Schneidman offered another psychological theory of suicide (Holmes & Holmes, 2005, chap. 3; Robbins, 1998, chap. 4; Shneidman, 1991).

Schneidman has described ten common characteristics or features of suicide. These characteristics consist of the following: (1) suicide seems to the suicidal person to be the only solution to the problem, (2) the goal of suicide is to end life, (3) the impetus for suicide is intolerable or unendurable psychological pain, (4) the source of psychological pain is hindered psychological needs, (5) the emotional state experienced by suicidal individuals is hopelessness/helplessness, (6) the cognitive state experienced is ambivalence, (7) the perceptual state experienced is that the suicidal person sees his or her options or choices as limited, (8) the action is to escape, (9) before committing suicide the suicidal person provides verbal or behavioral clues to others that he or she is going to commit suicide, and (10) “the consistency is lifelong patterns of coping”

(Robbins, 1998, p. 42). Schneidman's ten common features of suicide have provided a valuable framework for thinking about suicide.

One psychological theory of suicide that has recently emerged is Roy Baumeister's "escape theory" (Holmes & Holmes, 2005, chap. 3; Robbins, 1998, chap. 4). Although Baumeister recognized that his escape theory does not apply to all cases of suicide, Baumeister believed that people commit suicide mainly because they have a desire to escape an undesirable or aversive situation and want to escape from meaningful self-awareness of present life problems. Baumeister's theory includes six major steps that outline the process in which a person who experiences an aversive event(s) can potentially end up committing suicide (Robbins).

2.4 Risk factors for adolescent suicide

Those factors that place certain adolescents at risk for suicide are numerous and complex (Fleischmann & Bertolote, 2003; Gould & Kramer, 2001). For any given adolescent at risk for suicide, a combination of different risk factors that interact with each other to increase his or her risk for suicide may be present. Some adolescents may possess multiple risk factors, but only one or two of these risk factors are predominant in effecting their risk for suicide. Other adolescents may have multiple risk factors and each individual factor has equal power in contributing to their risk for suicide. Still, some adolescents may possess only one risk factor for suicide. Regardless of the number of factors that an adolescent has that places him or her at risk for suicide, the power of each risk factor in itself to predict a person's risk for suicide is low (Vitiello & Pearson, 2008). Risk factors tend to be interrelated, and possessing more than one risk factor increases a person's risk for suicide.

Some of the literature on the risk factors associated with suicide and suicidal behavior in adolescents has grouped these risk factors under six main classes or domains of factors (Commission on Adolescent Suicide Prevention, 2005, chap. 21; Fleischmann & Bertolote, 2003; Gould & Kramer, 2001). These domains include psychiatric factors, cognitive factors, biological factors, social and environmental factors, family factors, and negative or stressful life events (Fleischmann & Bertolote, 2003; Gould & Kramer, 2001). Although most studies examine these classes of factors separately, there is considerable overlap between these factors (Commission on Adolescent Suicide Prevention).

2.4.1 Psychiatric risk factors. Psychiatric or mental disorders are a powerful risk factor for adolescent suicide (Chan, Hung, & Yip, 2001). Psychological autopsy studies of children and adolescents who committed suicide have consistently shown that approximately 81% to 95% of these suicide victims had suffered from a psychiatric disorder or comorbid psychiatric disorders (Chan et al.; Fordwood et al., 2007; Gould & Kramer, 2001; Marttunen & Pelkonen, 2000). Adolescents with psychiatric disorders are nine times more likely to commit suicide than adolescents without psychiatric disorders, and the more chronic and severe a psychiatric disorder is, the greater the risk that an adolescent is at for suicide (Bridge et al., 2006). In addition, the risk for completed suicide increases with the number of psychiatric or mental disorders that an adolescent has been diagnosed with, and psychological autopsy studies have found that up to 70% of adolescents who suicide had more than one comorbid disorder.

Of the psychiatric disorders that adolescents who complete suicide suffer from, mood disorders are the most prevalent (Meadus, 2007). Approximately fifty to seventy-

five percent of child and adolescent suicide victims had a mood disorder, and the most common of the mood disorders that these victims had was Major Depressive Disorder (Marttunen & Pelkonen, 2000). However, although mood disorders are prevalent in both male and female adolescent suicide victims, mood disorders seem to be more prevalent among females than among males, whereas antisocial disorders tend to be more prevalent among males than among females (Chan et al.; Gould & Kramer; Marttunen & Pelkonen). Among adolescent females, having Major Depressive Disorder is the most significant risk factor for completed suicide, and adolescent females with Major Depressive Disorder may have a 20-fold increase in risk for completing suicide (Fordwood et al., 2007). Among adolescent males, prior suicide attempts are the most significant risk factor for suicide followed by Major Depressive Disorder. Even among adolescents who have symptoms of depression but whose symptoms do not meet the full criteria for a depressive disorder diagnosis, these adolescents are still at increased risk for suicide. In addition, whereas having Bipolar Disorder was found to be a risk factor for completed suicide in some studies, in other studies it was not (Bridge et al., 2006).

Substance abuse and substance dependence are two additional mental or psychiatric disorders that have been associated with adolescent suicide (Bridge et al., 2006). Approximately one-quarter to two-thirds of adolescents who complete suicide had previously been diagnosed with substance abuse or substance dependence (Marttunen & Pelkonen, 2000). Those adolescents who suffer from substance abuse or substance dependence together with a mood disorder are at much greater risk for committing suicide than those adolescents who have a substance abuse or substance dependence problem but who do not have a coexisting mood disorder (Pelkonen, Marttunen, & Aro,

2003). A high prevalence of comorbidity between mood disorders and substance abuse disorders in adolescent suicide victims has consistently been found in studies examining the risk factors for adolescent suicide (Gould & Kramer, 2001). Substance abuse comorbid with a mood disorder as a risk factor for adolescent suicide is particularly salient in older adolescent males (Bridge et al.).

Included under the category of psychiatric risk factors for adolescent suicide, previous suicide attempts is one of the most powerful predictors of eventual completed suicide (Bridge et al., 2006; Fleischmann & Bertolote, 2003). Even after controlling for the presence of a psychiatric disorder, a previous suicide attempt is the single biggest risk factor for completed suicide (Bridge et al.). Between one-quarter to one-third of adolescent suicide victims made a previous suicide attempt or attempts before they completed suicide (Gould & Kramer, 2001). Adolescents with a history of suicide attempts have an increased risk for suicide that is thirty times higher than the risk for completed suicide among adolescents with no histories of suicide attempts (Gould & Kramer; Marttunen & Pelkonen, 2000). For male adolescents, prior suicide attempts appear to increase their risk for completed suicide more than for female adolescents (Gould & Kramer). For female adolescents, Major Depressive Disorder is a stronger risk factor for completed suicide than a history of prior suicide attempts. For both male and female adolescents who have made a suicide attempt, the risk for suicide is higher in the first twelve months after the attempt, especially in the first six months (Fleischmann & Bertolote). Although a history of previous suicide attempts increases the risk that an adolescent will commit suicide, the majority of adolescents who complete suicide had no prior histories of suicide attempts.

2.4.2 Cognitive factors. Cognitive risk factors for adolescent suicide include dysfunctional cognitive styles (Gould & Kramer, 2001). Three commonly identified negative cognitive styles that are risk factors for suicide include hopelessness, pessimism, and poor interpersonal problem-solving ability (Commission on Adolescent Suicide Prevention, 2005, chap. 21; Gould & Kramer). Thinking or believing that one's situation is hopeless and that things will never get better is associated with suicidality among adolescents. However, based on studies conducted with clinical and nonclinical samples of adolescents, it appears that hopelessness per se is not a predictor of suicidality, but only when depression is comorbid with hopelessness. Pessimism is another negative cognitive style that may be related to hopelessness (Commission on Adolescent Suicide Prevention). Pessimism has been found to be related to suicide attempts independent of depression. In addition, poor interpersonal problem-solving ability is another dysfunctional cognitive style that has been found to increase an adolescent's risk for suicide (Gould & Kramer).

2.4.3 Family factors. A strong familial risk factor for adolescent suicidality, particularly in regards to suicide attempts and completed suicide, is a family history of suicide (Evans, Hawton, & Rodham, 2004; Fleischmann & Bertolote, 2003; Gould & Kramer, 2001). Having a family member or members who either attempted or completed suicide greatly increases an adolescent's risk of completed suicide. Twin studies and studies on adopted children support the notion that biological factors may play a role in a person's suicidal behavior (Fleischmann & Bertolote). However, to date, it is still not clear whether a family history of suicidality reflects a genetic predisposition to suicidality or whether it reflects something else (Fleischmann & Bertolote; Gould & Kramer). In

addition to a family history of suicidal behavior, having a parent(s) with a psychiatric or mental disorder, including depression, substance abuse, and antisocial behaviors, is a risk factor for adolescent suicide (Bridge et al., 2006).

Family factors for suicide also include several factors related to the family environment that can contribute to an adolescent's risk for suicide (Bridge et al., 2006). One such factor is family constellation. Adolescents who complete suicide are more likely to have come from non-intact family backgrounds. Particularly, losing a parent due to death or divorce or living away from one or both biological parents is a strong risk factor for suicide. Family discord has also consistently been linked to adolescent suicide (Bridge et al.; Commission on Adolescent Suicide Prevention, 2005, chap. 21). Particularly among younger adolescents, negative parent-child relationships or parent-child conflict has been found to be an important contributor to suicide. In addition, a lack of family support can contribute to an adolescent's risk for suicidal behavior (Commission on Adolescent Suicide Prevention).

Access to means, particularly to firearms, that can be used to commit suicide with is another risk factor that may be related to the family or home environment (Bridge et al., 2006; Commission on Adolescent Suicide Prevention, 2005, chap. 21). Keeping a firearm in the home has consistently and clearly been demonstrated in case-control studies to be associated with adolescent suicide (Bridge et al., 2006). Among 15-to-24-year-olds, close to three-quarters of suicides and suicide attempts have been found to involve the use of a firearm that belonged to a member of the adolescent's house (Commission on Adolescent Suicide Prevention). Suicidal adolescents who live in homes in which guns are kept are at even greater risk for suicide if these guns are loaded and not

kept in a locked place. If an adolescent lives in a home in which a gun(s) is kept, the gun is highly likely to be chosen as the method of suicide, and suicides in which firearms are used appear to be more impulsive and spontaneous in nature (Bridge et al.; Commission on Adolescent Suicide Prevention). In addition to firearms, if potentially lethal drugs are kept in a suicidal adolescent's home, this can increase an adolescent's risk for suicide or may increase the medical lethality of a suicide attempt (Bridge et al.).

2.4.4 Negative or stressful life events. A history of physical and/or sexual abuse is strongly associated with attempted and completed suicide in adolescents (Commission on Adolescent Suicide Prevention, 2005, chap. 21; Evans, Hawton, & Rodham, 2005; Martin, Bergen, Richardson, Roeger, & Allison, 2004). In longitudinal and in case-control studies, being a victim of physical abuse has been found to increase a person's risk for suicide (Commission on Adolescent Suicide Prevention). Physical abuse has also been demonstrated to contribute independently to adolescent suicide even after controlling for other factors. In addition to physical abuse, sexual abuse has also been linked with an increased risk for suicidal behavior (Commission on Adolescent Suicide Prevention). More extreme forms of sexual abuse have been found to increase the severity of suicidal behavior among adolescents (Martin et al.)

Stressful life events that have been found to be associated with increased risk for suicidal behavior include interpersonal loss, legal or disciplinary problems, and academic difficulties (Commission on Adolescent Suicide Prevention, 2005, chap. 21). In regards to interpersonal loss, suicidal behavior in older adolescents is most frequently precipitated by the loss of a romantic relationship. Legal or disciplinary problems are a precipitant to suicidal behavior in adolescents with Conduct Disorder and other disruptive

disorders. Furthermore, adolescents at risk for dropping out of high school have been found to have increased suicidal thoughts or behavior.

2.5 Teachers' knowledge about adolescent suicide

Given the prevalence of suicidality in the adolescent population, it is imperative that those individuals who have regular contact with adolescents be knowledgeable about and be able to recognize the risk factors and warning signs for suicide in adolescents (Scouller & Smith, 2002). In the adolescent suicide literature, individuals who have frequent and significant contact with adolescents have been termed the “gatekeepers” of adolescents who are at risk for suicide (Anderson, Standen, Nazir, & Noon, 2000; MacDonald, 2004; Scouller & Smith). Some groups of people who have commonly been identified as being “gatekeepers” are doctors, nurses, parents, school guidance counselors, school psychologists, and teachers. Since these individuals come into contact with adolescents frequently in their daily work, they have a responsibility to know what some of the common risk factors for adolescent suicide are so that they can recognize and intervene in cases where an adolescent is at high risk for suicide.

Possessing knowledge of the risk factors for adolescent suicide is important for the “gatekeepers” of at-risk adolescents in order to effectively prevent an adolescent from committing suicide (Marttunen & Pelkonen, 2000). Since preventing adolescents from committing suicide is partly dependent on being able to identify those adolescents who are at high risk for completing suicide, being knowledgeable about the risk factors for adolescent suicide is crucial in identifying at-risk adolescents (King, Price, Telljohann, & Wahl, 1999). Of the different professional groups of “gatekeepers” for adolescents at risk for suicide, schoolteachers especially are in an optimal position to recognize or

detect/identify adolescents who may be suicidal (Leane & Shute, 1998; Wastell & Shaw, 1999; Westefeld et al., 2007). Teachers have extensive contact with their students on almost a daily basis, and students spend as many waking hours in school as they do at home (Hamrick, Goldman, Sapp, & Kohler, 2004; King et al.; Shaughnessy & Nystul, 1985; Wastell & Shaw; Westefeld et al.). In addition to peers, teachers are often the first to recognize the signs of suicidal behavior in their students and may be the first to recognize an emotional change in their students (Shaughnessy & Nystul; Silbert & Berry, 1991). Furthermore, because there may be poor communication between some suicidal adolescents and their family members, these adolescents may disclose more to their teachers about their pain and suffering than to anyone else (Hamrick et al.). Even if a student confides in his or her peers or friends about his or her suicidal ideation or plans, these peers may, in turn, relate to a teacher about their friend's suicidality (Davidson & Range, 1997). Therefore, teachers are in a good position to play an important role in the prevention of youth suicide (Leane & Shute). Given the high rate of suicidality among adolescents, it is highly probable that a teacher will come into contact with at least one suicidal student during his or her career.

Despite the advantageous position that teachers are in to recognize students who are at risk for suicide, limited research has been conducted on teachers' knowledge about adolescent suicide (Chan, 2002; Hamrick et al., 2004; King et al., 1999; Scouller & Smith, 2002; Westefeld et al., 2007). Most of the research conducted on the measurement of knowledge about adolescent suicide among "gatekeepers" of at-risk adolescents has focused on other professional groups such as physicians, psychiatrists, psychologists, medical students, nurses, social workers, crisis interventionists, counselors, and the

clergy (Chan). The literature on adolescent suicide often focuses on teachers as part of the intervention process with a suicidal adolescent rather than as part of the process in which a student thought to be at risk for suicide is identified as such (Hamrick et al.). Therefore, within the teaching community, level of knowledge about the risk factors for adolescent suicide has not been well established (Scouller & Smith). This is a problem because one's level of knowledge about adolescent suicide and the risk factors for adolescent suicide may play a key role in whether one intervenes or not when he or she is faced with a suicidal student (Chan). Without sufficient knowledge about the risk factors for adolescent suicide, teachers may not be able to recognize students who are at high risk for suicide and will therefore not be able to take appropriate action (Scouller & Smith). Education about suicide is a key component of comprehensive suicide prevention programs for "gatekeepers" of youth (MacDonald, 2004).

Although research on teachers' knowledge about the risk factors for adolescent suicide is limited, most of the studies that have focused on this area have found that teachers' knowledge about adolescent suicide is inadequate or is lacking (Hamrick et al., 2004; Leane & Shute, 1998; MacDonald, 2004; Scouller & Smith, 2002). In assessing the knowledge level of Australian teachers and general practitioners about adolescent suicide, Scouller and Smith (2002) developed the Adolescent Suicide Behavior Questionnaire (ASBQ), a 39-item questionnaire that measures knowledge about adolescent suicide across five separate content areas related to the general area of adolescent suicide. The five content areas measured by the ASBQ include demographics and statistics, precipitating factors, risk factors, warning signs, and prevention and treatment. Scouller and Smith found that the knowledge of teachers about the risk factors

for adolescent suicide was poor and that teachers were only moderately knowledgeable in the content areas of demographics and statistics, precipitating factors, warning signs, and prevention and treatment. Teachers, on average, only answered 59% of the ASBQ items correctly. General practitioners had a higher mean number of correct responses and lower mean numbers of both incorrect and uncertain responses than did teachers. General practitioners also had a greater mean number of correct responses in each of the five content areas of the ASBQ than did teachers. In addition, 45% of teachers indicated that they were not sure whether all suicide threats should be taken seriously and only 11% of teachers were aware that having a psychiatric disorder is a strong risk factor for adolescent suicide. Scouller and Smith concluded that teachers in their study were generally poorly informed about adolescent suicide.

Leane and Shute (1998) also measured Australian teachers' knowledge about suicide using the Recognition of Suicide Lethality (RSL) questionnaire. Teachers' knowledge level about signs for suicide was found to be low. On average, teachers answered five of thirteen or 38.46% of RSL items correctly. MacDonald (2004) also found that Canadian elementary school and high school teachers possessed low overall knowledge about suicide. On average, Canadian teachers only answered 20.1 or 63% of 32 items correctly on the Facts on Suicide Quiz, a scale whose items pertain to facts and myths about suicide.

In one of a few published research studies conducted in the United States on teachers' abilities to identify symptoms of suicidal behavior in adolescents, Hamrick et al. (2004) gave both regular and special education teachers eight hypothetical cases of adolescents presented as being at risk for suicidal behavior. The hypothetical adolescents

were portrayed as showing behavior changes over a period of six months. Teachers were given a list of thirty-five behaviors indicative of depression and were asked to rate the risk level of each behavior. Hamrick et al. found that both regular educators and special educators had difficulties in correctly identifying symptoms of suicidal behavior. Teachers had the greatest difficulty in correctly identifying covert symptoms of suicidal behavior in adolescents. Supporting this finding, King et al. (1999) found that in a national sample of high school health teachers in the United States, only 9% of these teachers reported that they believed that they could recognize a student at risk for suicide.

Although the limited research on teachers' knowledge about adolescent suicide seems to suggest that teachers are insufficiently informed about youth suicide, Westefeld et al. (2007) found that teachers have some familiarity with the risk factors for adolescent suicide. In their study on the beliefs, knowledge, attitudes, and opinions of American high school teachers concerning adolescent suicide, teachers were given a list of risk factors drawn from the literature on adolescent suicide and were asked to indicate those risk factors that they viewed as key risk factors for adolescents. For nine of the fifteen risk factors, at least 68% or more of participants indicated that they viewed these risk factors as contributing to adolescent suicide. However, although teachers had some familiarity with the risk factors for adolescent suicide, when asked to identify other risk factors not included on the list, teachers did not identify other common risk factors of adolescent suicide. One of the strongest risk factors for eventual completed suicide that teachers did not recognize is a previous suicide attempt. Westefeld et al. concluded that their findings support the need for the education of teachers in several areas, including education about risk factors.

2.6 Factors affecting teachers' knowledge about adolescent suicide

Several factors that may affect teachers' knowledge about adolescent suicide have gone relatively unexamined in the research literature. One such factor is the type of teaching license that a teacher has. In examining teachers' capabilities to correctly identify symptoms of adolescent suicide in hypothetical adolescents, Hamrick et al. (2004) looked at whether there was a difference in the capabilities between "regular" educators and special educators to identify symptoms of suicidal behavior. Although there was not a difference in the capabilities between the two groups of teachers, this finding may not be unexpected given that the rate of depression among adolescents with learning and behavior disorders tends to be high. Therefore, since the rate of suicidality among the adolescent population as a whole is high, it might be expected that both "regular" teachers working with adolescents and special educators working with adolescents would have an almost equal knowledge base about adolescent suicide. However, whereas Hamrick et al. looked at differences between "regular" educators and special educators, no known studies have looked at differences in knowledge level between teachers holding other types of teaching licenses. Since suicide is a relatively uncommon phenomenon in childhood partly because many of the risk factors for suicide that affect prepubertal children usually lay dormant until prepubertal children become adolescents, it might be expected that teachers who teach at the elementary school level may be less knowledgeable about the risk factors for adolescent suicide than middle school or secondary school teachers (Judge & Billick, 2004; McKeown, Cuffe, & Schulz, 2006; Swahn & Bossarte, 2007; Roche, Giner, & Zalsman, 2005; Walsh & Eggert, 2007). Therefore, because elementary school teachers may not be faced with suicidal students as

often as middle school or secondary school teachers may be, elementary school teachers may have less knowledge about the risk factors for adolescent suicide.

Teaching experience is another factor that may influence teachers' level of knowledge about the risk factors for adolescent suicide. No previous studies have examined the relationship between teaching experience and knowledge level. However, assuming that teachers with more teaching experience have had more opportunities to be confronted with suicidal students than teachers with less teaching experience, it might be expected that teachers with more teaching experience will be more knowledgeable about adolescent suicide than teachers with less experience.

Level of educational background or experience may also affect a person's level of knowledge about suicide (Hamrick et al., 2004; McIntosh, Hubbard, & Santos, 1985; Richards & Range, 2001; Sato et al., 2006; Walker & Osgood, 2000-01; Wallin & Runeson, 2003). Hamrick et al. found that teachers who held a graduate degree were more effective in identifying symptoms of suicidal behavior in a hypothetical adolescent than teachers who held a Bachelor's degree were. In assessing Japanese medical students' knowledge about suicide in Japan and their attitudes towards suicide and suicidal behavior, Sato et al. found that although none of the medical students had learned about the topic of suicide as part of their medical education, fifth year medical students were significantly more knowledgeable about suicide in Japan than third year medical students. Also, fifth year medical students tended to have more sympathetic attitudes towards people who completed suicide or made suicide attempts than first year or third year medical students. McIntosh et al. found that undergraduate college students who had higher college class standing answered more questions correctly on a measure concerning

demographic and clinical factors associated with suicidality than undergraduates who had lower college class standing. Collectively, the aforementioned studies suggest a relationship between level of educational background and knowledge about suicide, such that the higher that one's educational background is, the more knowledgeable one may be about suicide.

2.7 Teachers' attitudes toward suicide

In addition to a teacher's knowledge about the risk factors for adolescent suicide, the attitudes that a teacher has toward suicide may also affect how he or she evaluates the suicide risk of an at-risk student and whether or not he or she chooses to intervene in the case of a suicidal student (Chan, 2002; Wastell & Shaw, 1999). Social psychological research on the relationship between attitudes and behavior has suggested that a person's attitudes toward something or someone often affect that person's behavior (Baron & Byrne, 2000, chap. 4). Therefore, if a teacher perceives a student's suicide attempt as a behavior whose intention is to get attention from others, for example, then that teacher may not intervene with that student and may not refer that student to a school counselor or to someone else who can help that student. Even if a teacher has substantial knowledge about adolescent suicide, he or she may have negative attitudes toward suicide (Leane & Shute, 1998). Having negative attitudes may prevent that teacher from fulfilling his or her role as a gatekeeper in the prevention of youth suicide.

Few research studies have examined teachers' attitudes toward suicide (Chan, 2002; Wastell & Shaw, 1999). Many studies have instead focused on assessing attitudes toward suicide among other groups of professionals who are also considered "gatekeepers" of adolescents at risk for suicide (Alston & Robinson, 1992; Anderson,

Standen, Nazir, & Noon, 2000; Domino, 1985; Domino & Perrone, 1993; Domino & Takahashi, 1991; Swain & Domino, 1985). In one of the few studies that sought to profile the attitudes of teachers toward suicide, Wastell and Shaw assessed the attitudes of preservice teachers toward suicide at a university in Australia. Preservice teachers completed the Suicide Opinion Questionnaire (SOQ), a questionnaire that measures attitudes toward suicide on eight separate scales. Preservice teachers tended to agree with the SOQ scales that relate suicide to mental illness and that associate suicide with being an impulsive action. Wastell and Shaw contended that holding attitudes that associate suicide with mental illness and with impulsiveness may have serious implications for suicide prevention. Teachers holding such attitudes may be reluctant to intervene with suicidal students since associating suicide with mental illness and with impulsivity may imply that teachers view suicide as something over which one has no control and which is unpredictable. However, although preservice teachers tended to perceive suicide as being closely related to mental illness, at the same time they were also more likely to view suicide as being associated with a normal action. Preservice teachers also tended to agree with the view that suicide represents a cry for help more than a desire to terminate one's life. Wastell and Shaw warned that holding the attitude that suicide represents a cry for help could become a problem when this attitude is so pervasive that preservice teachers view the communicated intent of suicidal behavior as being manipulative and attention-seeking in nature. Such a view may lead preservice teachers to dismiss the seriousness of a suicide threat made by a suicidal student when they become teachers. In addition to tending to perceive suicide as being associated with mental illness, with representing a cry for help, with being an impulsive action, and with being a normal

action, preservice teachers also tended to agree with the view that suicide indicates aggression and anger toward others. Of the eight scales on the SOQ, Wastell and Shaw found that preservice teachers tended to disagree with the views that individuals have the right to take their own lives, that suicide is indicative of a lack of religious values, and that suicide is a morally reprehensible action.

Similar to Wastell and Shaw, Chan (2002) also found that Chinese teachers and preservice teachers in Hong Kong tended to agree with the metaphor that suicide is essentially a “cry for help.” Chinese teachers also tended to view suicide as an unacceptable method of resolving one’s problems. Teachers were divided in their views on whether suicide is a serious moral transgression, whether people who commit suicide lack solid religious convictions, and whether most people who commit suicide believe in an afterlife. For each of these three views, approximately one-third of teachers disagreed, one-third of teachers agreed, and one-third of teachers were undecided. In addition, teachers were almost equally split between agreeing and disagreeing with the views that most suicide attempts are impulsive in nature, people do not have the right to take their own lives, and those who threaten to commit suicide rarely do so. Chan posited that one potential explanation for these divided views is that they represent a value conflict that exists in Hong Kong between Western values of individualism and the freedom to live one’s life as one wants and traditional Chinese values of collectivism, interpersonal harmony, and the maintenance of social order.

In examining the attitudes of Australian teachers and clergy members toward suicide, Leane and Shute (1998) used the five-factor model of the SOQ. The five-factor model assesses attitudes toward suicide along five separate factors or scales. Teachers’

mean scale score on the Acceptability factor of the SOQ indicated that teachers tended to view suicide as unacceptable. Teachers also tended to agree slightly with the views that suicide reflects social disintegration and that people who commit suicide suffered from personal deficits, such as a weak personality structure.

Davidson and Range (1999) presented preservice teachers attending an in-service training module on student suicide prevention with a short description of a hypothetical student who was portrayed as having problems and who expressed to his teacher his wish to die and his intention to attempt suicide in the immediate future. Before the training module, preservice teachers indicated that they were only moderately likely to hold the attitude that this hypothetical student would actually attempt suicide. In addition, before the training module, preservice teachers were only neutral in their view regarding whether this hypothetical student was merely just seeking attention or whether this hypothetical student should be taken seriously. However, although Davidson and Range (1999) found that preservice teachers were only neutral to slightly positive in their attitudes toward a hypothetical suicidal student, in another study with preservice teachers, Davidson and Range (1997) found that preservice teachers took a hypothetical student's suicide threat seriously. This was true regardless of whether this hypothetical student was presented as being either mildly, moderately, or strongly suicidal. Specifically, preservice teachers tended to believe that this hypothetical student was likely to attempt suicide and tended to believe that this hypothetical student was unlikely to be simply seeking attention.

2.8 Knowledge about suicide and attitudes toward suicide

Studies examining the relationship between level of knowledge about suicide and attitudes toward suicide have produced conflicting results (Beautrais, Horwood, & Fergusson, 2004; Swain & Domino, 1985; Knight, Furnham, & Lester, 1999; Wallin & Runeson, 2003). Some studies have found that knowledge about suicide is not associated with or related to attitudes toward suicide (Beautrais et al.; Knight et al.). However, Wallin and Runeson found that medical students in their last year of medical school were more likely than first year medical students to hold the views that completed suicide is often an expression of a psychiatric disorder and that most people who attempt suicide are not responsible for their own actions. Wallin and Runeson attributed this finding to the fact that during the course of the fifth year students' medical education, students gained knowledge about psychiatric disorders and about biological aspects of behavior that influenced their attitudes toward suicide. Therefore, last year medical students had more of a medical perspective on suicide than first year medical students. In a sample of Australian teachers and clergy, Leane and Shute (1998) found that acceptability of suicide was related to participants' scores on the Recognition of Suicide Lethality (RSL) questionnaire, an instrument that is used to measure knowledge about suicide signs. However, where it was expected that the greater the participants' knowledge was about suicide signs the more accepting they would be of suicide, Leane and Shute found that the greater the participants' knowledge was the less accepting they were of suicide. Similarly, using the RSL to measure knowledge about suicide signs among a sample of mental health professionals, Swain and Domino (1985) also found that there was a relationship between knowledge about suicide and attitudes toward suicide. Specifically, mental health professionals who were more knowledgeable about suicide were less likely

to view human beings as having a self-destructive drive toward suicide, were less likely to view suicide victims as being mentally unstable, and were less likely to view suicide as being an impulsive action that occurs with little warning. In addition, mental health professionals who were more knowledgeable about suicide were more likely to view suicide as a response to a harsh world, were more likely to view the elderly as being at greater risk for suicide, and were more likely to view suicide attempts as a “cry for help.” Likewise, Domino (1985) found that there was a correlation between clergy members’ attitudes toward suicide and their knowledge about suicide along ten separate attitude dimensions.

2.9 Purpose of the present study

The purpose of this study was to contribute to the limited existing research on teachers’ knowledge about the risk factors for adolescent suicide and on teachers’ attitudes toward suicide. This study sought to do this by investigating preservice teachers’ knowledge about adolescent suicide and its risk factors, and by assessing preservice teachers’ attitudes toward suicide. Furthermore, this study examined variables that may affect preservice teachers’ knowledge level about adolescent suicide, but that previously have been little examined in the research literature. Specifically, this study looked at the variables of the type of teaching license that a preservice teacher is studying to obtain, teaching experience, and level of educational background or experience. In addition, this study examined whether there is a relationship between knowledge about adolescent suicide and attitudes toward suicide.

CHAPTER III

METHOD

3.1 Research hypotheses

This study had two primary hypotheses. First, similar to past research studies that examined teachers' knowledge about adolescent suicide, it was hypothesized that participants in this study would have low overall knowledge about adolescent suicide (Hamrick et al., 2004; Leane & Shute, 1998; MacDonald, 2004; Scouller & Smith, 2002). Knowledge level was measured by responses to items on the Adolescent Suicide Behaviour Questionnaire (ASBQ) and was defined by the mean number or average percentage of correct responses to the ASBQ. Although previous research studies did not define what the cutoff percentage was that constituted a low knowledge level, MacDonald, Scouller and Smith, and Leane and Shute found that teachers only answered 63%, 59%, and 38.46%, respectively, of items correctly on questionnaires measuring knowledge about adolescent suicide. Therefore, this study did not define what percentage of items on the ASBQ participants had to answer correctly in order to be considered to possess a high level of knowledge about adolescent suicide. However, given the findings from MacDonald, Scouller and Smith, and Leane and Shute, it was hypothesized that participants would not answer more than 63% of the items on the ASBQ correctly.

Since this study was particularly interested in examining participants' knowledge about the risk factors for adolescent suicide, participants' responses to ASBQ items that pertained to risk factors for suicide were examined. Similar to Scouller and Smith (2002), it was hypothesized that participants would have a low level of knowledge about the risk factors for adolescent suicide. Specifically, like Scouller and Smith who found that teachers only scored, on average, approximately 52% of ASBQ items that pertained to risk factors correctly, it was hypothesized that participants would score, on average, less than 52% of risk factor items correctly.

The second primary hypothesis of this study was related to examining participants' attitudes toward suicide. Attitudes toward suicide were assessed using the eight clinical scales of the Suicide Opinion Questionnaire (SOQ). Although some questionnaires that have been used to assess attitudes toward suicide have been centered around a positive/negative or sympathy/hostility continuum in regards to measuring attitudes, attitudes toward suicide are complex and cannot be viewed on such simple continuums (Domino, Moore, Westlake, & Gibson, 1982; Swain & Domino, 1985). Therefore, since attitudes toward suicide are complex and multidimensional, this study did not make any specific hypotheses regarding participant attitudes toward suicide, but wanted to only explore this sample of preservice teachers' attitudes toward suicide. However, in accordance with the limited research studies that have examined preservice teachers' and teachers' attitudes toward suicide using the SOQ, it was expected that participants in this study would tend to agree with the attitudes that suicide reflects mental illness, that suicide is an impulsive act, and that suicide threats are not real but that they represent a cry for help (Chan, 2002; Wastell & Shaw, 1999). Based on the

study with preservice teachers conducted by Wastell and Shaw (1999), it was also hypothesized that participants would tend to disagree with the views that people have the right to take their own lives, that lack of religiosity or religious values plays a role in suicide, and that suicide is a morally bad action.

As secondary hypotheses, this study examined whether certain factors would affect participants' level of knowledge about adolescent suicide. First, it was hypothesized that participants studying to obtain either a Middle Childhood or Secondary Education teaching license would answer more items correctly on the ASBQ and on each of the five content areas of the ASBQ than participants who were studying to obtain an Early Childhood Education teaching license. Second, it was hypothesized that participants who had done or were currently doing any classroom teaching would answer more items correctly on the ASBQ and on each of the five content areas of the ASBQ than participants who had not done any classroom teaching. A third secondary hypothesis of this study was that there would be a relationship between level of educational background and knowledge about adolescent suicide, such that the higher a person's educational background, the greater the number of ASBQ items that person would answer correctly. Lastly, the relationship between participants' attitudes toward suicide and participants' knowledge about adolescent suicide was examined. Since studies examining the relationship between attitudes toward suicide and knowledge about suicide have produced conflicting results, no hypotheses were made about the relationship between participants' attitude towards suicide and participants' knowledge about adolescent suicide (Beautrais et al., 2004; Swain & Domino, 1985; Knight et al., 1999; Wallin & Runeson, 2003).

3.2 Participants

The participants in this study were 57 preservice teachers who were studying to obtain a teaching license in the College of Education and Human Services at Cleveland State University. Three participants had to be eliminated from this study due to large numbers of incomplete data on the participants' questionnaires. Participants in the final sample consisted of 40 women and 14 men (mean age for both women and men = 26.48). Of the 54 participants in this study, 83.3% indicated that their racial/ethnic background was White. Four participants identified their racial/ethnic background as African American/Black, 3 participants identified their background as Biracial/Multiracial, 1 participant identified as American Indian/Alaska Native, and 1 participant identified as Hispanic/Latino. In regards to the type of teaching license that participants were studying to obtain, 25 participants (46.3%) indicated that they were studying to obtain a teaching license in Early Childhood Education, 17 participants (31.5%) in Secondary Education, 7 participants (13.0%) in Middle Childhood Education, 3 participants (5.6%) in Special Education, and 2 participants (3.7%) were studying to obtain a Multi-Age teaching license. The mean number of Education courses that participants took was 10.43. All participants volunteered to participate in this study.

3.3 Procedure

Participants were recruited through Education courses offered through the College of Education and Human Services at Cleveland State University over a period of three academic semesters. The primary investigator contacted professors teaching Education courses, explained the purpose and nature of the study, and requested permission for the primary investigator to come to their classes and ask their students to participate. The

primary investigator went to those classes in which permission was obtained. A description of the study as well as the content of the study was given and described to students in the classes. Any questions and concerns regarding the study were addressed. Those students who indicated that they wanted to participate in the study were given manila envelopes containing two questionnaires and a demographic data sheet. An informed consent form was taped to the front of each manila envelope. Participants were instructed to read the informed consent form and to sign it, and the primary investigator collected the signed informed consent forms from participants. Participants were given one week to complete the questionnaires and demographic data sheet. The primary investigator returned to each class after one week and collected the completed questionnaire packets from participants.

3.4 Measures

3.4.1 The Adolescent Suicide Behaviour Questionnaire. The Adolescent Suicide Behaviour Questionnaire (ASBQ) is a questionnaire that was developed by David Smith and Kylie Scouller to measure knowledge about adolescent suicide among teachers and general practitioners (Scouller & Smith, 2002; Smith & Scoullar, 2001). It consists of 39 statements about adolescent suicide across five separate content areas pertaining to the general area of adolescent suicide: demographics and statistics, risk factors, precipitating factors, warning signs, and prevention and treatment. Participants are asked to indicate the extent to which they agree or disagree with each of the 39 statements using a five-point Likert scale with endpoints labeled “strongly agree” and “strongly disagree” and a midpoint labeled “uncertain.” Since the statements on the ASBQ were derived from and based on the comprehensive body of empirical literature on adolescent suicide, all

statements are either true or false (Scouller & Smith). Those items that are “false” or “incorrect” are reverse scored, and responses of 4 or 5 on the Likert scale are “correct” and responses of 1 or 2 on the Likert scale are “incorrect.” Overall knowledge about adolescent suicide can be measured by taking the average or mean percentage of items answered correctly on the ASBQ (Scouller & Smith; Smith & Scoullar). The average or mean number of correct, incorrect, and uncertain responses by participants can also be taken as well as the percentage of respondents who answered correctly, incorrectly, and uncertain to each item on the ASBQ. Within each content area of the ASBQ, the mean number of correct responses by participants can be taken and then compared with each other to see if participants are more knowledgeable in certain content areas than in others.

The items on the ASBQ were developed from a comprehensive and extensive literature search on adolescent suicide (Scouller & Smith, 2002; Smith & Scoullar, 2001). The items chosen for the first draft of the ASBQ were given to twenty psychologists, general practitioners, and secondary-school teachers in order to receive feedback about any items that might have been ambiguous. To establish face and content validity, Smith and Scoullar distributed their revised questionnaire to the Manager of the Victorian Health Promotion Foundation in Australia. This manager then coordinated the distribution of the ASBQ to all members of the Victorian Working Party for the Prevention of Youth Suicide for the purposes of expert review and revision. After making the appropriate changes to the ASBQ, the questionnaire was distributed to members of the clinical staff in the Child and Adolescent Psychiatry Department of a leading teaching hospital. The staff members in this department agreed with the answers to all of the items included on the ASBQ, and the consensus opinion from staff was that the ASBQ was

“comprehensive, clear, and useful” (Smith & Scoullar, 2001, p. 172). Smith and Scoullar (2001) also compared the ASBQ items with “two published checklists of risk factors for suicide” (p. 172) and with measures used in previous studies to assess knowledge about suicide. The ASBQ was found to show high levels of overlap with these checklists and measures, with the ASBQ including over 90% of the content included in the items of these checklists and measures.

Findings from studies that used the ASBQ support the reliability of the questionnaire (Scoullar & Smith, 2002). Mason, Smith, and Meuwissen (1996) distributed the ASBQ to a sample of 67 secondary-school teachers in Australia (as cited in Scoullar & Smith). For each item on the ASBQ, responses were almost identical. In addition, Smith and Scoullar (2000) administered the ASBQ to a sample of 1,639 general practitioners (as cited in Scoullar & Smith). Item by item, results were within 3%.

Scoullar and D.S. Smith (personal communication, March 2, 2004) later added two items to the 39-item ASBQ, one of which relates to gay and lesbian adolescents and suicide attempts and one of which relates to the relationship between suicide attempts and a history of physical and/or sexual abuse. The present study included these two additional items. Of the 41 items now included on the ASBQ, forty of these items were retained in the present study. One item was not retained because it pertained to suicide specifically among citizens of Australia. In addition, two of the items on the original ASBQ had to be slightly modified for the present study because these items reflected the phenomenon of suicide among adolescents living in Australia. One of the questions that was modified stated, “Suicide is one of the principal causes of death of young people in Australia.” For the present study, this question was modified to state, “Suicide is one of the principal

causes of death of young people in the United States.” The second question that was modified originally stated, “Adolescent suicide in Australia has not substantially increased in the last 20 years.” This question was modified in the present study to state, “Adolescent suicide in the United States has not substantially increased in the past forty years,” in order to make this question applicable to adolescent suicide in the United States.

3.4.2 The Suicide Opinion Questionnaire. The Suicide Opinion Questionnaire (SOQ) is a measure developed by Domino, Moore, Westlake, and Gibson (1982) to assess attitudes toward suicide. It is one of only a few instruments that exist for measuring attitudes toward suicide (Jenner & Niesing, 2000). The SOQ has been used with various populations in previous studies to assess attitudes toward suicide, and has been used in many countries to assess attitudes toward suicide and to examine cross-cultural differences in attitudes toward suicide between different countries (Alston & Robinson, 1992; Anderson, Standen, Nazir, & Noon, 2000; DeRose & Page, 1985; Domino, 1981; Domino, 1985; Domino, 1990; Domino & Groth, 1997; Domino & Leenaars, 1989; Domino & Leenaars, 1995; Domino, Lin, & Chang, 1995; Domino, MacGregor, & Hannah, 1988-89; Domino & Perrone, 1993; Domino & Shen, 1997; Domino & Su, 1994-95; Domino & Takahashi, 1991; Leenaars & Domino, 1993; Lester & Akande, 1994; Segal, Mincic, Coolidge, & O’Riley, 2004; Stillion & Stillion, 1998-99; Swain & Domino, 1985). The SOQ was developed from a pool of 3,000 items that pertained to attitudinal type of statements about suicide, and were generated from a survey of the literature on suicide (Domino, 2005; Domino et al., 1982). The 3,000 items were then subjected to a series of content analyses and were given to others, including

crisis interventionists, psychologists who had experience working with suicidal patients, and suicide survivors, for comment. On the basis of these and other procedures, 138 of the 3,000 items were kept. The 138 items were then administered to a sample of 96 undergraduate college students who responded to the items once and then responded to the items again six weeks later. One hundred items were retained for the final version of the SOQ. These 100 items had the highest test-retest reliability coefficients, all of which were higher than 0.68. Although the majority of the items on the SOQ are strictly attitudinal in nature, some of the items reflect factual knowledge about suicide and some of the items are both attitudinal and factual in nature. For each item on the SOQ, participants are asked to rate the extent to which they agree or disagree with that item using a five-point Likert scale with points labeled “strongly agree,” “agree,” “undecided,” “disagree,” and “strongly disagree.”

The SOQ was originally scored on fifteen separate factor scales (Domino et al., 2005; Domino et al., 1988-89; Domino et al., 1982). These fifteen factor scales were derived from a factor analysis of the responses of a heterogeneous sample of 285 adults to the 100 items on the SOQ, and “accounted for 76.7% of the total variance” (Domino et al., 1982, p. 258). Although the fifteen factors were used in several studies in scoring participants’ responses to the items on the SOQ, some of the factors contained items whose content did not intuitively seem to fit together with the content of the other items (Domino et al., 2005; Domino et al., 1988-89). In addition, some of the factors “contained too few items” (Domino et al., 2005, p. 110). In response to this, Domino et al. (1988-89) developed a new set of eight “clinical” scales from the SOQ by “combining a clinical perspective with an internal consistency approach” (p. 353). Domino et al.

reported that the eight clinical scales of the SOQ were developed by having seven mental health professionals who worked in the field of suicide prevention divide the SOQ items into meaningful content clusters of items. Of the 23 clusters obtained, 14 of these clusters were retained because at least five of the seven mental health professionals had identified these clusters in the same way or in a highly similar way. An item analysis was then conducted, and on the basis of this item analysis, 11 of the 14 clusters were retained. Using archival data from the responses of 200 college students to the SOQ, an internal consistency analysis was conducted and nine scales were kept “on the basis of their ability to discriminate the upper and lower 27 percent” (Domino, p. 110; Domino et al., p. 354). Data from the responses of 86 adults in the United States who had taken the SOQ twice within a two-month interval were scored on the nine clusters. One of the nine clusters was not retained because its test-retest reliability coefficient was less than 0.70. The remaining eight clusters had test-retest reliability coefficients above 0.70 with these coefficients ranging from 0.75 to 0.86 (Domino et al., 1988-89). Therefore, the eight remaining clusters became the eight “clinical” scales of the SOQ, and these eight scales together contain 64 items. Since Domino recommends that other researchers use the eight clinical scales of the SOQ instead of the fifteen-factor model and since the eight clinical scales have been used in previous studies employing the SOQ, the present study used the eight clinical scales of the SOQ in scoring participants’ responses. The present study used 44 of the 64 items of the clinical scales.

The eight clinical scales of the SOQ are: 1) *Mental illness* (that suicide reflects mental illness and that mental illness causes suicide); 2) *Cry for help* (“suicide threats are not real, they represent a cry for help”); 3) *Right to die* (“people have the right to take

their own lives”); 4) *Religion* (“lack of religiosity plays a role in suicide”); 5) *Impulsivity* (“suicide and parasuicide are impulsive acts”); 6) *Normality* (“everyone is potentially capable of suicide”); 7) *Aggression* (“suicide is an aggressive act”); 8) *Moral evil* (“suicide is a morally bad action”) (Domino & Shen, 1996-97, p. 20; Domino & Su, 1994-95, p. 135). All eight clinical scales have “satisfactory” test-retest reliability (Domino, 2005). Domino (1996) reported that using an internal consistency analysis to assess the reliability of the SOQ clinical scales is not appropriate because the scales “are purposely thematically heterogeneous rather than factorially pure” (p. 1009). Results from studies using the SOQ support the validity of this instrument (Domino, 1996).

3.4.3 Teaching license. To assess what type of teaching license participants were studying to obtain, participants were asked to indicate among six choices on the demographic data sheet that consisted of the following: Early Childhood Education, Middle Childhood Education, Secondary Education, Multi-Age, Special Education, and Other. Participants who marked “Other” to this question were asked to specify what type of teaching license they were studying to obtain.

3.4.4 Teaching experience. Teaching experience was assessed using one question on the demographic sheet. This item stated, “Have you done or are you currently doing any classroom teaching?” Participants responded to this item by marking either “Yes” or “No.”

3.4.5 Level of educational background. Level of educational background was assessed using one item on the demographic sheet. This item asked participants, “How many Education courses have you taken altogether (including any Education courses you are taking in the current semester)?” The response format to this item was open-ended.

3.5 Design and Data Analysis

Descriptive statistics were used to examine participants' knowledge level about adolescent suicide and about the risk factors for adolescent suicide, and were used to examine participants' attitudes toward suicide. Specifically, the mean or average number and percentage of items that participants answered correctly, incorrectly, and undecided to on the ASBQ were calculated. Participants' mean number of correct responses to each of the five content domains of the ASBQ was also calculated. For each of the forty items on the ASBQ, the number of participants who answered that item correctly, incorrectly, and undecided was calculated. Participants' mean or average rating on each of the eight clinical scales of the SOQ was calculated. For each item on the SOQ, the percentage of participants who indicated that they agreed, disagreed, or were undecided with that item was calculated. For the secondary hypotheses of this study, one-way multivariate analyses of variance, independent-samples *t* tests, and correlation methods were used.

CHAPTER IV

RESULTS

4.1 Participants' knowledge about suicide

To measure participants' overall level of knowledge about adolescent suicide, the mean percentage of correct responses to the Adolescent Suicide Behavior Questionnaire (ASBQ) was calculated. Participants scored, on average, 61% of the ASBQ items correctly. The number of correct responses answered by participants ranged between 15 and 34 items. Deficit in knowledge level was examined by investigating both the mean percentage of incorrect responses and the mean percentage of undecided responses to the ASBQ. On average, participants scored 17% of the ASBQ items incorrectly and answered "undecided" to 21% of the ASBQ items. The mean number and standard deviation of correct, incorrect, and undecided responses to the ASBQ are shown in Table I.

To measure participants' knowledge about risk factors for adolescent suicide, the mean percentage of correct responses on the *risk factors* content domain of the ASBQ was calculated. Participants scored, on average, 58% of items on this content domain correctly. The mean percentages of correct responses across the other four content domains of the ASBQ were also calculated for participants as a group. Out of the five

content domains, participants scored the most number of items correct on *warning signs*, scoring, on average, 75% of the items correctly on this content domain. Participants were less knowledgeable about items on the remaining content domains, with average scores ranging between 54% of the items correct on *demographics and statistics* to 65% of the items correct on *precipitating factors*. The mean numbers and standard deviations of correct responses across the five content domains are presented in Table II. The percentage of participants who answered correctly, incorrectly, and undecided to each ASBQ item are presented in Table III.

4.2 Participants' attitudes toward suicide

To examine participants' attitudes toward suicide, the mean score for each of the eight clinical scales of the SOQ was calculated. The mean scores for the *Suicide Reflects Mental Illness*, *Suicide Threats are "Not Real," Impulsivity*, and *Suicide is Morally Bad* scales indicated that participants, on average, were undecided or uncertain about their attitudes toward suicide along each of these four dimensions. For the *Importance of Religion* scale, participants' mean score on this scale fell almost halfway between "undecided" and "disagree," indicating that participants' attitudes were split between being undecided about whether lack of religiosity plays a role in suicide to disagreeing with the view that lack of religiosity is partly to blame for the occurrence of suicide. Participants' mean score on the *Suicide is Normal* scale also fell almost halfway between "undecided" and "disagree," suggesting that participants' attitudes were split between being undecided about whether everyone is potentially capable of suicide to disagreeing with this attitude. Participants' mean scores on both *The Right to Die* scale and the *Suicide Reflects Aggression/Anger* scales indicated that participants, on average,

disagreed with the notions that people have the right to take their own lives and that suicide is an aggressive act. The means and standard deviations for participants' scores on the eight clinical scales of the SOQ are presented in Table IV. For each item on the SOQ, Table V shows the percentage of participants who agreed with, disagreed with, and were uncertain about that item.

4.3 Participants' level of educational background and knowledge about suicide

A correlation analysis was conducted to examine the relationship between the number of correct responses that participants answered on the ASBQ and the number of Education courses that participants had taken. The correlation between the number of correct responses on the ASBQ and the number of Education courses taken was not statistically significant ($r = -0.12, p > 0.05$). The results of this correlation analysis are presented in Table VI.

Separate correlation analyses were conducted for the number of correct responses scored on each of the five content domains of the ASBQ and the number of Education courses that participants had taken. There was not a significant relationship between the number of Education courses taken and the *demographics and statistics* domain ($r = -0.12, p > 0.05$), the *risk factors* domain ($r = -0.16, p > 0.05$), the *precipitating factors* domain ($r = 0.08, p > 0.05$), the *warning signs* domain ($r = 0.06, p > 0.05$), and the *prevention and treatment* domain ($r = -0.17, p > 0.05$). Table VII presents these correlations and the p values associated with the significance tests for these correlations.

4.4 Teaching experience and knowledge about suicide

An independent-samples t test was conducted to examine whether participants who indicated that they have done or are currently doing any classroom teaching had a

higher number of correct responses on the ASBQ than participants who indicated that they have not had any classroom teaching experience. With an alpha level of 0.05, the independent-samples t test was significant, $t(50.31)$, $p = 0.017$. Participants who had done or were currently doing any classroom teaching had a significantly higher number of correct responses on the ASBQ ($M = 26.00$, $SD = 4.86$) than participants who had not done or were not currently doing any classroom teaching ($M = 22.79$, $SD = 4.64$). The 95% confidence interval for the difference in means ranged from 0.60 to 5.81. The eta square effect size index indicated that 11% of the variance of the number of correct responses to the ASBQ was accounted for by whether participants had any classroom teaching experience. Table VIII presents the results of this analysis.

A one-way multivariate analysis of variance was conducted to determine whether participants who had done or were currently doing any classroom teaching answered more items correctly on each of the five content domains of the ASBQ than participants who had not done any classroom teaching. The five dependent variables were the number of correct responses on each of the five separate content domains of the ASBQ. There was not a significant difference on the dependent variables between those participants who had classroom teaching experience and those participants who did not have any classroom teaching experience, Wilks's $\Lambda = 0.86$, $F(5, 48) = 1.56$, $p = 0.190$. Analyses of variances on each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method to control for Type I error across the multiple ANOVAs, each ANOVA was tested at the 0.01 level. The ANOVA was nonsignificant on demographics and statistics, $F(1, 52) = 3.47$, $p = 0.068$, on risk factors, $F(1, 52) = 2.68$, $p = 0.108$, on precipitating factors, $F(1, 52) = 4.14$, $p = 0.047$, on warning signs,

$F(1, 52) = 4.35, p = 0.042$, and on prevention and treatment, $F(1, 52) = 0.02, p = 0.903$.

The means and standard deviations for each of the two groups on the dependent variables are presented in Table IX.

4.5 Teaching license and knowledge about suicide

An independent-samples t test was conducted to determine whether there was a difference in the number of items answered correctly to on the ASBQ between participants studying to obtain different teaching licenses. Since it was of particular interest to examine any differences between participants studying to obtain a teaching license in Early Childhood Education and participants studying to obtain a teaching license in either Middle Childhood or Secondary Education, only participants in Early Childhood Education, Middle Childhood Education, or Secondary Education were used in this analysis. Middle Childhood and Secondary Education students were grouped together for the purpose of this analysis. The t test was significant, $t(-46.44) = -2.73, p = 0.009$. Participants studying to obtain a teaching license in either Middle Childhood Education or Secondary Education ($M = 26.67, SD = 4.25$) on average answered more items correctly on the ASBQ than participants studying to obtain a teaching license in Early Childhood Education ($M = 23.08, SD = 4.95$). The eta square index indicated that 14% of the variance of the number of correct responses to the ASBQ was accounted for by the type of teaching license that a participant was studying to obtain. Table X presents the results of this analysis.

A one-way multivariate analysis of variance was conducted to determine whether participants who were studying to obtain a teaching license in either Middle Childhood or Secondary Childhood Education answered more items correctly on each of the five

content domains of the ASBQ than participants who were studying to obtain a teaching license in Early Childhood Education. The five dependent variables were the number of correct responses on each of the five separate content domains of the ASBQ. Although there was a close difference between the two teaching license groups on the dependent variables, the difference between the groups was not significant, Wilks's $\Lambda = 0.70$, $F(10, 94) = 1.87$, $p = 0.059$. Analyses of variances on each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferroni method to control for Type I error across the multiple ANOVAs, each ANOVA was tested at the 0.01 level. The ANOVA was nonsignificant on risk factors, $F(2, 51) = 2.17$, $p = 0.125$, on precipitating factors, $F(2, 51) = 1.78$, $p = 0.179$, on warning signs, $F(2, 51) = 1.70$, $p = 0.193$, and on prevention and treatment, $F(2, 51) = 2.33$, $p = 0.107$. The ANOVA on demographics and statistics was significant, $F(2, 51) = 5.73$, $p = 0.006$. Post hoc analyses to the univariate ANOVA for demographics and statistics consisted of conducting pairwise comparisons to find which teaching license group answered more items correctly on the *demographics and statistics* content domain. Using the Bonferroni method, each pairwise comparison was tested at the 0.003 level (i.e., each comparison was tested at the alpha level for the ANOVA divided by the number of comparisons). Although the ANOVA on demographics and statistics was significant, none of the pairwise comparisons were significant. The mean difference between Early Childhood Education students and Middle Childhood/Secondary Education students on the number of correct responses to demographics and statistics was almost significant, $p = 0.007$. The means and standard deviations for each of the two groups on the dependent variables are presented in Table XI.

4.6 Participants' knowledge about suicide and attitudes toward suicide

To examine the relationship between participants' knowledge about suicide and participants' attitudes toward suicide, separate Pearson product-moment correlation coefficients were computed between the number of responses that participants answered correctly to on the ASBQ and participants' ratings on each of the eight clinical scales of the SOQ. Using the Bonferroni method to control for Type I error across the eight correlations computed, a p value of less than 0.00625 ($0.05 / 8 = 0.00625$) was required for significance. Out of the eight correlations computed, one correlation was statistically significant. There was a significant correlation between the number of correct responses on the ASBQ and the *Mental Illness* clinical scale of the SOQ ($r = 0.41, p = 0.002$), indicating that the greater the number of items on the ASBQ that participants answered correctly to, the more that participants tended to view suicide as reflecting mental illness. Table XII presents the correlations between the number of correct responses on the ASBQ and each of the SOQ clinical scales.

Separate Pearson product-moment correlation coefficients were also computed between the number of correct responses answered on each content domain of the ASBQ and ratings on each of the clinical scales of the SOQ. Using the Bonferroni approach to control for Type I error across the forty correlations computed, a p value of less than 0.00125 ($0.05 / 40 = 0.00125$) was required for significance. Out of the forty correlations, only one correlation was statistically significant. There was a significant correlation between the number of correct responses on the *risk factors* content domain of the ASBQ and the *Mental Illness* clinical scale of the SOQ ($r = 0.57, p < 0.00125$). The greater the number of items that participants answered correctly to on the *risk factors* content

domain, the more that participants tended to view suicide as reflecting mental illness. The correlations between the number of correct responses on each of the ASBQ content domains and the ratings on each of the SOQ clinical scales are presented in Table XIII.

Table XIV presents a complete table of bivariate correlations for variables in the study.

CHAPTER V

DISCUSSION

5.1 Meaning of findings

5.1.1 Overall knowledge about suicide. The results of this study support the findings from existing research on teachers' knowledge about adolescent suicide. As was hypothesized, preservice teachers in this study possessed low overall knowledge about adolescent suicide. This finding is in accord with the limited research in this area indicating that teachers' knowledge about adolescent suicide is inadequate or is lacking (Hamrick et al., 2004; Leane & Shute, 1998; MacDonald, 2004; Scouller & Smith, 2002). Similar to Scouller and Smith who administered the Adolescent Suicide Behavior Questionnaire (ASBQ) to secondary-school teachers and found that the mean percentage of items answered correctly on the ASBQ was 59%, preservice teachers in the present study answered, on average, 61% of the items correctly on the same questionnaire. Likewise, in another study that measured teachers' knowledge about adolescent suicide, elementary and secondary school teachers only scored, on average, 63% of items correctly on a 32 item questionnaire that contained true and false items relating to suicide facts and myths (MacDonald, 2004). Therefore, although the literature indicates that teachers have scored over half of items correct on measures of knowledge about

suicide, this seems to represent low overall knowledge about suicide. Teachers' knowledge about suicide in the youth population seems to be lacking or limited. One possible interpretation for the low overall level of knowledge about adolescent suicide found among preservice teachers in the present study is that preservice teachers are not either being taught or adequately taught about youth suicide. In the United States, most teacher education programs do not provide training for its students in the area of adolescent suicide (King et al., 1999). In addition, among schoolteachers, less than fifty percent of schools provide faculty training for teachers that educates teachers about the warning signs and risk factors for suicide (Davidson & Range, 1999; Rishel, 2006). Although teachers are in a good position to detect students at risk for suicide, teachers are often provided with no training in suicide prevention both at the undergraduate level and at the teaching level (Davidson & Range). Therefore, teachers' and preservice teachers' lack of knowledge about and training in the prevention of youth suicide may prevent them from detecting students who are at high risk for suicide. However, although existing research on teachers' knowledge about youth suicide seems to suggest that teachers' knowledge about suicide is lacking or is insufficient, there is very little research in this area. Therefore, additional research in this area needs to be conducted before inferences can be made about teachers' overall knowledge about youth suicide.

5.1.2 Knowledge about the risk factors for suicide and across the content domains of the ASBQ. As predicted, preservice teachers in the present study demonstrated a poor knowledge level on the risk factors for adolescent suicide, scoring less than 60% of the items correctly on the *risk factors* content domain of the ASBQ. Preservice teachers scored the highest number of items correctly on *warning signs* for adolescent suicide.

This finding is in agreement with Scouller and Smith (2002), who found that teachers in their sample who took the ASBQ scored the highest number of items correctly on the *warning signs* content domain. Although preservice teachers in this study seem to be the most informed about the warning signs for youth suicide and less informed about risk factors, one possible implication of this finding is that preservice teachers may still be likely to identify students at risk for suicide. Since warning signs for suicide may be more behavioral or observable in nature than risk factors for suicide, teachers may be more likely to recognize behavioral indicators of suicide risk since teachers have opportunities to directly observe students in the classroom setting (Kirchner et al., 2001). For example, the strongest risk factor for adolescent suicide is a previous suicide attempt (Bridge et al., 2006). However, teachers will not always know if a student has a history of suicide attempts. Instead, teachers may be more able to detect more observable changes in their students' behavior that may warn of suicide risk.

Participants scored the least number of items correctly on the *demographics and statistics* content domain. Similar to this finding, MacDonald (2004) found that while teachers answered a relatively high number of items correctly on a suicide questionnaire when these items pertained to common misconceptions about suicide, teachers answered incorrectly to many items that pertained to demographic information related to suicide. One possible explanation for a low knowledge level about demographic and statistical information related to suicide may be that other content areas pertaining to suicide, such as risk factors or precipitating factors, receive more attention in the literature on suicide and in the media (MacDonald, 2004; Smith & Scoullar, 2001).

5.1.3 *Individual ASBQ items.* Of the forty items on the ASBQ, the item that had the highest percentage of participants who answered correctly to that item was the item that pertained to the improvement in the mood of a young person who has threatened suicide. All but one participant correctly identified that the improvement in the mood of a young person who has threatened suicide does not mean that the danger of that person committing suicide is over. Therefore, preservice teachers in the present study seem well informed about the hidden message that is sometimes behind the improvement in the mood of a youth who has previously threatened to end his or her life. Preservice teachers may therefore be likely to be concerned about and to monitor those students who threatened suicide in the past but who suddenly seem to be “happy” again. This is important since the literature on suicide has found that individuals who appear to be depressed but then have an apparent improvement in their mood may be at the greatest risk for committing suicide. During the period in which depressed individuals suddenly appear to be “happy,” such individuals may have actually made the decision to end their own lives and are at peace with their decision.

Participants almost unanimously answered correctly that adolescents who are contemplating suicide usually tell their friends rather than their parents. None of the participants answered this item incorrectly, and only 5.6% of participants indicated that they were undecided about this item. There was also a high percentage of participants who answered correctly to the item “if you promise to keep a young person’s suicide plans confidential, you should usually keep that promise.” Fifty participants answered this question correctly and the remaining four participants were undecided about this item. Since the majority of participants recognized that you should *not* keep a young

person's suicidal plans confidential even if you promise that young person that you will do so, participants may be likely to disclose to a suicidal student's school counselor and/or parents that student's plans for suicide if that student reveals to his or her teacher that he or she is suicidal and has made plans for suicide.

Across all content domains on the ASBQ, the item that most participants answered incorrectly to was the item that pertained to the high comorbidity between psychiatric disorders and adolescent suicide. Over sixty percent of participants did not know that the majority of adolescents who commit suicide have a psychiatric disorder and close to nineteen percent of participants answered "undecided" to this item. This finding is in line with another study that found that only 11% of teachers knew that most adolescents who commit suicide have a psychiatric disorder (Scouller & Smith, 2002). One possible explanation for participants' lack of knowledge about the relationship between adolescent suicide and psychiatric disorders is that participants may tend to view suicidal behavior as more of a temporary response to stress or pressure rather than as evidence of more serious, chronic problems (Scouller & Smith, 2002). Another potential explanation is that 94.4% of participants in the present study indicated that they have *never* taken or were *not* currently taking a course in Abnormal Psychology. The majority of participants may not have learned about different psychiatric disorders and may therefore not know that there is a strong association between suicide and certain psychiatric disorders. In addition, participants in the present study seem to be knowledgeable about the relationship between suicide and depression since the majority of participants correctly identified that a young person who is depressed is more likely to commit suicide than a young person who is not depressed. Since the majority of

participants recognized depression as a risk factor for suicide but did not recognize psychiatric disorders as a risk factor, it could be that participants made a distinction between depression and psychiatric disorders in general, perhaps not viewing depression as a psychiatric disorder (Chan, 2002).

Another ASBQ item that most participants did not answer correctly was the item that pertained to whether many adolescents who commit suicide saw a doctor in the three months prior to their suicide. Only 7.4% of participants knew that many suicidal adolescents who eventually commit suicide visited their doctor within the three months prior to their deaths. One possible explanation for this low percentage is that this fact about suicide is probably not well known. Whereas other suicide facts are more common knowledge, such as not keeping a person's suicide plans confidential even if you promise that person that you would, the fact that many suicidal adolescents visit their doctor shortly before they commit suicide is probably not widely known. In addition, this fact about adolescent suicide is probably not as important as other facts for teachers to know because most teachers probably do not know if and when their students have been to the doctor.

Only 27.8% of participants answered correctly that adolescents who attempt suicide have commonly lost or been separated from a family member. This may potentially be cause for concern because teachers may be likely to be informed if one of their students loses a close family member, especially in cases of death. If teachers are not aware that losing a family member is a risk factor for suicide, teachers may not be likely to pay a little more attention to a student who has lost a family member and who seems to continue to having great difficulties coping with this death even after an

extended period of time has passed. However, although participants did not seem to recognize losing a family member as a risk factor for suicide, 79.6% of participants correctly recognized that a significant personal loss, such as the death of a close friend, could trigger an adolescent to attempt suicide. In addition, 88.9% of participants correctly identified that relationship break-ups can trigger a suicide attempt. Therefore, participants seemed to view the experience of losing a friend or significant other as more detrimental to adolescents than losing or being separated from a family member.

The majority of participants (70.4%) correctly identified that adolescents who complete suicide have usually made a previous suicide attempt. This is important since a prior suicide attempt is the single most powerful risk factor for adolescent suicide (Bridge et al., 2006). Also, the risk for repeating an unsuccessful suicide attempt is highest in the first three to six months after the unsuccessful attempt. Teachers who know that one of their students has attempted suicide may perhaps be more likely to monitor that student for any changes in his or her behavior, especially in the immediate time period following the suicide attempt. They may also be more likely to periodically “check in” with that student to see how he or she is doing.

Although close to sixty percent of participants in the present study indicated that they agree with the statement that secondary school teachers are in a good position to detect the risk factors for suicide in their students, 18.5% of participants indicated that they do not agree with this statement and 22.2% of participants indicated that they were not sure about this statement. This is of concern because close to 41% percent of participants did not recognize the important role that they can have in detecting students at risk for suicide (Leane & Shute, 1998; Wastell & Shaw, 1999; Westefeld et al., 2007).

In addition, although 63.0% of participants correctly indicated disagreement with the statement that “not all suicide threats or statements should be considered warning signs of high suicide risk,” 24.1% of participants incorrectly answered this statement and 13.0% of participants were undecided about this statement. This finding poses concern because *all* suicidal threats or statements should be taken as potential for suicide risk. Although an individual may not seriously intend to kill himself or herself when he or she threatens suicide, there is no way of knowing for sure whether an individual is serious when he or she makes these threats. Therefore, all suicidal statements or threats made by adolescents should be taken seriously.

In regards to the items on the *demographics and statistics* content domain, only 59.3% of participants recognized that suicide is one of the leading causes of death of young people in the United States. This is surprising since suicide is the third most common cause of death among adolescents between the ages of fifteen and twenty-four and among early adolescents between the ages of ten and fourteen (Walsh & Eggert, 2007). However, at the same time, because the number of youths who commit suicide annually is relatively low compared to the number of youths who attempt suicide or have thoughts about suicide, it may be that most participants have never been exposed to the suicide of an adolescent that they knew. Therefore, because adolescent suicide is a relatively uncommon occurrence when compared to other fatal events such as car accidents, it may be that participants perceive suicide as a rare cause of death among adolescents.

Approximately half of participants correctly identified that young males are more likely to kill themselves than young females. However, at the same time, the majority of

participants did not know that young females are more likely to attempt suicide than young males. This misconception about the gender difference in suicide attempts could reflect the view that because males are more successful at suicide completion than are females because they tend to use more lethal means during suicide attempts, that males must make more suicide attempts than females. Since more males die by suicide than do females, it might be incorrectly assumed from this fact that males must be more likely to attempt suicide than females.

5.1.4 Attitudes toward suicide. Participant responses to the Suicide Opinion

Questionnaire suggest that participants in this study are either conflicted or unsure about many of the attitudes that they hold towards suicide. In the present study, participants were unsure or undecided about whether suicide is reflective of mental illness, whether suicide represents a cry for help more than a desire to terminate one's life, whether suicide is an impulsive action, and whether suicide is morally wrong. Since a person's attitudes towards something or someone can affect or influence a person's behavior, the fact that participants were uncertain about their attitudes towards suicide can potentially be cause for concern (Baron & Byrne, 2000, chap. 4; Chan, 2002; Jenner & Niesing, 2000; Leane & Shute, 1998; Segal, Mincic, Coolidge, & O'Riley, 2004; Wastell & Shaw, 1999). A person's attitudes toward suicide can influence how that person responds to a suicidal individual and how much (if at all) that person is willing to get involved in suicide prevention. A teacher who is not sure or is conflicted about his or her attitudes toward suicide may be more reluctant or hesitant to intervene in the case of a suicidal student. One possible explanation for participants' undecided or conflicted attitudes about different aspects of suicide is that suicide continues to be a relatively controversial issue

in society. Participants' uncertain attitudes about suicide may reflect the result of being confronted with different or opposing attitudes about suicide in society. Despite participants' undecided views on different aspects of suicide, participants tended to disagree with the views that people have the right to take their own lives and that suicide is an aggressive act. Wastell and Shaw (1999) also found that preservice teachers tended to disagree with the attitude that people have the right to take their own lives. This finding is promising since having the attitude that people do not have the right to take their own lives implies having the opinion that no one should take their own life. If participants had tended to agree with the attitude that individuals have the right to commit suicide, then this might have implied having the attitude that people should not interfere if a person wants to commit suicide. Hopefully, by having the attitude that people do not have the right to end their own lives, participants will be more likely to interfere to help a student who may be suicidal.

5.1.5 Individual SOQ items.

5.1.5.a Mental illness scale. On the *Mental Illness* clinical scale, 74.1% of participants endorsed agreement with the item, "Most persons who attempt suicide are lonely and depressed." However, although most participants endorsed agreement with this item, only 22.3% of participants indicated that they agreed with the item that "people who commit suicide are usually mentally ill." Therefore, although depression is a type of mental illness, participants seemed to make a distinction between depression and mental illness in general. This finding that suicide is viewed as being more related to depression than to mental illness per se has been found in prior studies using the SOQ (Domino et al., 1995; Domino & Perrone, 1993).

For the item, “People who attempt suicide and live should be required to undertake therapy to understand their inner motivation,” 90.8% of participants indicated that they agreed with this statement. This finding is promising because it can be interpreted as meaning that participants view it as important to prevent a person who has already attempted suicide from attempting suicide again. Since therapy is often used as a means through which people are to improve and to feel better, participants seem to view therapy as an aide that can potentially prevent a suicidal person from attempting suicide again. Agreement with this item can also imply that participants tend to view a person’s motives for suicide as lying within that person rather than being external.

5.1.5.b Cry for help scale. Most participants (83.3%) indicated that they either agreed or strongly agreed that “a suicide attempt is essentially a ‘cry for help.’” The notion that a suicide attempt represents a “cry for help” is a common one both in the popular and professional literature, and this notion has been endorsed by people across different populations in studies using the SOQ (Domino & Leenaars, 1995; Domino et al., 1995; Leenaars & Domino, 1993; Wastell & Shaw, 1999). However, although the notion of suicide as being a “cry for help” is a popular one, a potential danger in holding this view is that people may disregard the seriousness or severity of a suicide attempt. Instead of viewing a suicide attempt as a desire to terminate one’s life, people who view suicide as a “cry for help” may merely see suicide attempts as conveying a plea for assistance (Domino, Gibson, Poling, & Westlake, 1980; Domino & Leenaars). Holding such a view may prevent a person from fully intervening with a suicidal individual since that person may think that the suicidal individual does not really intend to die but only wants help.

Although 59.3% of participants either disagreed or strongly disagreed that “those who threaten to commit suicide rarely do so,” 40.8% of participants strongly agreed, agreed, or were undecided with this SOQ item. In addition, 44.5% of participants indicated agreement or indecisiveness/uncertainty with the item, “Those people who attempt suicide are usually trying to get sympathy from others.” Given the percentages of agreement and uncertainty on these two items, it seems that many participants either viewed suicide threats and attempts as manipulative or attention-seeking in nature or were not sure whether suicide threats and attempts should be viewed in this way.

Most participants seemed to hold the view that people who attempt suicide are at risk for attempting suicide again since 85.2% of participants disagreed with the item that “once a person survives a suicide attempt, the probability of his trying again is minimal.” Therefore, many participants seem to hold the attitude that an unsuccessful suicide attempt will not prevent a person from attempting suicide again.

5.1.5.c Right to die scale. One interesting finding on this scale was that although most participants seemed to hold the attitude that people should be prevented from committing suicide, many participants were either undecided or disagreed with the statement that “people do not have the right to take their own lives.” For example, 96.3% of participants disagreed that “if someone wants to commit suicide, it is their business and we should not interfere” and 68.5% of participants agreed that “people should be prevented from committing suicide since most are not acting rationally at the time.” However, at the same time, the majority of participants (59.3%) either disagreed or was undecided with the statement, “People do not have the right to take their own lives.” Therefore, although most participants either seemed to believe or were unsure in their

beliefs about whether people have the right to take their own lives, they also seemed to believe that regardless of this right, people should still be prevented from committing suicide. This pattern of responses to the *Right to Die* scale is highly similar to that found in prior studies with the SOQ (Leenaars & Domino, 1993).

5.1.5.d Religion scale. Participants did not seem to view suicidal individuals as less religious than nonsuicidal individuals. For example, on the item, “People who attempt suicide are, as a group, less religious,” 85.1% of participants disagreed with this statement. In addition, 79.6% of participants disagreed that “people who commit suicide lack solid religious convictions” and 72.2% of participants disagreed that “most people who commit suicide do not believe in God.” However, at the same time, 64.8% of participants indicated that they believe that “suicide goes against the laws of God and/or of nature” and 18.5% of participants were undecided about this. Therefore, although participants did not seem to view suicidal individuals as being less religious or as not believing in God, most participants seemed to still hold the belief that suicide goes against God.

5.1.5.e Impulsivity scale. On the *Impulsivity* scale, 55.5% of participants disagreed that “most suicide attempts are impulsive in nature” and the remaining 44.5% of participants either agreed with or were undecided about this statement. In addition, most participants (74.1%) agreed that in most cases, “relatives of a suicide victim had no idea of what was about to happen,” implying the belief that since there were no apparent signs that the suicide victim was going to commit suicide, that the suicide victim’s decision to commit suicide must have been impulsive. Therefore, although participants’ mean total score on the *Impulsivity* scale indicated that participants were undecided or uncertain

about their attitudes regarding whether suicide is an impulsive action, many participants still endorsed the view that suicide is impulsive in nature. One potential danger in associating suicide with impulsivity is that holding this view about the nature of suicide can imply having the view that suicide is unpredictable and is something that people have little control over (Wastell & Shaw, 1999). Holding such a view may prevent a teacher from recognizing that he or she potentially has a role in suicide prevention. If a person believes that suicide is impulsive and happens without or with little warning, that person might hold the attitude that nothing can be done to prevent a suicide since suicide is more of an unplanned action. However, despite this view, many times there are warning signs that a person is going to commit suicide (Van Orden et al., 2006).

5.1.5.f Normality scale. On this scale, no participants agreed with the statement that “suicide is a normal behavior” and only 7.4% of participants indicated that they were undecided in their views about the normality of suicide. Thus, most participants seemed to view suicide as something that is abnormal. In addition, 66.7% of participants endorsed agreement with the item, “Suicides among young people are particularly puzzling since they have everything to live for.” This indicates that the majority of participants do not understand the reasons why a young person would commit suicide since such a person appears to have his whole life ahead of him.

5.1.5.g Aggression/Anger scale. Most participants did not view suicide as a vindictive act that is used to punish others for some perceived wrong that was done to them by another person or other people. For example, 81.5% of participants disagreed that “suicide attempters are typically trying to get even with someone.” In addition, most participants did not seem to view human beings as having an inherent, self-destructive

drive since 64.8% of participants disagreed that “suicide is clear evidence that man has a basically aggressive and destructive nature.”

5.1.5.h Moral evil scale. Surprisingly, slightly more than half of participants (51.9%) agreed with the statement that “suicide is a very serious moral transgression” and 48.1% of participants agreed that “in general, suicide is an evil act not to be condoned.” However, at the same time, most participants (51.9%) disagreed that they would feel ashamed if a member of their family committed suicide and also disagreed (90.8%) that “people who die by suicide should not be buried in the same cemetery as those who die naturally.” Therefore, it seems that although most participants viewed suicide as morally wrong, they also seemed to take the view that there should not be a sense of shame or stigma attached to someone who commits suicide.

5.1.6 Level of educational background and knowledge about suicide. The hypothesis that there would be a significant relationship between the level of participants’ educational background and participants’ knowledge level about adolescent suicide was not supported. Correlation analyses indicated that there were not significant relationships between the number of Education courses that participants have taken and the number of correct responses that participants scored on the ASBQ as a whole as well as across the five content domains of the ASBQ. These findings are not consistent with findings from prior studies that suggest that the higher a person’s educational background, the more knowledgeable a person is about suicide (Hamrick et al., 2004; McIntosh et al., 1985; Sato et al., 2006). One possible explanation for the difference between the findings in the present study and the findings in prior studies is that level of educational background or attainment was defined differently in the present study than in prior studies. In the present

study, level of educational background was defined by how many Education courses participants have taken. In prior studies examining the relationship between educational attainment and knowledge of suicide, level of educational background was defined either by participants' class standing or by the highest degree obtained by participants. Therefore, how level of educational background was defined in the present study could have influenced the results of this hypothesis. However, at the same time, there was a significant correlation between the number of Education courses that participants have taken and the class standing of participants, indicating that the greater the number of Education courses taken, the higher the academic standing of participants (see Table XIV).

5.1.7 Classroom teaching experience and knowledge about suicide. As

hypothesized, those participants with classroom teaching experience had a higher mean number of correct responses on the ASBQ than participants without classroom teaching experience. No known prior studies have looked at the relationship between classroom teaching experience and level of knowledge about suicide. The results of the present study suggest that having teaching experience in a classroom environment might increase one's knowledge about youth suicide and might increase one's ability to identify a student at risk for suicide. One possible explanation for the difference in knowledge level between participants with classroom teaching experience and participants without classroom teaching experience is that participants with classroom teaching experience might have come into contact with potentially suicidal students. Therefore, after having experience with students at increased risk for suicide, participants with classroom teaching experience might have gained more knowledge about youth suicide as a result of

their experiences than participants who have no experience teaching in a classroom environment. However, since the present study did not look at participants' own experiences with at-risk students for suicide, it is not known whether participants with classroom teaching experience have come into contact with any students at increased risk for suicide. In addition, another explanation for the higher mean number of correct responses to the ASBQ among participants with classroom teaching experience is that participants with classroom teaching experience might have received training that they had to complete before beginning their classroom teaching. Part of this training might have covered the issue of student suicide. However, given that less than half of schools in the United States provide faculty training for teachers that educates teachers about suicide, it is unlikely that preservice teachers received educational training about suicide (Davidson & Range, 1999; Rishel, 2006). Given that the present study seems to be the only existing study that has examined the relationship between classroom teaching experience and knowledge about youth suicide, more studies need to examine whether there is a relationship between these two variables and the possible reasons for such a relationship if one does exist.

Although participants with classroom teaching experience had a higher number of overall correct responses on the ASBQ than participants without classroom teaching experience, there were no significant differences between the two groups when the number of correct responses were examined separately for each of the ASBQ content domains. Therefore, participants with classroom teaching experience were no more knowledgeable about any specific area of suicide than participants without classroom teaching experience.

5.1.8 Teaching license and knowledge about suicide. In the present study, it was expected that participants who were studying to obtain either a Middle Childhood Education or a Secondary Education teaching license would answer more items correctly on the ASBQ than participants who were studying to obtain an Early Childhood Education teaching license. This hypothesis was supported by the results of the present study. Unlike the results of the present study, Hamrick et al. (2004) found that there was no difference between the capabilities of teachers with different teaching licenses to correctly identify symptoms associated with suicidal behavior in adolescents. However, whereas Hamrick et al. was interested in looking at differences between teachers with Special Education teaching licenses and teachers with non-Special Education teaching licenses, the present study examined differences in level of knowledge about suicide between two groups of preservice teachers *not* studying to become special education teachers. Therefore, the findings from this study suggest that both Middle Childhood and Secondary Education preservice teachers, two groups of preservice teachers who are more likely to be confronted with the issue of youth suicide when they become teachers than are Elementary Education preservice teachers, are more knowledgeable about youth suicide than Elementary Education preservice teachers. One possible explanation for this finding is that those students who are in Early Childhood Education are required to take a course in Child Development whereas Secondary Education students are required to take a course in Adolescent Psychology and students in Middle Childhood Education typically take both courses. Since completed suicide is a relatively rare occurrence in childhood and is more common in adolescence, perhaps the issue of youth suicide is not addressed in Child Development courses (Judge & Billick, 2004; McKeown et al., 2006; Swahn &

Bossarte, 2007; Roche et al., 2005; Walsh & Eggert, 2007). Middle Childhood and Secondary Education undergraduate students probably were exposed to the topic of suicide in their Adolescent Psychology courses and therefore might be more knowledgeable about youth suicide.

Although participants who were studying to obtain either a Middle Childhood or Secondary Education teaching license scored significantly more items correctly on the ASBQ than participants who were studying to obtain an Early Childhood teaching license, there were no significant differences between the two groups when the number of correct responses were examined separately for each of the ASBQ content domains. Therefore, Middle Childhood/Secondary Education participants were no more knowledgeable about any specific area of suicide than Early Childhood participants.

5.1.9 Knowledge about suicide and attitudes toward suicide. The present study found that there was a relationship between attitudes towards suicide and knowledge about suicide in that knowledge about suicide was related to attitudes regarding suicide as a reflection of mental illness. Domino (1985) also found a similar relationship using the SOQ among a sample of clergy members. However, whereas Domino found that the greater the number of responses that clergy members answered correctly to on a scale that measured knowledge about suicide signs, the less that clergy members perceived suicide as reflective of mental illness, the present study found the opposite relationship. Namely, the greater the number of responses that participants answered correctly to on the ASBQ, the more that participants tended to hold the view that suicide reflects mental illness and that mental illness causes suicide. Therefore, the more knowledgeable participants seemed to be about adolescent suicide, the more that they perceived a relationship

illness and suicide. When examining the correlations between each content domain on the ASBQ and each separate scale of the SOQ, the greater the number of items that participants answered correctly to on the content domain that measures knowledge about risk factors for suicide, the more that participants tended to perceive suicide as reflecting mental illness. Therefore, participants who were more knowledgeable about the risk factors for suicide seemed to hold the view that suicide is related to mental illness. Given that one of the most potent risk factors for suicide is having a mental disorder, it makes sense that participants who were more knowledgeable about the risk factors for suicide would tend to view suicide as related to mental illness (Chan et al., 2001; Fordwood et al., 2007; Gould & Kramer, 2001; Pelkonen & Marttunen, 2004).

5.2 Limitations of the study

One limitation of this study is the small sample size used in this study. Given the small representation of preservice teachers in this study, the relative contribution of this study to the existing literature on preservice teachers' knowledge and attitudes about youth suicide is limited. However, despite the small sample size used, the results of this study seem to confirm the results of prior studies on teachers' knowledge about youth suicide. In addition to the small sample size in this study, there was more Elementary Education preservice teachers represented in this study than there were Middle Childhood or Secondary Education preservice teachers. Since the topic of this study was on adolescent suicide and since suicide is a relatively uncommon phenomenon in childhood, it would have been more beneficial to have a larger representation of Middle Childhood and Secondary Education preservice teachers (Judge & Billick, 2004; Roche, Giner, & Zalsman, 2005).

Another limitation of this study was that the measure that was used to assess participants' knowledge about adolescent suicide, the ASBQ, focused more on the risk and precipitating factors for adolescent suicide rather than on more observable indicators or signs that an adolescent may be at risk for suicide. Although it is important for teachers to be knowledgeable about the risk and precipitating factors for youth suicide, it is not always likely that teachers will know if any of their students possess risk factors for suicide. However, teachers might be more likely to observe any behavioral changes or symptoms in their students while in the classroom setting that are cause for concern. For example, teachers might be likely to notice significant mood changes in their students that may be indicative that something is wrong. Therefore, it might have been beneficial to also measure preservice teachers' knowledge about behavioral and observable signs or indicators of suicide risk. Future studies in this area might want to address teachers' or preservice teachers' knowledge about behavioral signs or symptoms that are indicative of increased suicide risk.

5.3 Conclusion

The present study lends further support to prior research that has examined teachers' knowledge about adolescent suicide. Although research in this area is limited, the results of this and of prior studies point to the need for better education and preparation of both preservice teachers and teachers in the area of adolescent suicide. Teacher education programs at the undergraduate level and inservice programs for teachers already working in the field may want to provide training modules on adolescent suicide prevention. Part of these training modules should focus on increasing teachers' and preservice teachers' knowledge about adolescent suicide and on increasing their

awareness of the attitudes that they hold towards suicide and how these attitudes may help or hinder their interactions with suicidal students. Teachers need to be able to recognize the important role that they may play as gatekeepers for adolescents at risk for suicide.

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APPENDIX

Appendix A

Demographic Data Sheet

Please fill out this questionnaire as accurately as possible. Your time and careful attention are greatly appreciated.

- 1) Sex (please check): Male ___ Female ___

- 2) Age: _____ years old

- 3) Race/ethnicity (please check):
 African American/Black ___ American Indian/Alaska Native ___

 Asian/Pacific Islander ___ Biracial/Multiracial ___

 Hispanic/Latino ___ White ___ Other ___

- 4) What is your academic standing?
 Freshman ___ Sophomore ___ Junior ___ Senior ___

 Other (please specify) _____

- 5) What is your academic major? _____

- 6) What is your academic minor (if any)? _____

- 7) How many Education courses have you taken altogether (including any Education courses you are taking in the current semester)? _____

- 8) How many Psychology courses have you taken altogether (including any Psychology courses you are taking in the current semester)? _____

- 9) Have you taken or are you currently taking a course in Abnormal Psychology?
 Yes ___ No ___

- 10) Have any of your courses taken at the undergraduate level ever covered the topic of suicide?
 Yes ___ No ___

- 11) If you are in the College of Education and Human Services at Cleveland State and are studying to obtain a teaching license, please answer the following questions (if not, please skip down to question #12):
 - a) What type of licensure are you studying to obtain (please check)?:
 Early Childhood Education ___ Middle Childhood Education ___

Secondary Education ____ Multi-Age ____ Special Education ____

Other (please specify) _____

b) Have you done or are you currently doing any classroom teaching?

Yes ____ No ____

If you answered yes to this question, please describe below this teaching, including the type of teaching, the number of months that you taught for, and the age levels of the students that you taught:

c) Do you have any teaching experience(s) (this includes such experiences as teaching at

a summer camp or teaching at a place of worship)?

Yes ____ No ____

If you answered yes to this question, please describe below this experience or experiences, including the type of teaching, the number of months or years that you taught for, and the age levels of the students that you taught:

12) What is your religious affiliation?

Buddhism _____

Christianity

Roman Catholic _____

Orthodox (please specify) _____

Protestant (please specify) _____

Other (please specify) _____

Hinduism _____

Islam _____

Judaism

Orthodox _____

Conservative _____

Reform _____

No religious affiliation _____

Other (please specify) _____

13) If you identify with a religious affiliation, how often do you attend religious services at your place of worship?

Several times a week _____

Once a week _____

Once or twice a month _____

Only on major holidays _____

Once a year _____

Less than once a year _____

Other (please specify) _____

14) If you identify with a religious affiliation, are you an active member at your place of worship?

Yes _____ No _____

15) If you are at least thirty years old, what is your annual income range?

\$0 - \$9,999 _____

\$10,000 - \$14,999 _____

\$15,000 - \$24,999 _____

\$25,000 - \$34,999 _____

\$35,000 - \$49,999 _____

\$50,000 - \$74,999 _____

\$75,000 - \$99,999 _____

\$100,000 - \$149,999 _____

\$150,000 - \$199,999 _____

\$200,000 + _____

16) If you are under the age of thirty, what is the combined annual income range of your parent(s)?

- \$0 - \$9,999 ____
- \$10,000 - \$14,999 ____
- \$15,000 - \$24,999 ____
- \$25,000 - \$34,999 ____
- \$35,000 - \$49,999 ____
- \$50,000 - \$74,999 ____
- \$75,000 - \$99,999 ____
- \$100,000 - \$149,999 ____
- \$150,000 - \$199,999 ____
- \$200,000 + ____

17) What is the highest educational level obtained by your father?

- Less than 8th grade ____
- 8th grade ____
- 9th grade ____
- 10th grade ____
- 11th grade ____
- 12th grade ____
- High school graduate or GED ____
- Some college or technical school ____
- Undergraduate degree ____
- Graduate or Professional Degree ____

18) What is the highest educational level obtained by your mother?

- Less than 8th grade ____
- 8th grade ____
- 9th grade ____
- 10th grade ____
- 11th grade ____
- 12th grade ____
- High school graduate or GED ____
- Some college or technical school ____
- Undergraduate degree ____
- Graduate or Professional Degree ____

19) Is there anything else that you want to tell us about your attitudes toward suicide?

Appendix B

Tables

Table I.

Mean Number and Standard Deviations of Correct, Incorrect, and Undecided Responses on the Adolescent Suicide Behavior Questionnaire (total number of items = 40)

	Mean	Standard Deviation
Correct responses	24.57	4.99
Incorrect responses	6.91	3.64
Undecided responses	8.52	4.67

Table II.

Mean Number and Standard Deviations of Correct Responses on the Content Domains of the Adolescent Suicide Behavior Questionnaire

Content domain	Mean	Standard Deviation
Demographics and Statistics (number of items = 7)	3.76	1.39
Risk Factors (number of items = 16)	9.26	2.76
Precipitating Factors (number of items = 4)	2.59	1.00
Warning Signs (number of items = 7)	5.28	1.31
Prevention and Treatment (number of items = 6)	3.69	0.99

Table III.

Percentage of Correct, Incorrect, and Undecided Responses to each Item on the Adolescent Suicide Behavior Questionnaire (ASBQ)

ASBQ Item Number	Percentage Answered Correctly	Percentage Answered Incorrectly	Percentage Undecided
1	68.5 (37)	16.7 (9)	14.8 (8)
2	77.8 (42)	9.3 (5)	13.0 (7)
3	29.7 (16)	35.2 (19)	35.2 (19)
4	83.3 (45)	9.3 (5)	7.4 (4)
5	20.4 (11)	61.1 (33)	18.5 (10)
6	79.6 (43)	9.3 (5)	11.1 (6)
7	57.4 (31)	27.8 (15)	14.8 (8)
8	46.3 (25)	20.4 (11)	33.3 (18)
9	55.6 (30)	22.2 (12)	22.2 (12)
10	55.6 (30)	20.4 (11)	24.1 (13)
11	40.7 (22)	22.2 (12)	37.0 (20)
12	7.4 (4)	38.9 (21)	53.7 (29)
13	59.3 (32)	13.0 (7)	27.8 (15)
14	70.4 (38)	13.0 (7)	16.7 (9)
15	88.9 (48)	7.4 (4)	3.7 (2)
16	94.4 (51)	0 (0)	5.6 (3)
17	50.0 (27)	29.6 (16)	20.4 (11)
18	98.1 (53)	1.9 (1)	0 (0)
19	61.1 (33)	24.1 (13)	14.8 (8)

Table III. (continued)

Percentage of Correct, Incorrect, and Undecided Responses to Each Item on the Adolescent Suicide Behavior Questionnaire (ASBQ)

ASBQ Item Number	Percentage Answered Correctly	Percentage Answered Incorrectly	Percentage Undecided
20	59.3 (32)	18.5 (10)	22.2 (12)
21	50.0 (27)	20.4 (11)	29.6 (16)
22	66.7 (36)	20.4 (11)	13.0 (7)
23	63.0 (34)	24.1 (13)	13.0 (7)
24	92.6 (50)	0 (0)	7.4 (4)
25	27.8 (15)	24.1 (13)	48.1 (26)
26	59.3 (32)	22.2 (12)	18.5 (10)
27	79.6 (43)	16.7 (9)	3.7 (2)
28	24.1 (13)	22.2 (12)	53.7 (29)
29	61.1 (33)	27.8 (15)	11.1 (6)
30	75.9 (41)	1.9 (1)	22.2 (12)
31	81.5 (44)	3.7 (2)	14.8 (8)
32	59.3 (32)	11.1 (6)	29.6 (16)
33	37.0 (20)	31.5 (17)	29.6 (16)
34	59.3 (32)	14.8 (8)	25.9 (14)
35	68.5 (37)	3.7 (2)	27.8 (15)
36	64.8 (35)	5.6 (3)	29.6 (16)
37	88.9 (48)	5.6 (3)	5.6 (3)
38	70.4 (38)	11.1 (6)	18.5 (10)

Table III. (continued)

Percentage of Correct, Incorrect, and Undecided Responses to Each Item on the Adolescent Suicide Behavior Questionnaire (ASBQ)

ASBQ Item Number	Percentage Answered Correctly	Percentage Answered Incorrectly	Percentage Undecided
39	70.4 (38)	9.3 (5)	20.4 (11)
40	53.7 (29)	16.7 (9)	29.6 (16)

Note. The numbers in parentheses next to the percentages for each item number refer to the number of participants who answered correctly, incorrectly, and undecided for that particular item.

Table IV.

Mean Total Scores and Standard Deviations on the Eight Clinical Scales of the Suicide Opinion Questionnaire (SOQ)

SOQ clinical scale	Mean	SD	Maximum possible score
Mental illness	23.15	4.28	40
Cry for help	27.50	4.00	45
Right to die	19.91	3.48	25
Religion	24.24	4.15	35
Impulsivity	10.80	2.20	20
Normality	13.76	2.47	20
Aggression/Anger	11.69	2.03	15
Moral evil	13.20	3.19	20

Table V.

Percentage of Agreed, Disagreed, and Uncertain Responses to each Item on the Suicide Opinion Questionnaire (SOQ)

SOQ item number	Percentage agreed ^a	Percentage disagreed ^b	Percentage undecided
1	11.1 (6)	72.2 (39)	16.7 (9)
2	11.1 (6)	81.4 (44)	7.4 (4)
3	9.3 (5)	81.5 (44)	9.3 (5)
4	1.9 (1)	96.3 (52)	1.9 (1)
5	61.1 (33)	26 (14)	13.0 (7)
6	68.5 (37)	11.1 (6)	20.4 (11)
7	48.1 (26)	33.3 (18)	18.5 (10)
8	31.5 (17)	51.9 (28)	16.7 (9)
9	40.8 (22)	27.8 (15)	31.5 (17)
10	13.0 (7)	72.2 (39)	14.8 (8)
11	18.6 (10)	55.5 (30)	25.9 (14)
12	51.9 (28)	18.6 (10)	29.6 (16)
13	24.1 (13)	66.7 (36)	9.3 (5)
14	64.8 (35)	16.7 (9)	18.5 (10)
15	1.9 (1)	90.8 (49)	7.4 (4)
16	22.3 (12)	57.4 (31)	20.4 (11)
17	3.8 (2)	85.2 (46)	11.1 (6)
18	3.7 (2)	74.1 (40)	22.2 (12)
19	1.9 (1)	90.8 (49)	7.4 (4)

Table V. (continued)

Percentage of Agreed, Disagreed, and Uncertain Responses to each Item on the Suicide Opinion Questionnaire (SOQ)

SOQ item number	Percentage agreed	Percentage disagreed	Percentage undecided
20	3.7 (2)	74.0 (40)	22.2 (12)
21	7.4 (4)	85.1 (46)	7.4 (4)
22	9.3 (5)	79.6 (43)	11.1 (6)
23	14.9 (8)	70.4 (38)	14.8 (8)
24	5.6 (3)	72.2 (39)	22.2 (12)
25	40.8 (22)	37 (20)	22.2 (12)
26	14.9 (8)	51.8 (28)	33.3 (18)
27	53.7 (29)	14.9 (8)	31.5 (17)
28	51.8 (28)	24.1 (13)	24.1 (13)
29	24.1 (13)	25.9 (14)	50.0 (27)
30	16.7 (9)	62.9 (34)	20.4 (11)
31	0.0 (0)	92.6 (50)	7.4 (4)
32	13.0 (7)	48.1 (26)	38.9 (21)
33	83.3 (45)	9.3 (5)	7.4 (4)
34	0.0 (0)	92.6 (50)	7.4 (4)
35	74.1 (40)	11.1 (6)	14.8 (8)
36	1.9 (1)	66.7 (36)	31.5 (17)
37	74.1 (40)	14.9 (8)	11.1 (6)
38	68.5 (37)	9.3 (5)	22.2 (12)

Table V. (continued)

Percentage of Agreed, Disagreed, and Uncertain Responses to each Item on the Suicide Opinion Questionnaire (SOQ)

SOQ item number	Percentage agreed	Percentage disagreed	Percentage undecided
39	24.1 (13)	57.4 (31)	18.5 (10)
40	1.9 (1)	87.0 (47)	11.1 (6)
41	1.9 (1)	83.3 (45)	14.8 (8)
42	55.6 (30)	18.6 (10)	25.9 (14)
43	7.4 (4)	38.9 (21)	53.7 (29)
44	13.0 (7)	27.8 (15)	59.3 (32)
45	46.3 (25)	14.9 (8)	38.9 (21)
46	16.7 (9)	50.0 (27)	33.3 (18)
47	9.3 (5)	74.1 (40)	16.7 (9)
48	13.0 (7)	64.8 (35)	22.2 (12)
49	70.3 (38)	9.3 (5)	20.4 (11)
50	38.9 (21)	18.6 (10)	42.6 (23)
51	90.8 (49)	3.8 (2)	5.6 (3)
52	27.8 (15)	55.5 (30)	16.7 (9)
53	16.7 (9)	59.3 (32)	24.1 (13)
54	1.9 (1)	81.5 (44)	16.7 (9)
55	7.4 (4)	77.8 (42)	14.8 (8)
56	35.2 (19)	37.1 (20)	27.8 (15)
57	18.5 (10)	29.6 (16)	51.9 (28)

Table V. (continued)

Percentage of Agreed, Disagreed, and Uncertain Responses to each Item on the Suicide Opinion Questionnaire (SOQ)

SOQ item number	Percentage agreed	Percentage disagreed	Percentage undecided
58	3.8 (2)	50.0 (27)	46.3 (25)
59	22.3 (12)	31.5 (17)	46.3 (25)
60	3.8 (2)	55.6 (30)	40.7 (22)
61	1.9 (1)	90.8 (49)	7.4 (4)
62	35.2 (19)	14.8 (8)	50.0 (27)

Note. The numbers in parentheses next to the percentages for each item number refer to the number of participants who agreed with, disagreed with, and were undecided about that item.

^a“Strongly Agree” and “Agree” responses were combined. ^b “Strongly Disagree” and “Disagree” responses were combined.

Table VI.

Correlation between the Number of Correct Responses on the ASBQ and the Number of Education Courses Taken

		Correct responses on the ASBQ
Education courses	Pearson correlation	-0.12
	<i>p</i> value	0.37

Table VII.

Correlations between the Number of Correct Responses on the Content Domains of the ASBQ and the Number of Education Courses Taken

Content domain	Education courses	
	Pearson correlation	<i>p</i> value
Demographics and Statistics	-0.12	0.38
Risk Factors	-0.16	0.26
Precipitating Factors	0.08	0.59
Warning Signs	0.06	0.66
Prevention and Treatment	-0.17	0.21

Table VIII.

Independent-Samples t test between Participants with Classroom Teaching Experience and Participants without Classroom Teaching Experience on the Mean Number of Correct Responses on the ASBQ

Group	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Classroom teaching experience (<i>n</i> = 30)	26.00	4.86	2.47*	50.31	0.017
No classroom teaching experience (<i>n</i> = 24)	22.79	4.64			

**p* < 0.05, two-tailed.

Table IX.

Means and Standard Deviations for the Classroom Teaching Groups on the Number of Correct Responses on the ASBQ Content Domains

Content domain	Group	
	Classroom teaching experience ^a	No classroom teaching experience ^b
Demographics and statistics	4.07 (1.34)	3.38 (1.38)
Risk factors	9.80 (2.89)	8.58 (2.47)
Precipitating factors	2.83 (0.95)	2.29 (1.00)
Warning signs	5.60 (1.10)	4.88 (1.45)
Prevention and treatment	3.70 (1.02)	3.67 (0.96)

Note. The values enclosed in parentheses are standard deviations.

^a*n* = 30. ^b*n* = 24.

Table X.

Independent-Samples t test between Participants Studying to Obtain Different Teaching Licenses on the Mean Number of Correct Responses on the ASBQ

Teaching license	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Early Childhood					
Education (<i>n</i> = 25)	23.08	4.95	-2.73*	46.44	0.009
Middle/Secondary					
Childhood Education					
(<i>n</i> = 24)	26.67	4.25			

**p* < 0.05, two-tailed.

Table XI.

Means and Standard Deviations for the Teaching License Groups on the Number of Correct Responses on the ASBQ Content Domains

Content domain	Type of teaching license		
	Early Childhood Education ^a	Middle or Secondary Education ^b	Other ^c
Demographics and statistics	3.24 (1.27)	4.42 (1.32)	3.20 (1.10)
Risk factors	8.72 (2.82)	10.08 (2.67)	8.00 (2.00)
Precipitating factors	2.48 (1.12)	2.83 (0.87)	2.00 (0.71)
Warning signs	5.20 (1.19)	5.54 (1.22)	4.40 (2.07)
Prevention and treatment	3.44 (0.92)	3.79 (1.02)	4.40 (0.89)

Note. The values enclosed in parentheses are standard deviations.

^a*n* = 25. ^b*n* = 24. ^c*n* = 5.

Table XII.

Correlations Between the Number of Correct Responses on the ASBQ and Ratings on the Clinical Scales of the SOQ

SOQ clinical scale	Correct responses on the ASBQ	
	Pearson correlation	<i>p</i>
Mental illness	0.41*	0.002
Cry for help	0.23	0.091
Right to die	0.06	0.672
Religion	0.23	0.100
Impulsivity	-0.05	0.708
Normality	0.34	0.011
Aggression	-0.06	0.65
Moral evil	-0.09	0.508

**p* < 0.00625

Table XIII.

*Correlations Between the Number of Correct Responses on the ASBQ Content Domains and Ratings on the SOQ Clinical**Scales*

SOQ clinical scale	Content domain					
	Demographics and statistics	Risk factors	Precipitating factors	Warning signs	Prevention and treatment	
Mental illness	0.19	0.57*	0.34	-0.07	-0.02	
Cry for help	0.17	0.38	0.14	-0.17	-0.03	
Right to die	0.14	0.07	0.13	0.01	-0.23	
Religion	0.10	0.25	0.32	0.04	-0.06	
Impulsivity	-0.26	-0.05	0.14	-0.05	0.17	
Normality	0.22	0.28	0.27	0.32	-0.05	
Aggression	-0.07	-0.04	0.29	-0.15	-0.20	
Moral evil	-0.22	-0.04	0.09	-0.15	0.06	

Table XIV.

Bivariate Correlations Between Variables in the Study

	Sex	Age	Academic standing	Number of Education courses taken	Number of Psychology courses taken	Suicide covered in undergrad courses	Classroom teaching	Teaching experience	Months of teaching experience	Correct responses on the ASBQ	Total SOQ score
Sex	1.00	-0.06	0.06	0.27*	0.16	0.11	-0.07	0.01	0.11	0.00	0.06
Age	-0.06	1.00	0.38**	0.16	0.07	-0.18	-0.41**	-0.32*	0.37**	0.12	0.08
Academic standing	0.06	0.38**	1.00	0.41**	0.40**	-0.26	-0.51**	-0.08	-0.20	0.23	-0.01
Number of Education courses taken	0.27*	0.16	0.41**	1.00	0.06	-0.08	-0.32*	-0.04	-0.03	-0.12	-0.11
Number of Psychology courses taken	0.16	0.07	0.40**	0.06	1.00	-0.16	-0.24	-0.02	0.05	0.21	-0.32*
Suicide covered in undergrad courses						1.00					
Classroom teaching	-0.07	-0.41**	-0.51**	-0.32*	-0.24	0.15	1.00	0.60	-0.04	-0.32*	-0.08
Teaching experience	0.01	-0.32*	-0.08	-0.04	-0.02	0.04	0.60**	1.00	-0.27	-0.23	-0.19
Months of teaching experience	0.11	0.37**	-0.20	-0.03	0.05	0.11	-0.04	-0.27	1.00	-0.03	-0.10
Correct responses on the ASBQ	0.00	0.12	0.23	-0.12	0.21	-0.13	-0.32*	-0.23	-0.03	1.00	0.40**
Total SOQ											

score	0.06	0.08	-0.01	-0.11	-0.32	-0.17	-0.08	-0.19	-0.10	0.40**	1.00
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* $p < 0.05$, two-tailed. ** $p < 0.01$, two-tailed.