Spring 2015

College Students' Knowledge of Suicide Risk Factors and Prevention Strategies

Joshua Mitchell
Hamline University

Running Head: SUICIDE PREVENTION

College Students' Knowledge of Suicide Risk Factors and Prevention Strategies

Joshua Mitchell

An Honors Thesis

Submitted for partial fulfillment of the requirements

For graduation with honors in psychology

From Hamline University

4/11/15

SUICIDE PREVENTION

Abstract

Suicide is one of the leading causes of death among college aged students (Hirsch & Barton, 2011). Several risk factors for suicidal ideation have been identified, but little work has focused on awareness of suicide prevention resources. The focus of this study is to assess a college population's knowledge on suicide risk factors and determine whether they feel strongly about one method of prevention over another. This study is focused on assessing individual knowledge of risk factors and identification of appropriate prevention strategies. It was hypothesized that participants who are more successful at identifying risk factors will be more knowledgeable about the appropriate course of action to take to prevent a suicide attempt. The results suggest that there are no main effects for identifying suicide risk factors between: genders, year-in-school, and majors. Significance was found for relationships between suggested prevention methods and comfort of performing prevention.

College Students' Knowledge of Suicide Risk Factors and Prevention Strategies

Most people do not think about suicide or suicide risk factors in the course of everyday life. Some individuals do experience suicidal ideation, but push away or deny such thinking. Others struggle with more severe forms of suicidality as well as with the associated stigma. Suicidality is highest among adolescents, especially among older adolescents, such as those of college age and those attending college (Swanke & Buila, 2010**)**. It is important to understand the risk factors that contribute to suicidality in college students in order to design and implement effective prevention and intervention programs.

Risk factors for suicidality include genetic and physiological factors, psychological and relationship factors, and sociocultural factors. This review will focus primarily on the psychological, relationship, and sociocultural risk factors that are most relevant for college populations. For example, adjustment to a new lifestyle plus lack of a well-developed support system, academic struggles, and access to alcohol and/or drugs are a few college-specific risk factors discussed. In addition, college students' knowledge of risk factors and peer responses to suicidality will be summarized. Understanding college students' knowledge of risk factors could also be helpful in identifying new or better ways of capitalizing on peer support and peer interventions. This research study is focused on students' recognition of risk factors by assessing their knowledge through a series of vignettes. Each vignette presents a college student with multiple risk factors. Participants must identify the risk factors correctly and then rank a number of intervention strategies. It is hypothesized that students with a better

recognition of risk factors will select appropriate intervention strategies to aid those experiencing suicidality.

Risk Factors for Suicidality

A sickening fact about suicide in college students is that it has been among the top three causes of death between 1991-2013 (sometimes as high as the leading cause, depending on the study) (Cerel, J., Bolin, M. C., & Moore, M. M., 2013; Garlow, S. J., Rosenberg, J., Moore, J. D., Haas, A. P., Koestner, B., Hendin, H., & Nemeroff, C. B., 2008; Hirsch & Barton, 2011; Lamis, D. A., Ellis, J. B., Chumney, F. L., & Dula, C. S., 2009; Reynolds, 1991; Swanke & Buila, 2010). In one study, suicide was said to be an issue by 42% of students, but only 10% thought it was an issue on their campus (Westefeld, J. S., Button, C., Haley, J. T. J., Kettmenn, J. J., MacConnell, J., Sandil, R., & Tallman, B., 2006). Each college student who struggles with suicidality has a unique set of risk factors and experiences that contribute to increased vulnerability, but there are a number of research studies that help us to understand the most common types of risk (Swanke & Buila, 2010).

A risk factor is any characteristic or event that increases the likelihood of suicidality. Suicidality includes suicidal ideation, parasuicide, and suicide. In general, the more risk factors that are present, the higher the likelihood that some form of suicidality will be experienced. Less than 50% of the people who experience suicide ideation receive any help whatsoever (Morse & Schulze, 2013). Risk factors are so common among college students that it is difficult to single out any one as more detrimental than another. Risk is also difficult to assess because not all college students react to specific risk factors in the same way. One person might partake

in excessive drinking and drug use but never express suicide ideation whereas another person who occasionally drinks might have one bad day and that bad experience sends him or her over the edge.

Psychological (Individual) Risk Factors

Mental Illness/Disorder

One important risk factor that was prominent among individuals who completed suicide or attempted suicide was the presence of depressive symptoms or other psychological disorders. In regards to college students, many experience their first psychiatric episode while at college, and 12-18% of students have a diagnosable mental illness (Mowbray, C. T., Megivern, D., Mandiberg, J. M., Strauss, S., Stein, C. H., Collins, K., ... & Lett, R., 2006). The National College Health Assessment (NCHA) reported that the number of students diagnosed with depression has increased from 10% in 2000 to 18% in 2008. Makenzie et al. (2011) researched the depression rates of students accessing campus health care over the course of three years. These researchers reported that depression was just as frequent in men (25%) as in women (26%) (Mackenzie, S., Wiegel, J. R., Mundt, M., Brown, D., Saewyc, E., Heiligenstein, E., Fleming, M., 2011). In comparison to other studies done on college campuses, there was twice as much reported depression and suicidal ideation (Mackenzie et al., 2011).

Among students who experienced suicide ideation, there are many psychological symptoms present such as depression, helplessness, and hopelessness (Garlow et al., 2008; Stephenson, H., Pena-Shaff, J., & Quirk, P., 2006). Feelings of hopelessness, anxiety, and self-esteem are often found to be related to suicidal thought in most cases (Stephenson et al.,

2006). Garlow et al. found that out of 729 students, 80 were receiving psychiatric treatment. More of the students in psychiatric treatments were found to have current suicide ideation (13/80), compared to those without psychiatric help (67/647) (Garlow et al., 2008). Depressive symptoms and other psychological disorders are among the top risk factors for suicide and suicide ideation once a previous attempt has been accounted for (Bridge, J. A., Goldstein, T. R., & Brent, D. A., 2006; Garlow et al., 2008; Lewinsohn, P. M., Rohde, P., & Seeley, J. R., 1994; Mackenzie et al., 2011; Reynolds, 1991; Stephenson et al., 2006). While those symptoms may be present in some suicide cases according to Stephenson, Bridge et al. (2006) says that a psychiatric disorder is present in nearly 90% of suicide victims. In fact, according to Bridge et al., the presence of a psychiatric disorder causes a 9-fold increase in risk for suicide. In self-reports, there was a relation between hopelessness and helplessness that led to predicted ideation (Stephenson et al., 2006). The more severe the symptoms of depression in a person the more likely they were to experience current suicidal ideation (Garlow et al., 2008).

Because depression is often treated with medications, the risk is overlooked, though in some cases the medication poses more of a risk than help. Individuals with a history of suicide attempt or self-harm were receiving pharmacotherapy twice as often as individuals that had no history (Bridge et al., 2006). At the time of their suicide, between 7-20% of students were receiving professional help (Bridge et al., 2006). In some cases only one-quarter of college students were aware of possible resources on campus for suicidality (Cerel et al., 2013; Westefeld, J. S., Homaifar, B., Spotts, J., Furr, S., Range, L., & Werth, J. L. J., 2005). A common reason for not seeking professional help was that the student felt their problem wasn't serious enough (Czyz, E. K., Horwitz, A. G., Eisenberg, D., Kramer, A., & King, C. A., 2013).

SUICIDE PREVENTION

College students who show frequent, intense or unmanageable anxiety and anxiety sensitivity are at a higher risk of suicidality (Lamis & Jahn, 2013). Anxiety sensitivity is an increased sensitivity to the physical and emotional symptoms of anxiety. People who suffer from anxiety sensitivity are at risk of overreacting to symptoms of anxiety. Anxiety sensitivity is thought to be closely linked to fear and has been referred to as the "fear of fears" (Capron, D. W., Fitch, K., Medley, A., Blagg, C., Mallott, M., & Joiner, T., 2012; Schmidt, N. B., Capron, D. W., Raines, A. M., & Allan, N. P., 2014). Anxiety sensitivity's relation with suicide is believed to be due to the increase in distress response for stress and anxiety symptoms (Schmidt et al., 2014). An association between anxiety sensitivity and suicidal ideation was observed in individuals with panic disorders (Capron et al., 2012). Lamis and Jahn's 2013 study looked at anxiety sensitivity and its effect on suicidal rumination. Suicidal rumination is similar to suicide ideation but is a person's repeated focus on suicidality, not necessarily the intent to complete a suicide attempt. Their results showed that anxiety sensitivity played a role in suicidal rumination in college students. By reducing the anxiety sensitivity in college students, Schmidt et al.(2014) found that suicidal ideation also decreased.

Other psychopathological risk factors found to play a role in suicidality include bipolar disorder and schizophrenia. Bipolar disorder and schizophrenia often emerge and are diagnosed during the college years and are associated with increased risk for suicidality. Bipolar disorder was found to increase risk of suicidality by 20-30 times in comparison to the general public (Pompili, M., Gonda, X., Serafini, G., Innamorati, M., Sher, L., Amore, M., ... & Girardi, P., 2013). Risk was found to be highest during the early years after the diagnosis (Pompili et al., 2013). While not as high of a risk as bipolar disorder, schizophrenia patients

have an 8.5% increase for suicidality. Nearly half the people diagnosed with schizophrenia have experienced suicidal ideation at one point, and 4-13% eventually complete a suicide attempt (Kasckow, J., Felmet, K., & Zisook, S., 2011).

The comorbidity of disorders poses an increased risk for suicidal ideation and behavior. Autopsy studies have shown that up to 70% of suicide completers have multiple disorders and the more disorders present, the more likely an individual will be suicidal (Beautrais, 2000; Bridge et al., 2006). A potent combination that professionals must be aware of is mood, disruptive, and substance abuse disorders (Bridge et al, 2006).

Numerous studies have found that alcohol use and abuse were common among suicide attempters and those who complete suicide (Bridge et al., 2006; Schaffer, M., Jeglic, E. L., & Stanley, B., 2008; Stephenson et al., 2006; Swahn & Bossarte, 2007). For suicide attempters, alcohol abuse was common in the months preceding the incident and there was high incidence of alcohol use around the time of the attempt (Schaffer et al., 2008). The information on suicide attempts and alcohol seem to implicate alcohol playing a role in potentiating the attempt, but not necessarily being the sole reason behind the ideation or attempts (Bridge et al., 2006; Schaffer et al., 2008; Swahn & Bossarte, 2007). Binge drinking is also correlated with a higher likelihood of suicide attempts or ideation (Bridge et al., 2006; Schaffer et al., 2008). Solitary binge drinking is found to be a predictor for suicidality (Gonzalez, 2012). Increased suicidal ideation in students was reflected by their willingness to engage in solitary binge drinking. Students with a previous suicide attempt were four times more likely to engage in solitary binge drinking opposed to social binge drinking (Gonzalez, 2012). Solitary drinking is

linked to negative life events and has an increased risk for severe depression and suicidality (Gonzalez, 2012). Those who consumed alcohol within three hours of the attempt were more likely to have a lethal outcome. Schaffer et al. (2008) found the consumption of alcohol to make the risk seven times higher for a lethal outcome. Other findings were that 50% of suicide victims consumed alcohol at the time of attempt and 25% were intoxicated at the time of the incident. Schaffer et al. (2008) also reported that students who binge drank were more likely to experience suicidal thought and attempts. When asked about future attempts, those who admitted to binge drinking were much more likely to admit planning a possible future attempt. The significance of binge drinking and past attempts warrants intervention for those that have admitted to having a drinking problem. The relationship between alcohol abuse and ideation is high enough to be significant in predicting future attempt but adding a past attempt to the mix raises alarm for a person's suicide attempt in the future (Schaffer et al, 2008).

Non-medically prescribed drug users in college sit at around 6.3% compared to the 2.8% of the population (12 and older) (Zullig & Divin, 2012). Reasons for the difference in percentages include accessibility, academic strain, and social norms. Zullig and Divin (2012) suggest different prescription drugs (stimulants, opioid painkillers, antidepressants) increase the risk of suicidality in college students when abused. The use of non-medically prescribed drugs for recreational use was linked to increased suicidality in student's who admitted using them within one year of the study (Zullig & Divin, 2012).

Previous Suicide Attempt

The most significant risk factor for a college aged student (18-25) is a previous attempt (Bridge et al., 2006; Garlow et al., 2008; Lewinsohn et al., 1994). It's hard to predict a future suicide attempt for anyone, and it becomes even more difficult to do with someone who has attempted in the past. Studies have shown, though, that a previous suicide attempt is the best predictor for a future attempt (Lewinsohn et al., 1994). Some estimates for repeated attempts show that in a 6-month follow-up there is a 10% chance of recurrence, and a 42% chance with a 21-month follow-up (Bridge et al., 2006). Garlow et al. administered the PHQ-9 to college students and found that a past suicide attempt was associated with current thoughts of suicide at a higher rate than the students who didn't have a past attempt. Lewinsohn's study identified five additional measures for predicting a suicide attempt even after controlling for past attempts, but a previous attempt is by far the strongest predictor.

Gender Differences and Sexual Orientation

Risk factors are prevalent in both men and women, but the specific factors and the pattern of factors vary. For example, it is well documented that women experience suicide ideation more frequently. More adult men complete suicide (Pompili et al., 2013).

Gender differences are also important when considering the risk factor of alcohol use and abuse and psychopathology. Two studies found that the effect of alcohol on suicidal ideation was more pronounced in woman compared to men. Binge drinking in women, when associated with depressive disorders, led to higher suicidality (Schaffer et al., 2008; Stephenson et al., 2006). Women with comorbid alcohol abuse and conduct disorders were found to be

three times more likely to have a reported suicide attempt (Bridge et al., 2006; Stephenson et al, 2006).

Gay men and lesbians exhibit higher rates of anxiety disorders, mood disorders, and substance abuse issues (Gilman, S. E., Cochran, S. D., Mays, V. M., Hughes, M., Ostrow, D., & Kessler, R. C., 2001; Reed, E., Prado, G., Matsumoto, A., & Amaro, H., 2010). GLBTQ students were found to have an increased use of drugs and alcohol when presented with an unwelcoming college environment (Reed et al., 2010). These students also experience increased stress and victimization, leading to increased suicidality (Reed et al., 2010). Risk of suicidal thought was found to be higher in gay couples compared to non-gay couples (Gilman et al., 2001; Harris 2013). Harris suggests that some members of the GLBTQ community have a difficult time finding someone to get close to, increasing risk for suicidality (Harris, 2013).

Personality Characteristics

In addition to psychopathology, there are other psychological factors related to suicidal thought and action in college-aged adults. Being impulsive can also be a risk factor even with the absence of most mental illnesses. Impulsivity is the act of behaving a certain way without thinking of the possible outcomes. The more stressful interactions an impulsive person goes through in a day have been linked to an increase in suicidal thoughts (Kleiman, E. M., Riskind, J. H., Schaefer, K. E., & Weingarden, H., 2012). Dvorak et al. (2013) found that even after controlling for depressive symptoms, impulsivity was shown to increase suicidality.

Other Individual Factors

Physical health and fitness is often overlooked as a risk factor for suicidality. For many, physical activity is a hobby and a method of staying in shape. Physical activity is also used to combat some depressive symptoms and stress (Elliot, C. A., Kennedy, C., Morgan, G., Anderson, S. K., & Morris, D., 2012). Studies have shown that physically active individuals show less depressive symptoms than inactive people (Elliot et al., 2012). Since depression has such negative effects on suicidality and ideation, it makes low activity levels a risk factor for certain individuals. Elliot's study showed the benefits of physical exercise and how exercise could be used as a protective factor in some situations. On the other hand, inactive individuals see increased risk of suicidal actions or thoughts (Bridge et al., 2006; Elliot et al., 2012). Activity levels aren't the only pressing concern for physical health and suicide thought and action. Some chronic disabilities like diabetes and epilepsy have been shown to be a risk factor for suicide (Bridge et al., 2006). Lewinsohn et al. found that functional impairment of any kind (either due to illness or injury) has been associated with suicide risk (1994; Bridge et al., 2006).

Other risk factors that contribute to suicidal ideation that people might not have considered include whether or not they are a full or part time student. Full time students who remain on campus through the academic year have far lower suicidal ideation than their part-time counterparts that commute to and from school (Schwartz, 2013).

Relationship Risk Factors

In some situations it was found that men whose main source of social support was their family experienced increased suicidal ideation (Lamis & Lester, 2013). The study found that family support by itself is not an effective method of prevention for men in college. There was

no information about family support and its effect on women, but both men and women were found to have decreased suicidal thoughts with healthy peer relationships (Lamis & Lester, 2013). Lamis and Lester also reported that negative interactions added to the stress of a college life, resulting in increased suicidal ideation. During the adjustment period for college students they are at an increased risk for suicidality if there is parent-child conflict. The conflict can cause a negative disruption in the adjustment, rather than adaptation to the environment (Lamis & Jahn, 2013).

Negative social interactions among peers pose as a risk factor for college students (Conley, C. S., Kirsch, A. C., Dickson, D. A., & Bryant, F. B., 2014; Hirsch & Barton, 2011). The development of new friendships on campus poses as a risk factor if they aren't maintained. Interpersonal conflict with new friends and roommates were linked to stressors contributing to suicidality (Hirsch & Barton, 2011). An attempt to keep old friendships active while adjusting to college has been found to have a negative effect on adjustment (Conley et al., 2014).

For both women and men, physical abuse during childhood produced a significant increase in suicidal ideation as well as in adulthood (Beautrais, 2000). There is also an increased risk for suicidality in children who were victims of sexual abuse. Women who reported sexual victimization were found to have twice as many suicide attempts (Stephenson et al., 2006). For men, an increase in suicide risk has been seen when they have been assaulted in a non-sexual way (Stephenson et al., 2006).

Sociocultural Risk Factors

SUICIDE PREVENTION

Though suicide is an individual's action, it affects a person's entire sociocultural network. In some cases suicide is the result of a diminishing social network regardless of home country or religious affiliate (Horton, 2006; Young, R., Sweeting, H., & Ellaway, A., 2011). Some cultures will sometimes stress perfectionism that may contribute to increased risk for some college students. Pressure to excel and be perfect has been linked to an increasing number of suicide attempts, most notably among college students and celebrities (Flett, G. L., Hewitt, P. L., & Heisel, M. J., 2014). For men and women college students who feel the cultural pressure to be perfect, there is an increase in suicidality if perfectionism is paired with one of the following: 1) Increased stress, due to daily activities, 2) an increase in academic struggles, and 3) a poor social network (Flett et al., 2014). Even for college students who don't strive for perfection there is an increased risk for being a part of the college community. Students were shown to have a 15-18% increase in suicidality for having low involvement in their college community (Young et al., 2011). While being religious is usually considered a protective factor, attending a school of different religious background increased a student's risk of suicide by 2-4 times compared to the general student body.

Prevention

Risk factors of suicide are difficult to decipher in individuals, even when you have a basic knowledge of what they are. In situations where a person is demonstrating telltale signs of suicide ideation, knowing the things to do to aid in prevention could help save a life. There are two forms of prevention that have the most benefit for those who are struggling with suicidality. The first is seeking professional help, whether a suicide hot line, psychologist, or

someone trained in suicide prevention. The other form of prevention is peer prevention, which is obtaining help from friends, roommates, or other people without the professional training. Many factors influence the efficacy of professional and nonprofessional interventions.

Professional Help

Professional help is the most commonly considered form of prevention that targets suicidality. David Lester (2013) graduated from a college in which there was no concern with suicide prevention and 40 years later the school added a counseling center but failed to incorporate a suicide prevention program. College campuses are concerned with the well being of their students, but suicide prevention is hindered by two factors according to Lester (2013): 1) Staff with an expertise in prevention is limited, if not absent altogether. 2) Lack of funds for training such a program on college campuses. Lester also suggests that one additional reason for lack of suicide-related resources on campus, and a tolerance for students who express suicidal ideation, is a concern about civil liability. The placement of trained professionals in schools is seen as one prevention option that is essential in reducing students at risk (Cerel et al., 2013; Garlow et al., 2008; Morse & Schulze, 2013). Placing professionals in the schools counseling and wellness centers help with a basis for leadership and conducting of the intervention process. On campuses with large number of students it would be impossible to have enough trained professionals on staff to deal with each person suffering from suicidal risk factors. With the high numbers of students suffering from suicidal ideation and not seeking help, there is a need for other resources to get the help needed (Morse & Schulze, 2013). Four separate studies showed that few students take advantage of the resources available, whether

it's because of knowledge of access or personal choice. In off-campus medical facilities, most students that go in for regular check-ups aren't screened for suicidality and other risk factors. In the year prior to the study, those same physicians not screening for suicide came into contact with a high percentage of individuals who attempted suicide (47%)(Bridge et al., 2006). Elliot et al. (2012) reported that 10% of students received help from their mental health facility on campus. Bridge et al. (2006) found that in the 1-3 months prior to their completed suicide only 7-20% of people sought professional help. And Garlow et al. (2008) found that only 16% of student's that have had suicidal thoughts were receiving professional help at the time. Students who sought treatment and received medication still frequently displayed poor outcomes. In the cases in which medication was provided for depressive symptoms there was seen to be a twice as likely chance of suicidal ideation or attempt (Bridge et al., 2006). For those receiving antidepressants, risk of suicide increased by 4% compared to the 2% for the placebo (Bridge et al., 2006).

Awareness of Help

For students who say they have access to campus resources and information on suicide prevention, studies have shown that relatively few of them are actually aware of the materials available. One survey showed that only 26% of students were aware of where to access available resources on campus (Cerel et al., 2013). Another survey's results had the same percent of students (26%) say they were aware of resources available, but 12% said they would never seek treatment even if they needed it (Westefeld et al., 2005). The low percentage of people that know of resources shows that there is more that needs to be done on campuses.

The same study showed that 40% of people knew someone that attempted suicide while in college and 28% knew someone who completed suicide while attending school (Cerel et al., 2013).

Students who knew someone who completed a suicide attempt while they were in school indicated that it had a profound effect on them. Those students considered themselves to be "suicide survivors". For those who see themselves as "suicide survivors", it didn't matter if the person who completed suicide was a family member or friend, what mattered was the perceived closeness that they had with the individual (Cerel et al., 2013). On a college campus, a suicide has an impact on a variety of individuals including classmates, roommates, counseling staff, and faculty. Each of these people can classify himself or herself as a "suicide survivor", if they choose to do so and many suicides have as many as a hundred survivors. Cerel et al. (2013) reported that individuals who were affected by the suicide of a student displayed increased support for campus services related to suicide prevention. The research also found that awareness of suicidal thoughts and behaviors were higher in those who considered themselves survivors.

Technology Prevention

In today's age we are seeing more and more dependence on the internet and technology for information. Vaughn (2012) attributes the increased use of social media (e.g. cyber bullying) to increases in suicidal thoughts and action. Given the increased access to and ease with which current college students use online technologies why not focus on an internet based prevention strategy. Haas et al. (2008) took a step in that direction with their study that

sent emails out to students on campuses. They invited 14,500 students to take their survey and received 1162 responses (8%). Overall, Haas' study, despite the low response rate, showed promise as a method of intervention for students suffering from suicidal ideation. 91% viewed what the counselor posted about them personally, 34% submitted dialogues online with a counselor, 20% sought out professional help, and 15% entered a treatment plan (Haas, A., Koestner, B., Rosenberg, J., Moore, D., Garlow, S. J., Sedway, J., . . . Nemeroff, C. B., 2008). With the internet being a good way to stay anonymous, starting more prevention methods similar to this might result in more student's seeking treatment.

Peer Prevention

Another form of suicide prevention to look at in colleges is peer prevention. Students who live on campus spend the majority of their time with their peers whether it is in the classroom, extracurricular activities, or around campus. Students are also more likely to relate with peers suffering from suicide ideation because a lot of their experiences on campus are similar. In addition, students spend a lot of time with their peers developing trust and communication that doesn't always happen with a professional on campus that they would see once in a while. Establishing peer relationships in college is an important part of dealing with all the stressors and may provide support for at risk students. Peer relationships in college students is important because in nearly 80% of documented mental health issues, the person seeking professional help said they consulted a peer first (Walther, Abelson, & Malmon, 2014).

Active Minds is a program focused on helping students establish networks on campuses with the goal of destigmatizing mental health concerns and help peers identify professional

resources if needed. Since its creation in 2003, Active Minds has expanded from two branches to 400+ (Walther et al., 2014). A lot of times students are unaware of the resources available on campuses. First year students also have shared that they have had no formal education about mental wellness. There was also a lack of education from parents and other support networks. Organizations like Active Minds are a good way to improve the awareness of mental illnesses on campus without stigmatizing it. Another important role for peers on campus is related to the research behind positive social support and its effect on suicidal behavior. Hirsch and Barton (2011) found that a positive social support system had a protective effect on suicidal ideation whereas a negative exchange increased suicidal risk. The positive support system from peers has a range of benefits including academic and mental health improvements. The utilization of positive peer relationships is recommended on campuses to reduce the suicidal ideation of its students (Hirsch & Barton, 2011). The students who did talk to someone else talked to a peer the majority of the time. After talking to someone else, nearly half found it helpful and the other half were referred for professional help (Morse & Schulze, 2013).

Third Party Training

A strategy for enhancing student networks developed by Worcester Polytechnic Institute (WPI) is a student-centered training program used to improve peer networks supports on campuses (Morse & Schulze, 2013). Students are trained and then become a part of the University's Student Support Network (SSN) where they focus on reaching out and helping distressed students. The networks include athletes, presidents of fraternities, and leaders of

clubs on campus. The compelling nature of the training and features of the training have led to 96% retention in learning. For the students that participated in the training, crisis responding skills, as measured by the Suicide Intervention Response Inventory (SIRI), improved significantly (Morse & Schulze, 2013). Self-reports from students involved in SSN training showed that they felt more aware of the warning signs to look for since they had knowledge beyond the "normal" college behavior. Another goal of SSN training is to familiarize the students on counseling services. This is done because the more familiar with the services they are the more likely they are to suggest it to struggling friends. This new awareness changed students' perspective on what counseling services were used for and helped reduce the stigmatization associated with seeing a professional. In order for on campus interventions to be successful it must first be accepted by the student's themselves (Drum & Denmark, 2012; Hirsch & Barton, 2011). The low percentage of suffering students who access the available resources and facilities needs to increase before additional funds will be given to schools for professional training.

One possible option for reducing the cost of on campus support while providing students with professionally trained help includes having campuses provide "Gatekeeper training". Gatekeeper training is an education of risk factors and signs of suicide provided to a multitude of people including teachers, doctors, and coaches. Studies have shown that gatekeeper training has been an effective method of reducing suicide among likely individuals (Cimini, M. D., Rivero, E. M., Bernier, J. E., Stanley, J. A., Murray, A. D., Anderson, D. A., . . . & Bapat, M., 2014; Swanke & Buila, 2010). Cimini et al. (2014) found that small-group gatekeeper training led to increases in knowledge and comfort in asking students about suicide. The basis of gatekeeper training is that the risk factors of suicide are recognizable, and can be seen even

in those not seeking professional help (Swanke & Buila, 2010). The best gatekeepers have been found to be peers as well as family members because of the close relationships to the persons at risk of suicide. Gatekeeper training would be an effective method of teaching individuals the warning signs of suicide without needing to hire additional help in the schools. Proactive prevention is a method of prevention that aims to reduce exposure to stress in an attempt to reduce reaction (Drum & Denmark, 2012). Success with proactive prevention has been found in first year students, LGBTQ students, and other individuals affected by loss or trauma. The idea of proactive prevention is to help these at risk students find coping methods so they can adjust to the negative feelings they may have (Drum & Denmark, 2012).

Suicide is, and has been, among the top causes of death for college students for many years (Cerel et al., 2013; Garlow et al., 2008; Hirsch & Barton, 2011; Lamis et al., 2009; Reynolds, 1991; Swanke & Buila, 2010). Many risk factors are recognizable and include aspects of genetic and physiological factors, psychological and relationship factors, and sociocultural factors. Recognizing the risk factors that college student's exhibit enables individuals to intervene. There are multiple intervention methods to utilize. Some of the more common ones include professional and peer intervention, a third party source (e.g. Gatekeeper training), and technology interventions. This research study looks to explore a college student's understanding and recognition of risk factors common to their environment and how they would approach a possible suicide situation. The focus will be looking at gender differences for identification, suggested prevention methods, and comfort of performing specific prevention methods.

Method

Participants

A sample of 78 college students (46 women, 32 men) completed a confidential questionnaire. Participants earned extra credit points for select classes. Participants consisted of freshman (28.2%, *n* = 22), sophomores (32.1%, *n* = 25), juniors (29.5%, *n* = 23), and seniors (10.3%, *n* = 8) on Hamline University's campus. Students were psychology majors (14.1%, *n* = 11), psychology double majors (24.4%, *n* = 19), business majors (11.5%, *n* = 9), public health majors(6.4%, *n* = 5), biology majors (7.7%, *n* = 6), and other majors (30.8%, *n* = 24). The remaining students were undecided (5.1%, *n* = 4). Students were recruited by asking for participants in classrooms and by email.

Materials/Procedures

Participants were asked to complete a short questionnaire to gather basic information such as gender, school year, and major. Participants read a series of six vignettes that portrayed vignettes involving college students that might cause concern. Vignettes included risk factors associated with suicidality. Participants were asked to identify risk factors and rank the appropriateness of intervention strategies and their comfort level with those strategies. Each vignette included three risk factors.

Three types of risk factors were included. The first focused on mental illness/psychopathology: depression, anxiety, or substance abuse. Half of the vignettes described severe mental illness; half described more moderate mental illness. The second type

of risk factor focused on a previous suicide attempt or suicidal ideation. Half of the vignettes described a previous suicide attempt and the other half described suicidal ideation. The third type of risk factor focused on personality risk factors: problematic relationships or impulsivity. Half of the vignettes described a situation where the person was impulsive. The other half described the person having problematic relationships in their life.

Following each vignette was a set of five questions. The first question focused on risk factors. Participants were told to underline what they considered to be a risk factor in each vignette. The second question focused on the risk factor participants perceived to be most dangerous. The third question asked participants to rate their concern for the individual in the vignette on a four-point scale (Not very concerned, somewhat concerned, moderately concerned, seriously concerned). The next question asked participants to identify one or more intervention methods they felt would be appropriate. Interventions included: no intervention needed at this time, one-on-one interaction, peer/group interaction, contacting a student resource, contacting an adult on campus, and calling 911. The last question asked the participants to rate their comfort level in completing or providing each intervention (from not at all comfortable, slightly uncomfortable, mostly comfortable, to very comfortable). The questionnaire is provided in Appendix 1.

Scoring the participant responses:

Vignettes were scored as follows: three points for a correctly identified risk factor, minus one point for incorrectly identifying something as a risk factor, and minus two points for

missing a risk factor. With this scoring system, there is a possibility of nine points in each vignette and fifty-four points for the whole questionnaire.

Statistical Analysis

Descriptive statistics were used to find average score for gender, year-in-school, and major. An independent t-test was conducted to find differences between male and female overall scores. A series of one-way ANOVAs were used to find significance between total score and gender, year-in-school, and major. A series of chi-square analyses were used to find any significance between gender and suggested prevention methods and comfort of performing each prevention method for each vignette. Chi-square analyses were also used to find significance between the suggested prevention methods and comfort of performing the prevention methods.

Results

The first set of analyses addressed the hypotheses related to students' recognition of risk factors for suicidality.

To examine the accuracy of student recognition of risk factors by gender, an independent t-test was performed. Men scored an average of 31.78 (*SD* = 11.66) and women 32.96 (*SD* = 10.99) overall [*t* (76) = -.45, *p* = .65]. No significant gender differences were observed. To examine the accuracy of student recognition of risk factors by year-in-school and by major, a one-way ANOVA test was performed. Freshmen scored lower than other classmates with a mean score of 27.95 (*SD* = 12.99). Sophomores scored a mean of 33.68 (*SD* =

10.62), followed by seniors with 33.88 (*SD* = 8.34). Juniors were the most accurate, with the highest average score of 35.00 (*SD* = 10.19). Scores among majors varied with psychology double majors scoring the lowest (*M* = 27.53, *SD* = 13.22) and public health majors scoring the highest (*M* = 38.20, *SD* = 4.32). No main effects were observed for year-in-school or major. Overall, students were fairly accurate in their identification of risk factors. Scores on the overall accuracy scale ranged from 2 to 53 (out of 54). Please see Figures 1a, 1b, and 1c for a breakdown of accuracy scores by gender, year in school, and major.

The most frequently recognized risk factor was anxiety (145/156, 92.9%), followed by depression (142/156, 91.02%), alcohol and drug abuse (136/156, 87.2%), suicidal ideation (189/234, 80.8%), suicide attempt (176/234, 75.2%), troubled relationships (166/234, 70.9%), and impulsivity (139/234, 59.4%). Suicidal ideation and suicide attempt, troubled relationships, and impulsivity appeared in three of the six scenarios resulting in more opportunities to identify them. The other risk factors appeared in two of the six scenarios.

The most concerning risk factor for suicidality identified by students was suicidal ideation, identified as most dangerous risk factor in 134 out of 234 (57%) of the situations where it was present. Ideation was followed by depression (80/156, 51%), drug and alcohol abuse (62/156, 39%), suicide attempt (75/234, 31%), anxiety (38/156, 24%), impulsivity (30/234, 13%), non-risk factors (31/468, 6%), and troubled relationships (12/234, 5%).

The second set of analyses addressed the hypotheses related to students' recognition of possible intervention strategies. To examine how frequently students identified a particular intervention strategy as an appropriate intervention strategy, a series of frequency statistics

were performed. Comparisons of gender and suggested intervention strategies were found by conducting a series of chi-square analyses.

For scenario 1, a student struggling with severe depression, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods, though men were more likely to suggest one-on-one prevention [X^2 (1, N = 78) = 3.68, p = .055].

For scenario 2, a student struggling with moderate depression, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods.

For scenario 3, a student struggling with severe alcohol abuse, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction, peer/group interaction, and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods.

For scenario 4, a student struggling with moderate alcohol abuse, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction, peer/group interaction, contacting a student resource (R.A.), and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods.

For scenario 5, a student struggling with severe anxiety, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction, peer/group interaction, contacting a student resource (R.A.), and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods.

For scenario 6, a student struggling with moderate anxiety, students endorsed the following strategies as appropriate more than 50% of the time: one-on-one interaction, peer/group interaction, and contacting an adult on campus. There were no main effects found for gender and suggested prevention methods.

Please refer to Figure 2a-f for a breakdown of suggested prevention methods.

The third set of analyses addressed the hypotheses related to students' comfort level with respect to intervening with a friend. To examine whether students identified a particular intervention strategy as one they would feel comfortable offering a friend, a series of chi-square analyses were performed.

For scenario 1, a student struggling with severe depression, chi-square analyses revealed significant associations between suggested prevention method and comfort of performing the prevention method for: one-on-one interaction, peer/group interaction, contacting a student resource, and contacting an adult on campus. Students who suggested one-on-one prevention expressed feeling very comfortable with providing that prevention method [X^2 (2, N = 78) = 23.23, p < .001]. Students who did not suggest peer/group interaction expressed feeling uncomfortable performing the intervention [X^2 (3, N = 78) = 14.73, p = .002]. Students who did not suggest contacting a student resource on campus expressed feeling

uncomfortable with performing the intervention [X^2 (3, N = 78) = 17.64, p = .001]. Students who suggested contacting an adult on campus expressed feeling very comfortable with performing the intervention [X^2 (3, N = 78) = 27.74, p < .001]. Gender comparison showed an effect approaching significance for women being more comfortable calling 911 in this scenario [X^2 (3, N = 78) = 7.38, p = .061]. Please refer to Figure 3a-e for a breakdown of scenario 1 comfort of performing prevention methods.

For scenario 2, a student struggling with moderate depression, chi-square analyses revealed significant associations between suggested prevention methods and comfort of performing the prevention method for: one-on-one interaction, peer/group interaction, contacting a student resource, contacting an adult on campus, and calling 911. Students who suggested one-on-one prevention expressed feeling very comfortable with providing that prevention method [X^2 (3, N = 78) = 14.41, p = .002]. Students who did not suggest peer/group interaction expressed feeling uncomfortable performing the intervention [X^2 (3, N = 78) = 21.76, p < .001]. Students who did not suggest contacting a student resource on campus expressed feeling uncomfortable with performing the intervention [X^2 (3, N = 78) = 23.97, p < .001]. Students who suggested contacting an adult on campus expressed feeling very comfortable with performing the intervention [X^2 (3, N = 78) = 24.08, p < .001]. Students who did not suggest calling 911 expressed feeling uncomfortable with performing it as a prevention method [X^2 (3, N = 77) = 42.81, p < .001]. There were no main effects for gender and comfort of performing prevention in this scenario. Please refer to Figure 4a-e for a breakdown of scenario 2 comfort of performing prevention methods.

For scenario 3, a student struggling with severe alcohol abuse, chi-square analyses revealed significant associations between suggested prevention methods and comfort of performing the prevention method for: one-on-one interaction, peer/group interaction, contacting a student resource, contacting an adult on campus, and calling 911. Students who did not suggest one-on-one interaction expressed feeling uncomfortable with performing the intervention [X^2 (3, N = 78) = 24.69, p < .001]. Students who suggested peer/group interaction expressed feeling comfortable performing the prevention [X^2 (3, N = 78) = 21.8, p < .001]. Students who did not suggest contacting a student resource expressed feeling uncomfortable performing the prevention [X^2 (3, N = 78) = 15.32, p = .002]. Students who suggested contacting an adult on campus expressed feeling very comfortable performing the prevention [X^2 (2, N = 78) = 11.99, p = .002]. Students who did not suggest calling 911 expressed feeling uncomfortable with performing it as a prevention method [X^2 (3, N = 76) = 20.48, p < .001]. There were no main effects for gender and comfort of performing prevention in this scenario. Please refer to Figure 5a-e for a breakdown of scenario 3 comfort of performing prevention methods.

For scenario 4, a student struggling with moderate alcohol abuse, chi-square analyses revealed significant associations between suggested prevention methods and comfort of performing the prevention method for: one-on-one interaction, peer/group interaction, contacting a student resource, contacting an adult on campus, and calling 911. Students who suggested one-on-one interaction expressed feeling very comfortable with performing it as a prevention method [X^2 (3, N = 78) = 28.34, p < .001]. Students who suggested peer/group interaction expressed feeling comfortable performing the prevention [X^2 (3, N = 78) = 21.31, p <

.001]. Students who suggested contacting a student resource expressed feeling very comfortable performing the prevention [X^2 (3, N = 78) = 27.79, p < .001]. Students who suggested contacting an adult on campus expressed feeling very comfortable performing the prevention [X^2 (3, N = 78) = 18.96, p < .001]. Students who did not suggest calling 911 expressed feeling uncomfortable with performing it as a prevention method [X^2 (3, N = 76) = 49.07, p < .001]. There were no main effects for gender and comfort of performing prevention in this scenario. Please refer to Figure 6a-e for a breakdown of scenario 4 comfort of performing prevention methods.

For scenario 5, a student struggling with severe anxiety, chi-square analyses revealed significant associations between suggested prevention methods and comfort of performing the prevention method for all prevention methods listed. Students who did not suggest "no intervention was needed" expressed feeling not at all comfortable performing it as a prevention method [X^2 (3, N = 78) = 18.74, p < .001]. Students who suggested one-on-one interaction expressed feeling very comfortable with performing it as a prevention method [X^2 (3, N = 78) = 21.5, p < .001]. Students who suggested peer/group interaction expressed feeling comfortable performing the prevention [X^2 (3, N = 78) = 26.75, p < .001]. Students who suggested contacting a student resource expressed feeling very comfortable performing the prevention [X^2 (3, N = 78) = 31.6, p < .001]. Students who suggested contacting an adult on campus expressed feeling very comfortable performing it as a prevention method [X^2 (3, N = 78) = 17.14, p = .001]. Students who did not suggest calling 911 expressed feeling uncomfortable performing it as a prevention method [X^2 (3, n = 77) = 55.61, p < .001]. There were no main

effects for gender and comfort of performing prevention in this scenario. Please refer to Figure 7a-f for a breakdown of scenario 5 comfort of performing prevention methods.

For scenario 6, a student struggling with moderate anxiety, chi-square analyses revealed significant associations between suggested prevention methods and comfort of performing the prevention method for all prevention methods listed. Students who did not suggest "no intervention was needed" expressed feeling not at all comfortable performing it as a prevention method [X^2 (3, N = 78) = 27.97, p < .001]. Students who suggested one-on-one interaction expressed feeling very comfortable with performing it as a prevention method [X^2 (3, N = 78) = 24.17, p < .001]. Students who suggested peer/group interaction expressed feeling comfortable performing the prevention [X^2 (3, N = 78) = 18.15, p < .001]. Students who did not suggest contacting a student resource expressed feeling uncomfortable performing it as a prevention method [X^2 (3, N = 78) = 15.87, p = .001]. Students who suggested contacting an adult on campus expressed feeling very comfortable performing it as a prevention method [X^2 (3, N = 78) = 33.29, p < .001]. Students who did not suggest calling 911 expressed feeling uncomfortable performing it as a prevention method [X^2 (3, n = 77) = 38.19, p < .001]. Gender comparison showed an effect approaching significance for women being more uncomfortable contacting an adult on campus in this scenario [X^2 (3, N = 78) = 7.23, p = .065]. Please refer to Figure 8a-g for a breakdown of scenario 6 comfort of performing prevention methods.

Discussion

Suicide is among the top three causes of death for college students in multiple studies (Cerel et al., 2013; Garlow et al., 2008; Hirsch & Barton, 2011; Lamis et al., 2009; Reynolds,

1991; Swanke & Buila, 2010). Understanding how peers might recognize and intervene with struggling students is imperative. This study examined students' ability to recognize suicidal risk factors and suggest appropriate prevention methods for at-risk college students. Prevention methods were also rated based on students' comfort of performing them.

The results did not support the initial hypotheses for gender differences and overall recognition of risk factors. Results for year-in-school and major also did not support the initial hypotheses. There were larger variations in overall score for year-in-school and major than variations by gender. A surprising outcome was that psychology double majors had the lowest average score (M = 27.53, SD = 13.22) of all majors. This finding is somewhat inconsistent with the relatively higher scores for students who majored in psychology alone. Freshman scored lower than other classes (M = 27.95, SD = 12.99), which could be a result of their lack of education on the topic.

Students identified mental illness (depression, anxiety, substance abuse) more frequently than any other risk factors. High recognition of these disorders is a step in the right direction and possible reasons for such accurate identification is the high priority classes/professionals make regarding these disorders. Despite being recognized most often, mental illnesses were not considered as the most dangerous risk factor as often as suicidal ideation. Only depression was thought to be the most dangerous risk factor in more than 50% of the scenarios it was present. This raises suspicion that students who recognize mental illness do not see it as a very serious condition or are unaware of how it can impact suicidality.

A concerning result was how often a previous suicide attempt was missed as a risk factor. A previous suicide attempt is considered the biggest risk factor for a future suicide attempt, making the lack of identification alarming (Bridge et al., 2006; Garlow et al., 2008; Lewinsohn et al., 1994). Suicide attempt was also identified as the most dangerous risk factor in only 31% of scenarios it was present. This reflects either how many times it was missed throughout the survey or how many students are not educated about the severity of a past suicide attempt.

The second set of findings showed how often students suggested prevention methods for various scenarios. Students suggested one-on-one interaction and contacting an adult on campus more than 50% of the time for each scenario. Only in the scenario where a student is struggling with severe depression was there a gender difference in suggested prevention method. Men were more likely to suggest one-on-one prevention than women. One possible explanation is that men are more uncomfortable contacting others about someone who exhibits the symptoms of severe depression.

Each scenario consisted of three risk factors. Previous research has found the comorbidity of disorders to increase suicidal ideation and behaviors, most specifically, depression, anxiety, and substance abuse disorders in combination with other suicidal risk factors (Beautrais, 1999; Bridge et al., 2006). It was expected that no scenario would result in a majority of students suggesting no intervention was needed. Students identified that “no intervention was needed at the time” a total of three times over the entirety of the survey.

This finding suggests that students recognize intervention is needed in situations where there are multiple risk factors.

The third set of findings showed how comfortable students were performing each individual prevention method. There were significant associations between comfort level for a particular intervention method and whether it was a suggested prevention method. The good news for such a result is that students who do suggest certain prevention methods over others would feel comfortable acting upon them. On the other hand, in cases where certain prevention was not suggested, students would feel uncomfortable performing the action if the opportunity presented itself. Expectations for comfort were that it would remain consistent throughout each scenario. Being comfortable performing a certain prevention method for one scenario and not another suggests the likelihood that students are only comfortable performing a prevention method if they feel it is appropriate.

Women expressed feeling slightly more comfortable with calling 911 for a student with severe depression symptoms. This is good because as depression symptoms get more severe, suicidal ideation increases (Garlow et al., 2008). Women also reported feeling more discomfort contacting an adult on campus for students who struggle with moderate anxiety. Moderate anxiety is common among college students and targeting anxiety might help reduce the increase in suicidal ideation associated with anxiety. Students that are sensitive to the effects of anxiety are at an even greater risk of suicidality, making moderate anxiety just as big of a concern as other risk factors (Lamis & Jahn, 2013).

Limitations

One of the biggest limitations of the study was the diversity of the sample. The sample of students was from the same university campus and recruited primarily from psychology classrooms where these risk factors are most likely discussed. Expanding the sample of participants beyond Hamline University and to surrounding universities would improve diversity of sample size. Including ratings for the likelihood of performing various prevention strategies would help further understand peer responses to struggling students.

Future Research

Future research possibilities include providing short video vignettes of college students. Real-life situations like these would more adequately test college students' ability to recognize risk factors. It would also provide a realistic situation that might better tap students' responses to their peers. Another possibility is altering the vignettes to contain lesser-known risk factors such as: bipolar disorder, schizophrenia, perfectionism, and physical health. Altering the vignettes to contain different combinations of risk factors is another way of testing students' knowledge on comorbidity and how some combinations might not seem dangerous but prove to be just as big of a risk for suicidality.

References

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

Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry, 47*(3-4), 372-394.

Capron, D. W., Fitch, K., Medley, A., Blagg, C., Mallott, M., & Joiner, T. (2012). Role of anxiety sensitivity subfactors in suicidal ideation and suicide attempt history. *Depression and anxiety*, *29*(3), 195-201.

Cerel, J., Bolin, M. C., & Moore, M. M. (2013). Suicide exposure, awareness and attitudes in college students. *Advances in Mental Health, 12*(1), 46-53.

Cimini, M. D., Rivero, E. M., Bernier, J. E., Stanley, J. A., Murray, A. D., Anderson, D. A., . . . & Bapat, M. (2014). Implementing an Audience-Specific Small-Group Gatekeeper Training Program to Respond to Suicide Risk Among College Students: A Case Study. *Journal of American College Health*, *62*(2), 92-100.

Conley, C. S., Kirsch, A. C., Dickson, D. A., & Bryant, F. B. (2014). Negotiating the Transition to College Developmental Trajectories and Gender Differences in Psychological Functioning, Cognitive-Affective Strategies, and Social Well-Being. *Emerging Adulthood*, 2167696814521808.

Czyz, E. K., Horwitz, A. G., Eisenberg, D., Kramer, A., & King, C. A. (2013). Self-reported barriers to professional help seeking among college students at elevated risk for suicide. *Journal of American College Health*, *61*(7), 398-406.

Drum, D. J., & Denmark, A. B. (2012). Campus suicide prevention: Bridging paradigms and forging partnerships. *Harvard Review of Psychiatry, 20*(4), 209-221.

Dvorak, R. D., Lamis, D. A., & Malone, P. S. (2013). Alcohol use, depressive symptoms, and impulsivity as risk factors for suicide proneness among college students. *Journal of affective disorders*, *149*(1), 326-334.

Elliot, C. A., Kennedy, C., Morgan, G., Anderson, S. K., & Morris, D. (2012). Undergraduate physical activity and depressive symptoms: A national study. *American Journal of Health Behavior, 36*(2), 230-241.

Flett, G. L., Hewitt, P. L., & Heisel, M. J. (2014). The destructiveness of perfectionism revisited: Implications for the assessment of suicide risk and the prevention of suicide. *Review Of General Psychology, 18*(3), 156-172.

Garlow, S. J., Rosenberg, J., Moore, J. D., Haas, A. P., Koestner, B., Hendin, H., & Nemeroff, C. B. (2008). Depression, desperation, and suicidal ideation in college students: results from the American Foundation for Suicide Prevention College Screening Project at Emory University, *Depression and anxiety*, *25*(6), 482-488.

Gilman, S. E., Cochran, S. D., Mays, V. M., Hughes, M., Ostrow, D., & Kessler, R. C. (2001). Risk of psychiatric disorders among individuals reporting same-sex sexual partners in the national comorbidity survey, *American Journal of Public Health, 91*(6), 933-939.

Gonzalez, V. M. (2012). Association of solitary binge drinking and suicidal behavior among emerging adult college students. *Psychology of addictive behaviors*, *26*(3), 609.

Haas, A., Koestner, B., Rosenberg, J., Moore, D., Garlow, S. J., Sedway, J., . . . Nemeroff, C. B. (2008). An interactive web-based method of outreach to college students at risk for suicide. *Journal of American College Health, 57*(1), 15-22.

Harris, K. M. (2013). Sexuality and suicidality: Matched-pairs analyses reveal unique characteristics in non-heterosexual suicidal behaviors. *Archives Of Sexual Behavior*, *42*(5), 729-737.

Hirsch, J. K., & Barton, A. L. (2011). Positive social support, negative social exchanges, and suicidal behavior in college students. *Journal of American College Health, 59*(5), 393-398.

Horton, L. (2006). Social, cultural, and demographic factors in suicide.

Kasckow, J., Felmet, K., & Zisook, S. (2011). Managing Suicide Risk in Patients with Schizophrenia, *CNS Drugs*, *25*(2), 129–143.

Kleiman, E. M., Riskind, J. H., Schaefer, K. E., & Weingarden, H. (2012). The moderating role of social support on the relationship between impulsivity and suicide risk. *Crisis: The Journal of Crisis Intervention And Suicide Prevention*, *33*(5), 273-279.

Lamis, D. A., Ellis, J. B., Chumney, F. L., & Dula, C. S. (2009). Reasons for living and alcohol use among college students. *Death Studies, 33*(3), 277-286.

Lamis, D. A., & Jahn, D. R. (2013). Parent–Child Conflict and Suicide Rumination in College Students: The Mediating Roles of Depressive Symptoms and Anxiety Sensitivity. *Journal of American College Health*, *61*(2), 106-113.

Lamis, D. A., & Lester, D. (2013). Gender differences in risk and protective factors for suicidal ideation among college students. *Journal of College Student Psychotherapy, 27*(1), 62-77.

Lester, D. (2013). Suicide prevention on campus – what direction? *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 34*(6), 371-373.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting and Clinical Psychology, 62*(2), 297-305.

Mackenzie, S., Wiegel, J. R., Mundt, M., Brown, D., Saewyc, E., Heiligenstein, E., Fleming, M. (2011). Depression and suicide ideation among students accessing campus health care. *American Journal of Orthopsychiatry, 81*(1), 101-107. doi:10.1111/j.1939-0025.2010.01077.x

Morse, C. C., & Schulze, R. (2013). Enhancing the network of peer support on college campuses. *Journal of College Student Psychotherapy, 27*(3), 212-225.

Mowbray, C. T., Megivern, D., Mandiberg, J. M., Strauss, S., Stein, C. H., Collins, K., ... & Lett, R. (2006). Campus mental health services: Recommendations for change. *American Journal of Orthopsychiatry*.

Pompili, M., Gonda, X., Serafini, G., Innamorati, M., Sher, L., Amore, M., ... & Girardi, P. (2013). Epidemiology of suicide in bipolar disorders: a systematic review of the literature. *Bipolar disorders*, *15*(5), 457-490.

Reed, E., Prado, G., Matsumoto, A., & Amaro, H. (2010). Alcohol and drug use and related consequences among gay, lesbian and bisexual college students: Role of experiencing violence, feeling safe on campus, and perceived stress.*Addictive behaviors*, *35*(2), 168-171.

Reynolds, W. M. (1991). Psychometric characteristics of the adult suicidal ideation questionnaire in college students. *Journal of Personality Assessment, 56*(2), 289-307.

Schaffer, M., Jeglic, E. L., & Stanley, B. (2008). The relationship between suicidal behavior, ideation, and binge drinking among college students. *Archives of Suicide Research, 12*(2), 124-132.

Schwartz, A. J. (2013). Comparing the risk of suicide of college students with nonstudents. *Journal of College Student Psychotherapy, 27*(2), 120-137.

Schmidt, N. B., Capron, D. W., Raines, A. M., & Allan, N. P. (2014). Randomized clinical trial evaluating the efficacy of a brief intervention targeting anxiety sensitivity cognitive concerns. *Journal of consulting and clinical psychology*, *82*(6), 1023.

Stephenson, H., Pena-Shaff, J., & Quirk, P. (2006). Predictors of college student suicidal ideation: Gender differences. *College Student Journal, 40*(1), 109-117.

Swahn, M. H., & Bossarte, R. M. (2007). Gender, early alcohol use, and suicide ideation and attempts: Findings from the 2005 youth risk behavior survey. *Journal of Adolescent Health, 41*(2), 175-181.

Swanke, J. R., & Buila, S. M. D. (2010). Gatekeeper training for caregivers and professionals: A variation on suicide prevention. *Advances in Mental Health, 9*(1), 98-104.

Vaughn, J. A. (2012). Special suicide and suicide prevention section of the journal of american college health. *Journal of American College Health, 60*(2), 101. doi:10.1080/07448481.2011.645928

Walther, W. A., Abelson, S., & Malmon, A. (2014). Active minds: Creating peer-to-peer mental health awareness. *Journal of College Student Psychotherapy, 28*(1), 12-22.

Westefeld, J. S., Button, C., Haley, J. T. J., Kettmenn, J. J., MacConnell, J., Sandil, R., & Tallman, B. (2006). College student suicide: A call to action. *Death Studies, 30*(10), 931-956.

Westefeld, J. S., Homaifar, B., Spotts, J., Furr, S., Range, L., & Werth, J. L. J. (2005). Perceptions concerning college student suicide: Data from four universities. *Suicide and Life-Threatening Behavior, 35*(6), 640-645.

Young, R., Sweeting, H., & Ellaway, A. (2011). Do schools differ in suicide risk? The influence of school and neighbourhood on attempted suicide, suicidal ideation and self-harm among secondary school pupils. *BMC public health*, *11*(1), 874.

Zullig, K. J., & Divin, A. L. (2012). The association between non-medical prescription drug use, depressive symptoms, and suicidality among college students. *Addictive behaviors*, *37*(8), 890-899.

Figures

Figure 1a. Mean score differentiated by gender

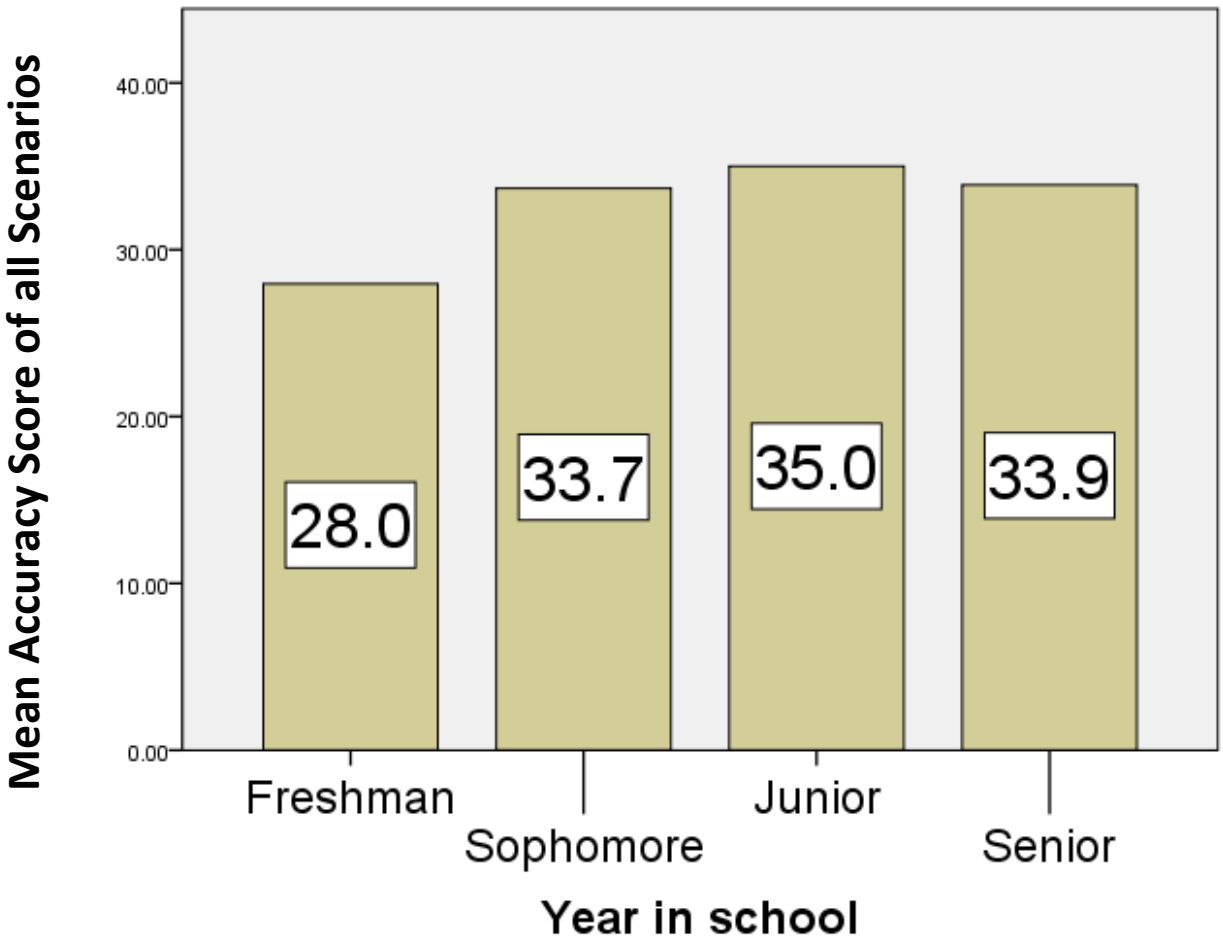

Figure 1b. Mean score differentiated by year-in-school

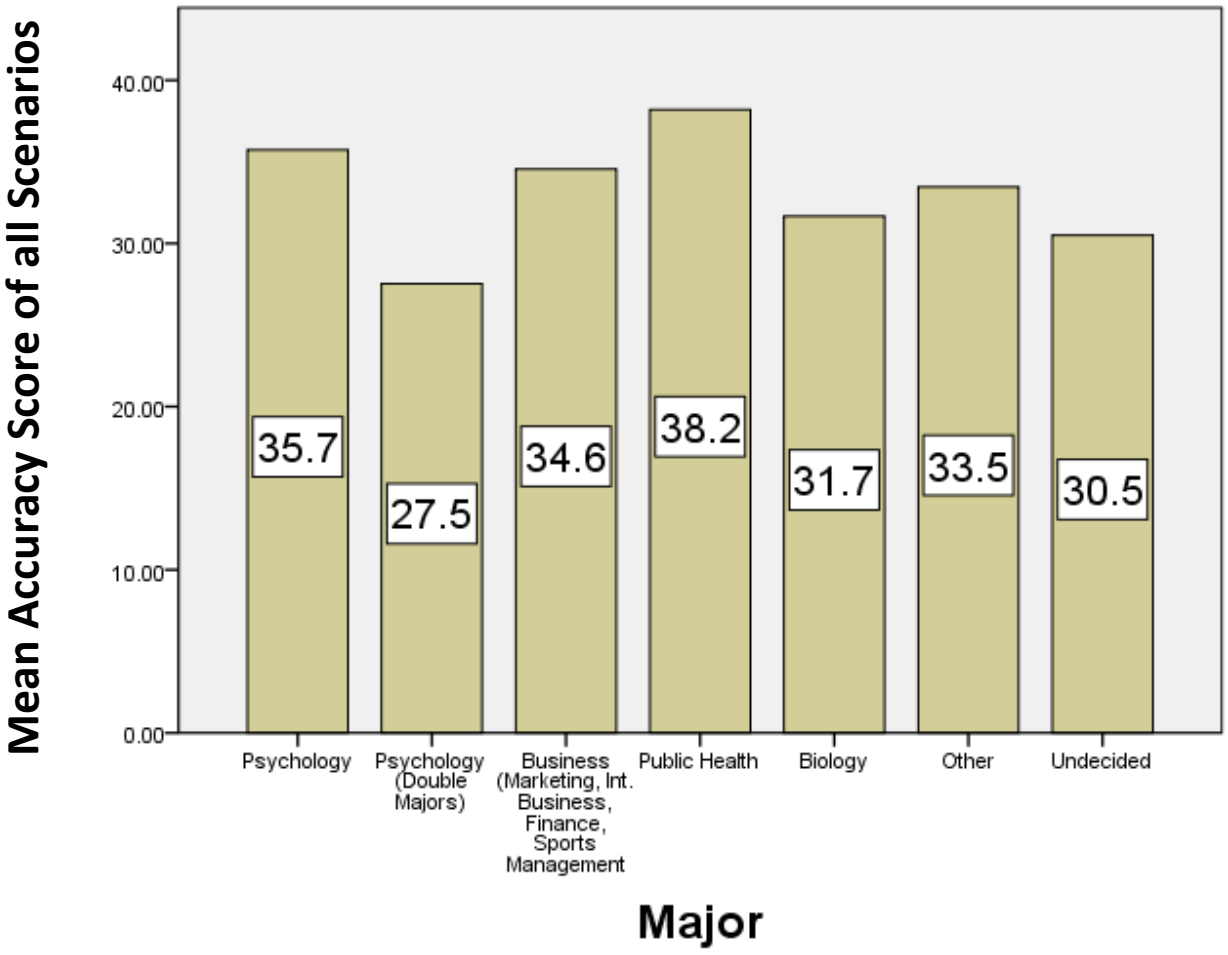

Figure 1c. Mean score differentiated by major

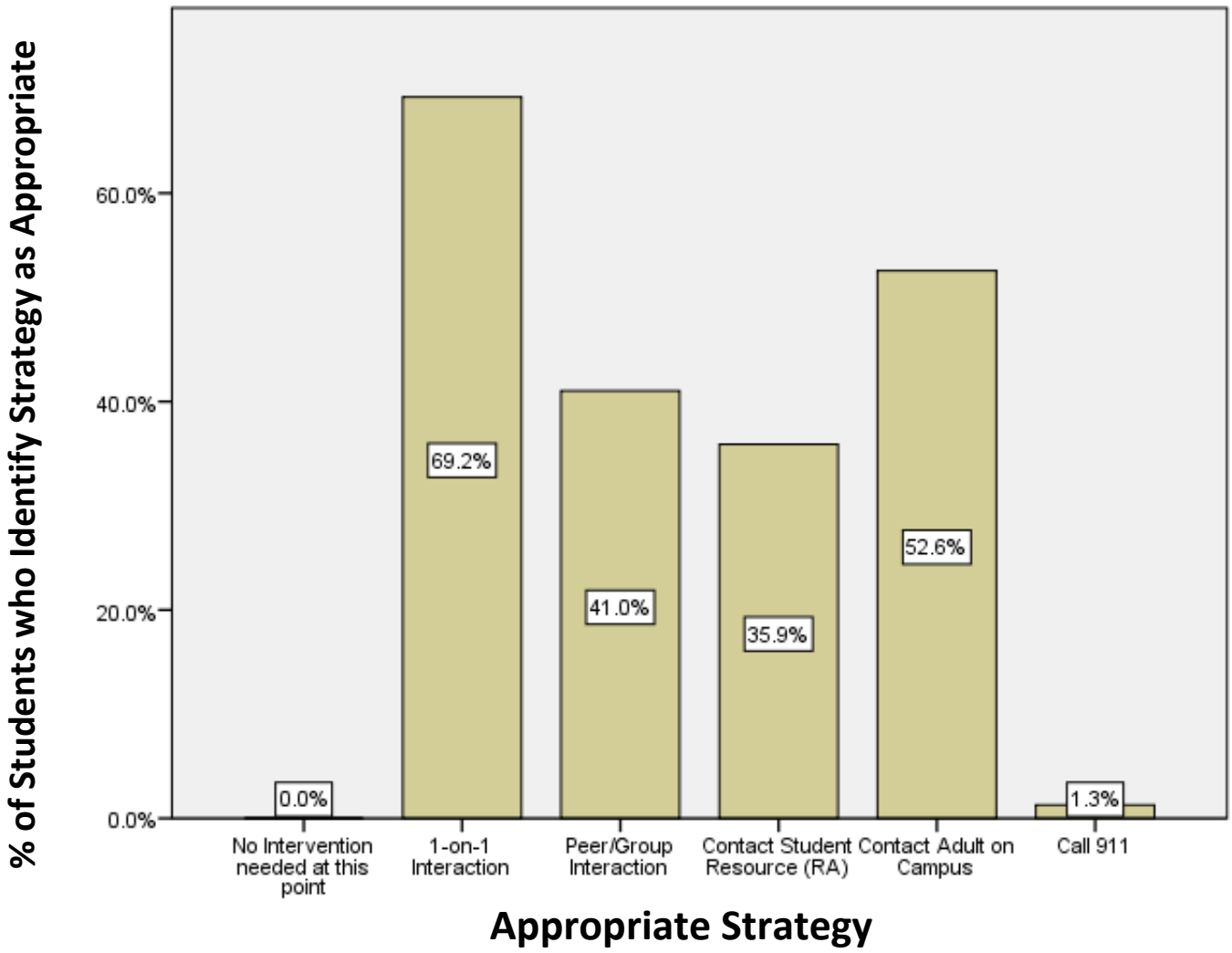

Figure 2a. % suggested prevention for scenario 1

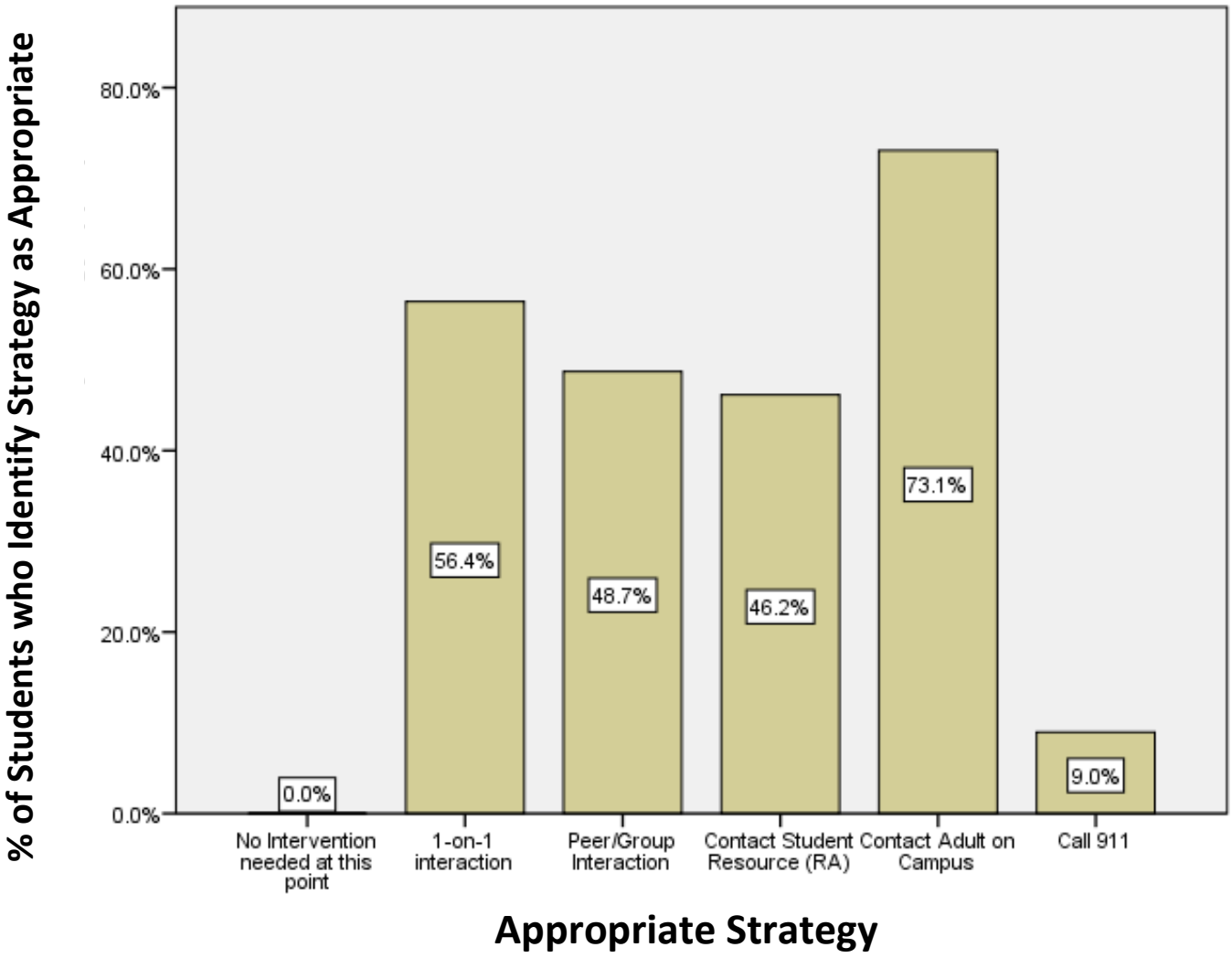

Figure 2b. % suggested prevention for scenario 2

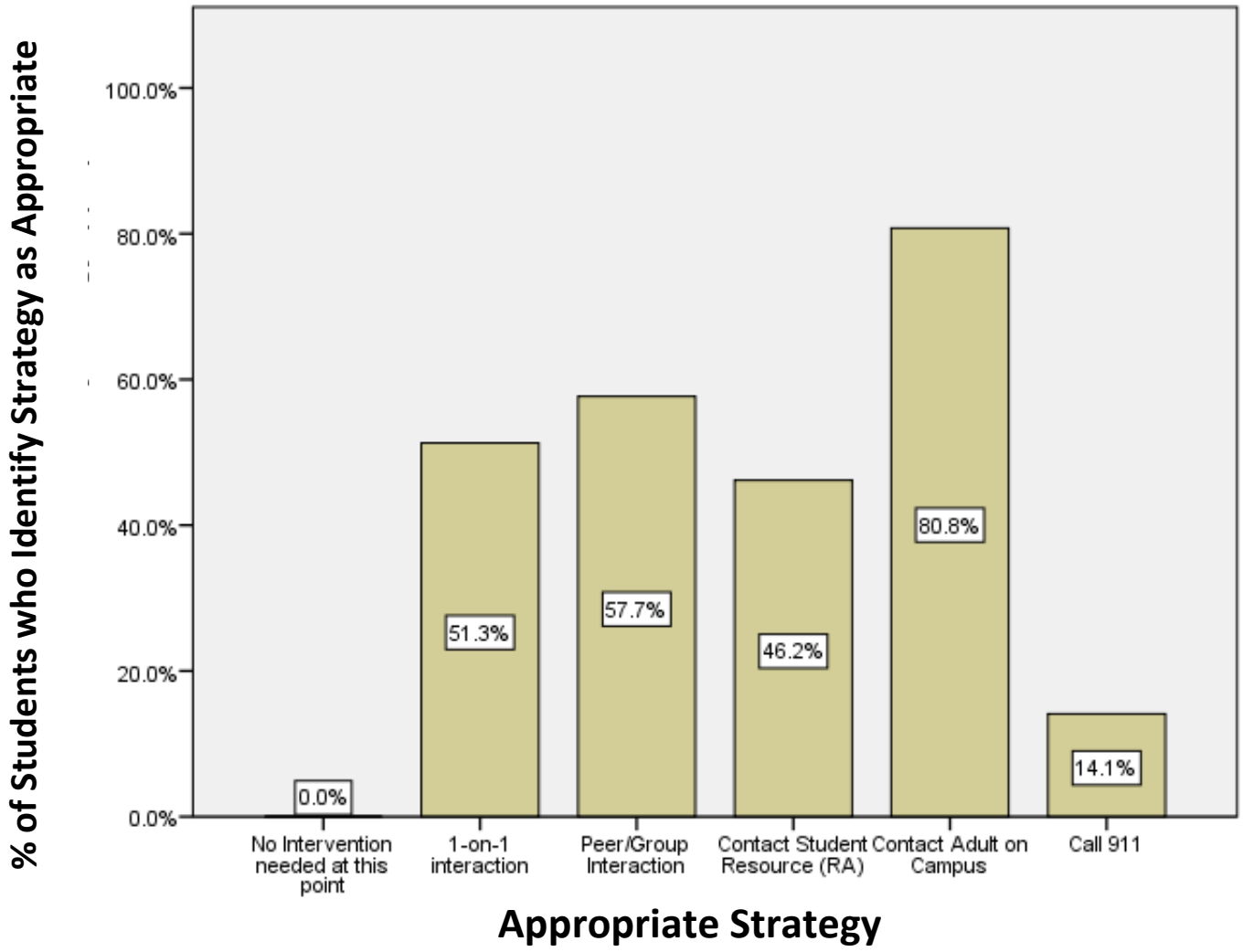

Figure 2c. % suggested prevention for scenario 3

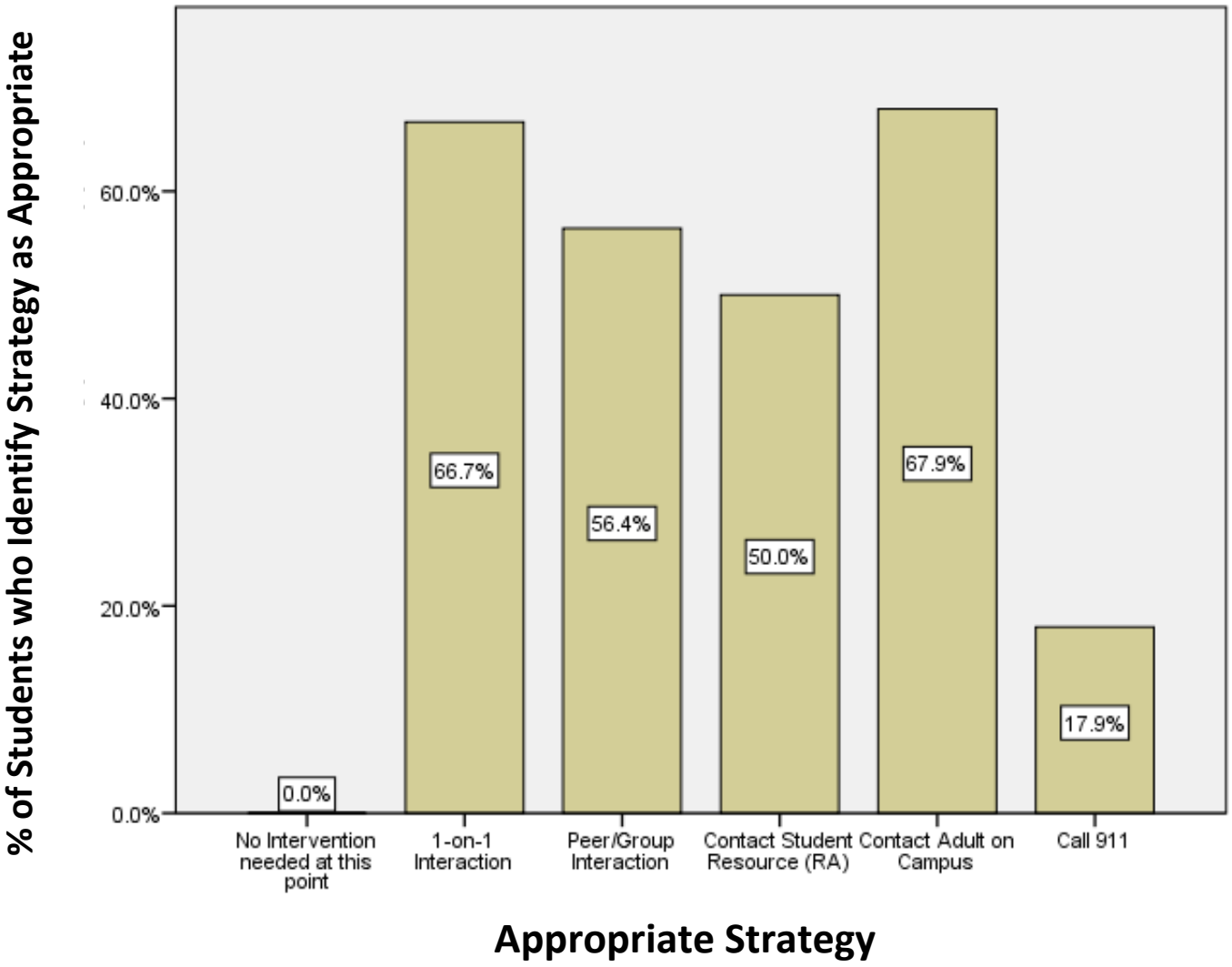

Figure 2d. % suggested prevention for scenario 4

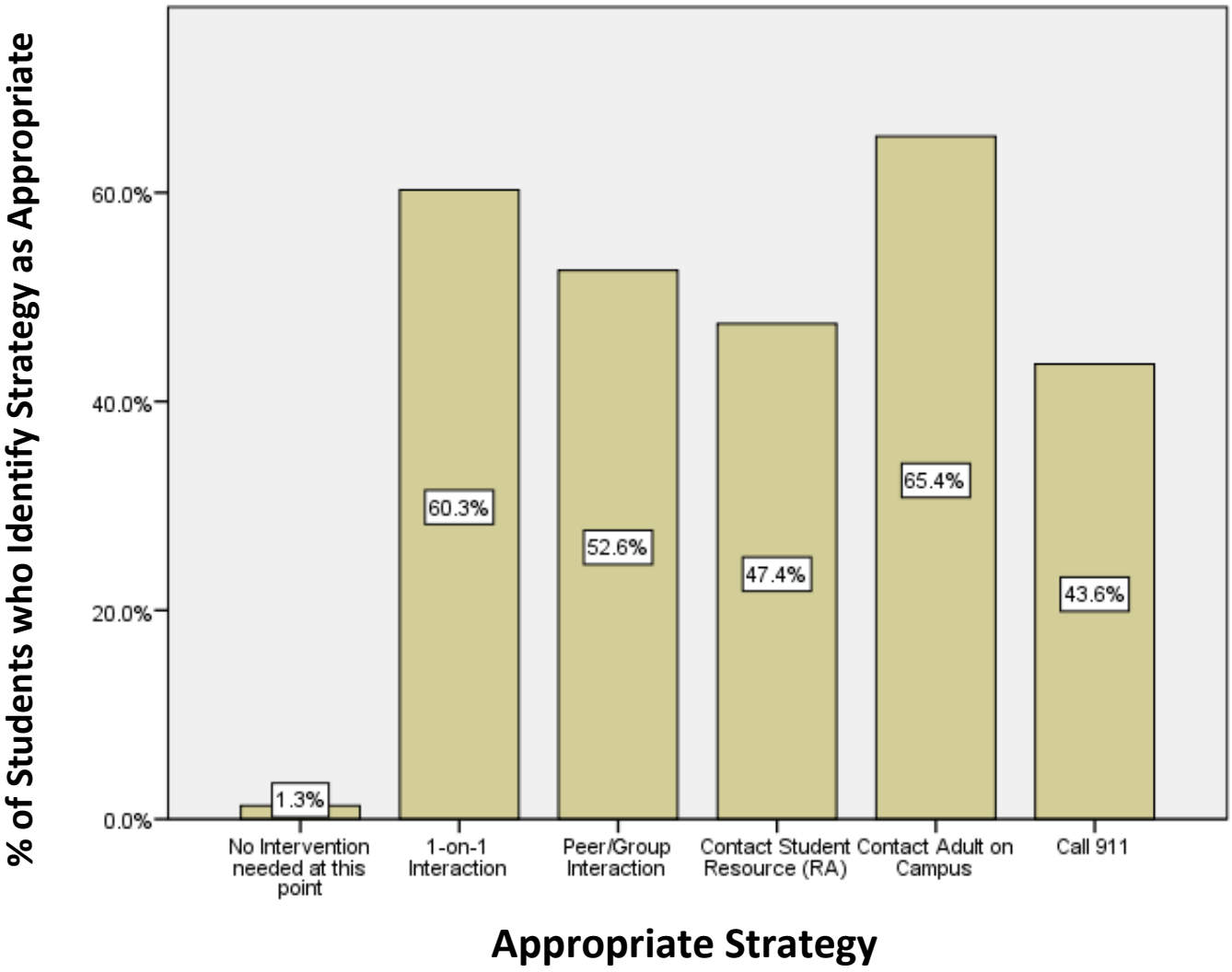

Figure 2e. % suggested prevention for scenario 5

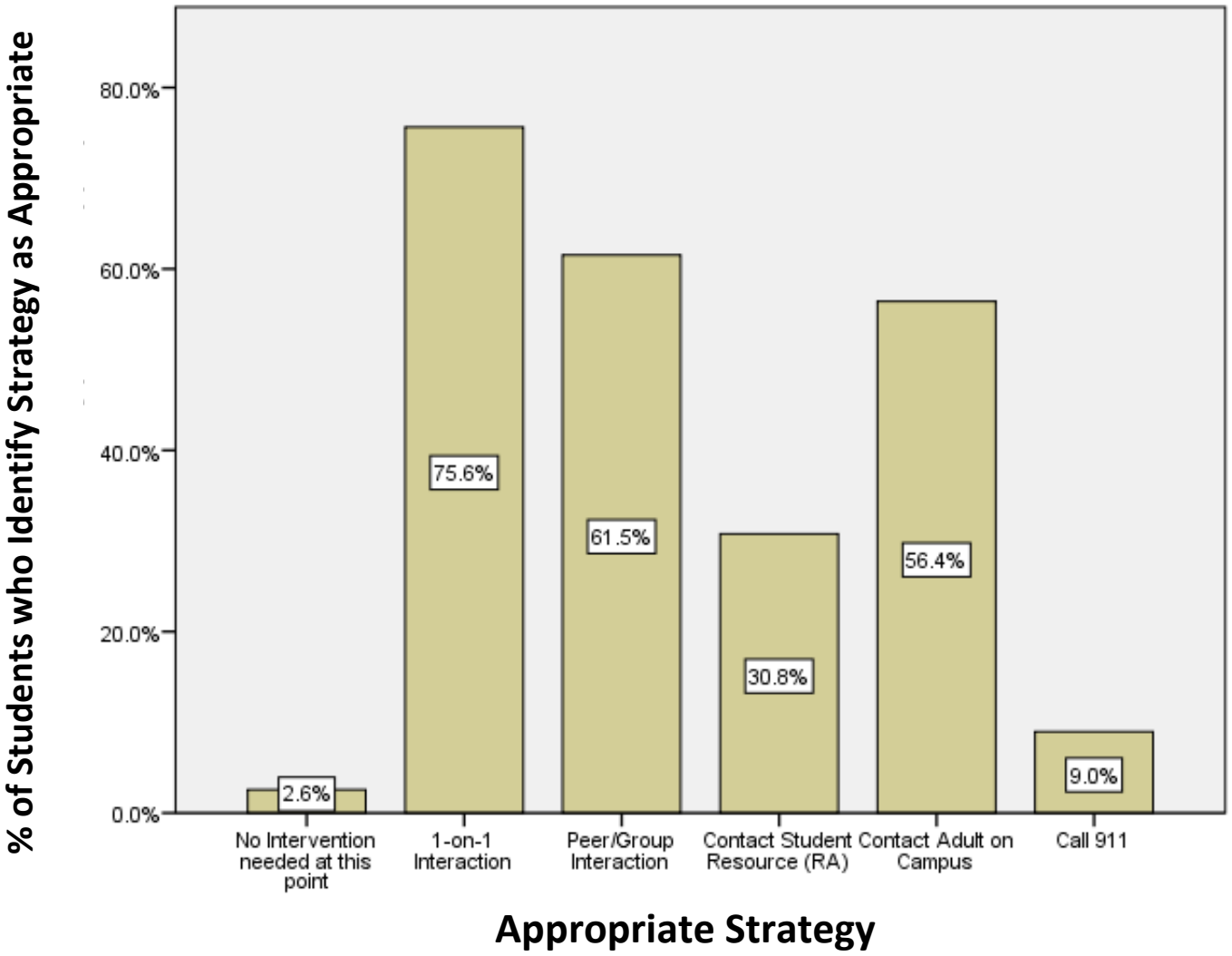

Figure 2f. % suggested prevention for scenario 6

Scenario 1

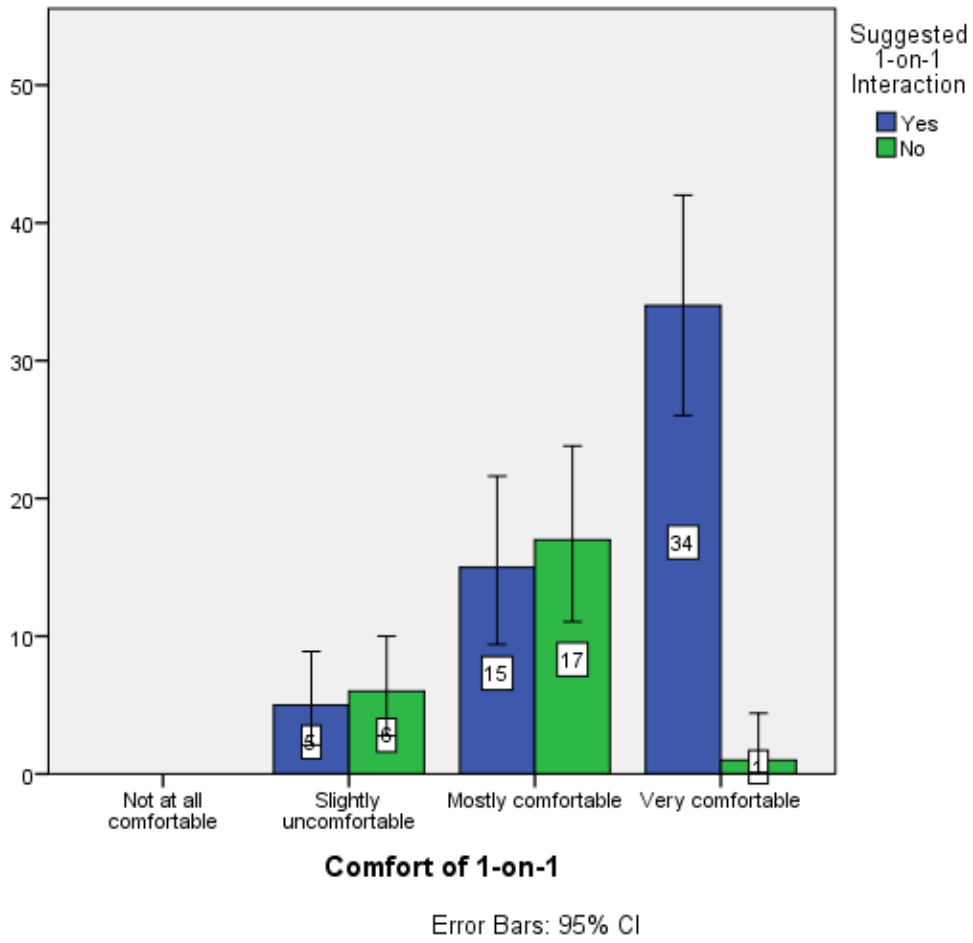

Figure 3a. Frequency of comfort for suggested prevention

SUICIDE PREVENTION

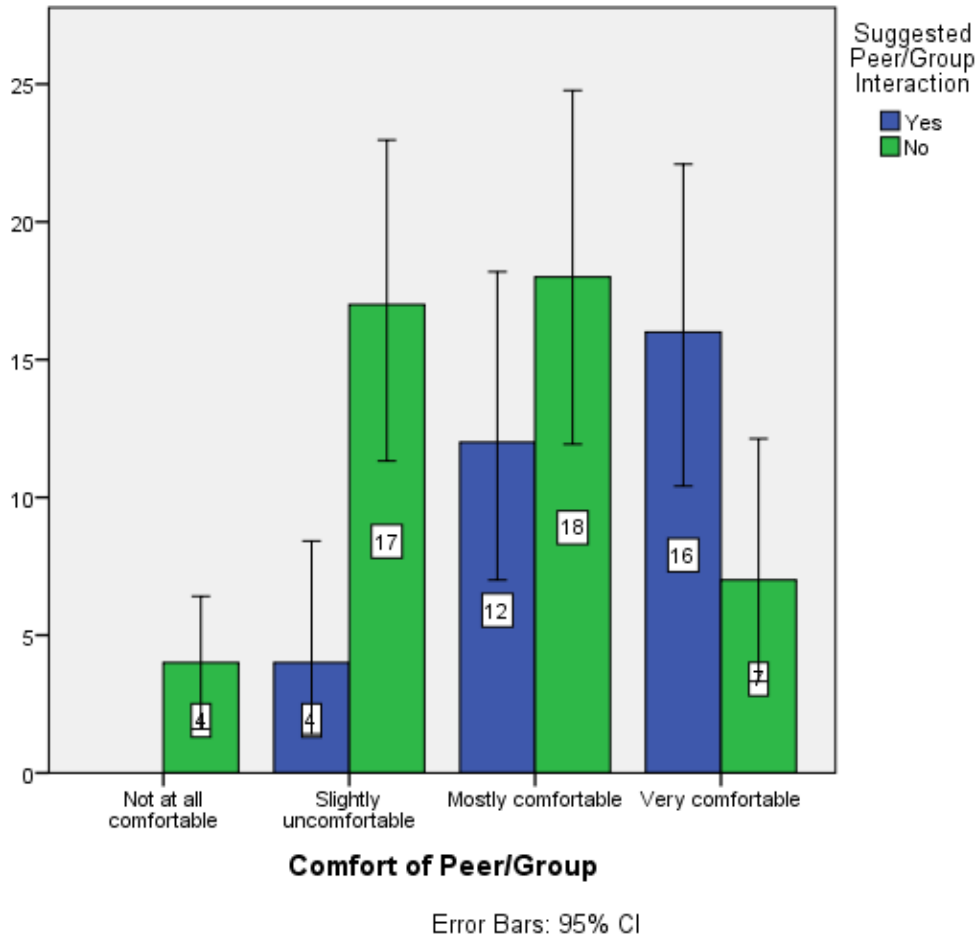

Figure 3b. Frequency of comfort for suggested prevention

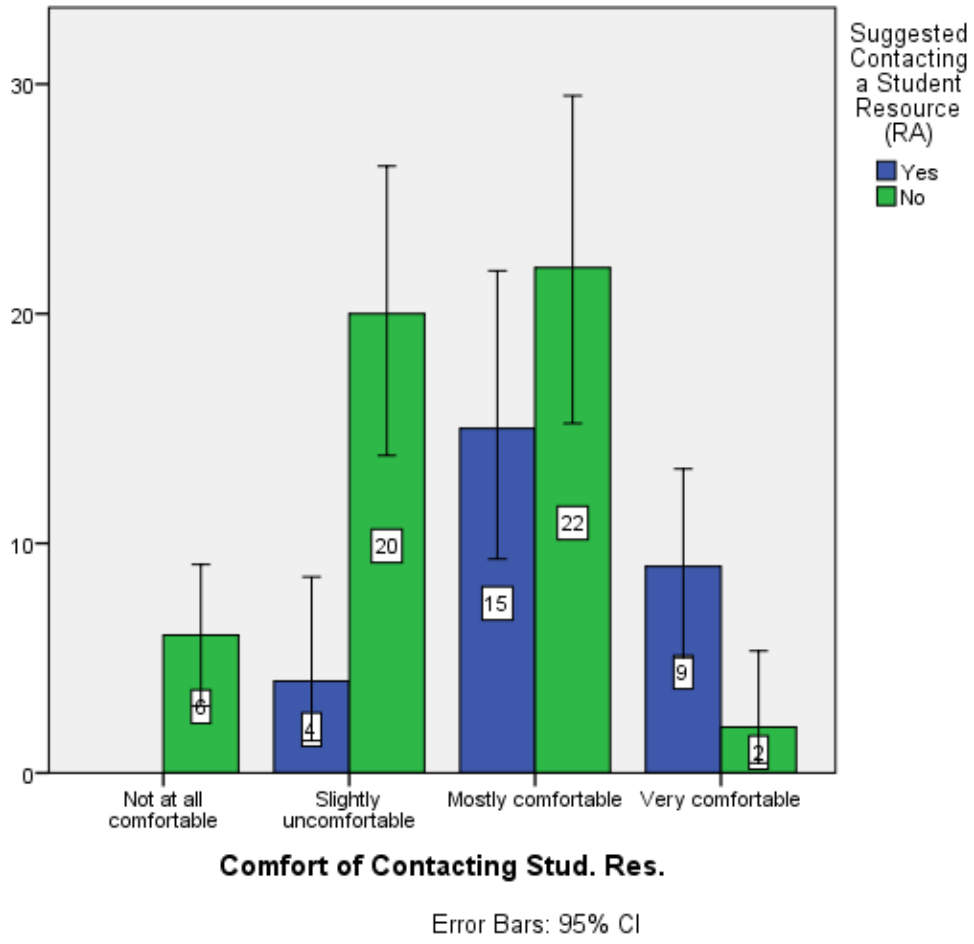

Figure 3c. Frequency of comfort for suggested prevention

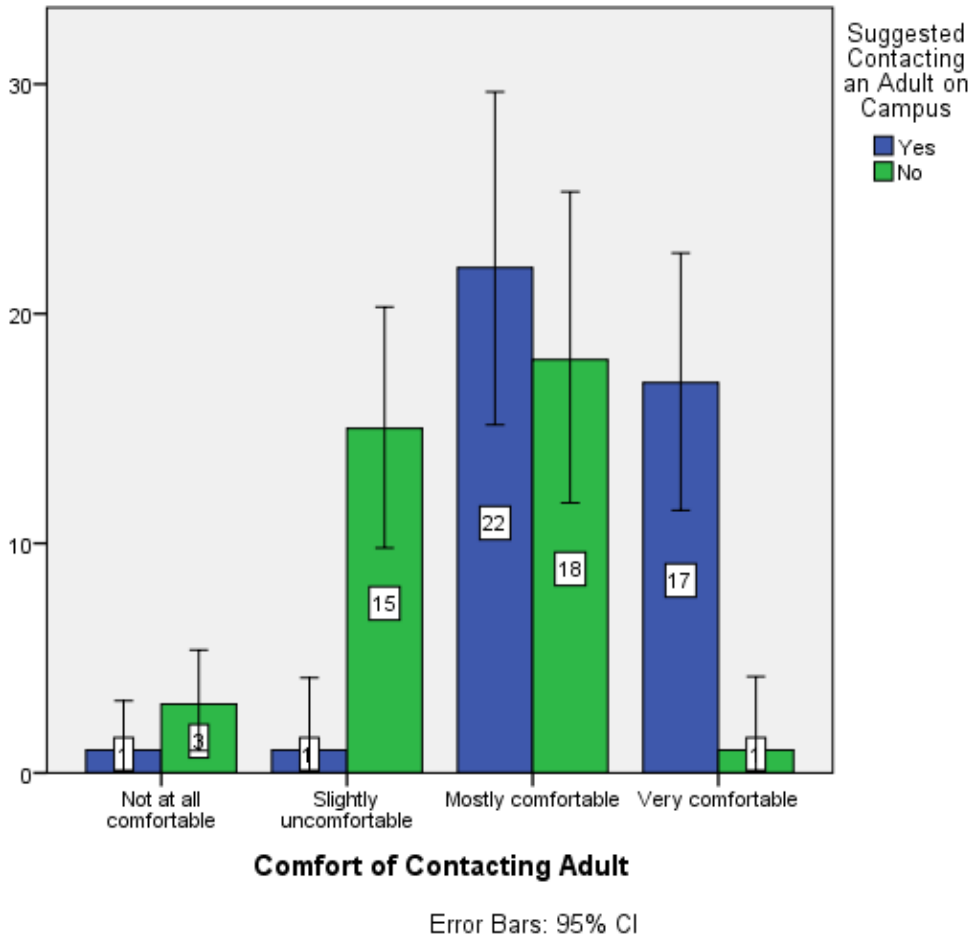

Figure 3d. Frequency of comfort for suggested prevention

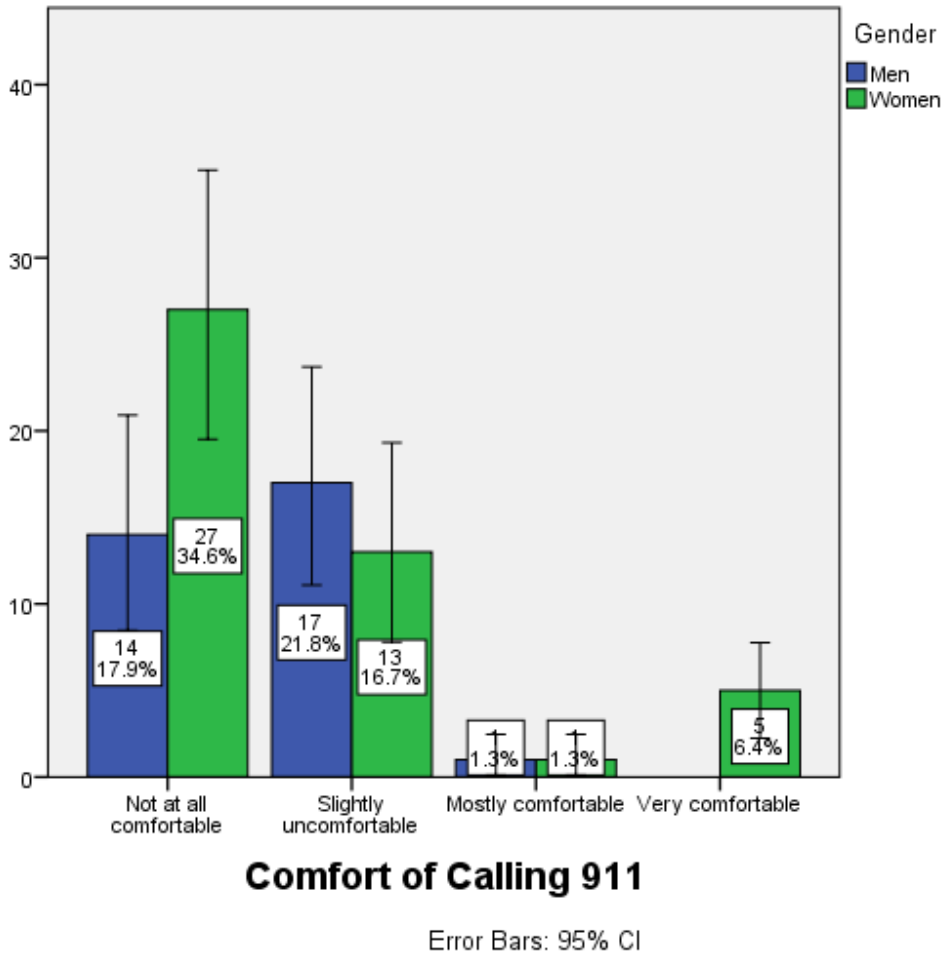

Figure 3e. Gender differences for comfort of calling 911

Scenario 2

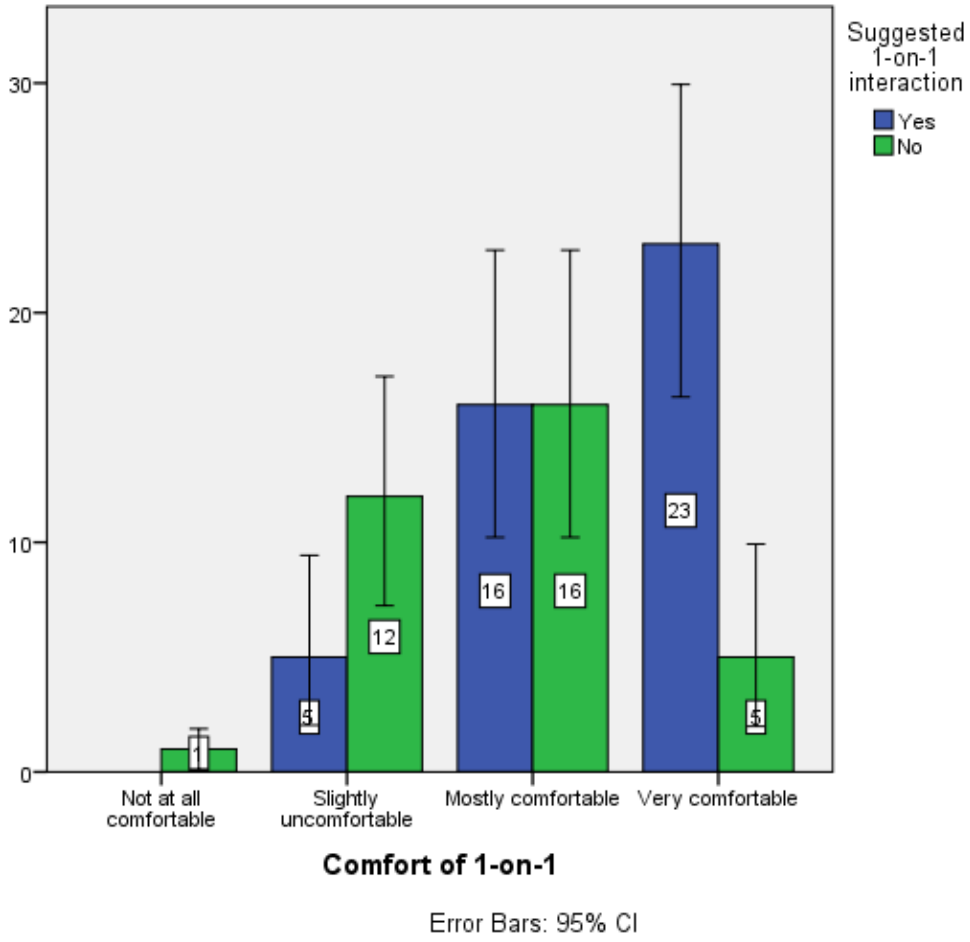

Figure 4a. Frequency of comfort for suggested prevention

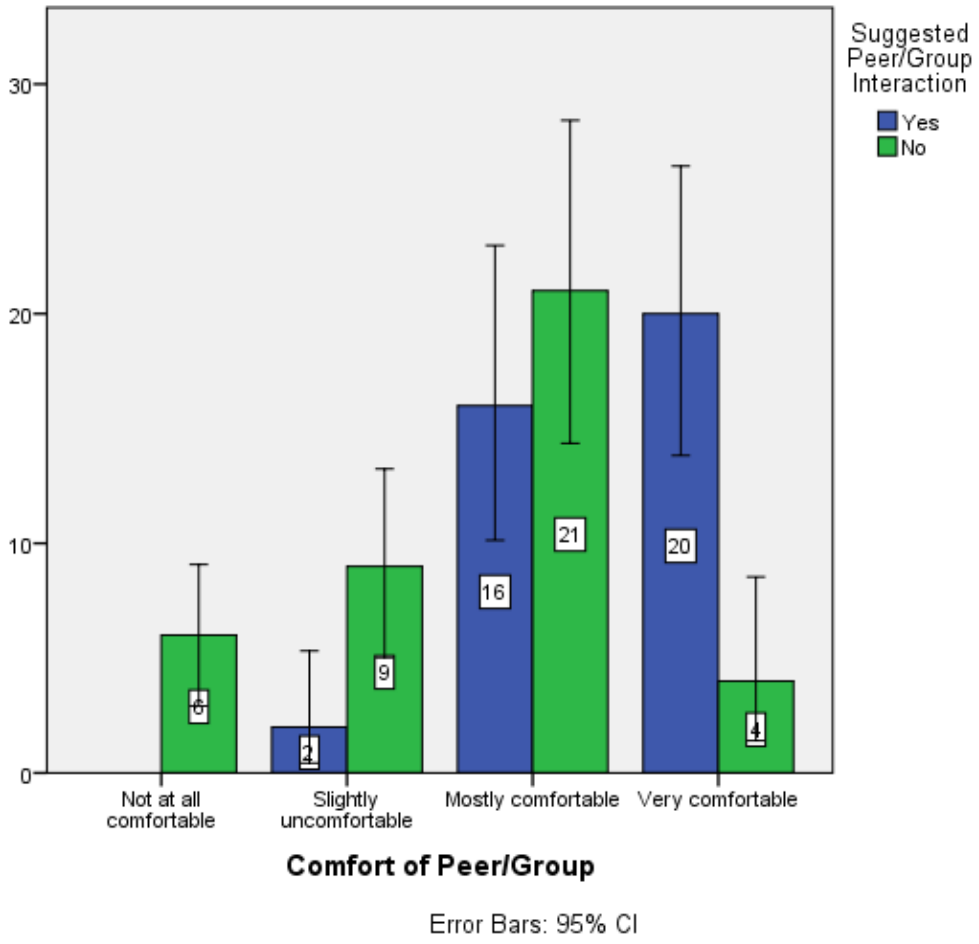

Figure 4b. Frequency of comfort for suggested prevention

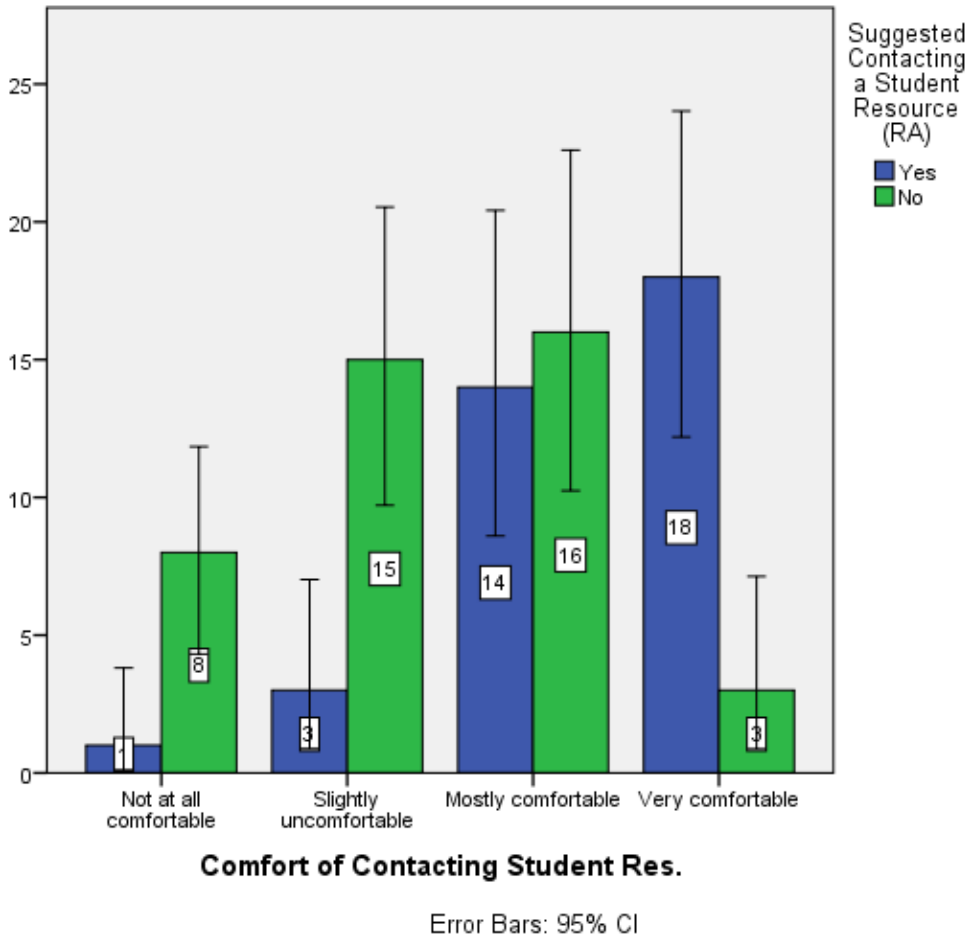

Figure 4c. Frequency of comfort for suggested prevention

SUICIDE PREVENTION

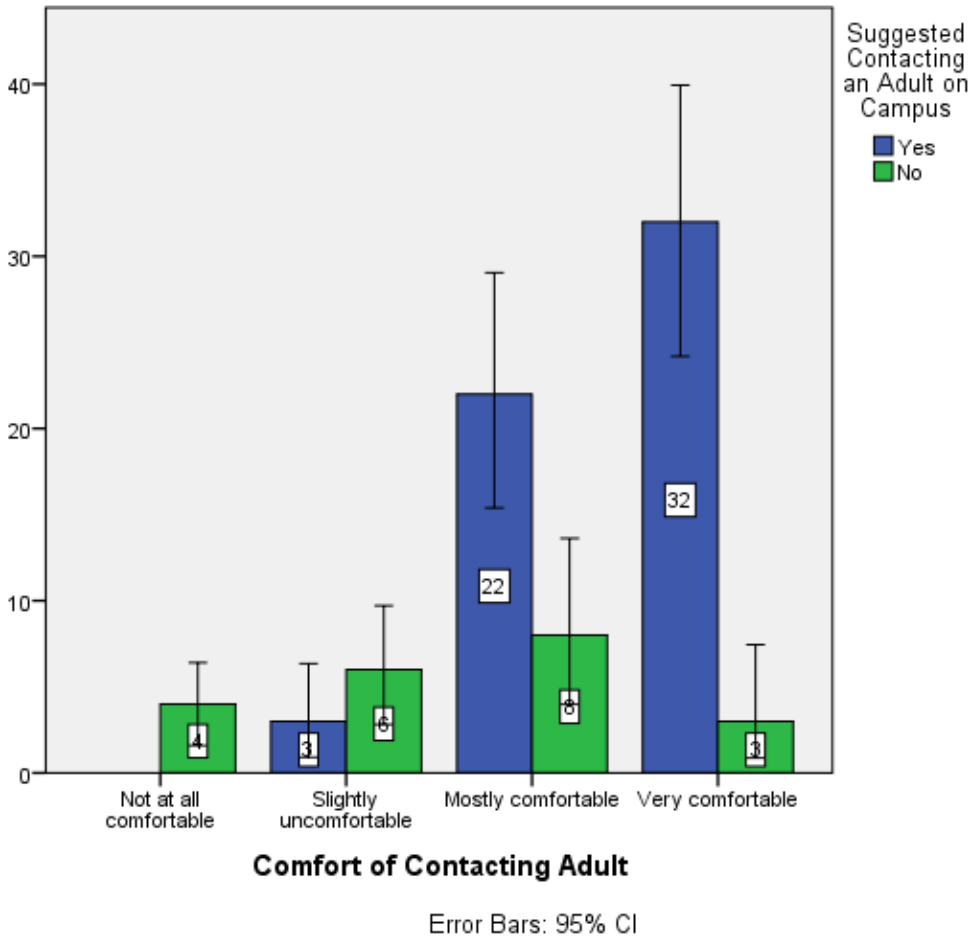

Figure 4d. Frequency of comfort for suggested prevention

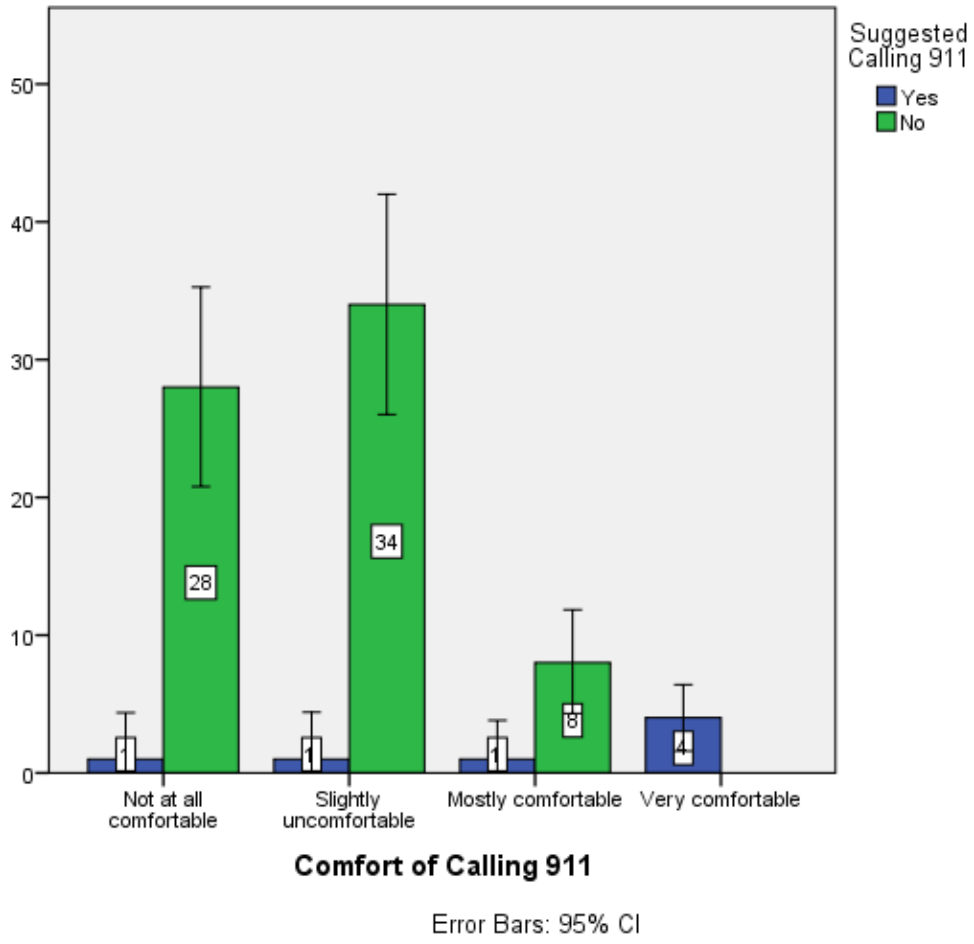

Figure 4e. Frequency of comfort for suggested prevention

Scenario 3

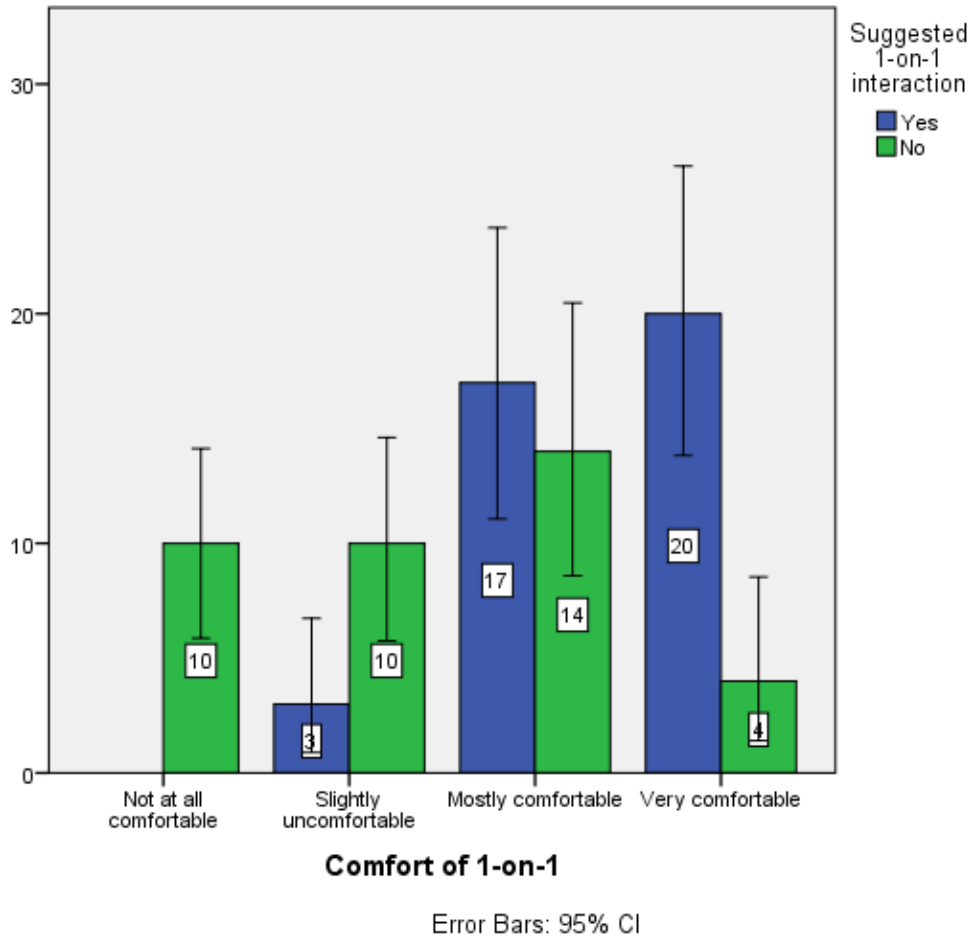

Figure 5a. Frequency of comfort for suggested prevention

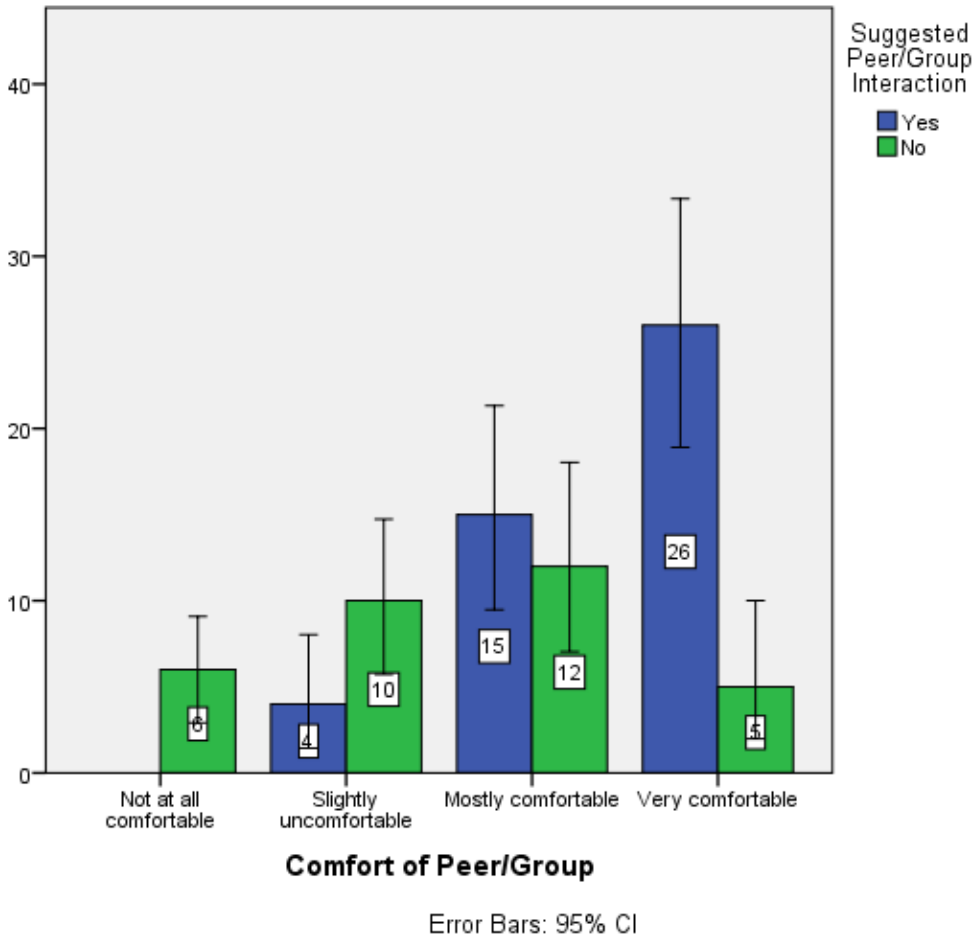

Figure 5b. Frequency of comfort for suggested prevention

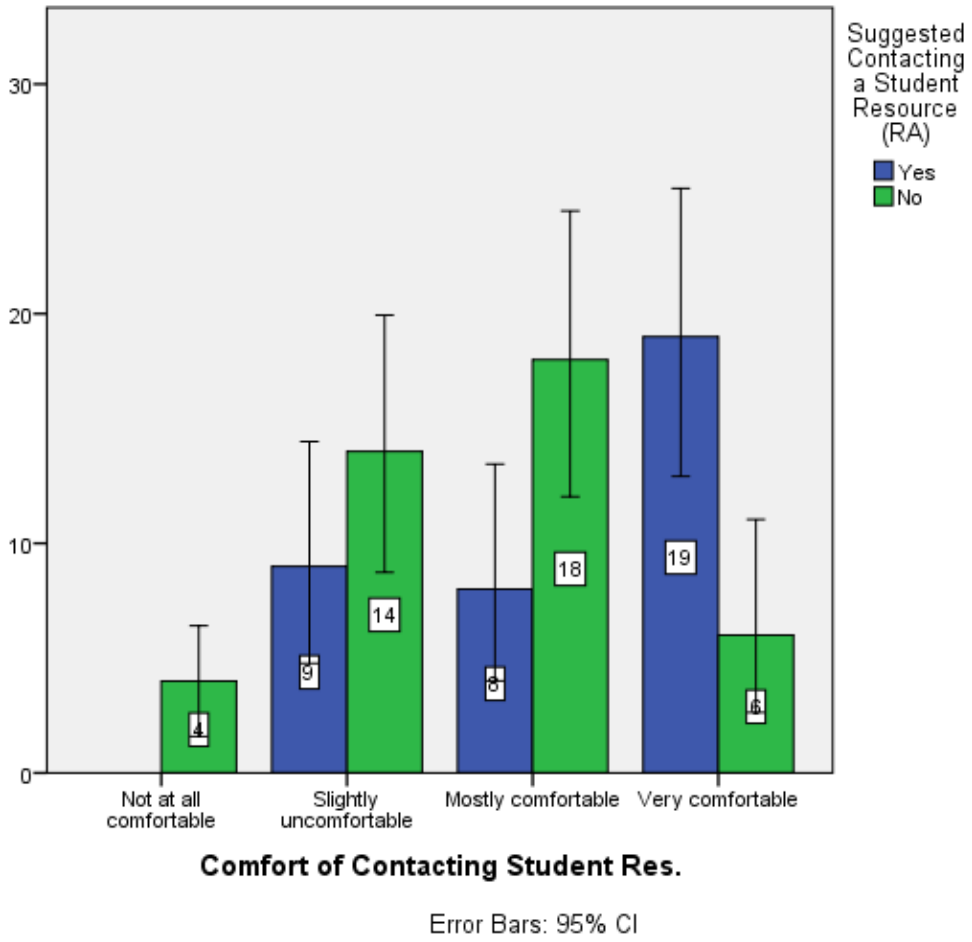

Figure 5c. Frequency of comfort for suggested prevention

SUICIDE PREVENTION

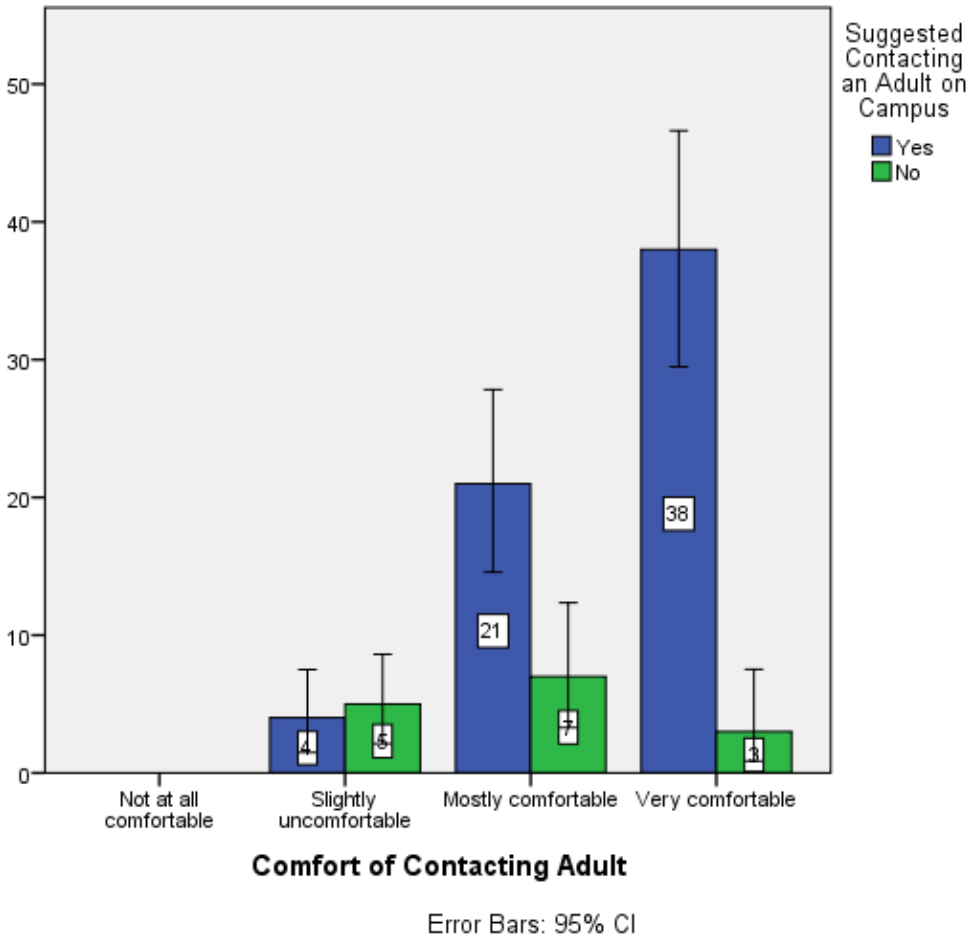

Figure 5d. Frequency of comfort for suggested prevention

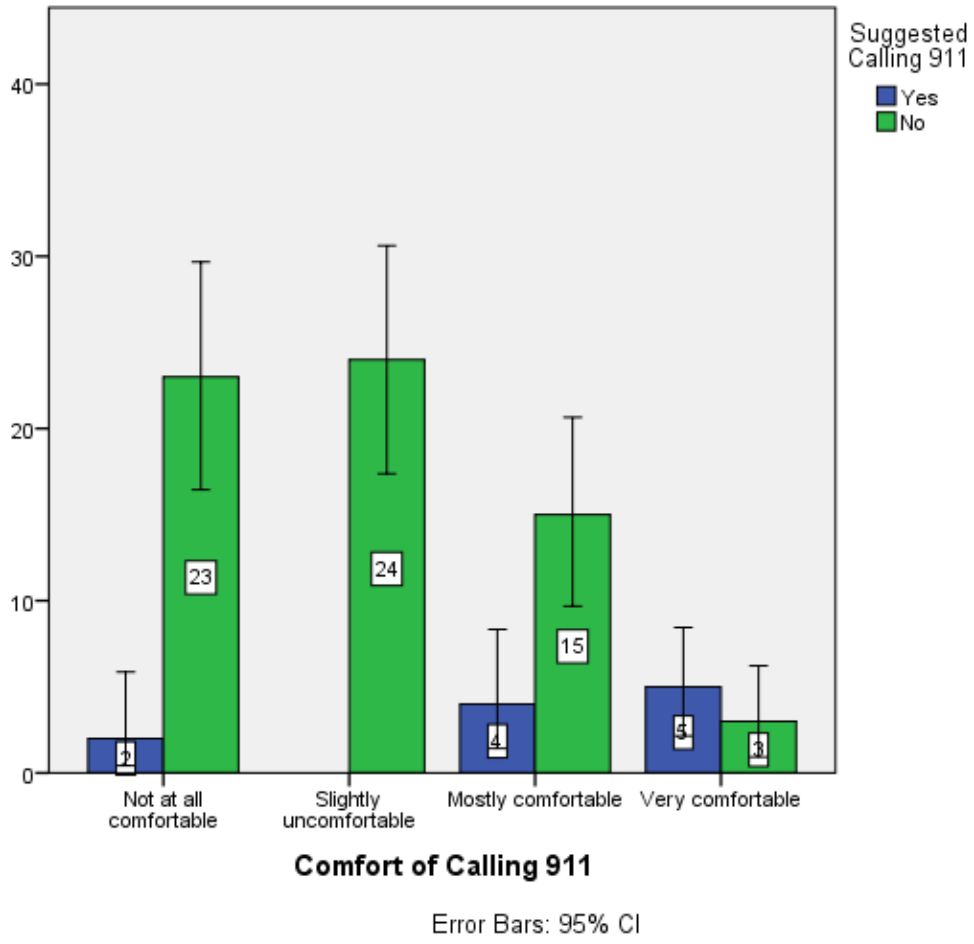

Figure 5e. Frequency of comfort for suggested prevention

SUICIDE PREVENTION

Scenario 4

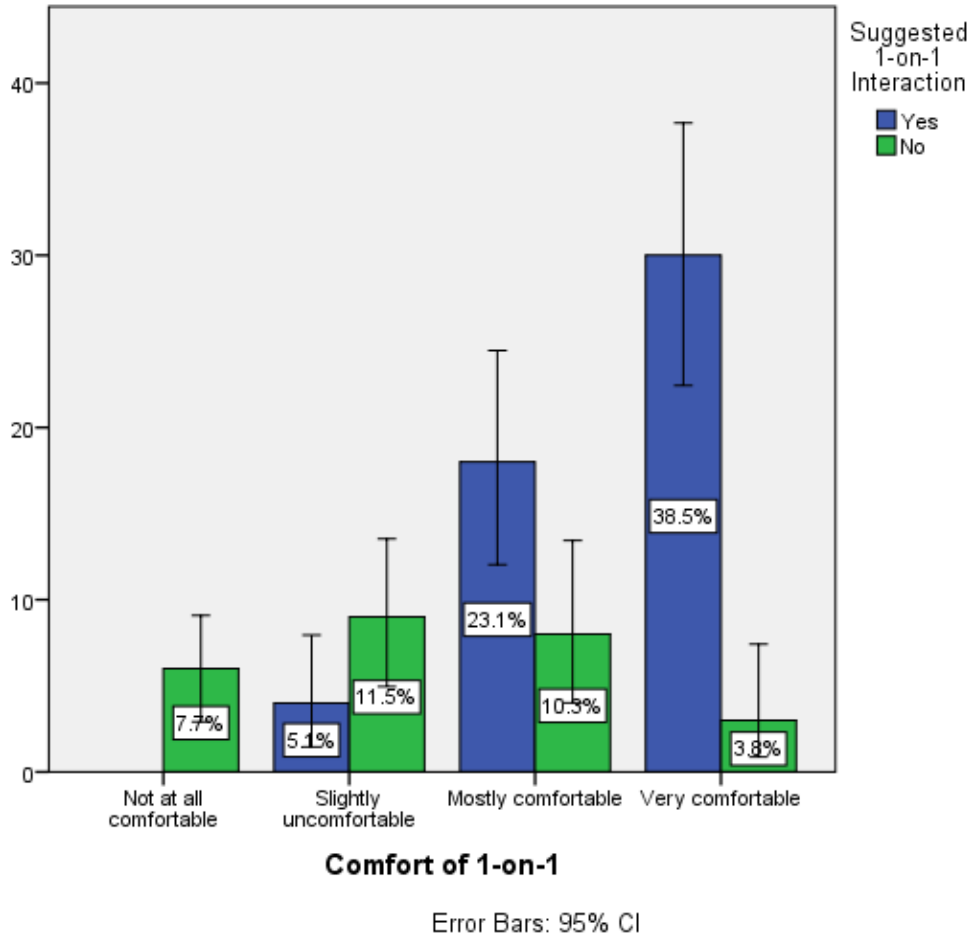

Figure 6a. Frequency of comfort for suggested prevention

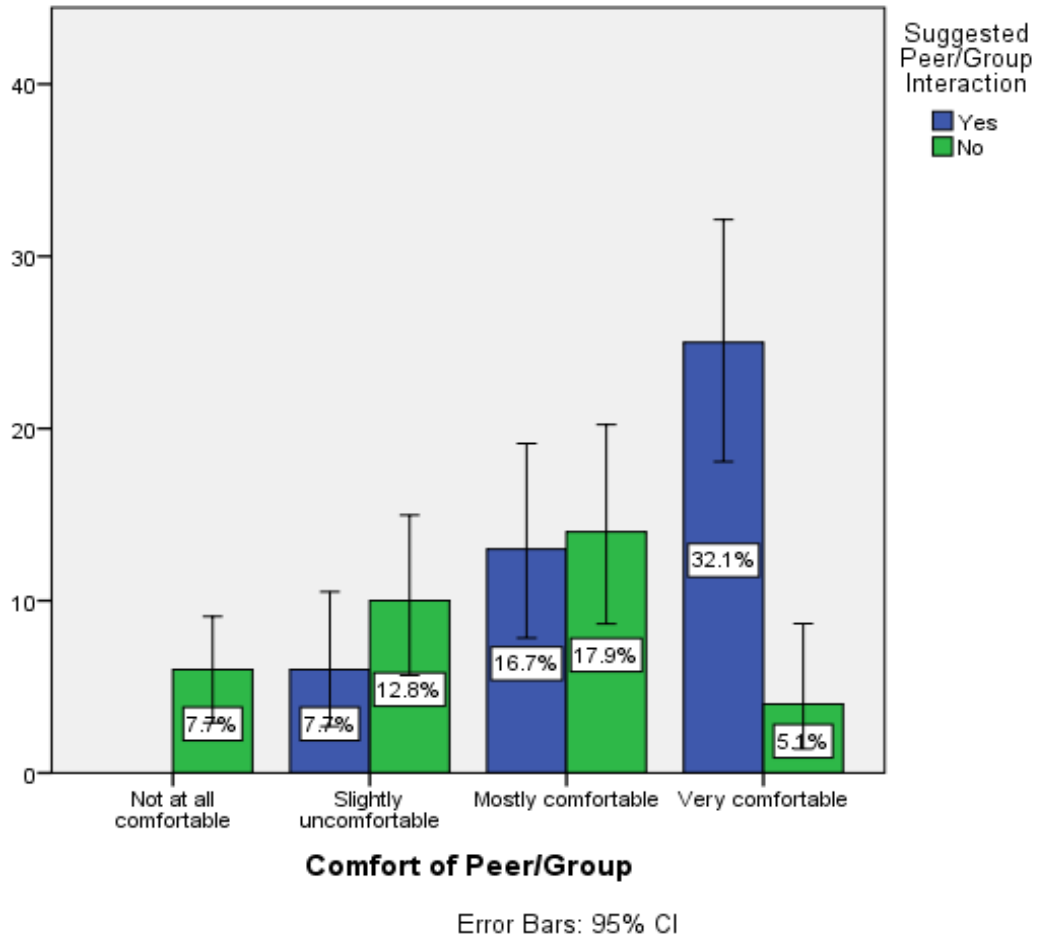

Figure 6b. Frequency of comfort for suggested prevention

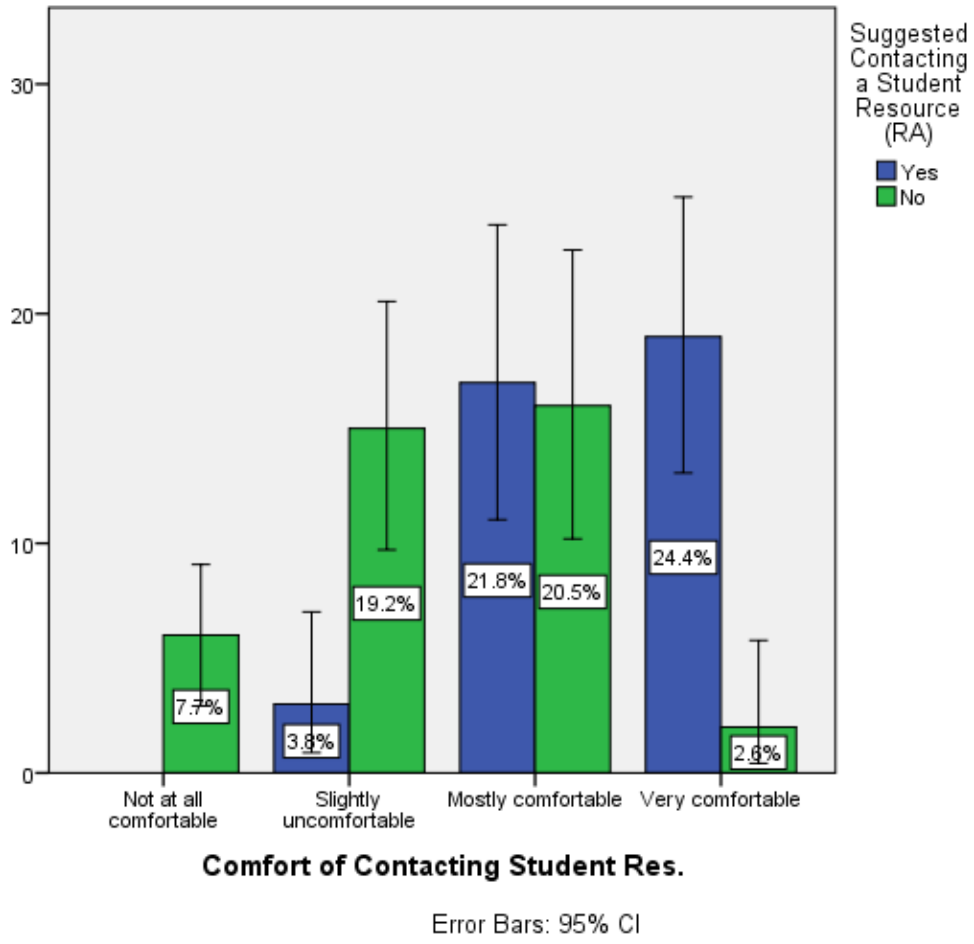

Figure 6c. Frequency of comfort for suggested prevention

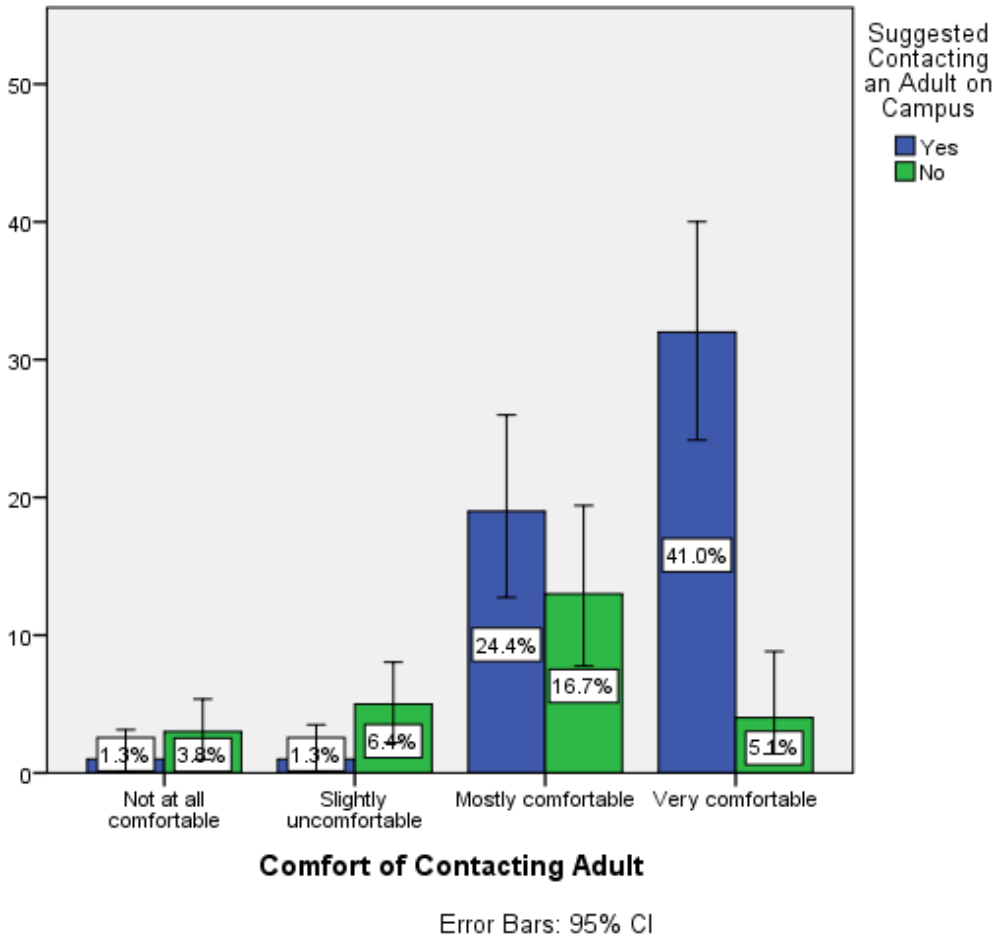

Figure 6d. Frequency of comfort for suggested prevention

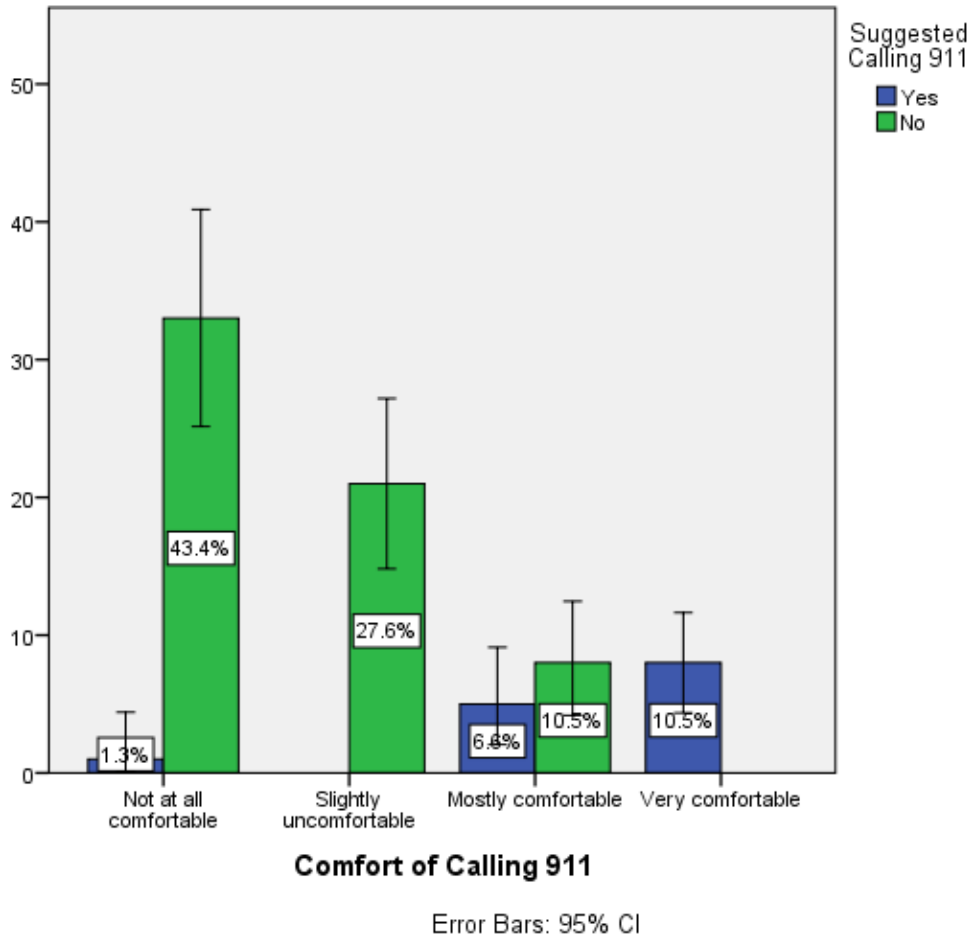

Figure 6e. Frequency of comfort for suggested prevention

Scenario 5

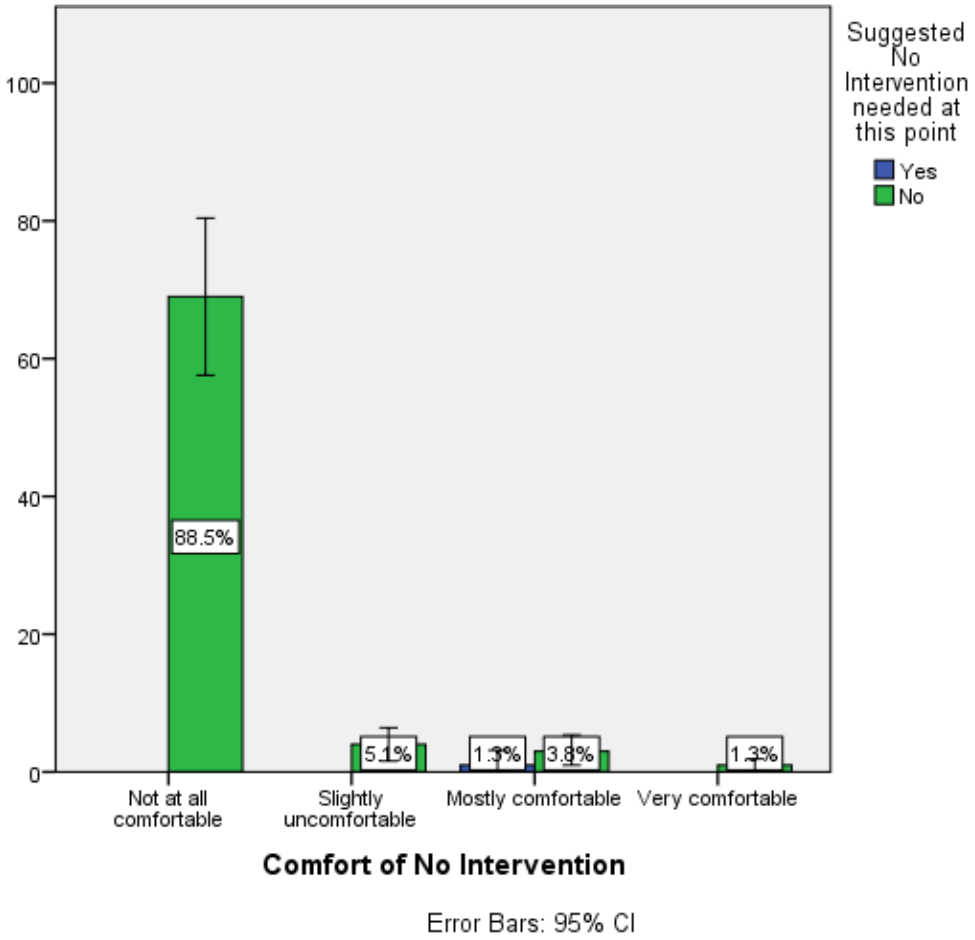

Figure 7a. Frequency of comfort for suggested prevention

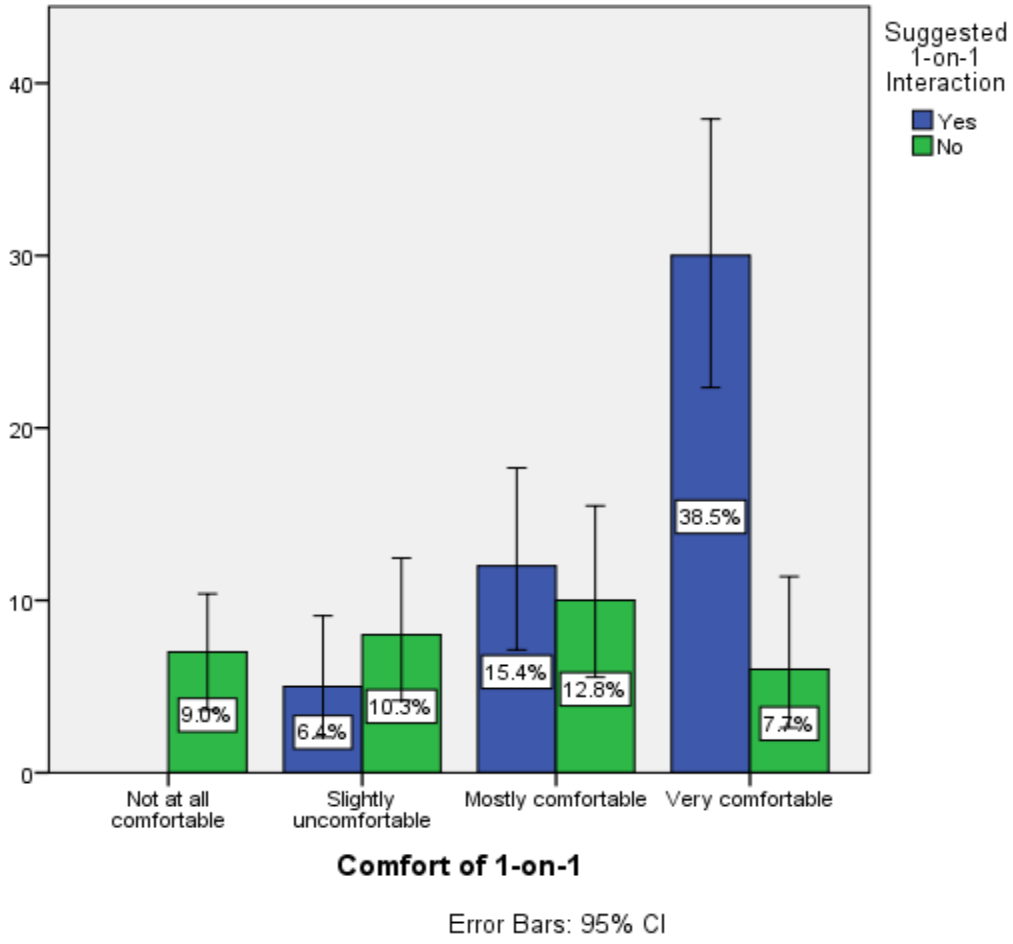

Figure 7b. Frequency of comfort for suggested prevention

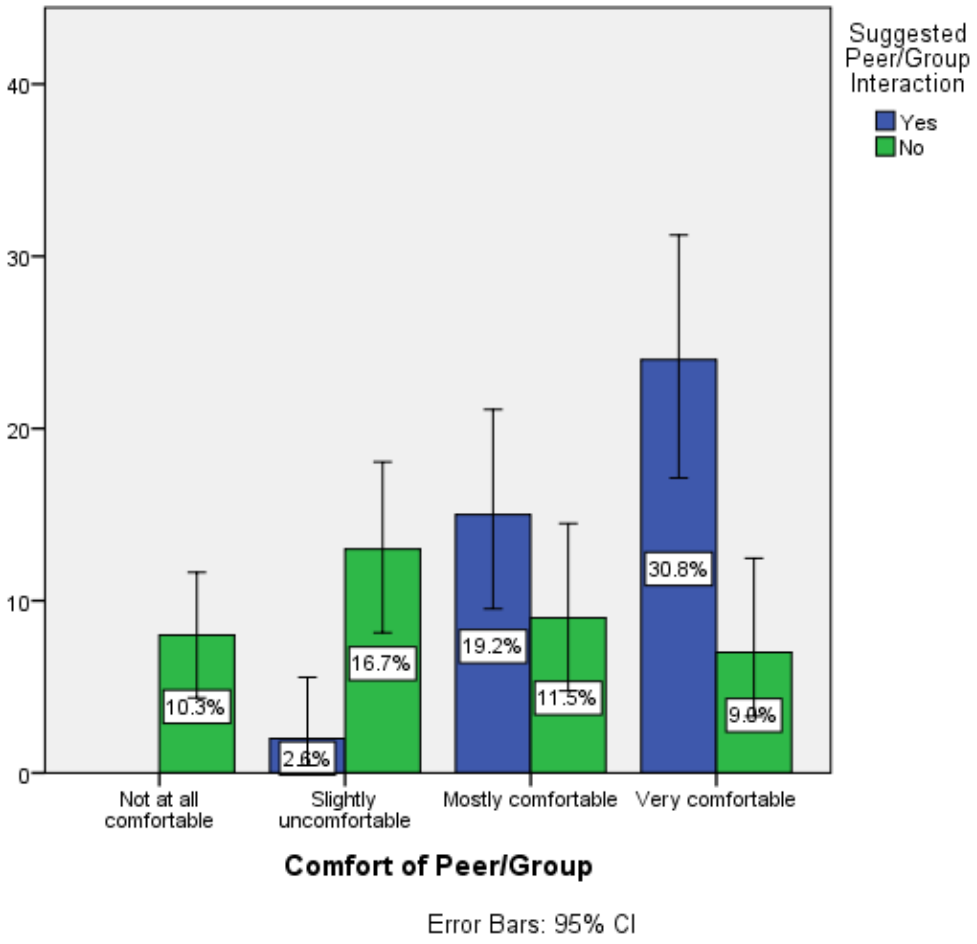

Figure 7c. Frequency of comfort for suggested prevention

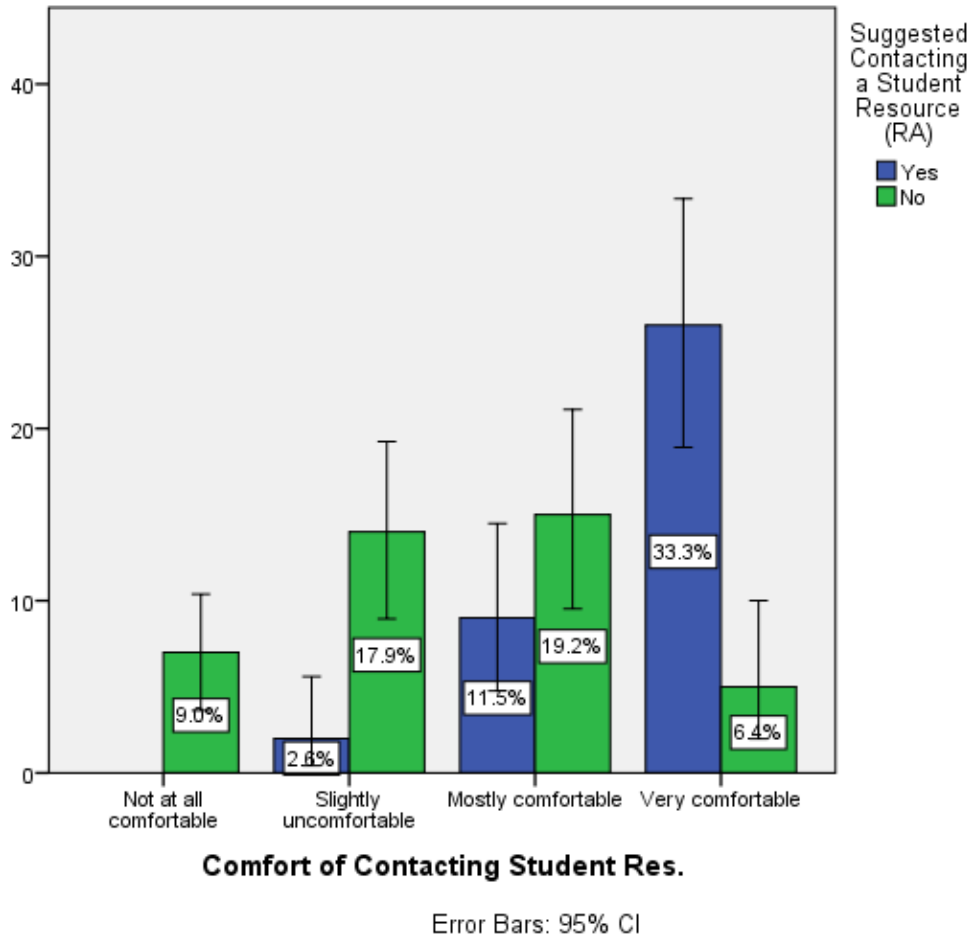

Figure 7d. Frequency of comfort for suggested prevention

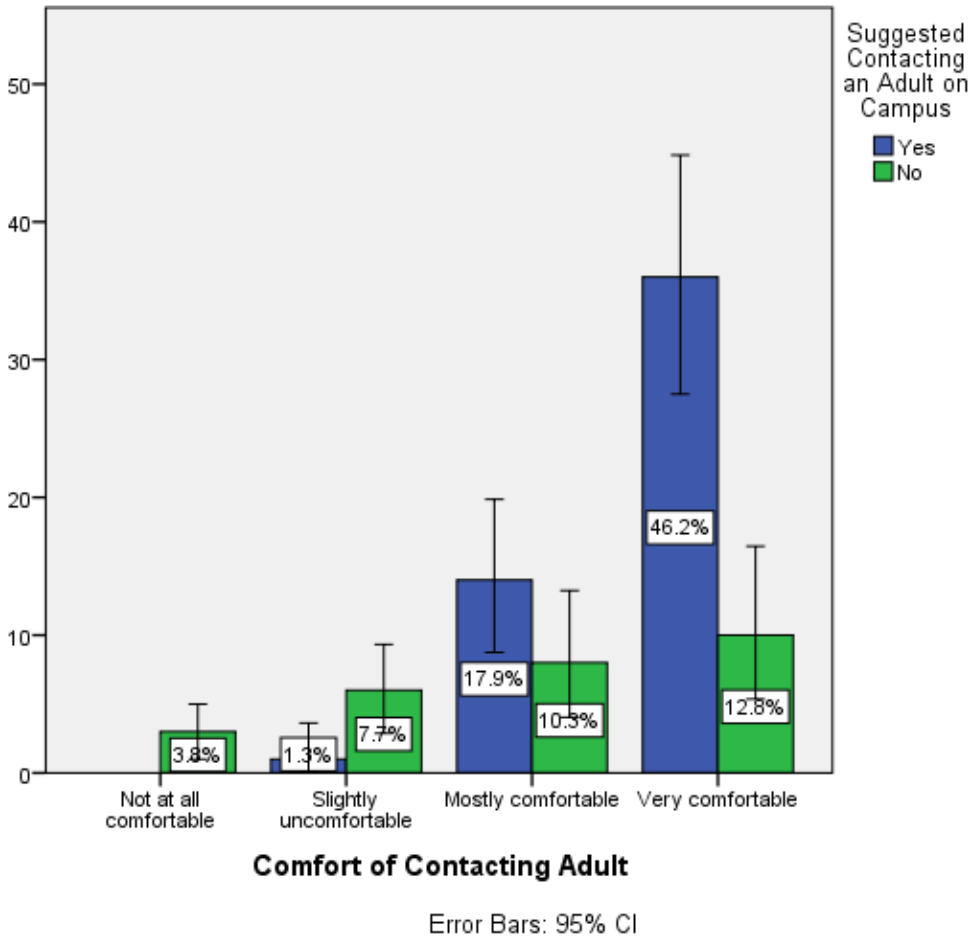

Figure 7e. Frequency of comfort for suggested prevention

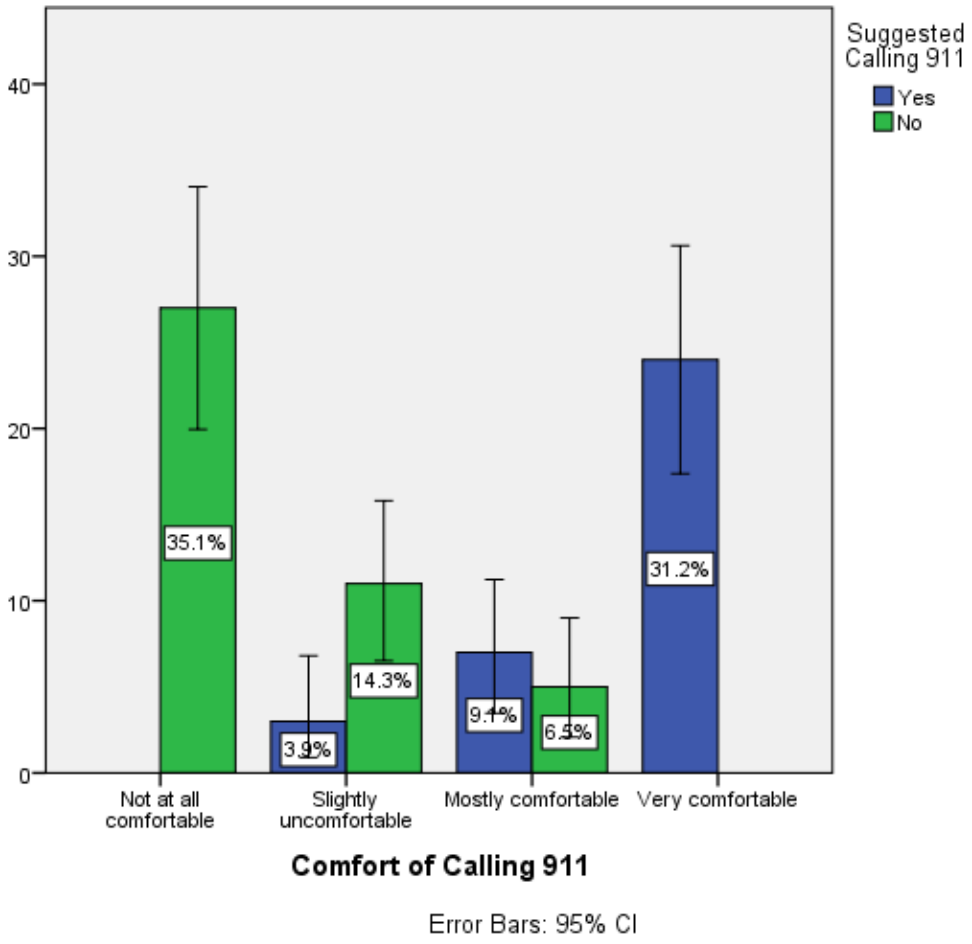

Figure 7f. Frequency of comfort for suggested prevention

Scenario 6

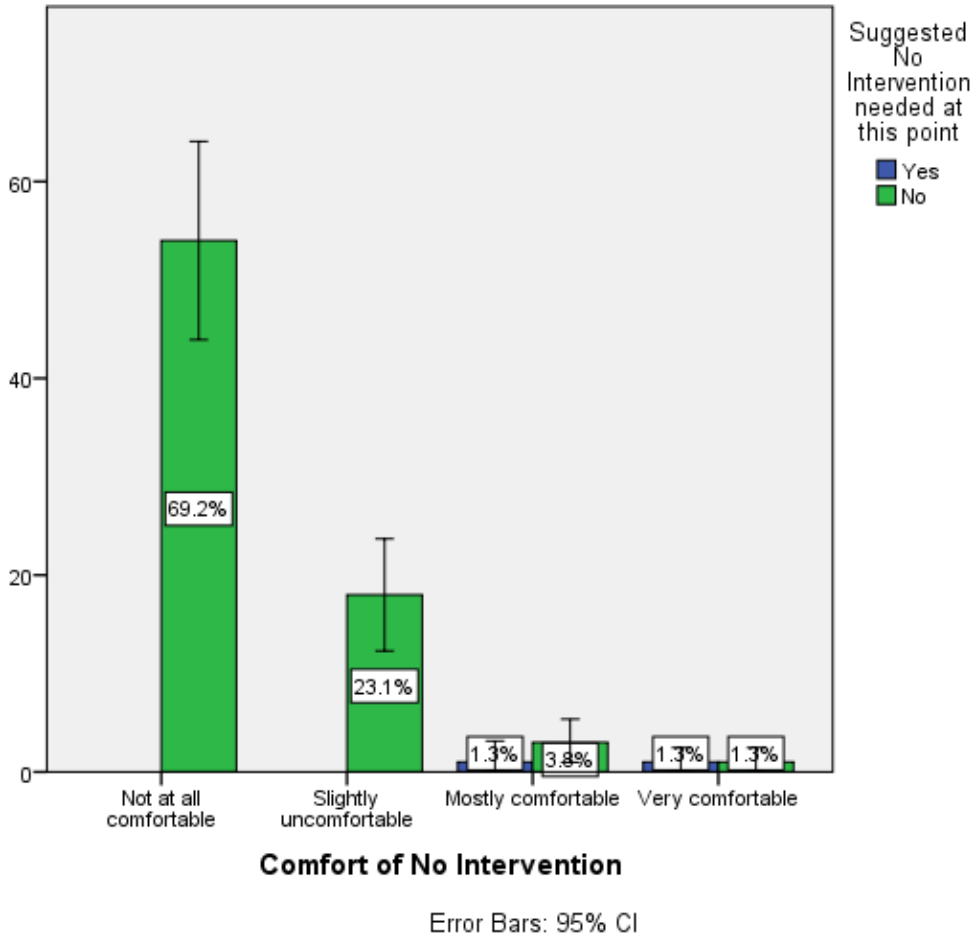

Figure 8a. Frequency of comfort for suggested prevention

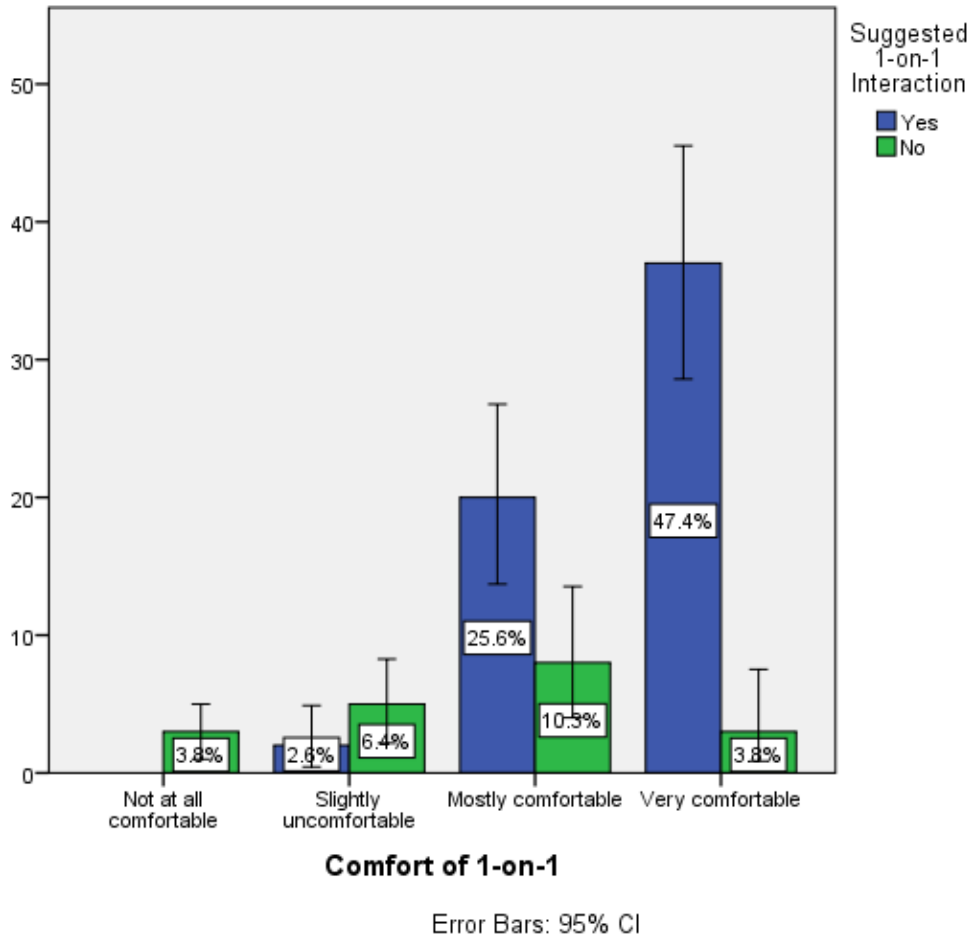

Figure 8b. Frequency of comfort for suggested prevention

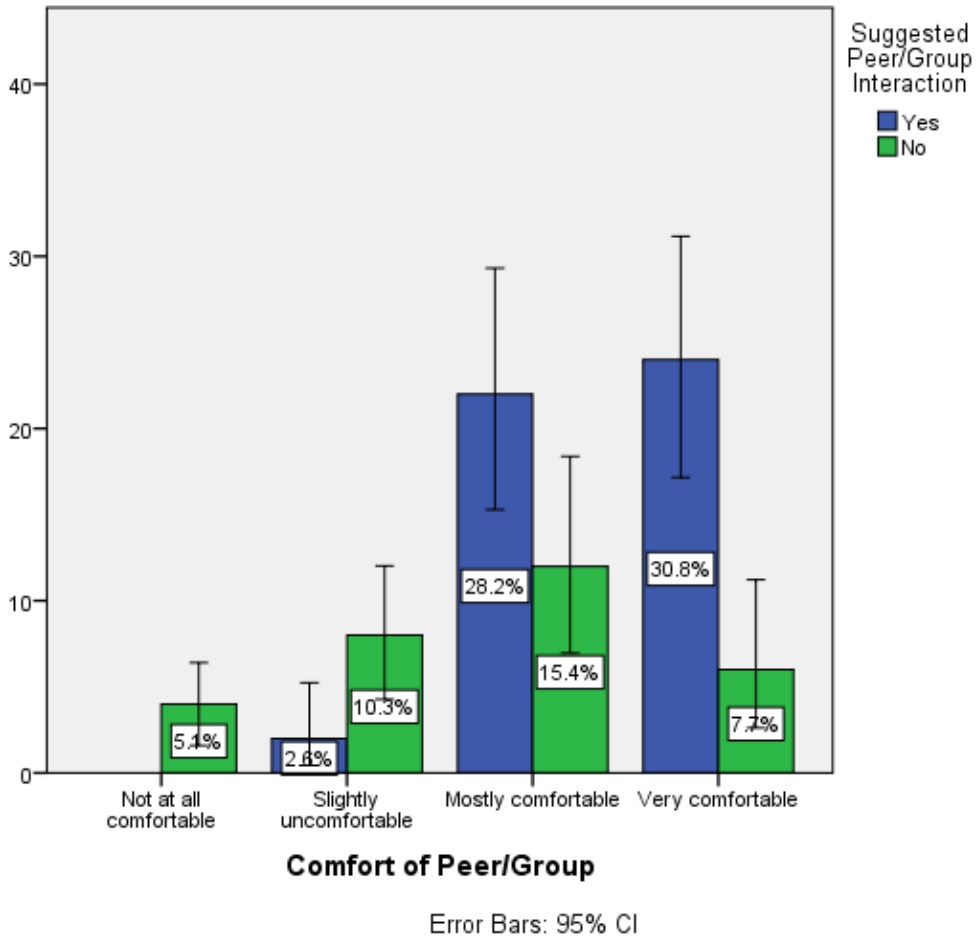

Figure 8c. Frequency of comfort for suggested prevention

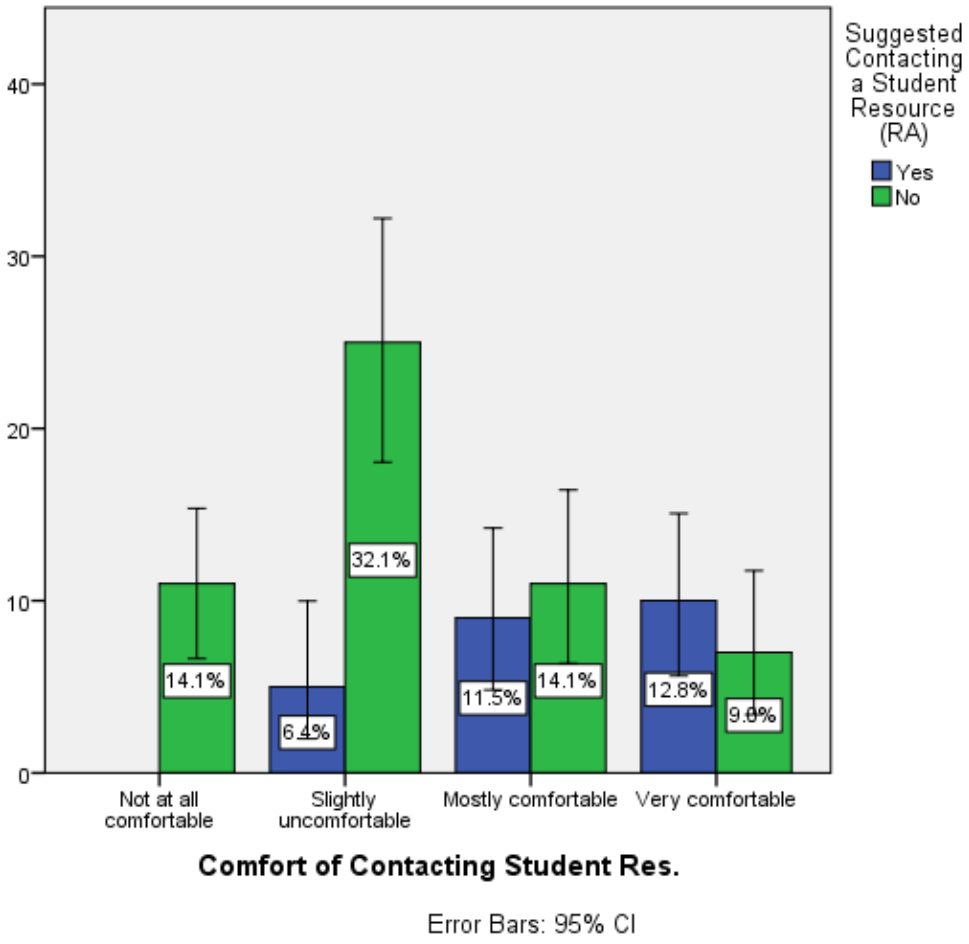

Figure 8d. Frequency of comfort for suggested prevention

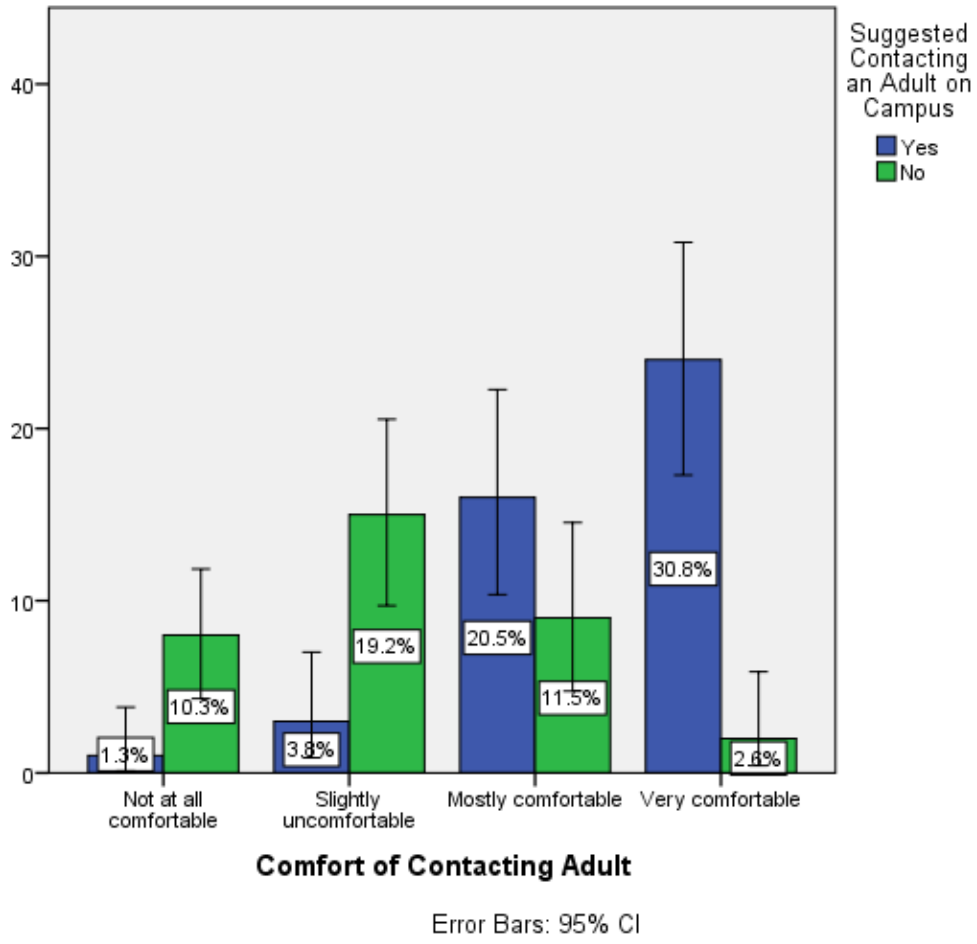

Figure 8e. Frequency of comfort for suggested prevention

SUICIDE PREVENTION

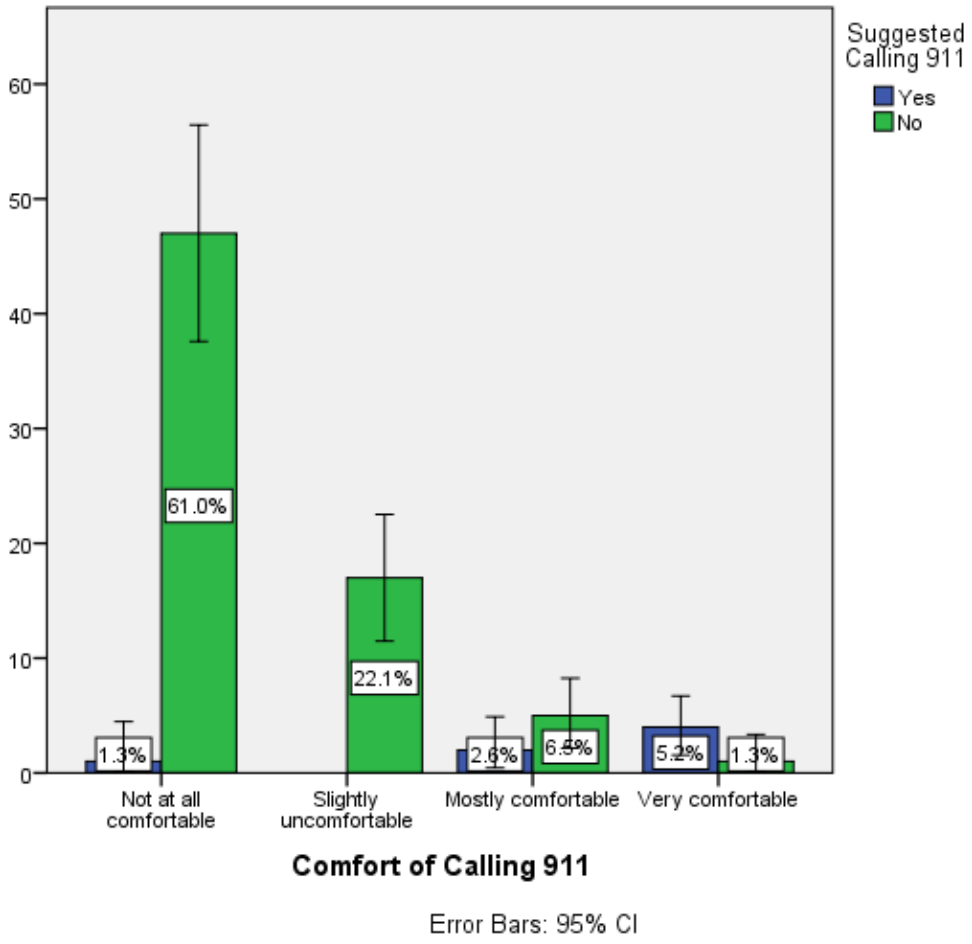

Figure 8f. Frequency of comfort for suggested prevention

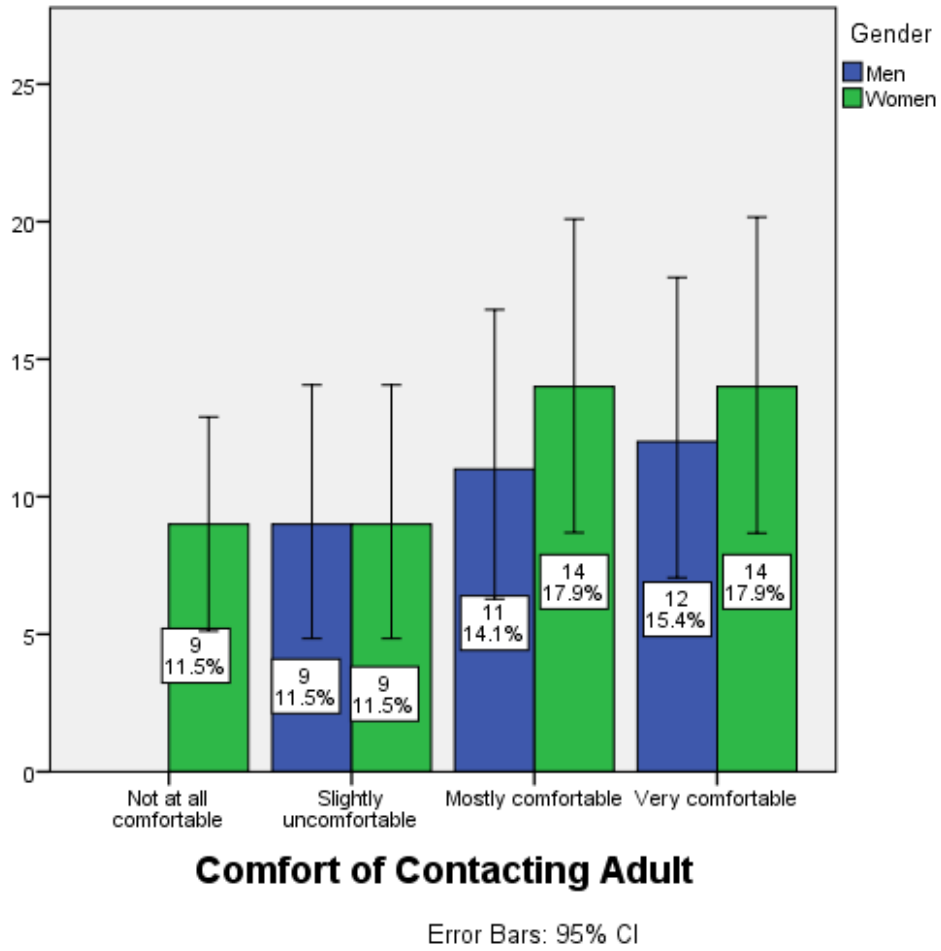

Figure 8g. Gender differences for comfort of contacting an adult on campus

Appendix A

Scenario #1:

Brandon/Molly, a 20-year-old college student, has become increasingly distant from his roommate and other friends. He has also stopped talking with his parents, with whom he is very close. Brandon has started missing classes almost every week and sleeping much more than usual. When his friends asked if he was okay, he admitted that he was struggling and revealed that he had felt suicidal in the past, but did not think he was suicidal now. Brandon's friends know that he is sometimes impulsive and has made a number of poor decisions recently, including breaking up with a girl he liked very much and deciding to drop his pre-med major because of unexpected difficulties in a chemistry course.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous: _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
    a. Not very concerned
    b. Somewhat concerned
    c. Moderately concerned
    d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
    a. No intervention needed at this point
    b. One-on-one interaction (Private talks)
    c. Peer/Group interaction
    d. Contact student resource (R.A)
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
    f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

SUICIDE PREVENTION

Scenario #2:

Jason/Lucy, a 19-year-old college student, is always arguing with his apartment roommates and his brother who also attends the same school. When he is not angry, Jason is sad and withdrawn. He finds it difficult to think clearly, so he is considering taking incompletes in his courses so he doesn't fail all of them. Jason has begun telling others that he is not sure that things will ever get better. Those statements worry his brother because it sounds similar to the way Jason talked during his junior year of high school when Jason took a combination of pills and alcohol. Jason's parents found him passed out, but he recovered after medical treatment. Jason has been mostly fine until these recent problems.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous:
   _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
   a. Not very concerned
   b. Somewhat concerned
   c. Moderately concerned
   d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
   a. No intervention needed at this point
   b. One-on-one interaction (Private talks)
   c. Peer/Group interaction
   d. Contact student resource (R.A)
   e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
   f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

SUICIDE PREVENTION

Scenario #3:

Nick/Karen, a 20-year-old college student, is back on campus following a semester off after a suicide attempt where he intentionally drove his car into a freeway barrier. Nick worked with a counselor to identify better ways of coping with frustration and disappointment, but Nick has struggled to find any strategies that work consistently. He is drinking most nights, sometimes a 12-pack of beer, sometimes 6 or 7 vodka shots, but mostly several beers so that he can fall asleep. His friends are worried about the drinking and have tried to limit him and distract him with other activities. At least a couple of days a week, he can't make it to class because he is hung over. Recently Nick was reprimanded by the dean of students following an episode in which Nick screamed at a professor and demanded to talk about his poor academic performance.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous: _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
    a. Not very concerned
    b. Somewhat concerned
    c. Moderately concerned
    d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
    a. No intervention needed at this point
    b. One-on-one interaction (Private talks)
    c. Peer/Group interaction
    d. Contact student resource (R.A)
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
    f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

SUICIDE PREVENTION

Scenario #4:

Jack/Jamie, a 19-year-old college student, faces discipline from the school after vandalizing a large lecture hall. Though he was highly intoxicated at the time, Jack is unable to use it as an excuse because it's not his first offense involving alcohol. Jack has been described as a very heavy drinker for several years. He makes unwise decisions while under the influence, but has only recently had to deal with any real consequences. Many times when he wakes up from a night of drinking, he thinks that he can't undo the damage that his drinking has caused and wonders whether he might be better off dead. He has never acted on such thoughts, but they are becoming more frequent as he gets in more serious academic and legal trouble.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous:
   _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
   a. Not very concerned
   b. Somewhat concerned
   c. Moderately concerned
   d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
   a. No intervention needed at this point
   b. One-on-one interaction (Private talks)
   c. Peer/Group interaction
   d. Contact student resource (R.A)
   e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
   f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

SUICIDE PREVENTION

Scenario #5:

Frank/Nikki, a 21-year-old college student, is entering his senior year. Though he usually does very well in classes, he worries about the idea of graduating, getting a job, and doing something "important." Frank develops an irrational fear of doing poorly and begins to experience "panic attacks" as test dates draw closer. With all his attention focused on getting over the "attacks," he begins to push away people that he cares about. His lack of attention towards his girlfriend leads to a break-up after 2 years of dating. Because he isn't in the mood to study after the recent break-up he goes into the next test and breaks down completely. Before getting his copy of the exam, he bolts to the bathroom and locks himself in a stall, thinking that suicide might be the best option for dealing with these unpredictable and scary emotions.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous: _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
    a. Not very concerned
    b. Somewhat concerned
    c. Moderately concerned
    d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
    a. No intervention needed at this point
    b. One-on-one interaction (Private talks)
    c. Peer/Group interaction
    d. Contact student resource (R.A)
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
    f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

SUICIDE PREVENTION

Scenario #6:

Robb/Ronda, a 23-year-old college student, returns to campus after one year off. He took the time to recover from overdosing on his anti-anxiety medication. Now that he's back in school he becomes paranoid about things that remind him of his past. Prior to his suicide attempt Robb had moderate anxiety but being back in school is causing it to increase as time goes on. The increase in anxiety has made everyday tasks difficult and is impacting his grades negatively. Since he didn't see any alternative, Robb packed his bags and contacted the university about dropping out yet again. He didn't contact friends or family about his decision and surprised them by showing up at home.

1) A risk factor is any characteristic or event that increases the likelihood of suicidality. Identify the risk factors in the scenario above by circling or underlining them. (In each scenario, there are up to four risk factors.)

2) Which risk factor that you identified do you consider to be the most dangerous:

   _____

3) How concerned are you about this person's possibility of a serious suicide attempt?
   a. Not very concerned
   b. Somewhat concerned
   c. Moderately concerned
   d. Seriously concerned

4) In this particular situation, which do you consider to be an appropriate method of intervention? You may select any or all of them.
   a. No intervention needed at this point
   b. One-on-one interaction (Private talks)
   c. Peer/Group interaction
   d. Contact student resource (R.A)
   e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
   f. Call 911

5) Rate your comfort level for the following intervention method:
    a. No intervention needed at this point
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    b. One-on-one interaction (Private talks)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    c. Peer/Group interaction
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    d. Contact student resource (R.A)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    e. Contact adult on campus (Professor, Counselor, Student Affairs staff)
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable
    f. Call 911
        i. Not at all comfortable
        ii. Slightly uncomfortable
        iii. Mostly comfortable
        iv. Very comfortable

Appendix B

Scoring the participant responses:

Scenario 1: The first scenario consists of severe depression symptoms, suicidal ideation, and impulsive actions as risk factors. There were three spots to identify depression and participants were required to locate two of the three to earn credit for identification. To earn credit for the suicidal ideation risk factor, the participant must clearly identify the ideation. The impulsive risk factor could be identified in a variety of ways. First would be identifying the phrase where the individual in the scenario was described as impulsive or known for making poor decisions recently. The other way to earn a correct identification would be to identify the two examples in which they were impulsive. Identification of just one example didn't get them an incorrect score, but they didn't receive credit for identifying the impulsive risk factor.

Scenario 2: The second scenario consists of moderate depressive symptoms, troubled relationships, and a past suicide attempt as risk factors. For the participant to earn credit for troubled relationships they must identify the "always arguing" in this scenario. Similarly to scenario 1, scenario 2 consists of three opportunities to identify depressive symptoms. To earn credit for doing so, the participant must once again identify two of the three symptoms. For correct identification of the past suicide attempt the participant must identify the combination of pills and alcohol or having their parent's find them passed out.

Scenario 3: The third scenario consists of a past suicide attempt, severe alcohol abuse, and troubled relationships as risk factors. Correct identification of the past suicide attempt requires clear identification of "Suicide attempt" or the action they took to take their life. For scenario three points were deducted for identifying "identify better ways of coping" and "struggling to find any strategies" because they are attempts to get better and not risk factors. To earn credit for identifying the severe alcohol abuse risk factor the participant must identify one of the following in the scenario; "drinking most nights", their friends concern for their drinking, or missing class due to being hung-over. The troubled relationship credit was awarded for identifying the person in the scenario was reprimanded for behaviors or the altercation between them and the professor.

Scenario 4: The fourth scenario consists of impulsive actions, moderate alcohol abuse, and suicidal ideation as risk factors. Impulsivity could be identified in one of two locations to earn credit, either identifying the act in which they were impulsive or their tendency to make unwise decisions. Points are docked from the score if the participant identifies the high level of intoxication. Reasoning for this is that high intoxication is common and may happen to people

who aren't considered alcohol abusers. For credit to be earned in identifying the alcohol abuse the participant must identify the person in the scenario being a heavy drinker for many years. To earn credit for suicidal ideation the participant must identify the phrase "better off dead". By doing so they were not docked points for considering frequency of academic and legal troubles. If the participant doesn't identify the phrase "better off dead" they were docked points for identifying academic and legal trouble as a risk factor.

Scenario 5: The fifth scenario consists of severe anxiety, troubled relationships, and suicidal ideation as risk factors. To earn credit for identifying the severe anxiety risk factor the participant must identify the person's irrational fear, panic attacks, breaking down, or having unpredictable and scary emotions. Only one is required for credit because of the severity of each situation in which they are listed. Correct identification of troubled relationships requires identifying the person in the scenario pushing away the people they care about. If they identified the example of "lack of attention" along with pushing people away they were not penalized, but identifying "lack of attention" as a risk factor without pushing the person away was penalized. Reasoning for that is giving less attention to someone can have a multitude of reasons, not just because they are pushing people away. For credit in identifying the suicidal ideation the participant must identify the thoughts of suicide.

Scenario 6: The sixth scenario consists of moderate anxiety, a past suicide attempt, and impulsivity as risk factors. Correct identification of the past suicide attempt requires participants to identify the action they took as a suicide attempt. To earn credit for the moderate anxiety risk factor participants must identify either the paranoia or increase in anxiety as a result of being back at school or how the increase in anxiety is impacting grades. Correct identification of impulsivity requires identifying the act of dropping out of school. Points were deducted from scores if participants identified not contacting family or friends as a risk factor without identifying the dropping out of school. Reasoning for the deduction is that as an adult, making decisions without contacting friends or family is common.