WE ARE THE SAFETY NET: SKILLS FOR SUICIDE PREVENTION

EVALUATING A TRAINING TO INCREASE RECOGNITION AND RESPONSE TO SIGNS OF SUICIDE AMONG AT-RISK PEERS

By

Rebekah Burket, M.S.

A Dissertation Submitted in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Philosophy

in

Clinical-Community Psychology

University of Alaska Fairbanks and Anchorage

May 2017

APPROVED:

Kendra Campbell, Committee Chair
Inna Rivkin, Committee Co-Chair
James Fitterling, Committee Member, UAA Program Director
Monica Skewes, Committee Member
Valerie Gifford, UAF Program Director
Cecile Lardon, Chair, *Department of Psychology*
Todd Sherman, Dean, *College of Liberal Arts*
Michael Castellini, Dean, *Graduate School*

Abstract

This pilot study evaluated the effects of a brief suicide prevention training. The intervention was efficient and targeted peer intervention for those least likely to engage in proactive help seeking on their own behalf. The results were promising but mixed. The results showed that the intervention can increase suicide literacy and confidence about safety planning and help seeking on behalf of an at-risk peer. Significant differences were found in the small sample with variables most relevant to the ability to recognize peers at risk for suicide and act effectively on their behalf. Variables not directly emphasized in the training and those with high baseline scores did not show change. The brevity of the intervention lends itself to potential dissemination opportunities in educational and healthcare settings such as new student orientations, teacher in-service trainings, hospital staff training and community-based outreach.

Dedication

In memory of Joseph Cain

Table of Contents

Page

Page

List of Figures

Page

List of Tables

Page

List of Appendices

Page

Acknowledgments

I would like to thank my committee members, Drs. Kendra Campbell, Inna Rivkin, Monica Skewes, and James Fitterling for their enthusiastic support of my research. I am especially grateful for the grant that funded the project from the Yates Research Foundation of Montana State University's Psychology Department. Thanks are also due to Omar Gomez and Hugh Leonard for their efforts as research assistants for the project. Special recognition is owed to my family, especially my parents and grandmother Gertrude "Trudy" Cain, whose unwavering support in every form made all the difference.

Chapter One: Introduction

Suicide prevention is an issue that is particularly relevant to college-age Alaskans because this population has a risk for suicide that is elevated above other age groups. At the same time, young adults who are distressed are more likely to confide in peers than to seek out professional help. Additionally, depressed and suicidal individuals are less able to effectively engage in help-seeking behavior and are less responsive to public awareness-raising efforts. For these reasons, I used ideas from the mental health first aid movement and bystander intervention literature to develop a suicide prevention training and evaluated the utility of the intervention for teaching college-age people how to recognize and respond to at-risk peers.

Significance

The research addressed an area of need for suicide prevention that is particularly relevant to college-age Alaskans. Suicide was the leading cause of death for 15 to 44 year-olds from 2005 to 2009 in Alaska (Hull-Jilly & Saxon, 2010). Alaska had the second highest suicide rate in the nation in 2010 (Hull-Jilly & Saxon, 2013) and the highest rate in the nation in 2007. Being male, young, Alaska Native or American Indian, and living in a rural region or non-hub community were associated with increased risk. Suicide prevention efforts are needed in the college-age population.

In addition to being at elevated suicide risk, college-age students are more apt to confide in a peer rather than seek out a professional when in distress (Ross, Hart, Jorm, Kelly & Kitchener, 2012). It is quite likely that a young person will encounter a distressed peer given the prevalence of the problem in this age group and their tendency to favor peers as confidants. Yet, suicide prevention efforts throughout the state are largely directed to gatekeepers such as health aides, educators, and mental health professionals (Craig & Hull-Jilly, 2012). The current study

addressed the need for crisis recognition and response skills among the lay community that focus specifically on suicide prevention rather than global mental health first aid (MHFA) skills.

MHFA is the assistance given to someone who is at risk for or is experiencing a mental health crisis (Ross, et al., 2012). Peers who are trained in MHFA are equipped to provide basic assistance until appropriate connections to professional care are facilitated or the crisis has subsided. Some of the components necessary to provide MHFA effectively include the ability to recognize signs of risk and knowledge of local support resources. The scope of the training did not include the standard range covered in MHFA curriculums. Instead my research focused exclusively on two aspects of MHFA: suicide literacy and prevention.

Depressed people are not as receptive to mental health promotion messages as people in good mental health (Goldney & Fisher, 2008). People who are in a major depression or suicidal crisis are least able to integrate and act effectively to access support resources. In fact, one of the characteristics of severe mental illness is poor insight or the lack of ability to accurately assess the gravity of the problem. Peers may be better able to recognize an at-risk associate than the person themselves. Healthy peers will likely also be better equipped to assist an at-risk person to access supportive services.

Some rural areas of Alaska have much higher per capita death rates from suicide even though suicide has a relatively low base rate of occurrence. The sequela of even one suicide in rural Alaska is devastating due to close relationships between members of small communities. Training local residents in rural areas may be especially relevant given the accessibility of peers and limited access to formal care in remote areas. For these reasons the research addressed the need to equip the lay population with the skills to recognize and effectively respond to college-age peers who are at risk for suicide.

My research addressed a need for further study in health promotion and mental health literacy that includes rural and Indigenous participants in Alaska. Mental health literacy as a method for suicide prevention has been well researched in other areas such as Australia (Kitchener & Jorm, 2006; Chamberlain, Goldney, Taylor, & Eckert, 2012). However, fewer studies have been done in the United States regarding outcomes of peer interventions for Indigenous groups. There is a paucity of research on mental health promotion and mental health literacy among rural and Indigenous populations (Clelland, Gould, & Parker, 2007). Students with Alaska Native, American Indian, and rural backgrounds account for about 19.6 % of the University of Alaska Fairbanks (UAF) student body (University of Alaska Fairbanks, 2013). The research presented a unique opportunity to recruit and include circumpolar, rural, and Indigenous research respondents and contribute to the mental health promotion and suicide prevention literature.

Theory

The research methods, questions, and evaluation strategies were grounded in the Transtheoretical Model (TTM) of behavior change (Prochaska, 2013; McConnaughy, Prochaska, & Velicer, 1983). I utilized the TTM of health behavior change to evaluate whether participating in the suicide prevention training resulted in better recognition of signs of suicide risk, increased knowledge about ways to intervene, increased intention to intervene on behalf of an at-risk peer, and strengthened sense of self-efficacy when aiding an at-risk peer.

The TTM is a validated theoretical system for conceptualizing a person's readiness to act upon a new health behavior such as intervening on behalf of an at-risk peer (Prochaska, 2013). The model relies on a stage theory of change and is useful for categorizing respondents' stage of

change and tailoring interventions to that unique position. The six stages of change are precontemplation, contemplation, preparation, action, maintenance, and termination.

Precontemplation is the state of having no intention to change within the next six months. Contemplation is the presence of intention to change behavior within the next six months. Preparation is characterized by intention to change within the next 30 days. Action is the stage where people make specific changes to their behaviors. People in maintenance have changed their behavior and sustained this change for over six months. Vulnerability to returning to previous behaviors is low in the maintenance stage (Prochaska, Redding, & Evers, 2008). In addition to stage of change, decisional balance and self-efficacy are also important constructs of the TTM.

My research evaluated the feasibility of using an innovative application of the TTM to assess change in the health behavior of help seeking on behalf of an at-risk peer among college-age students. This research assessed respondents' stage of change as a continuous outcome variable as well as self-efficacy and suicide literacy. The research contributed to suicide prevention efforts in Alaska and the academic literature as discussed in subsequent sections.

Research Goals

The study evaluated the utility of the training for increasing the efficacy of lay bystanders to identify and respond to peers at risk for suicide. The study used an experimental design to assess changes following participation in the training in knowledge, readiness to intervene, and sense of efficacy when providing assistance to peers at risk for suicide. Participants were randomly assigned to one of two conditions: an intervention condition with in-person training or a control condition. The training concluded with a group debriefing exercise to facilitate a sense of connectedness among the participants and allow for the participants to raise any reactions they

had to the training material. The outcome variables, a) suicide risk knowledge, b) readiness to intervene, and c) self-efficacy when intervening on behalf of an at-risk peer, were assessed before the training and one week after the training. The control group completed the same baseline and post-test assessments about one week apart.

Hypotheses. The analyses evaluated several hypotheses. First, I predicted an increase in the intervention group participants' suicide literacy in three key areas when compared to the control group. I expected intervention group participants to show increased ability to accurately recognize suicide risk signs, increased knowledge base of local support resources, and decreased endorsement of myths associated with suicide. Second, I predicted that respondents would report an increased willingness to respond on behalf of at-risk peers such as connecting a peer with professional resources. Third, I predicted that intervention group participants would show an increased sense of self-efficacy when responding to an at-risk peer.

Outcomes. The results provided information regarding feasibility of prevention intervention research with college-age students in Alaska and future considerations for research on peer intervention training for suicide prevention. The outcomes were promising but mixed. Participants assigned to the intervention group showed significant increases in suicide literacy, increased reasons in favor of assisting an at-risk peer, and increases in sense of efficacy when intervening on behalf of an at-risk peer as compared to the control group. Participants assigned to the intervention group did not show significant differences on outcome measures for stigma, readiness to change, sense of community, prevention efficacy or bystander efficacy. These findings, interpretations, and implications are described in detail in the results and discussion sections.

Chapter Two: Review of the Literature

Suicide Epidemiology

Suicide is a significant health concern globally, nationally, and locally. Nearly one million people die by suicide worldwide each year (Fleischmann & Saxena, 2013). Suicide risk can be under identified for several reasons. People who seek help through primary care are often treated for physical problems and released. Further, mental health issues can be overlooked due to lack of resources and lack of mental health training background in providers in primary care settings. Other barriers, such as stigma, can impede patients' comfort with disclosing suicidal distress (De Leo et al., 2013; Freedenthal & Stiffman, 2010). Death by suicide, and barriers to prevention in primary care, continue to be a public health concern.

Global epidemiology. The World Health Organization examined suicide epidemiology according to age, sex, and method of death in low- and middle-income countries (De Leo et al., 2013).

Age. Middle-aged and older adults were found to be more at risk in Australia, New Zealand, and Italy. However, younger age groups were most at risk in the Pacific Islands. The authors noted that rapid culture change, economic destabilization, and increased access to drugs in the Pacific Islands area might have a role in increasing youth suicide (De Leo et al., 2013). Suicide is a leading cause of death among youth across the globe.

Sex. De Leo and colleagues (2013) noted a gender paradox related to suicide. Males accounted for most of the deaths by suicide but females attempted suicide more frequently. The gender paradox reflects the tendency of men to be more likely to attempt suicide with a firearm and die while women are more likely to attempt suicide by poisoning. Poisoning has a greater margin of error for medical intervention and recovery.

Method of death. Hanging was found to be the most common method of death across countries. Poisoning from carbon monoxide and drug overdose was common in Australia and New Zealand. In many countries, shooting accounted for more than 8% of deaths by suicide (De Leo et al., 2013)

Non-fatal attempts. Women were most likely to make non-fatal suicide attempts in many geographic areas. The notable exception was the Philippines where men made more non-fatal suicide attempts than did women. Hanging was found to be a common method of non-fatal suicide attempts. Cutting was most associated with nonfatal suicidal behaviors in western countries such as the United Kingdom (De Leo et al., 2013). Poisoning with overdoses of drugs or ingesting hazardous chemicals were the most common methods of non-fatal suicide attempts in other areas of the globe.

Ethnicity. Clifford, Doran, and Tsey (2013) noted that people with Indigenous ancestry have higher suicide rates than the general population in Canada, Australia, and the United States. In Canada, the rate of death among First Nations people was twice that of other Canadians. The suicide rate in Maori youth of New Zealand was more than double that of the general population. People of American Indian decent in the United States died by suicide 1.5 times more than the rest of the population although it is important to note that significant regional variation is present (Wexler, White, & Trainor, 2015). Suicide health disparities in these populations may be related to the disruptive qualities of colonization and intergenerational effects of trauma that increase exposure to multiple risk factors associated with suicide (Clifford et al., 2013).

Voracek (2007) found that suicide is more prevalent in affluent, fast-paced, socially distanced communities where the residents exhibited higher intelligence in an international sample. However, the direction of the relationship was exactly reversed for all four variables in

the United States. There, he found that suicide is more prevalent in areas with lower socioeconomic status (SES), slower pace of life, lower education levels, and less social distance.

National epidemiology. Suicide is the 10th leading cause of death in the United States (McFaul, Mohatt, & DeHay, 2014; Walrath, Garraza, Reid, Goldston, & McKeon, 2015; Hammerschlag et al., 2015). In the 1990's, suicide was the 11th leading cause of death in the United States, and the rate of death by suicide was declining (10.48 per 100,000; Caine, 2013). However, the rate of suicide has increased in the United States over the last decade despite attention to prevention efforts. In 2010, the rate had increased to 12.08 per 100,000. Risk has grown notably for people who are middle-aged.

Age. In 2008, suicide was the 10th leading cause of death for adults in the United States (Crosby, Han, Ortega, Parks, & Gfoerer, 2011). Suicide is a particularly serious health issue among young people in the United States. Suicide has been found to claim more young lives than other important disease sectors combined including HIV, cancer, heart disease, and birth defects (Miller, Eckert, & Mazza, 2009). Specifically, suicide has been found to be the fourth leading cause of death in children ages 10 to 14 (Crosby et al., 2011), the second leading case of death in youth ages 15 to 24 (Walrath et al., 2015; Crosby et al., 2011), and the second leading cause of death among 25 to 34-year-olds (Caine, 2013). The middle years of life are increasingly associated with suicide risk in the United States. Baca-Garcia and colleagues (2010) reported a 2.4% lifetime prevalence for suicide among people 18 years and older. For 35 to 44 year-olds, the suicide rate increased almost 30% between 1999 (13.70 deaths per 100,000) and 2010 (17.75 deaths per 100,000; Caine 2013).

Age groups at the extreme ends of the life spectrum were not at increased risk for suicide. However, suicide was shown to be the eighth leading cause of death among 45 to 64-year-olds

(Crosby et al., 2011). For those over age 65, the rate dropped by 5.8% and for 10 to 24 year-olds the rate of death by suicide did not fluctuate significantly (Caine, 2013).

Sex. The gender paradox found in global epidemiological studies was consistent epidemiological data for the United States. American males engage in higher rates of fatal suicide attempts while women make more non-fatal suicide attempts (Crosby et al., 2011).

Method of death. Firearms are the leading cause of death by suicide in the United States. The use of guns as a method of suicide has remained steady in the last decade, but death by poisoning has increased, especially for the middle-aged (Caine, 2013).

Non-fatal attempts. Suicidal thoughts and behaviors varied by sociodemographic factors and by region and state, but have not significantly increased or decreased overall in the last decade (Jashinsky et al., 2014; Crosby et al., 2011). Eaton and colleagues (2012) reported a 7.8% suicide attempt rate and prevalence of serious ideation ranging from about 14.4% to 18.9% in youth. About 100 to 200 suicide attempts were made by 15-24 year-olds for every death by suicide (Casstevens, 2013). Women and young adults have the greatest risk for non-fatal suicide attempts (Baca-Garcia et al., 2010; Crosby et al., 2011). Baca-Garcia and colleagues (2010) stated that 18 to 24-year-old women who identified as Caucasian or African American and 25 to 44-year-old Caucasian women make the most attempts. The highest prevalence for suicidal ideation is found in women ages 18 to 29 and for residents of the Midwestern United States (Crosby et al.; 2011) No specific differences were found in plans or attempts among women, suggesting that non-fatal suicidal behavior had different patterns than fatal suicidal acts (Crosby et al., 2011).

Ethnicity. Variations in suicide risk were noted according to ethnicity in the United States. People in Asian American groups were least at risk with some variation in the

subpopulation. The lowest risk was found among non-Hispanic Asian American people (Crosby et al., 2011). Sue, Cheng, Saad, and Chu (2012) indicated that Asian-American elderly women have an elevated risk for death by suicide and suggest that the low incidence of mental health burden for Asian American people may in part be due to underreporting related to low professional service utilization.

People in African American or Hispanic groups had a lower risk for suicide than those who identified as Caucasian (Hirsch, Visser, Chang, & Jeglic, 2012). O'Donnell, Meyer, and Schwartz (2011) reported that suicide among people who are Caucasian is double that of people who identify as African American or Latino. Crosby and colleagues (2011) found that people who identified as non-Hispanic White were most at risk for suicidal ideation and planning.

People in American Indian and Alaska Native groups were most at risk for dying by suicide. People who identified as American Indian were 1.5 times more likely to die by suicide than the general population (Clifford et al., 2013) although there is significant regional variation across Indigenous groups in the United States. For example, many Indigenous communities have suicide rates that fall below the national rate (Wexler et al., 2015). Some states, such as Alaska, have notoriously high rates of suicide (Hull-Jilly & Saxon, 2010). Specific sectors of people in Alaska have elevated suicide risk (Craig & Hull-Jilly, 2012).

Local epidemiology. Allen, Levintova, and Mohatt (2011) noted that suicide in Alaska is a significant health disparity. At the same time, community level variance in suicide rates can vary dramatically within populations. Currently, Alaska has the second highest suicide rate in the nation (Hull-Jilly & Saxon, 2013; Hammerschlag et al., 2015) and had the highest rate in 2007 (Hull-Jilly & Saxon, 2010). The decrease in suicide rate by 2% from 2007 to 2010 may in part be due to the diligent efforts of stakeholders in the state to address suicide. Death by suicide in

Alaska in 2010 (25.8 per 100,000) was still over two times the national rate. In 2015 the statewide rate had risen to 27.1 per 100,000 (Statewide Suicide Prevention Council, 2016).

Age. Suicide is a problem that is particularly relevant to young Alaskans. Hull-Jilly and Saxon (2010) described people in Alaska ages 15 to 44 as most at risk. Suicide was the leading cause of death for 15 to 44-year-olds in Alaska from 2005 to 2009.

Sex. Eighty-one percent of suicide deaths in Alaska from 2004 to 2008 were males (Hull-Jilly & Saxon, 2010). The gender paradox noted in global and national suicide trends is also true in Alaska. More men die from suicide but women have a higher frequency of attempts across most of Alaska, although there is some local variation (Hull-Jilly & Saxon, 2013).

Method of death. The three most common causes of death by suicide in Alaska were gunshot wounds, strangulation, and poisoning (Hull-Jilly & Saxon, 2010). Further, men were found to be more likely than women to die from gunshot injuries but were about as equally likely to die from strangulation, hanging, or suffocation as women. Women were found to be more at risk for dying from poisoning (Hull-Jilly & Saxon, 2013).

Non-fatal attempts. In Alaska, suicide attempts were in the top five most likely causes for hospitalization for 10 to 84-year-olds and the primary cause for hospitalization in 15 to 34-year-olds from 2005 to 2009 (Craig & Hull-Jilly, 2012). About 4.3% of adult Alaskans had serious thoughts of suicide in the 2009 to 2013 time period (Hammerschlag et al., 2015).

Ethnicity. Certain populations in Alaska are more at risk for death by suicide. Rates per 100,000 for groups in Alaska were 7.9 for Asian/Pacific Islanders, 14.4 for African Americans, 22.2 for Caucasians, and 49 for American Indians and Alaska Natives (Hull-Jilly & Saxon, 2013). Alaska Native people were more than twice as likely to die by suicide than non-Native Alaskans. Suicide death rates among Alaska Natives were more than four times the rate of the

national average (12.08 per 100,000; Caine, 2013). The authors reported that Alaska Native men ages 20-29 were particularly at risk (155.3 deaths per 100,000; Craig & Hull-Jilly, 2012). Being male, young, Alaska Native or American Indian, and living in a rural region or non-hub community were associated with increased risk (Craig & Hull-Jilly, 2012; Wexler, Silveira, & Bertone-Johnson, 2012). Death by suicide is a public health concern in Alaska and affects people at the national and global levels. Addressing barriers to suicide prevention begins with raising awareness of risk factors associated with suicide.

Risk factors. SAD PERSONS is a mnemonic suggested by the United States Substance Abuse and Mental Health Services Administration (SAMHSA) to remember the major risk factors for suicide (Center for Substance Abuse Treatment, 2009). The mnemonic stands for sex, age, depression or hopelessness, previous attempts or hospitalizations by the individual or family members, ethanol (alcohol) and other drug abuse, rational thinking loss or co-occurring mental disorder, being single, widowed, or divorced, presence of an organized or serious plan, no social support, and stated future intent of self-harm (Center for Substance Abuse Treatment, 2009; Bolton, Spiwak, & Sareen, 2012). Each risk factor will be discussed in turn.

Sex. Male sex is a risk factor for suicide (Center for Substance Abuse Treatment, 2009; Caine, 2013, De Leo et al., 2013). The gender paradox in suicide refers to the pattern where more men die from suicide than women but more women make suicide attempts (De Leo et al., 2013). The most common attempt method for suicide is overdose and second most common is cutting. Men tend to favor extremely lethal means like guns when attempting suicide and are likely to have a higher death rate even though men attempt suicide less often. Women tend to favor pills when attempting suicide and pills have a wider margin for post attempt medical intervention.

Age. Being young is a risk factor. People in the 19 to 45 year age range are more at risk than any other age (Miranda & Shaffer, 2013) although this can vary by race. For example 15 to 24 year-old Alaska Native men have the highest rate of suicide in the nation (Craig & Hull-Jilly, 2012) and 45 to 64 year old American Indian and Alaska Native men are most at risk for attempts (May, Serna, Hurt, & DeBruyn, 2005). Caucasian males over the age of 70 also have higher risk than other age groups (Caine, 2013).

Depression. Depression and hopelessness are closely associated with suicide (Isometsa, 2014; Hirsch et al., 2012).

Previous attempts. Previous attempts or hospitalizations for suicidality also suggest elevated suicide risk (Center for Substance Abuse Treatment, 2009). Previous attempts or hospitalization of an immediate family member due to a serious mental illness is also a risk factor.

Ethanol and drug abuse. Alcohol problems increase suicide risk. Excessive alcohol and/or drug use is associated with suicide because inhibitions are impaired when under the influence. Kaplan and colleagues (2013) looked specifically at the presence of intoxication upon death by suicide. For females, being younger and American Indian or Alaska Native (AI/AN) increased the chances of dying by suicide while intoxicated. For men, being younger, identifying as AI/AN, Hispanic, veteran, lower education, and rural increased risk of dying by suicide while intoxicated. Excessive abuse of substances is also associated with other factors that increase suicide risk such as history of sexual abuse and mental disorder diagnosis.

Rational thinking loss. Rational thinking loss is a risk factor for suicide. Mental disorders or an organic problem that affects thinking may also impair inhibitions and increase risk for dying by suicide. Examples of conditions with rational thinking loss include serious

mental illness such as anxiety or depression with psychotic breaks or dementia. O'Donnell and colleagues (2011) stated that the most robust risk factors for suicide are mood disorders and substance use disorders. Both these conditions affect executive function and the ability to approach problems rationally.

Single. Having no spouse is a risk factor (Center for Substance Abuse Treatment, 2009). People who are single, widowed, or divorced are more at risk because they are more likely to get seriously depressed before someone else notices. Separations may also exacerbate and/or precipitate suicidal risk.

Organized plan. The presence of an organized, specific suicide plan is a serious risk factor for suicide (Center for Substance Abuse Treatment, 2009). A specific plan includes a method, place and time.

No social support. No social support and stressful life circumstances are risk factors. Examples include a break up or conflict with a significant other, job loss, and/or financial hardship. Crosby and colleagues (2011) noted that ideation, suicide plans, and attempts were most prevalent among individuals who were unemployed rather than employed and those with high school educations as opposed to college graduates. Low social support and challenges entering social settings such as the workforce tie into feelings of depression and hopelessness.

Stated future intent. Stated intent to die with determination or ambivalence is a serious indicator for suicide risk (Center for Substance Abuse Treatment, 2009).

Other factors. Access to lethal means such as a firearm is a risk. Chronic illness, especially conditions that are accompanied by chronic pain, stigma, and low chances of a good prognosis, are risk factors for suicide. Certain sexual orientations are associated with higher risk, such as lesbian, gay, or bisexual (O'Donnell et al., 2011). Personality traits such as impulsivity,

aggressiveness and rigidity are risk factors (Center for Substance Abuse Treatment, 2009; Voracek, 2007; Links, Kolla, Guimond, & McMain, 2013).

Histories of trauma, whether due to family of origin abuse (Hooven, 2013), military occupation or deployment, or exposure to a natural disaster, also put people at risk. Bossarte and colleagues (2012) reported on the conflicting evidence of risk for suicide associated with military service. Specific divisions of the military may have different patterns of risk (Snarr, Heyman, & Slep, 2010). Ideation ranged from 3.8% to 17.4% in the sample. A psychiatric diagnosis, especially depression and/or PTSD, and lack of social support were the strongest risk factors for suicide.

Indirect warning signs. Indirect warning signs can be remembered with the mnemonic IS PATH WARM. This mnemonic stands for ideation, substance abuse, purposelessness, anxiety, feeling trapped, hopelessness, withdrawal, anger, recklessness, and mood changes (Center for Substance Abuse Treatment, 2009; Gunn, Lester, McSwain, 2011; Rudd et al. 2006). These indirect warning signs for suicide are similar to the SAD PERSONS risk factors but show indirectly that someone is at risk for suicide.

Ideation is thinking or talking about death and suicide (Center for Substance Abuse Treatment, 2009). For example, someone might say, "maybe everyone would be better off without me." Substance abuse, especially severe addictions that involve multiple substances, is a warning sign. Substances that lower inhibitions, such as alcohol, are especially problematic when someone has suicide on their mind.

Purposelessness is a warning sign (Rudd et al. 2006). For example, purposelessness may manifest in someone who just lost a job or spouse and feels a loss of connection or purpose. Mood issues such as anxiety and depression are clearly linked to suicide. Feeling trapped is a

warning sign. People can get tunnel vision and lose sight of their options. For example, after losing a job someone might think, "I'll never find another job!" and feel trapped.

These indirect warning signs can relate to the rational thinking loss described in SAD PERSONS (Center for Substance Abuse Treatment, 2009). Suicide can seem like a reasonable solution to a difficult situation when someone feels trapped and has rational thinking loss. Hopelessness is another indirect warning sign (Hirsch, et al., 2012). For example, if options for finding work seem unattainable, then the person may feel hopeless and trapped.

Withdrawal goes hand in hand with these indirect signs because when a person believes in the hopeless outlook then he or she may lose motivation to continue with goal-oriented action. The person may begin to avoid social interactions (Rudd et al. 2006) Anger and mood changes are hallmarks of depression and are associated with suicide (Lester, McSwain, & Gunn, 2011). Recklessness ties into the lack of inhibitions and can be more problematic when coupled with substance use. Knowing the direct warning signs of suicide is important if a person demonstrates many of the SAD PERSON risk factors and IS PATH WARM indirect warning signs for suicide.

Direct warning signs. The biggest direct warning sign for current suicide risk is a previous attempt (Center for Substance Abuse Treatment, 2009). Concerned peers can learn to be comfortable asking about previous attempts directly. Information such as what triggered the previous attempt and what method was used can provide insight regarding the person's current level of risk. For example, one might ask for information about the location of the previous suicide attempt(s), who they were with, and whether they were under the influence of drugs. Being comfortable talking about the circumstances and how the person felt about surviving the previous attempt(s) can provide valuable information on how urgent it is to connect their peer with immediate professional attention.

Possession or seeking access to lethal methods is the next biggest direct warning sign for suicide (Center for Substance Abuse Treatment, 2009). Firearms and hanging are the most lethal methods for suicide attempts. Possession of a gun, large quantities of drugs, or actively seeking out these means are direct warning signs of suicide. All verbal and written statements about the desire to die or benefits of ending one's life should be taken as a direct warning sign. Examples of direct warning signs include when a person says final goodbyes, makes a will, or indicates a sense of finality about a decision to end his or her life. Sometimes this means that the person who has been depressed for a length of time will suddenly be peaceful and full of resolve.

Suicide risk factors may act in synergy with one another to fuel a destructive spiral. The Alaska Statewide Suicide Prevention Council (2012) referred to the "web of causality" or a network of factors that interact to create suicide risk for Alaskans. Such risk factors are depression or other mental illness, history of suicide attempts, death by suicide within the social network, needing but not receiving mental health care, increased use of drugs, alcohol or binge drinking, access to lethal means such as a firearm, and adverse childhood experiences which include a constellation of situations that increase risk of trauma exposure. Examples of adverse childhood experiences are abuse and neglect, parental mental illness or substance abuse and loss of a parent by death or incarceration.

Gary (2005) discussed risk factors for Alaska Native and American Indian youth. Stressors covered a constellation of risks related to sequela of social disintegration, acculturation and cultural conflict. Identity formation problems, chronic dysphoria and anomie were risk factors. Risks associated with violence included multiple foster home placements, legal involvement, suicide of a close friend or family member, history of suicide attempts, low self-esteem, hopelessness, sexually transmitted infections, pregnancy, family conflict, family history

of physical abuse or violence, sexual abuse, and alcohol use. School problems were a risk factor and included deficits in social skills, problem solving, and coping skills.

The literature suggests that effective suicide prevention must address all risk factors such as alcoholism, domestic violence, child abuse, and unemployment (May et al., 2005). These factors work synergistically as important mental health determinants (Clelland et al., 2007). An evaluation of a longitudinal suicide prevention program that had been in place on an Indian reservation for 15 years found that the program significantly reduced the number of suicidal gestures but the number of completed suicides was not significantly changed (May et al., 2005). The authors concluded that the risk factors in the broader social context were important to consider as a whole.

Protective factors. Some factors protect people from suicide risk. The inverse of the risks factors are the protective factors. For example, being socially connected, having a spouse, being employed, and not abusing drugs are all protective factors. Gary (2005) described protective factors as healthy relationships with family, community support, and positive school relationships. Protective factors, including spirituality (Garroutte et al., 2012; Snarr et al., 2010) may work together to form a protective spiral (Henry et al., 2012).

Having the opportunity to talk about surviving others' suicides may be beneficial as well. DeCou, Skewes, Lopez, and Skanis (2013) discuss the experience of suicide survivorship. Participants in their study reported a positive, relieving, and even therapeutic experience after discussing how others' suicides had affected their lives.

Suicide Prevention

Suicide prevention refers to efforts to reduce the incidence of suicide. The three main approaches to suicide prevention are reduction of access to lethal means, increasing mental

health literacy, and increasing help seeking. Mental health literacy and lethal means restriction training for primary care providers has been well researched as effective prevention measures (Betz et al., 2013; Pelkonen, Karlsson, & Marttunen, 2011).

Decreasing access to lethal means. Lethal means are methods that could be used to end one's life. Lethal means might include firearms, rope, large quantities of pills, or access to a tall structure. Cox and colleagues (2013) reviewed the effectiveness of suicide prevention programs that utilized restriction of access to suicide hotspots, or locations with a reputation for suicide, such as bridges, train tracks, or isolated parks. They found that installation of bridge barriers at suicide hotspots with the purpose of restricting access to the means to jump to one's death resulted in reduction of deaths by suicide. In the specific areas where bridge barriers were installed there was a reduction in suicides, in some cases to zero. Restriction of access was also associated with an overall holding or decreasing of general suicide rates rather than compensatory increases in another area with better accessibility. Cox and colleagues proposed that reducing access to means was most effective because it afforded time for the suicidal crisis to pass, the person could come to a different conclusion about what to do, and/or seek help for the problem.

Bryan, Stone, and Rudd (2011) supported the efficacy of restricting access to lethal means. They noted that most people do not die on their first suicide attempt and only about one quarter of survivors will make another attempt. This means that attempters who have access to extremely lethal methods, such as a firearm, have less chance of surviving than do people with access to less lethal means such as a knife. The person in crisis has a better chance of surviving the suicidal crisis if lethal means can be secured in another location or locked. Betz and

colleagues (2013) noted that parents of youth who were at risk for suicide were more likely to secure firearms when informed about the benefits of restricting access to lethal means.

Increasing mental health literacy. Mental health literacy (MHL) refers to the information necessary to aid in recognizing, treating, and preventing mental illness (Hart, Jorm, Paxton, & Cvetkovski, 2012; Kitchener & Jorm, 2006). Goldney and Fisher (2008) defined MHL as "the knowledge and beliefs about mental disorders that aid in their recognition, management, prevention, and help-seeking" (p. 129). MHL includes the domains of knowledge about mental illness and help-seeking efforts. Research has indicated that increased mental health literacy did not correlate with increased help seeking, particularly among the most severely depressed individuals with suicidal ideation (Goldney & Fisher, 2008). The authors suggest that people who are severely depressed and/or suicidal may have difficulty with problem solving and may have a reduced capacity to put into action knowledge that is circulated by MHL campaigns.

Gatekeeper trainings and mental health first aid are the main examples of community efforts to increase mental health literacy. Gatekeeper trainings target groups of people who are accessible to people in a suicidal crisis. Gatekeepers include college dorm supervisors, faculty, and people in health care, law enforcement, and helping professions (Wallack, Servaty-Seib, & Taub, 2013). Gatekeeper trainings aim to increase accurate recognition of distress in suicidal individuals and manage them appropriately (Moore, Cigularov, Chen, Martinez, & Hindman, 2011; Isaac et al., 2009). Questions remain regarding whether such training makes a difference in help seeking behavior and if such training is appropriate for all populations. For example, Sareen and colleagues (2013) noted iatrogenic effects with training participants in a Canadian First Nations sample. However, gatekeeper trainings have been widely implemented as suicide prevention measures in Alaska (Statewide Suicide Prevention Council, 2012).

One possible application for gatekeeper training is to increase mental health literacy among primary care providers. About 40% of people who died from suicide accessed an emergency medical care setting at least once (Betz et al., 2013; Luoma, Martin, & Pearson, 2002). However, Wintersteen and Diamond (2013) found that less than half of physicians in their study felt confident identifying depression in adolescents. The Henry Ford Health Care System was able to reduce the rate of suicide among its patients from 96.6 to 19.1 per 100,000 by implementing a suicide prevention initiative that included a comprehensive risk assessment for suicide (Ahmedani, Coffey, & Coffey, 2013). Having professionals with a working knowledge of mental health literacy is critical for those who seek care when depressed or in a suicidal crisis.

However, the mental health first aid movement is an example of a prevention effort geared toward lay people. Mental health first aid training teaches people how to respond to community members who are in, or are at risk for being in, mental health crisis and aid them until they can connect with professional help (Hart et al., 2012). Gatekeeper and mental health first aid training are offered publicly in Alaska. However, participants tend to be professionals in the helping, education, or medical professions. The current research makes a new contribution to the literature because the training targets the lay audience. Increasing help seeking behaviors on behalf of an at-risk peer is one way to support those who do not seek professional help when in distress.

Increasing help seeking. Encouraging help seeking and increasing interventions on behalf of an at-risk peer are suicide prevention methods that have less empirical validation than reducing access to lethal means or increasing mental health literacy (Cox et al., 2013). However, facilitating help seeking remains a promising area of research and practical application. Downs and Eisenberg (2012) discussed the phenomenon among college students who have access to the

free or low-cost campus health care infrastructure but tend to underutilize the services available when in crisis. They noted that less than half of the students who were seriously considering suicide had received any treatment at all within the last 12 months. Young adults may be most likely to approach a peer for support when in distress (Ross et al., 2012; Kitchener & Jorm, 2006).

The lack of service utilization by students is paralleled by behavior in the general population. Downs and Eisenberg (2012) noted that more than half of the adults with mental health problems in the United States do not engage in treatment. For example, although extensive efforts to raise mental health literacy have been undertaken in Australia, the mental health literacy and treatment seeking behaviors among people who are depressed and in suicidal crisis were not influenced in the same way as the general population (Goldney, Fisher, Wilson, & Cheok, 2002; Chamberlain et al., 2012). For these reasons, educating peer bystanders on how to recognize and respond to an at-risk peer may be most effective.

Local efforts. The Alaska Statewide Suicide Prevention Council (SSPC) noted many suicide prevention initiatives across the state particularly in the military, educational and other professional settings (Statewide Suicide Prevention Council, 2016). Programs such as Applied Suicide Intervention Skills Training (ASIST), mental health first aid, Question Persuade Refer (QPR) and Talk Saves Lives were offered across the state to youth and adult gatekeepers in 2016. These initiatives generally reach professional and paraprofessional audiences (Statewide Suicide Prevention Council, 2016). The Center for Alaska Native Health Research administers several research-based prevention interventions such as Elluam Tungiinun (Toward Wellness; Rasmus, 2014) and the Qungasvik Projects (Mohatt, Fok, Henry, Allen & People Awakening Team, 2014; Rasmus, Charles & Mohatt, 2014) as well as research regarding local

understandings of stress and coping (Rivkin et al., 2011). The current study expands the prevention intervention knowledge by targeting the lay audience, specifically students who are concerned about a peer.

Bystander Intervention

Researchers have identified factors that inhibit and increase helpful bystander responses to peers in need. Bystanders are more likely to act when they recognize a need, believe they have the skills to meet the needs, feel as though they have the time, and believe that the responsibility is likely theirs. The two main factors that inhibit bystanders' helping behavior are the bystander effect, or the tendency of individuals to not act when in the presence of other witnesses, and ambiguity as to the urgency of the situation (Hawks, Peck, & Vail-Smith, 1992; Fischer et al., 2011). The presence of onlookers creates ambiguity regarding the urgency of the situation and confusion regarding who will take action if action is necessary.

Bystander effect. The bystander effect is a pattern of group behavior where a person's likelihood of intervening to help is reduced by the presence of other onlookers (Fischer et al., 2011). Increased bystander effects were found in simulated bystander experiments where confederates were instructed to be passive. All-male bystanders decreased the bystander effect in high danger situations but not in non-emergency situations. When there was only one additional bystander, and when multiple bystanders were acquaintances, the bystander effect was smaller than when two or more bystanders were present and when bystanders were strangers (Fischer et al., 2011). The bystander effect is also reduced in rural and remote areas (Myer, 2010; Fischer et al., 2011). Residents of rural communities are less likely to be strangers to each other and are likely to be aware that there are fewer resources to access for help than in urban settings. These factors reduce the bystander effect.

The bystander effect was reduced or even reversed when situations were clearly emergencies, when perpetrators were present, when other bystanders were perceived as sources of support, and when the emergency was seen as appropriate for intervention by multiple bystanders (Fischer et al., 2011). When bystanders perceive danger not only to the people involved in the incident but also physical danger to themselves, onlookers were most likely to take action to intervene (Fischer et al., 2011). Bystanders may be more likely to take action to reduce their own fear of danger to themselves. Dangerous situations are more likely to be associated with the expectation that others will help because it is easy for others to see that help is needed. Passive onlookers reduce the likelihood that someone will engage in helping behavior. This effect attenuates in dangerous emergency situations in part because ambiguity about the need of help is reduced (Fischer et al., 2011).

Ambiguity. Ambiguity is a major impediment to prosocial bystander behavior (Kalafat, Elias & Gara, 1993; Hawks et al., 1992). Kalafat and colleagues (1993) found that in vignette conditions of low diffusion of responsibility and low ambiguity students were more likely to act on the behalf of a peer by telling an adult. Students were more likely to talk to their peer without accessing adult support, especially if the respondents were male, in situations with high responsibility diffusion and high ambiguity.

Banyard, Plante, and Moynihan (2004) corroborated the role of ambiguity as an impediment to bystander interventions. They further noted that bystanders are less likely to act when fault for the problem is unclear. This inhibition to act held true whether there clearly was an emergency or not. Bystander interventions are increased when the bystander is aware that there is a need for action, knows what action to take, and believes that the person in need is not

the cause of the problem for which they need help (Banyard et al., 2004; Vaillancourt, Stiell, & Wells, 2008).

Awareness. The literature suggests that prosocial bystanding behaviors can be improved with training that increases knowledge about the issue. Polanin, Espelage, and Pigott (2012) suggested that bystanders can be taught to intervene appropriately and training increased the likelihood that bystanders will act prosocially. The authors noted that trainings must address ambiguity and the bystander effect because these factors heavily influence the participants' willingness to intervene. Banyard and colleagues (2004) identified factors associated with increased bystander interventions that can be manipulated by training. These factors include enhancing problem recognition, increasing skills, and developing commitment to intervene.

Confidence. Banyard and colleagues (2004) noted that bystanders who have training or see themselves as physically strong are more willing to intervene to prevent sexual assault. Treatment participants, especially women, were more likely to help at a 9-month follow-up after participating in a training where they were taught about the bystander effect and the likelihood of being witness to an emergency (Hawks et al., 1992). Role-playing responses in emergency situations and developing goals around being an active bystander appeared to improve prosocial bystanding behaviors (Hawks et al., 1992; Banyard, Moynihan & Plante, 2007). For these reasons, the training I offered emphasized recognition of suicide risk factors, opportunity to engage in practical application by identifying risk factors in a story about a fictitious peer, and suggesting interventions for the peer in the story.

Transtheoretical Model

The Transtheoretical Model (TTM) provided the theoretical grounding of the research questions. The TTM has been used widely to evaluate health behavior change for tobacco

cessation and relapse prevention. More recently, the model has been applied to other health behaviors such as interpersonal violence and bullying prevention (Prochaska et al., 2008). Fewer studies have been directed towards prevention research or have applied the model to modification of such health behaviors as suicide prevention or help seeking on behalf of an at-risk peer. However, the model is well suited for evaluating bystander interventions (Banyard et al., 2007).

The core concept of the TTM is that people change in stages and cycle or recycle through the stages in a nonlinear fashion. There are six stages of change in the TTM (Prochaska, et al., 2008; Prochaska & Norcross, 2007). These stages are precontemplation, contemplation, preparation, action, maintenance, and termination. People in precontemplation have no intention to change the target behavior within the next six months. Those in contemplation do intend to take action but have not yet formulated a concrete plan. Individuals in the preparation stage of change intend to make a change in the target behavior within the next 30 days and have already taken some action towards accomplishing this change (Prochaska et al., 2008). People in the action stage have changed their behavior for less than six months and work actively to keep the change in place. People in maintenance have changed their behavior for over six months and the change has become normalized and automatic. There is no vulnerability to returning to the previous behavior and the new behavior has become the norm in the maintenance stage (Prochaska et al., 2008).

The study applied the TTM to assess change in help seeking on behalf of an at-risk peer among college-age students. Specifically, the research assessed respondents' change as a continuous outcome variable.

Summary

Suicide patterns across the global, national, and statewide contexts reveal a varied makeup of the problem. Trends such as the gender paradox, where men are more likely to die from suicide but women make more attempts, were true across most contexts. The data revealed a serious burden of suicide risk for college-age people, especially among men. Specific sub-populations in Alaska, such as college-age Alaska Native men, have very high risk for suicide when compared to the national rate (Craig & Hull-Jilly, 2012; Muehlenkamp, Marrone, Gray, & Brown, 2009). These findings suggested that the peer intervention training was relevant to a serious issue among college-age students in Alaska.

Suicide often takes people by surprise. However, individuals who are at risk for dying by suicide generally exhibit clusters of indirect and direct warning signs. Effective safety planning accounts for the risk factors and warning signs that the person has and incorporates their protective factors as strengths to get through the suicidal moment (Center for Substance Abuse Treatment, 2009). The training educated participants to recognize specific warning signs for suicide in addition to understanding risk and protective factors.

People who are in mental health crisis may be least likely to be able to integrate mental health literacy information, recognize problems within themselves, or act upon their own behalf to engage in treatment (Goldney et al., 2002; Chamberlain et al., 2012). People in mental health crises such as serious depression or suicidality may experience a degree of impairment that requires external help to connect them with the available resources.

Moreover, college-aged youth are likely to seek assistance from their peers (Ross, et al., 2012) or contact professionals in primary care who have only general mental health training. For these reasons I have directed my intervention to increase lay bystanders' mental health literacy

and readiness to act on behalf of an at-risk peer. The primary components of suicide literacy are the ability to recognize risk factors and warning signs of distress. The training aimed to increase suicide literacy and knowledge of support resources as a means of increasing readiness and sense of self-efficacy when acting to connect a peer to such supports.

Current literature shows that suicide is a problem that is especially concerning for young adults in Alaska. The research tested the feasibility of peer intervention training as a method for suicide prevention. While peer intervention does not address the whole network of risk factors associated with suicide, the goal of peer intervention is to increase the likelihood that someone will act to connect a peer with professional help that will address the contextual nuances of the problem. The logic informing the intervention follows the conclusions demonstrated in the bystander intervention literature and the TTM.

In the TTM, knowledge is necessary, but not sufficient, for behavior change (Prochaska & Norcross, 2007). Both readiness to change, or in this case, readiness to intervene on behalf of an at-risk peer, and self-efficacy, or confidence and competence in knowledge, are needed for a person to engage in a new behavior. Several theoretical constructs of the TTM, including decisional balance and self-efficacy, are related to behavior change. Decisional balance refers to the pros and cons of changing. Self-efficacy is confidence that one can engage in the new behavior effectively. The outcome variables of interest in the study included these TTM constructs. The goal of the training was to increase participants' mental health literacy and thereby increase their self-efficacy and likelihood of intervening on behalf of an at-risk peer.

Chapter Three: Method

The study evaluated the capacity of a bystander intervention training to change suicide literacy, readiness to act on behalf of an at-risk peer, and sense of self-efficacy when intervening. The measures and intervention training materials were approved by the University of Alaska Fairbanks (UAF) Institutional Review Board for approval prior to use in the research trial. Appendix A shows the approval letter. After receiving the training, participants in the intervention group were expected to be better able to recognize signs of suicide risk, endorse fewer stigmatizing beliefs about suicide, have increased knowledge about ways to intervene, show greater intention to intervene, and demonstrate a stronger sense of self-efficacy when aiding an at-risk peer.

Design

The study used an experimental between subjects design to analyze change in the dependent variables between intervention group and control group participants over time. Participants ($N = 48$) were randomly assigned to the control group ($n = 27$) or the intervention group ($n = 21$). The control group completed only the assessments. The intervention group received a fact sheet on suicide risk signs, participated in the peer intervention training, and completed the assessments. The independent variables were the training group to which the participant was assigned and time of assessment (e.g. baseline and post-test). The dependent variables were scores on measures that assessed knowledge of suicide risk factors and resources, intent to act on behalf of an at-risk peer, and sense of efficacy in acting.

Participants

Results of a power analysis indicated that a medium effect size of $f = .25$ with power = .95 would be detected by a total of 128 participants (G*Power; Faul, Erdfelder, Lang, &

Buchner, 2007). For this reason the recruitment goal was 128 college students. The researcher contacted instructors of record for undergraduate courses and asked permission to advertise the opportunity to participate in suicide prevention research. Potential research participants were provided with flyers and a brief oral invitation to the project.

Other recruitment efforts were made in addition to the in-person invitations. Instructors of record made announcements in university classes, radio public service announcements were broadcast by the campus radio station, and hardcopy flyers were posted to campus bulletin boards. Anyone under 18 was excluded from the study. Individuals confirmed that they were at least 18 years old, not suicidal, and had not had thoughts of harming themselves in the last 12 months in order to participate. The UAF Institutional Review Board required these exclusions to ensure participant safety due to the sensitive nature of the topic.

Recruitment efforts resulted in a total of 48 participants responding from a college campus in the circumpolar north. Participants were assigned at random to either the intervention or control group. There were 27 people in the intervention group and 21 in the control group. Participants were offered compensation choices to reduce attrition. Choices included a $15 gift card, course credit in a college social science course, or no compensation. The majority (n = 46) of the participants choose cash compensation and course credit if they were eligible for credit as determined by individual instructors of record. With diligent follow up, a total of 21 intervention group participants (78%) and 17 control group participants (80%) completed the second assessment one week later.

Table 1 shows the demographic characteristics of the sample. Women made up about 79% of the sample (n = 38) while men made up about 21% of the sample (n = 10). Ethnicity was unequally distributed. About 69% of the sample identified as Caucasian (n = 33). Ten percent of

the sample identified as Alaska Native (n = 5), 8% as African American (n = 4), and 4% identified as Asian American (n = 2), Hispanic (n = 2), or other (n = 2), respectively. About half the participants reported middle-income status in their families of origin (51%). Most participants were either first year (21%) or third year undergraduates (23%) and a little over half were social science majors (52%).

Table 1
Demographic Characteristics

Variable			N	Percent of Sample	Mean	SD	Range
Age					26	11.06	18-73
Socioeconomic Status							
	$50,000 and under		17	36.2			
	$50,000 to $99,999		24	51			
	$100,000 and above		6	12.8			
Gender							
	Male		10	20.8			
	Female		38	79.2			
Ethnicity							
	Caucasian		33	68.8			
	Non-Caucasian		15	31.3			
		AI/AN	5	10.4			
		Asian American	2	4.2			
		Hispanic American	2	4.2			
		African American	4	8.3			
		Other	2	4.2			
Class Rank							
	Freshman		10	20.8			
	Sophomore		9	18.8			
	Junior		11	22.9			
	Senior		8	16.7			
	Other		9	18.7			
Major							
	Social Sciences		25	52.2			
	Non-Social Sciences		23	47.8			

Table 2 shows the sample characteristics that are related to community involvement. Only 12.5% of the sample indicated that they were members of an athletic team and 2.1% stated that they had fraternity or sorority membership. However, 54.2% of the sample indicated that they participated in extra-curricular university sponsored activities. A little less than half the sample (45.8%) reported having a faith affiliation and one quarter (25%) stated that they participated regularly in faith activities. In general the participants were not typically involved in formal memberships but about half engaged in extracurricular events and about one quarter were involved regularly in faith activities.

Table 2
Community Involvement

Variable			N	Percent of Sample
Campus Engagement				
	Athletic Team Member			
		Yes	6	12.5
		No	42	87.5
	Fraternity/Sorority Member			
		Yes	1	2.1
		No	47	97.9
	Extra-curricular university activities			
		Yes	26	54.2
		No	22	45.8
General Community Engagement				
	Faith Affiliation			
		Yes	22	45.8
		No	26	54.2
	Regular participation			
		Yes	12	25
		No	36	75

Table 3 shows the sample characteristics related to previous exposure to suicide prevention activities and prior experience interacting with someone who was suicidal. The majority of participants (64.6%) had no prior suicide prevention training. Of those who had prior

training (35.4%) just over half had received training within the last year (18.8% of the overall sample) and 8.4% of the overall sample had received suicide prevention training in the last 1 to 6 months. The majority (75%) indicated that they planned to attend suicide prevention trainings in the future, not including the current study's training, and nearly all the participants (93.85) had some prior interaction with someone who was thinking about killing themselves. Most indicated that this was a rare occurrence for them (45.8%) but about 16.7% stated that this happened often for them. A portion of respondents (4.2%) indicated that they interacted with someone who was thinking about killing themselves all of the time. Only 6.3% of the participants stated that they had never interacted with someone who was thinking about killing him or herself.

Table 3
Suicide Prevention Exposure

Variable			N	Percent of Sample
Past Suicide Prevention Training				
	No		31	64.6
	Yes		17	35.4
		Within the last month	1	2.1
		Within the last 6 months	3	6.3
		Within the last year	9	18.8
Plans to attend future suicide prevention activities				
	No		12	25
	Yes		36	75
Prior interaction with someone who was thinking about killing themselves				
	No		3	6.3
	Yes		45	93.8
		Rarely	22	45.8
		Sometimes	13	27
		Often	8	16.7
		All of the time	2	4.2

Procedure

Participants arrived at a classroom on campus and filled out consent forms to participate in research. Please see Appendix B for the informed consent recruitment script. Both intervention group and control group participants completed the baseline questionnaire. Control group participants (n = 21) were dismissed until the second measurement point one week later. Participants who were assigned to the control group were offered an information packet on suicide prevention resources and an optional discussion of the information after they completed the second assessment. Both intervention and control group participants were offered optional incentives after completing all the research activities. Incentives included a $15 dollar gift card and a voucher for course credit.

Intervention group participants (n = 27) attended the suicide prevention training after completing the baseline assessment. The training lasted approximately 90 minutes and included didactic information, practical application of the didactic information with a fictitious vignette, and a debriefing exercise. Participants in the intervention group were provided with resource information such as the Careline crisis intervention phone number and contacts for local mental health resources. The intervention group participants were dismissed after the training session until the second measurement point one week later. A proctor was available to escort students to the Health and Counseling Center in the unlikely event of an adverse participant reaction to the training material. No participants utilized the escort.

Participants' answers were kept confidential but not anonymous. The informed consent forms and participant names were locked separately from the data. Names were used to give extra credit and were disclosed with the participant's consent to their instructors of record to allow for extra credit compensation.

Intervention

I adapted SAMHSA's Treatment Improvement Protocol (TIP) 50 to create a suicide prevention training for the lay audience (Center for Substance Abuse Treatment, 2009). Please see Appendix C for a full script of the training and debriefing exercise. TIP 50 provides steps for suicide risk assessment for clinicians who work with clients with substance use problems. The TIP is organized into sections that discuss how to gather information, access support, take responsible action, and extend the action. I adapted the TIP content to a level appropriate for a lay audience, specifically people who do not have mental health training, but who wished to learn how to recognize and effectively respond to a peer at risk for suicide.

First, information was provided regarding how to notice and talk with a peer at risk for suicide. The SAD PERSONS mnemonic was used to help the participants recall the risk factors associated with suicide. These risk factors include male sex, 19-45 year old age range, depression or hopelessness, previous suicide attempt, ethanol or other drug abuse, rational thinking loss, single, organized, serious plan, no social support, and stated future intent to kill him or herself. Participants were provided information regarding indirect and direct warning signs of suicide including access to lethal means such as a firearm. Intervention participants learned that asking directly about past suicide attempts and current thoughts of suicide will not cause harm but will rather improve the situation by giving the at-risk peer a chance to be heard and be referred to help (DeCou et al., 2013). Examples of how to bring up the topic were given.

Second, the presenter discussed how to access support and take responsible action. Participants were shown how to distinguish between situations where immediate supports were needed versus lower risk situations. Participants learned to think of their personal safety first. For example, intervention group participants were taught that accessing emergency medical care or

help from a peace officer are appropriate actions in imminent risk situations. Imminent risk situations included situations where lethal means are present, not possible to remove, and the person at risk has a specific, active suicide plan. Lower risk situations included scenarios where passive thoughts of suicide were present or the at-risk peer was willing to relinquish lethal means and mobilize social supports. Participants learned how to safety plan with a peer at lower risk for suicide by taking practical steps to assist their peer to access counseling, self-help support groups, medical care, pastoral counseling, and/or support of family and friends. Participants were given brochures for local helping resources and crisis line numbers. Extending the action included learning about self-care, following up with the peer, and continuing to offer support as appropriate.

Third, the presenter engaged the group in application of the information with a fictitious vignette. The participants were provided with a limited demographic and life circumstance description. Then the group worked together to identify the SAD PERSONS risk factors that were present, decide if the case represented an at-risk peer and suggest supportive actions appropriate for the scenario. Participants were reminded to use the skill of listening throughout interactions with at-risk peers. The benefit of having someone willing to listen was emphasized.

Last, the presenter ended the training with an experiential debriefing exercise to allow for integration of the material, model self-care, and unobtrusively screen participants for any misunderstandings or adverse reactions. The tone of the exercise was purposed to generate a shift in mood from the serious topic of the training to the humorous effort needed to create a web sufficient to bounce a balloon. Participants stood in a small circle and tossed a ball of yarn to each other to attempt making a web. The person holding the yarn ball had the floor and was given a choice to share a comment or pass. The presenter started first to model the type of

disclosures that were appropriate. The first round of toss was an icebreaker with a choice of sharing a favorite food or favorite way to relax. The next rounds were debriefing rounds with choices of an "I think," or an "I feel" statement regarding current reactions in the moment to the topic. Care was given to invite disclosures regarding anything that bothered the participants or anything that seemed particularly useful from the training.

Measures

Measures were derived from the sexual assault prevention bystander intervention and TTM literature to assess sense of efficacy and readiness to act on behalf of an at-risk peer. The assessment battery queried general demographic characteristics, participants' previous participation in suicide prevention training and personal experience with suicide, and the influence of socially desirable responding. Many of the measures were adapted from Banyard, Plante, and Moynihan's (2005) Rape Prevention Through Bystander Intervention curriculum assessment. I adapted the measures by replacing references to rape and sexual assault with terms related to suicide. Appendices D-N show the full measures. The discussion below includes measures of internal consistency for scales with continuous variables.

The demographics section of the questionnaire assessed the individual differences among participants and exposure to suicide prevention at baseline. Demographic questions queried age, gender, year in college, social activity, and socioeconomic status. Baseline suicide literacy was assessed with questions about previous suicide prevention training, personal history with exposure to suicidality in others, and current likelihood of accessing support services such as Careline in the event of concern for self or others.

I assessed socially desirable response bias, or the tendency to value appearing helpful or altruistic, with Crowne and Marlow's (1960) measure for social desirability. Bystander behavior

has the potential for bias by the desire to identify as altruistic, helpful, or kind. Assessing social desirability allowed for the analyses to control for this construct statistically. The measure consists of 33 true/false statements that the respondents rate according to their own behavior. Summing the number of socially desirable responses derives the total scale score. A higher score indicates greater socially desirable response bias.

Suicide literacy. Changes to suicide literacy were assessed in two domains. The Literacy of Suicide Scale (Calear, Batterham & Christensen, 2012) was used to assess endorsement of myths about suicide. This measure consists of 27 items that assess suicide literacy in four main areas: signs and symptoms, causes of suicide, risk factors associated with suicide, and prevention. Respondents indicated their level of knowledge on a three-point scale with answer anchors "true," "false," and "I don't know." Summing the number of correct responses derives the total scale score. Higher scores indicate greater suicide literacy. I predicted that suicide literacy scores would increase for intervention group participants.

The Stigma of Suicide Scale short form (Batterham, Calear, & Christensen, 2013b) was used to measure stigmatizing beliefs about suicide. The measure consists of a 16-item scale with a five-point Likert response format with answer anchors ranging from "strongly disagree" to "strongly agree." The items are grouped into subscales which assess stigma, isolation and depression, and normalization and glorification associated with suicide. Respondents ranked their degree of belief that specific descriptive terms, such as "immoral," "depressed," and "heroic," were accurate to describe someone who dies by suicide. The Cronbach's alpha reported by Batterham and colleagues (2013b) suggested strong consistency in the items ($\alpha = .90$). The current sample showed somewhat lower consistency ($\alpha = .79$). I predicted that stigma scores would decrease for intervention group participants.

Readiness to intervene. The Readiness to Change scale was adapted from Banyard and colleague's (2005) nine-item Readiness to Change measure for rape prevention that the authors developed from the widely used University of Rhode Island Change Assessment (URICA) based on the Transtheoretical Model. I replaced the term "sexual assault" with the term "suicide" and clarified the scale anchor labels. The response format is a five-point Likert scale with anchors that range from "not at all true" to "extremely true."

The first three items make up the precontemplation subscale (I don't think suicide is a big problem on campus; I don't think there is much I can do about suicide prevention on campus; there isn't much need for me to think about suicide prevention on campus). The second three items assess the contemplation stage of change (sometimes I think I should learn more about suicide prevention but I haven't done so yet; I think I can do something about suicide and am planning to find out what I can do about the problem; I am planning to learn more about the problem of suicide on campus). The final three items of the measure assess for the action stage (I have recently attended a program about suicide prevention; I am actively involved in projects to deal with suicide on campus; I have recently taken part in activities or volunteered my time on projects focused on preventing suicide on campus). The scale is scored by calculating means for each subscale and next deriving a final readiness score. The action and contemplation means are summed and the precontemplation mean is subtracted from the subtotal to derive the final readiness score. Cronbach's alpha for the subscales of the Readiness to Change scale in Banyard and colleagues (2005) research ranged from .53 on the precontemplation subscale to .77 on the contemplation subscale. Similar levels of internal consistency were found in the current study (precontemplation $\alpha = .52$, contemplation $\alpha = .89$, action $\alpha = .80$). I predicted that readiness to change scores would increase for intervention group participants.

Sense of community was measured with Unger and Wandersman's (1982) Sense of Community scale as modified by Banyard and colleagues (2005). The items include the questions "Do you feel a sense of community with other people on campus," "How important is it to you to feel a sense of community with people on this campus," and "Some people care a lot about the kind of campus they live on, for others the campus is not important, how important is the campus atmosphere to you?" Respondents rated their answers on a five-point Likert scale. The rating was summed to give a total score for sense of community. The Cronbach's alpha for the Sense of Community scale in Banyard and colleagues' (2005) research was .71 (M = 12.18, SD = 2.10). Measures of internal consistency were somewhat higher in the current sample (α = .84). Sense of community may be correlated with willingness to engage in helping behaviors. Fischer and colleagues (2011) and Myer (2010) indicated that the bystander effect was minimized in situations where people were not strangers and a weaker effect was shown in rural settings. Measuring sense of community allowed for exploration of this construct.

Banyard and colleagues (2005) developed the 11-item Decisional Balance Scale as part of their evaluation of a rape prevention program. The authors relied on a theoretical construct, decisional balance, from Prochaska and DiClemente's Transtheoretical Model as the basis for the scale development. The items are grouped into two subscales. Items 1 to 5 measure the pros of intervening on behalf of someone in trouble while items 6 to 11 measure the cons. The total decisional balance score is calculated by subtracting the "cons" subscale score (α = .76; M = 16.92, SD = 4.61) from the "pros" subscale score (α = .72; M = 17.96, SD = 3.67). I changed the instructions and wording on the anchors. Internal consistency for the items was slightly higher in the current study (cons α = .85, pros α = .77). I predicted that total decisional balance scores would increase for intervention group participants.

Respondents were queried about whether they had a plan for helping an at-risk peer as a bystander. This was assessed with one item in a yes/no response format. Level of confidence in carrying out the plan was measured with a 5-point Likert scale. I predicted that more intervention group participants would have a plan for assisting an at-risk peer after participating in the intervention.

Self-efficacy. Sense of self-efficacy was assessed with several measures. The Mentors in Violence Program (MVP) Efficacy Scale (Katz, 1994) is a 10-item scale that addresses self-efficacy with interpersonal, gender-based violence prevention. Respondents rated their level of agreement with each statement on a five-point Likert scale with anchors ranging from "strongly disagree" to "strongly agree." Measures of internal consistency for the MVP scale in Banyard and colleagues (2005) research were acceptable ($\alpha = 75$, $M = 34.15$, $SD = 6.13$). I changed the directions and the item wording significantly to assess efficacy around suicide prevention. However, the scale appeared to function similarly in the current study ($\alpha = .75$). I predicted that self-efficacy scores would increase for intervention group participants.

The Campus Efficacy Scale (Banyard, Plante, & Moynihan, 2002; Banyard et al., 2005) was developed to assess bystander effectiveness when responding with violence prevention behaviors. The scale provides a score of perceived ineffectiveness. Respondents rated their confidence in being able to perform fourteen bystander behaviors on a one hundred point scale with anchors that range from "can't do" to "can do." I modified the measure to assess the respondents' confidence in various bystander behaviors when confronted with a peer at risk for suicide using a 5-point Likert scale. The total scale score was derived by calculating the mean. Internal consistency for the scale was good in the current study ($\alpha = .90$). I predicted that prevention efficacy scores would increase for intervention group participants.

The Slaby Bystander Efficacy Scale (Slaby, Wilson-Brewer, & DeVos, 1994) is a 9-item scale that assessed respondents' degree of agreement with statements about violence prevention. Participants rated each statement on a five-point Likert scale with answer anchors that ranged from "strongly disagree" to "strongly agree." The total score for the scale is calculated by summing the values of the responses to the nine items. The scale showed good internal consistency in Banyard and colleagues' (2005) research ($\alpha = .90$, $M = 42.95$, $SD = 5.97$). I modified the items to query efficacy related to suicide prevention and found similar consistency among the items ($\alpha = .93$). I predicted that bystander effectiveness scores would increase for intervention group participants.

I adapted SAMHSA's TIP 50 to create a suicide prevention training for the lay audience (Center for Substance Abuse Treatment, 2009). I adapted measures from a study that evaluated the efficacy of a peer bystander intervention for sexual assault prevention on a college campus and used the adapted measures to evaluate the suicide prevention training (Banyard et al., 2002). The goals of the training were to increase suicide literacy, readiness to act on behalf of an at-risk peer, and sense of self-efficacy when intervening among intervention group participants. I used an experimental design to assess changes in these key outcome variables.

Chapter Four: Results

A two way mixed model analysis of covariance (ANCOVA) was used to assess change over time and the extent to which these changes differed for the intervention group as compared to the control group. The independent variables were the group to which the participants were assigned, either intervention group or control group, and time at baseline and post-test measurements. The dependent variables were the scores on the outcome measures. Social desirability was included as a covariate in all the ANCOVA tests. Ethnicity was included as an additional covariate for the outcome, suicide literacy, which was significantly correlated with ethnicity. A separate analysis was performed for each outcome.

The analyses evaluated several hypotheses. First, I predicted that the training would increase participants' knowledge, including accuracy in recognition of suicide risk signs, and decrease endorsement of myths associated with suicide. Outcome variables that addressed the first hypothesis included suicide literacy, stigma, isolation, and glorification. I expected intervention group participants' suicide literacy scores to increase and their stigma, isolation, and glorification scores to decrease. Second, I predicted that respondents would report an increased willingness to respond on behalf of an at-risk peer. Outcome variables that addressed the second hypothesis included decisional balance and readiness to change. I expected intervention group participants' decisional balance and readiness to change scores to increase.

Third, I predicted that participants' sense of self-efficacy would increase when responding to an at-risk peer. The outcome variables that addressed the third hypothesis included self-efficacy, prevention efficacy, and bystander effectiveness. I expected intervention group participants' self-efficacy, prevention efficacy, and bystander effectiveness scores to increase. I expected control group participants' scores to show no change from baseline to post-test. I

assessed social desirability for inclusion as a covariate in the analyses. Sense of community was assessed for purposes of exploratory analysis.

Data Preparation Prior to Analysis

Prior to analysis, the 48 respondents' data were examined for completeness. One case in the control group was excluded due to an acquiescent response set and lack of completeness. The data were cleaned and converted to a master file that contained all data from both the control and intervention groups. Data from the baseline and post-test assessment points were linked to create a single case for each participant and missing data were excluded from analyses on an analysis-by-analysis basis. For example, participants who did not complete an item or items for a particular outcome were excluded from analyses of that outcome. Items that were reverse coded were transformed into new variables. Finally, scale totals were calculated for each outcome measure using the steps discussed in the measures section.

As shown in Table 4, the overall distribution of the sample was negatively skewed and platykurtic. The sample included fewer, less extreme outliers than would be typically found in a normal distribution. The data from the scales that assessed the stigma of suicide, decisional balance, readiness to change, and self-efficacy were not significantly different from the normal distribution. The variables suicide literacy, stigma of suicide related to isolation and glorification, sense of community, prevention efficacy, and bystander effectiveness all showed a tendency towards platykurtosis and negative skew when compared to the normal distribution. This reflects participants' generally high endorsement of some outcome variables at baseline such as sense of efficacy and readiness to act on behalf of an at-risk peer. The sample's baseline characteristics are explained in detail in the subsequent section.

While the sample was significantly skewed and kurtotic (exceeded a *z*-score of 2.58), the departure from the norm was not extreme (Field, 2005). None of the *z*-scores exceeded the threshold of 3.29 or less recommended by Field for parametric tests. Ghasemi and Zahediasl (2012) note that sample sizes of 30 or more tend to be robust to violations of normality and results of parametric testing can be reliable even with non-normal sample distributions when the sample size is larger than 30. Based on these characteristics, I determined that the assumptions of parametric tests were true for this sample. However, the results of this pilot sample should be interpreted with caution.

Table 4. *Skewness, Kurtosis, and Normality Tests for Outcome Variables*

Variable	Mean (SD)	Skewness (^{z}Skewness)	Kurtosis (^{z}Kurtosis)	Kolmogorov-Smirnov Test		Shapiro-Wilk Test	
				Statistics Df (1, 46)	*p* value	Statistics Df (1, 46)	*p* value
Suicide Literacy	15 (5.27)	-1.076 (-3.07)	1.267 (.388)	.195	.00*	.908	.001*
Stigma	2.50 (.98)	-.004 (-.011)	-1.134 (-1.65)	.104	.20	.950	.05
Isolation	4.20 (.66)	-.451 (-1.29)	-.021 (.031)	.198	.00*	.888	.00*
Glorification	2.06 (.80)	.378 (1.08)	-.971 (-1.41)	.193	.00*	.916	.003*
Decisional Balance	1.07 (1.25)	-.273 (-.78)	.260 (.378)	.094	.20	.983	.75
Readiness to Change	4.09 (2.27)	-.733 (-2.09)	1.584 (2.30)	.122	.08	.962	.14
Sense of Community	3.4 (3.21)	-.584 (-1.76)	-.210 (-.305)	.131	.05*	.946	.03*
Self-Efficacy	3.9 (5.28)	.160 (.46)	-.222 (.323)	.085	.20	.980	.62
Prevention Efficacy	4.3 (5.14)	-.972 (-2.78)	.214 (.311)	.218	.00*	.905	.001*
Bystander Effectiveness	4.15 (.66)	-.861 (-2.46)	.619 (.90)	.133	.04*	.904	.001*

Abbreviations: SD, standard deviation; Df, degree of freedom; *, significant outcome

Baseline Characteristics

The participants were 48 respondents from a college campus in the circumpolar north. See Table 1 for a full description of the demographic characteristics of the sample. Overall the

sample had a noticeable level of exposure to suicide prevention at baseline (35.4%) as well as interactions with others who were suicidal (93.8%). About 58% of the participants had a plan to help assist a peer at risk for suicide. Participants were generally neutral regarding their degree of confidence ($M = 3.04$, $SD = 1.33$) in carrying out their plan.

I examined scores for the sample as a whole on the outcome measures at baseline. See Table 4 for a summary of the sample means and standard deviations for each outcome measure at the baseline measurement time point. Suicide literacy was measured with the Literacy of Suicide Scale (LOSS; Calear et al., 2012). Participants were asked to identify statements about suicide as true or false (e.g. substance use is a risk factor for suicide [T]; people who have thoughts about suicide should not tell others about it [F]). On average the participants scored a little over half of the answers correct at baseline ($M = 15$, $SD = 5.27$, range = 0 to 25).

The participants rated their level of agreement with stereotyped descriptions of suicide on a 5-point scale using the Stigma of Suicide Short Form (SOSS; Batterham, Calear and Christensen, 2013a). At baseline, the sample gave ratings of "disagree" to "neutral" for stigmatizing descriptions such as cowardly and shallow ($M = 2.50$, $SD = .98$, range = 1 to 4). Participants tended to agree with isolation stereotypes associated with suicide (e.g. isolated, lonely) and tended to see suicide as associated with isolation ($M = 4.20$, $SD = .66$, range = 2 to 5). The group disagreed with terms such as brave and strong, which were associated with glorification of suicide ($M = 2.06$, $SD = .8$, range = 1 to 4).

Participants rated reasons for and against intervening on behalf of an at-risk peer on a 5-point scale using the Decisional Balance Scale (Banyard et al., 2005). The overall decisional balance rating was found by subtracting the sum of the ratings for each participant's reasons

against intervening from the sum of their ratings for reasons in favor of intervening. The group reported slightly more pros than cons at baseline (M = 1.07, SD = 1.25, range = -2 to 4).

Respondents rated statements associated with the precontemplation, contemplation, and action stages of change on a 5-point scale using the Readiness to Change Scale (Banyard et al., 2005). The sample as a whole was moderately ready to act on average but there was some variability (M = 4.09, SD = 2.27, range = -3 to 9).

Participants rated how much they felt a sense of campus community on a 5-point scale using the Sense of Community measure (Unger & Wandersman, 1982). The scale was included so that the sense of community construct could be explored because the bystander effect is not as strong in rural communities (Fischer et al., 2011; Myer, 2010). Answer choices ranged from "not at all" (1) to "a great deal" (5). Respondents moderately to mostly agreed that they felt a sense of community (M = 3.4, SD = 3.21, range for mean rating = 1 to 4).

Respondents rated on a 5-point scale how much they agreed with statements associated with their ability to personally act on behalf of an at-risk peer using the MVP Self-Efficacy Scale (Katz, 1994). On average, respondents indicated that they neither agreed nor disagreed when rating themselves as able to make a safety plan with a peer, help a peer put away lethal means, and advise a peer that help is available. Participants tended to agree with statements that were associated with personal efficacy with suicide prevention (M = 3.9, SD = 5.28, range for mean rating = 2.8 to 5).

Participants rated their level of agreement with statements associated with bystander efficacy with suicide prevention on a 5-point scale using the Slaby Bystander Efficacy Scale (Slaby et al., 1994). The sample started with somewhat high scores at baseline on the prevention efficacy outcome variable and tended to agree or strongly agree with suicide prevention oriented

statements (M = 4.3, SD = 5.14, range for mean rating = 2.67 to 5). For example, the participants in the sample tended to agree that suicidal behavior can be prevented and people can learn to help prevent suicide.

Respondents were asked to rate their confidence level on a 5-point scale using the Bystander Efficacy Scale regarding their belief in their ability to carry out behaviors associated with intervening on behalf of a peer at risk for suicide (Banyard et al., 2002; Banyard et al., 2005). As shown by their scores on the bystander effectiveness outcome variable, the group tended to feel very confident that they could engage in behaviors such as talking to a peer who is considering suicide, asking for help on behalf of a peer or stranger, and alerting authorities regarding someone at risk for suicide (M = 4.15, SD = .66, range = 2 to 5).

At baseline, participants reported that they were slightly likely to contact the Careline crisis number on their own behalf (M = 2.44, SD = .1.49, range = 1 to 5), were moderately likely to contact Careline on behalf of someone else (M = 3.42, SD = 1.35, range = 1 to 5), and were moderately likely to believe that suicide was a problem on campus (M = 3.48, SD = 1.13, range = 1 to 5). Participants who had a plan for assisting a peer at risk for suicide at baseline (n = 18, 37.5%) reported on average that they felt neutral, that is neither certain nor uncertain, regarding their ability to carry out their plan (M = 3.04, SD = 1.33, range = 1 to 5).

Intervening as a bystander is a behavior potentially biased by social expectations to be helpful and kind. Participants were administered the 33-item Marlow-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) to assess for response bias related to social norms. The scale was included so that social desirability could be held as a covariate in the outcomes analysis. Participants responded either true or false to each statement. A sum was created from the respondent's items that were consistent with socially desirable responding. A higher score

indicated a greater degree of socially desirable responding. The current sample showed slightly higher levels of social response bias ($M = 17.77$, $SD = 5.74$, range = 6 to 30) than did Crowne and Marlowe's sample ($M = 13.72$, $SD = 5.78$, range = 0 to 33).

Differences Between Conditions

Next, I conducted several tests to evaluate the sample characteristics at baseline. I examined whether demographic variables differed significantly between the intervention and control groups by utilizing *t* tests for continuous variables (e.g. age) and chi-square tests for categorical variables (e.g. gender). There were no differences between the intervention and control group in age, gender, class rank, socioeconomic status, previous knowledge of suicide prevention, and previous exposure to suicidality. However, there was a significant difference between the intervention and control group in ethnicity. The control group had an approximately equal distribution of Caucasian and non-Caucasian participants (52.4% and 47.6% respectively). However the intervention group had a greater proportion of Caucasian participants than non-Caucasians (81.5% vs. 18.5% respectively), $X^2 (1, N = 48) = 4.66$, $p = .03$.

I evaluated whether the baseline outcome variable measurements differed significantly between the intervention and control groups with *t* tests. There were no significant differences between the intervention and control groups in baseline outcome measurements. I used *t* tests to identify any outcome variables that were significantly related to ethnicity. At baseline, there were no differences between Caucasian and non-Caucasian respondents in their sense of community, sense of efficacy and readiness to act when intervening on behalf of a peer, and knowledge of suicide stigma. However, the baseline suicide literacy scores differed significantly between Caucasians and non-Caucasians. Caucasians had significantly higher suicide literacy scores at baseline ($M = 16$, $SD = 4.69$) than non-Caucasian participants ($M = 11.87$, $SD = 5.50$),

$t(46) = 2.68$, $p = .01$. For this reason, I entered ethnicity as a covariate to control for this relationship in the main analyses that examined changes in suicide literacy scores.

I conducted several tests to evaluate the sample characteristics at post-test. A total of 78% of the intervention group participants (21 of the initial 27) and 80% of the control group participants (17 of the initial 21) returned and completed the second assessment. I examined whether baseline demographic and outcome variables differed significantly between those who returned to complete the post-test and those who did not by utilizing *t* tests for continuous variables (e.g. age) and chi-square tests for categorical variables (e.g. ethnicity, gender, past suicide training). There were no significant differences in demographic or outcome variables between those who returned and completed the post-test assessment and those who did not.

Correlations Between Outcomes

Finally, I examined the bivariate correlations among the outcome measures. Table 5 shows a summary of the correlations. Suicide literacy was significantly related to social desirability. Readiness to change was significantly related to knowledge of stigma, decisional balance and sense of community. Decisional balance was significantly related to self-efficacy and social desirability in addition to readiness to change. Self-efficacy was significantly correlated to prevention efficacy, bystander effectiveness and social desirability. The correlation outcomes suggested that the variables were distinct and were appropriate for separate analyses.

Table 5

Means, Standard Deviations, and Correlations Among Study Variables

Variable	Mean	SD	Suicide Literacy	Stigma	Isolation	Glorification	Decisional Balance	Readiness to Change	Sense of Community	Self-Efficacy	Prevention Efficacy	Bystander Effectiveness	Social Desirability
Suicide Literacy	15	5.27	-	-.002	.101	.183	-.055	.170	.123	-.121	.038	-.222	-.303*
Stigma	2.50	.98		-	-.023	-.053	.025	-.310*	.074	-.253	.018	-.166	.107
Isolation	4.20	.66			-	-.031	-.092	-.018	-.198	-.026	.033	-.013	-.297
Glorification	2.06	.80				-	-.057	.419**	.413**	.120	.142	.189	.002
Decisional Balance	1.07	1.25					-	.313*	.150	.387**	.247	.201	.370**
Readiness to Change	4.09	2.27						-	.408**	.202	.312*	.215	.245
Sense of Community	3.4	3.21							-	-1.60	.057	.100	.241
Self-Efficacy	3.9	5.28								-	.617**	.511**	.303*
Prevention Efficacy	4.3	5.14									-	.170	.112
Bystander Effectiveness	4.15	.66										-	.212
Social Desirability	17.77	5.74											-

* = $p < .05$

** = $p < .01$

Data Analytic Plan

I predicted that intervention group scores would increase from baseline to post-test for suicide literacy, readiness to act, and sense of efficacy when intervening on behalf of a peer at risk for suicide. The analyses were done using the Statistical Package for the Social Sciences (SPSS) version 21 software. The data were analyzed using a two by two mixed model analysis of covariance (ANCOVA) to assess the interaction between group (intervention group vs. control group) and time (baseline vs. post-test) for continuous outcome variables. Chi-square analysis was used to evaluate dichotomous variables. Social desirability was entered as a covariate in all the ANCOVA analyses and ethnicity was added as an additional covariate for the analysis that examined changes in suicide literacy. Missing data were handled by excluding participants from analyses for which they had missing data on an analysis-by-analysis basis. Table 6 contains a summary of all the outcomes for the main effects analyses.

Suicide literacy. I measured suicide literacy with the LOSS. Participants also rated their level of awareness regarding the problem of suicide on the local campus. There was a significant interaction between group and time for LOSS scores, $F(1, 34) = 12.11$, $p = .001$, partial $\eta^2 = .26$. Intervention group participants reported an increase in suicide literacy from baseline ($M = 14.12$, $SD = .99$) to post-test ($M = 19.57$, $SD = 0.60$) whereas control participants reported minimal change from baseline ($M = 15.69$, $SD = 1.12$) to post-test ($M = 16$, $SD = .67$).

There was a significant interaction between group and time for awareness of suicide on campus, $F(1, 35) = 6.17$, $p = .018$, partial $\eta^2 = .15$. Intervention group participants reported an increase in awareness of the problem of suicide from baseline ($M = 3.46$, $SD = .25$) to post-test

($M = 4.06$, $SD = .25$) whereas control participants reported minimal change from baseline ($M = 3.73$, $SD = .28$) to post-test ($M = 3.58$, $SD = .28$).

Stigma. I measured stigma with the SOSS. The SOSS includes three distinct subscales that measure the degree to which the respondent endorses suicide stereotypes in the domains of stigma, isolation, and glorification of someone who died by suicide. The interaction between group and time was not significant for the stigma subscale $F(1, 35) = .002$, $p = .97$, partial $\eta^2 = 0$. Intervention group participants reported no observable change in endorsement of stigmatizing descriptions of suicide from baseline ($M = 2.50$, $SD = .22$) to post-test ($M = 2.39$, $SD = .22$). Likewise, control group participants reported minimal change from baseline ($M = 2.49$, $SD = .24$) to post-test ($M = 2.38$, $SD = .25$).

The interaction between group and time was not significant for the isolation subscale $F(1, 35) = .094$, $p = .76$, partial $\eta^2 = .003$. Intervention group participants showed a slight increase in endorsement of isolating descriptions of suicide from baseline ($M = 4.35$, $SD = .15$) to post-test ($M = 4.47$, $SD = .19$). Control group participants reported minimal change from baseline ($M = 4.12$, $SD = .64$) to post-test ($M = 4.14$, $SD = .22$).

The interaction between group and time was not significant for the glorification subscale $F(1, 35) = .090$, $p = .77$, partial $\eta^2 = .003$. Intervention group participants reported no change in endorsement of glorifying descriptions of suicide from baseline ($M = 2.20$, $SD = .17$) to post-test ($M = 2.20$, $SD = .19$). Likewise, control group participants reported minimal change from baseline ($M = 1.80$, $SD = .19$) to post-test ($M = 1.86$, $SD = .21$).

Readiness to act. I measured readiness to act on behalf of a peer at risk for suicide with the Decisional Balance and Readiness to Change Scales. I also assessed for the presence of a plan to act on behalf of an at-risk peer and willingness to contact Careline on behalf of self or

others. I found a significant interaction between group and time for decisional balance scores, $F(1, 35) = 6.11$, $p = .018$, partial $\eta^2 = .15$. Intervention group participants reported an increase in decisional balance scores from baseline ($M = 1.46$, $SD = .27$) to post-test ($M = 1.81$, $SD = .25$) whereas control participants reported a decrease from baseline ($M = .90$, $SD = .30$) to post-test ($M = .55$, $SD = .38$).

On the other hand, the interaction between group and time was not significant for readiness to change $F(1, 35) = .001$, $p = .98$, partial $\eta^2 = 0$. Intervention group participants reported no observable difference in readiness to change scores from baseline ($M = 5.03$, $SD = .38$) to post-test ($M = 5.30$, $SD = .44$). Likewise, control group participants reported minimal change from baseline ($M = 3.43$, $SD = .43$) to post-test ($M = 3.72$, $SD = .49$).

When examining the sample as a whole, there were no significant differences between the intervention and control groups in changes in the presence of a plan to assist an at-risk peer $X^2 (3, N = 38) = 6.09$, $p = .12$. Since over one quarter of the participants entered the study with a plan already in place, I next examined the subset of participants who started with no plan at all. Of this subsample, intervention participants were more likely to gain a plan for helping as a bystander than control participants, $X^2 (1, n = 18) = 5.56$, p = .018. Out of the intervention group participants who started with no plan, 78% (7 of 9) gained a plan. Of the control participants who started out with no plan, 22% (2 of 9) gained a plan.

Looking at the whole sample, I found a significant interaction between group and time for confidence in personal ability to carry out a plan to help an at-risk peer, $F(1, 32) = 6.48$, $p = .016$, partial $\eta^2 = .17$. Intervention group participants reported an increase in confidence in their ability to carry out their plan to assist a peer from baseline ($M = 3.32$, $SD = .30$) to post-test ($M =$

4.0, *SD* = .26) whereas control participants reported a slight decrease from baseline (*M* = 2.87, *SD* = .33) to post-test (*M* = 2.49, *SD* = .28).

There were no significant interaction effects for willingness to contact Careline on behalf of oneself $F(1, 35) = .75$, $p = .39$, partial $\eta^2 = .021$. Although not significant, intervention group participants reported an increase in willingness to contact Careline for themselves from baseline (*M* = 2.58, *SD* = .33) to post-test (*M* = 3.28, *SD* = .32). Control participants also reported an increase from baseline (*M* = 2.28, *SD* = .36) to post-test (*M* = 2.65, *SD* = .35) although this increase was slightly smaller than the change seen in the intervention group. Likewise, there was no significant interaction effect for willingness to contact Careline on behalf of a peer $F(1, 35) = .39$, $p = .54$, partial $\eta^2 = .011$. Intervention group participants reported no change in willingness to contact Careline for others from baseline (*M* = 3.72, *SD* = .32) to post-test (*M* = 3.73 *SD* = .25) and similarly control participants reported minimal change from baseline (*M* = 3.35, *SD* = .35) to post-test (*M* = 3.57, *SD* = .27).

Sense of community. The interaction between group and time was not significant for sense of community $F(1, 35) = .07$, $p = .79$, partial $\eta^2 = .002$. Intervention group participants reported no observable change in sense of community scores from baseline (*M* = 10.02, *SD* = .62) to post-test (*M* = 10.39, *SD* = .59). Similarly, control group participants reported minimal change from baseline (M = 10.98, *SD* = .69) to post-test (M = 11.52, *SD* = .66).

Sense of efficacy. I measured sense of self-efficacy when intervening on behalf of a peer at risk for suicide with the Self-Efficacy, Prevention Efficacy, and Bystander Effectiveness Scales. There was a significant interaction between group and time for self-efficacy scores, $F(1, 34) = 4.62$, $p = .039$, partial $\eta^2 = .12$. Intervention participants reported an increase in self-efficacy from baseline (*M* = 38.77, *SD* = 1.04) to post-test (*M* = 40.89, *SD* = .95) whereas control

participants reported a decrease from baseline (M = 35.86, SD = 1.20) to post-test (M = 34.96, SD = 1.09).

In contrast, the interaction between group and time was not significant for prevention efficacy $F(1, 35) = .96$, $p = .33$, partial $\eta^2 = .03$. Intervention group participants reported no observable change in prevention efficacy scores from baseline (M = 39.9, SD = 1.12.) to post-test (M = 40.7, SD = 1.3). Likewise, control group participants reported minimal change from baseline (M = 36.71, SD = 1.25.) to post-test (M = 36.19, SD = 1.45).

The interaction between group and time was not significant for bystander effectiveness $F(1, 35) = .054$, $p = .817$, partial $\eta^2 = .002$. Intervention group participants reported no observable change in bystander effectiveness scores from baseline (M = 4.25, SD = .14) to post-test (M = 4.40, SD = .12). Likewise, control group participants reported minimal change from baseline (M = 4.18, SD = .15) to post-test (M = 4.29, SD = .13). Please see Table 6 for a summary of the outcomes of the analyses of the effects of the intervention effort. Appendix O contains figures with line graphs that provide visual descriptions for the outcomes of each analysis.

Table 6
Summary of the Intervention Effects Analysis Outcomes

Variable	Intervention Group		Control Group				
	Time 1	Time 2	Time 1	Time 2			
	M (SD)	*M* (SD)	*M* (SD)	*M* (SD)	$F(1, 35)$	p	η^2
Suicide Literacy	14.12 (.99)	19.57 (.60)	15.69 (1.12)	16 (.67)	12.11	.001*	.26
Stigma	2.50 (.22)	2.39 (.22)	2.49 (.24)	2.38 (.25)	.002	.97	0
Isolation	4.35 (.15)	4.47 (.19)	4.12 (.64)	4.14 (.22)	.094	.76	.003
Glorification	2.20 (.17)	2.20 (.19)	1.80 (.19)	1.86 (.21)	.090	.77	.003
Awareness of Suicide	3.46 (.25)	4.06 (.25)	3.73 (.28)	3.58 (.28)	6.17	.018*	.15
Decisional Balance	1.46 (.27)	1.81 (.25)	.90 (.30)	.55 (.38)	6.11	.018*	.15
Readiness to Change	5.03 (.38)	5.30 (.44)	3.43 (.43)	3.72 (.49)	.001	.98	0
Plan Confidence	3.32 (.30)	4.01 (.26)	2.87 (.33)	2.49 (.28)	6.48	.016*	.17
Sense of Community	10.02 (.62)	10.39 (.59)	10.98 (.69)	11.52 (.66)	.07	.79	.002
Self-Efficacy	38.77 (1.04)	40.89 (.95)	35.86 (1.20)	34.96 (1.09)	4.62	.039*	.12
Prevention Efficacy	39.90 (1.12)	40.70 (1.30)	36.71 (1.25)	36.19 (1.45)	.96	.33	.03
Bystander Effectiveness	4.25 (.14)	4.40 (.12)	4.18 (.15)	4.29 (.13)	.054	.817	.002

*Indicates significant effect

Chapter Five: Discussion and Conclusion

This pilot study evaluated the effects of a brief suicide prevention training. I evaluated the intervention effects on students' suicide literacy, readiness to act, and sense of efficacy when assisting a peer at risk for suicide. The results were promising but mixed. Variables most closely linked to the intervention content showed the greatest change.

Interpretation of Results

First, I predicted that the training would increase participants' knowledge including accuracy in recognition of suicide risk signs and decrease endorsement of myths associated with suicide. The results indicated a strong effect on suicide literacy among intervention group participants. I found that students who were assigned to the intervention group showed greater changes in knowledge of suicide risk factors and myths at post-test than students who were assigned to the control condition. Specifically, the intervention group participants endorsed fewer myths associated with suicide and accurately identified more risk factors associated with suicide when compared with controls at the post-test measurement. These pilot results give support for the feasibility of increasing suicide literacy using my brief intervention.

Second, I predicted that respondents would report an increased willingness to respond on behalf of an at-risk peer. Decisional balance was significantly increased by the intervention. I found that students assigned to the intervention condition endorsed increased reasons in favor of helping an at-risk peer at follow up when compared to students who were not assigned to the intervention condition. These findings suggest that providing practical training and information on how to notice and respond to an at-risk peer can enhance decisional balance.

Third, I predicted that participants' sense of self-efficacy in responding to an at-risk peer would be increased. I found that participants assigned to the intervention group showed increased

belief at post-test in their ability to intervene effectively on behalf of a peer at risk for suicide when compared to students who were not assigned to the intervention group. The participants who were exposed to the bystander intervention training showed stronger agreement with statements associated with confidence in aiding an at-risk peer with actions such as telling a peer about help that is available and assisting a peer to put away lethal means. Intervention group participants showed a stronger belief that they possessed skills to assist a peer with safety planning. The results suggest that it is feasible to increase self-confidence in aiding an at-risk peer by providing the intervention information.

Outcome measures for stigma, readiness to change, sense of community, prevention efficacy, and bystander efficacy did not show significant change with the pilot sample available. The nonsignificant findings yield fruitful feasibility considerations that are informative for future intervention efforts. These aspects are discussed in the section on limitations.

Implications of Results

The study shows that suicide literacy and confidence about safety planning and help seeking were improved among the college-age sample when they participated in the brief intervention. This is important because people who are college-age have an increased risk for suicide (Caine, 2013; Crosby et al., 2011) and college-age Alaskans have even greater risk when compared to the national norms (Hull-Jilly and Saxon, 2010). Further, people in this age range are more likely to reach out to their peers for support than to formal authorities or helping professionals (Ross et al., 2012; Downs and Eisenberg, 2012). The fact that nearly all the participants (93.8%) had prior experience interacting with a peer at risk for suicide supports the seriousness and prevalence of suicidality in this age group in Alaska. Taken together, the results speak to the continued need for suicide prevention interventions in this age group. Equipping

peers to effectively respond to situations they already encounter is an important step in suicide prevention. The results of my research suggest that doing so is feasible.

Spontaneous participant feedback given during the debriefing activity corroborated that participants were often not new to suicide prevention concepts or exposure to at-risk peers. Several expressed a wish to have been exposed much earlier in life to the suicide prevention concepts covered in the training. Several indicated that high school would have been an ideal time for them to receive such suicide prevention information. The high level of exposure to suicide and suicide prevention in the sample is also demonstrated quantitatively in Table 3 which shows that over one third of the sample had prior suicide prevention training and nearly all (93.8%) had interacted with someone who was suicidal.

High rates of exposure to suicide in the sample are consistent with the local and statewide rates of suicide that fall well above the national average of 13.4 deaths per 100,000 (Kochanek, Murphy, Xu & Tejada-Vera, 2016; Hammerschlag et al., 2015; Statewide Suicide Prevention Council, 2016). The 2015 Alaska statewide rate of 27.1 per 100,000 is more than twice the national rate (Hammerschlag et al., 2015). The 2014 average of 22 suicides per 100,000 in the Fairbanks North Star Borough is nearly twice the national rate and slightly lower than the overall Alaska statewide rate (Statewide Suicide Prevention Council, 2016). My sample characteristics, along with the current statistics on suicide, suggest that college-age Alaskans are likely to encounter a peer in crisis. Therefore, equipping people in this age range with knowledge regarding how to respond effectively to such an encounter has broad practical application as a method of suicide prevention intervention.

Further, we know that despite high prevalence rates, college and school age youth are unlikely to approach the formal care system or authority figures for help. Young people are much

more likely to reach out to peers. Isaac and colleagues (2009) reported that nearly half of males and more than half of females knew a peer who had attempted suicide but only 25% had confided in an adult. Similarly, about two-thirds of college students who experienced suicidal ideation rarely mentioned the problem to instructors but instead reached out to peers for help (Wallack et al., 2013). My research suggests that peers can be taught to notice and respond confidently to a peer facing a suicidal crisis as shown by increases in suicide literacy and confidence in carrying out a plan to help among intervention group participants. Teaching people to effectively respond to an issue that has high relevance in the population is an important contribution.

Interventions by peer bystanders are increased when the bystander is aware that there is a need for action, when the bystander knows what action to take, and when he or she believes that the person in need is not the cause of the problem for which they are in need of help (Banyard et al., 2004; Banyard et al., 2005; Vaillancourt et al., 2008). My training focused heavily on increasing suicide literacy so that the prerequisite of accurate problem recognition would be met and therefore increase the chances of effective bystander recognition of need.

Next the intervention content was devoted to practical steps that lay people can take to act protectively towards an at-risk peer such as remove lethal means, mobilize the peer's social network, and connect the peer to formal resources as available. The intervention touched less directly on confronting stigma such as victim blaming and instead I emphasized the correction of myths and fears that impede bystander action. I discussed evidence that talking directly about suicide will not increase the problem but rather will likely provide relief if discussed with compassion and willingness to listen (DeCou et al., 2013). Please see Appendix C for a complete narration of the training script. My research contributes to the prevention intervention literature

and practical application because the results showed that it is feasible to teach recognition of risk signs as well as appropriate responses and thus increase effective bystander helping behaviors.

My intervention was an in-person brief training, intended for a lay audience, specifically peers who were worried about an associate. The training blended knowledge of risk factors and action-oriented skills practice. Peer bystanders were taught suicide literacy so that they will accurately recognize signs of suicide risk. Participants were given facts regarding myths associated with suicide such as the myth that talking directly about suicide can make the problem worse. Resource information regarding local, formal helping services as well as practical home support such as securing firearms and mobilizing informal social network help was offered. Opportunities to apply the information to a fictitious vignette allowed for increases in confidence in recognizing and speaking with a peer at risk. These points were addressed in the training to increase proactive peer bystander behavior.

This intervention augments existing prevention intervention efforts that tend to target professional and paraprofessional community-based gatekeepers. Trainings such as ASIST, QPR, SafeTalk, and Campus Connect are much lengthier interventions and are typically available to community leaders such as educators, health professionals, and formal gatekeepers (Pasco, Wallack, Sartin, & Dayton, 2012; Taub et al., 2013; Wallack et al., 2013). My intervention content is consistent with gatekeeper trainings in that there is a common foundational focus on knowledge of suicide and attempts to increase self-efficacy when directing someone who is suicidal to resources. However my training was unique in that the content was modified to be palatable for lay people with no professional training who were concerned about a peer. Mnemonics suggested in SAMHSA's TIP 50 were used to help participants readily remember suicide risk factors and organize awareness of risk in order to differentiate between

imminent risk and lower risk situations (Center for Substance Abuse Treatment, 2009). The intervention was practically focused and used a case vignette to emphasize actions that could be done immediately with no professional intervention such as remove lethal means, talk with the person, mobilize their social network, and connect with professional care as available and as necessary. I included an experiential debriefing exercise to screen participants for adverse reactions and provide opportunity to build a sense of support among participants.

The potential for a brief training such as the one piloted here is significant considering the time and cost effectiveness while positively impacting suicide literacy and self-confidence when aiding an at-risk peer. Members of small communities where there are disparities in access to formal services may especially benefit from brief training with a practical focus such as the one piloted in this study. The changes in suicide literacy and self-confidence found in my study are consistent with changes observed in other outcome studies (Isaac et al., 2009; Nasir et al., 2016; Walrath et al., 2015).

The brief nature of the intervention is a strength. The intervention was efficient and targeted peer intervention for those least likely to engage in proactive help seeking on their own behalf. Significant differences were found in the small sample with variables most relevant to the ability to recognize a peer at-risk for suicide and act effectively on their behalf. The brevity of the intervention lends itself to dissemination in educational and healthcare settings such as new student orientations, teacher in-service trainings, hospital staff training and community-based outreach.

My research extends the knowledge base regarding outcomes of suicide prevention interventions. Research on outcomes associated with suicide prevention gatekeeper programs is somewhat limited and has shown mixed outcomes, particularly in Indigenous communities (Isaac

et al., 2009; Nasir et al., 2016; Sareen et al., 2013). Isaac and colleagues (2009) identified 13 articles that met inclusion criteria for their meta-analysis. Their conclusions reflected that gatekeeper training is effective for teaching suicide prevention knowledge, intervention skills, and efficacy among professionals. They additionally noted an impact on lowering suicide rates associated with gatekeeper trainings when implemented in conjunction with other suicide prevention efforts. Nasir and colleagues (2016) identified 6 articles that met criteria for a similar meta-analysis that was focused on suicide prevention outcome studies in Indigenous communities across the globe. Their results generally supported the efficacy of gatekeeper training to increase suicide prevention knowledge, bolster confidence, and effective interventions for people at risk.

However, they noted that Sareen and colleagues (2013) identified no increases in intervention knowledge or abilities for those provided with ASIST training when compared to participants who were provided with a resilience retreat (Nasir et al., 2016). Further they reported increased suicidal ideation among the intervention group participants who received ASIST training. My research expands the literature regarding outcomes of suicide prevention trainings and provides a unique contribution from a community-based sample of lay people. My pilot study showed strong feasibility for teaching suicide literacy, self-efficacy, and increasing participants' knowledge of how to intervene utilizing a brief intervention. Importantly, no participants required utilization of the crisis response protocol although crisis response measures were in place. No participants disclosed negative effects during the experiential debriefing although the sample presented with a high exposure to interactions with others who were suicidal.

Limitations

There were limitations to the study related to sample characteristics at baseline, small sample size, and prior exposure to suicide prevention concepts. Outcome measures for readiness to change, prevention efficacy, bystander efficacy, sense of community and stigma did not show significant change with the pilot sample available. Students who self-selected to participate in the research had high baseline levels of belief in the idea that suicide is preventable and prior exposure and/or interest in suicide prevention information. Over one third of the sample (35.4%) had received suicide prevention training within the last year and 75% of the respondents indicated that they intended to participate in future suicide prevention activities. The self-selected sample was an action-oriented group. These qualities may have reduced the power to detect intervention effects.

For example, intervention group participants did not show a measurable difference in their stage of change (precontemplation, contemplation, and action) associated with readiness to act on behalf of a peer. Many participants were already motivated to take action at baseline prior to receiving the intervention. Similarly, prevention efficacy and bystander effectiveness were areas where the sample showed a high degree of endorsement of items at baseline, which suggests a possible ceiling effect for these two outcome measures.

Next, the intervention focused heavily on content related to knowledge of myths and risk factors associated with suicide as well as safety planning including knowledge of local crisis intervention resources and examples of how to secure lethal means. The intervention content emphasized knowledge and correction of myths associated with suicide such as the common, but unsupported, belief that asking about suicide will make someone harm him or herself (DeCou et al., 2013). Change was not detectable for endorsement of stigmatizing descriptions of suicide.

The sample showed a low level of stigmatizing beliefs at baseline and the intervention did not directly address stigma. Instead, the group information was presented in a nonjudgmental way and provided an experientially respectful discourse on suicide prevention considerations. This is in contrast to the didactic emphasis on suicide literacy that did show a significant change. Future research will benefit from including a direct didactic component to address stigma.

Finally, a larger sample size of 128 or more participants was needed to detect medium effects. The limited sample may have underpowered the statistical tests and contributed to difficulty with detecting change. Time efficient recruitment mechanisms such as social media, radio, and newspaper public service announcements were readily accessible and utilized extensively but did not result in large participant turnout. In-person recruitment efforts were most fruitful but were prohibitively time consuming. The research experience suggested that a larger sample is feasible if significant time and human resources are available for rigorous in-person recruitment efforts. In-person recruitment was much more productive and may be necessary for topics that are sensitive, such as suicide prevention.

Conclusion

The research addressed an issue relevant not only to college-age Alaskan populations but also to people nationally and globally. In Alaska, college-age people, rural, and Alaska Native peoples have elevated suicide risk. Suicide is the 10th leading cause of death in the United States and is also recognized as a global health concern. College-age Alaskans are especially likely to be aware of a peer at risk for suicide and will benefit from being taught how to respond effectively to an at-risk peer. The bystander intervention literature suggests that peer bystanders are more likely to engage when they know there is a need for action and also know which actions they need to undertake (Kalafat et al., 1993; Fischer et al., 2011; Hawks et al., 1992). My

research endeavored to enhance suicide literacy so that students would be better able to identify when there is a need for action. The intervention also attempted to increase readiness to take action and self-efficacy when acting so that students were aware of appropriate responses to at-risk peers and confident in following through with those actions.

No participants indicated any adverse reaction to the intervention and no participants utilized the escort plan for immediate referral to the campus health and counseling center. These process results suggest that the training is appropriate for low-risk groups and may be relevant to offer to higher-risk groups. Future research may benefit from including people who experienced recent suicidal ideation in the sample. People in higher risk social networks may have the most to gain from peer intervention training.

Future research efforts will benefit from attending to measurement refinement. Many of the current measures were adaptations of measures used in bystander intervention training for sexual assault prevention. The scales can be analyzed to identify which measures and items are most sensitive to change as well as clarify instructions and answer anchors to refine the focus of the measures. Further, scoring metrics should be tailored to reflect the local norms regarding suicide. For example, one item "most people who die from suicide are younger than 30" is scored as false in the original scale but in the Alaskan context the correct answer for this item is true. The scoring rubrics and intervention content need to be modified to reflect current, local norms regarding suicide.

Future researchers who wish to explore suicide prevention research in small communities may benefit from lessons learned regarding recruitment in the current pilot study. Social media, radio announcements, and Internet bulletins allowed for broad coverage of the research

opportunity. However, in-person recruitment efforts appeared most effective in generating participants. In-person recruiting may be critical for sensitive topics such as suicide prevention.

Attention to experiential, culturally grounded teaching methods is an important area to give further research attention (Wexler et al., 2015). For example, I believe that experiential debriefing is critical for suicide prevention research so that participants can be screened for potential adverse reactions to the material. Experiential activities are also important to facilitate a physical shift from the topic of suicide because the material has potential to bring up heavy memories. The activity allows time for participants to integrate their learning through reflection on what was covered in the training and transition to the next steps in their day. For example, when participants engaged in the interactive, physical activity of creating a web while debriefing from the intervention, the activity allowed them to consider what had been covered, articulate their reactions, and move into a thoughtful, integrative mindset through the mechanism of the physical activity.

Experiential adaptations that incorporate culturally relevant activities may be especially effective and necessary when conducting suicide prevention research in communities with populations that have high exposure to loss by suicide. Wexler and colleagues (2015) suggest one such promising community storytelling alternative approach to didactic gatekeeper training. The model, Professional-Community Collaborations for At-risk youth Engagement and Support (PC-CARES) uses storytelling as a mechanism for enhancing community capacity by making connections between local cultural knowledge, clinical support, and at-risk youth (Wexler et al., 2016). Rasmus and colleagues (2014) provide a model for developing experiential, culturally grounded suicide prevention interventions that are based on locally relevant cultural activities and survival skills. Experiential, culturally-informed debriefing is essential to provide

participants with a way to integrate the suicide prevention information and process potential emotional reactions to the material.

Future research efforts may focus on assessing the sustainability of the intervention effects that were found. Walrath and colleagues (2015) found no intervention effects in their sample upon follow up one year after the intervention. Refresher sessions may be needed to keep skills and knowledge current. Follow up training may be necessary for long-term effectiveness, similar to updating a first aid or CPR endorsement.

The current pilot sample yielded results that were promising for the feasibility of efforts to increase suicide literacy, reasons for acting on behalf of an at-risk peer, and self-efficacy when doing so. The outcomes that were supported show that a brief intervention can increase suicide literacy, decisional balance, and self-efficacy when acting to aid a peer at risk for suicide. Feedback from participants and suicide prevalence rates suggest that the information may be needed and effective with younger audiences such as high school age. Further study with a larger sample is needed to determine the effectiveness of the training with high school students and with students in rural settings where peers are often more readily accessible than trained professionals.

References

Ahmedani, B. K., Coffey, J., & Coffey, C. E. (2013). Collecting mortality data to drive real-time improvement in suicide prevention. *American Journal of Managed Care, 19*, 386-390.

Allen, J., Levintova, M., & Mohatt, G. (2011). Suicide and alcohol-related disorders in the U.S. Arctic: Boosting research to address a primary determinant of health disparities. *International Journal of Circumpolar Health, 70,* 473-487.

Baca-Garcia, E., Perez-Rodriguez, M. M., Keyes, K. M., Oquendo, M. A., Hasin, D. S., Grant, B. F., & Blanco, C. (2010). Suicidal ideation and suicide attempts in the United States: 1991-1992 and 2001-2002. *Molecular Psychiatry, 15,* 250-259.

Banyard, V. L., Moynihan, M. M., & Plante, E. G. (2007). Sexual violence prevention through bystander education: An experimental evaluation. *Journal of Community Psychology, 35,* 463-481.

Banyard, V. L., Plante, E. G., & Moynihan, M. M. (2002). Rape prevention through bystander education at a northeastern state university 2002-2004: Post-test data codebook. Retrieved from http://www.polsci.ucsb.edu/faculty/glasgow/ps15/bystander.pdf

Banyard, V. L., Plante, E. G., & Moynihan, M. M. (2004). Bystander education: Bringing a broader community perspective to sexual violence prevention. *Journal of Community Psychology, 32,* 61-79.

Banyard, V. L., Plante, E. G., & Moynihan, M. M. (2005). *Rape prevention through bystander education: Bringing a broader community perspective to sexual violence prevention.* Final report for U.S. Dept. of Justice grant award no. 2002-WG-BX-0009, document no. 208701.

Batterham, P. J., Calear, A. L., & Christensen, H. (2013a). Correlates of suicide stigma and suicide literacy in the community. *Suicide & Life-Threatening Behavior, 43,* 406-417.

Batterham, P. J., Calear, A. L., & Christensen, H. (2013b). The Stigma of Suicide Scale: Psychometric properties and correlates of the stigma of suicide. *Crisis, 34,* 13-21.

Betz, M. E., Miller, M., Barber, C. B., Miller, I., Sullivan, A. F., Camargo, C. A., . . . Boudreaux, E. D. (2013). Lethal means restriction for suicide prevention: Beliefs and behaviors of emergency department providers. *Depression & Anxiety, 30,* 1013-1020.

Bolton J. M., Spiwak, R., & Sareen, J. (2012). Predicting suicide attempts with the SAD PERSONS scale: A longitudinal analyses. *Journal of Clinical Psychiatry, 73,* 735-741.

Bossarte, R. M., Kerry, K. L., Piegari, R., Altieri, J., Kemp. J., & Katz, I. (2012). Prevalence and characteristics of suicide ideation and attempts among active military and veteran participants in a national health survey. *American Journal of Public Health, 102,* 38-40.

Bryan, C. J., Stone, S. L., & Rudd, M. D. (2011). A practical, evidence-based approach for means-restriction counseling with suicidal patients. *Professional Psychology: Research & Practice, 42,* 339-346.

Caine, E. D. (2013) Forging an agenda for suicide prevention in the United States. *American Journal of Public Health, 103*, 822-829. doi: 10.2105/AJPH.2012.301078

Calear, A. L. Batterham, P. J., & Christensen, H. (2012). The Literacy of Suicide Scale: Psychometric properties and correlates of suicide literacy. *Unpublished manuscript.*

Casstevens, W. J. (2013). Reflections on suicide prevention from a choice theory perspective. *International Journal of Choice Theory & Reality Therapy, XXXIII*, 102-103.

Center for Substance Abuse Treatment. (2009). *Addressing suicidal thoughts and behaviors in substance abuse treatment.* Treatment Improvement Protocol (TIP) Series 50. HHS Publication No. (SMA) 09-4381. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Chamberlain, P. N., Goldney, R. D., Taylor, A. W., & Eckert, K. A. (2012). Have mental health education programs influenced the mental health literacy of those with Major Depression and suicidal ideation? A comparison between 1998 and 2008 in South Australia. *Suicide & Life-Threatening Behavior, 42,* 525-540.

Clelland, N., Gould, T., & Parker, E. (2007). Searching for evidence: What works in Indigenous mental health promotion? *Health Promotion Journal of Australia, 18,* 208-216.

Clifford, A. C., Doran, C. M., & Tsey, K. (2013). A systematic review of suicide prevention interventions targeting Indigenous peoples in Australia, United States, Canada, and New Zealand. *BMC Public Health, 13*, 463. doi: 10.1186/1471-2458-13-463

Cox, G. R., Owens, C., Robinson., J., Nicholas, A., Lockley, A., Williamson, M., . . . Pirkis, J. (2013). Interventions to reduce suicides at suicide hotspots: A systematic review. *BMC Public Health, 13,* 214. doi: 10.1186/1471-2458-13-214

Craig, J., & Hull-Jilly, D. (2012). Characteristics of suicide among Alaska Native and Alaska non-Native people, 2003-2008. *State of Alaska Epidemiology Bulletin Recommendations and Reports, 15*, 1-10. Retrieved from http://www.epi.alaska.gov/bulletins/docs/rr2012_01.pdf

Crosby, A. E., Han, B., Ortega, L. A. G., Parks, S. E., & Gfroerer, J. (2011). Suicidal thoughts and behaviors among adults aged ≥ 18 years: United States, 2008-2009. *MMWR Surveillance Summaries, 60,* 1-22.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24,* 349-354.

DeCou, C. R., Skewes, M. S., Lopez, E. D. S., & Skanis, M. L. (2013). The benefits of discussing suicide with Alaska Native college students: Qualitative analysis of in-depth interviews. *Cultural Diversity & Ethnic Minority Psychology, 19,* 67-75.

De Leo, D., Milner, A., Fleishmann, A., Bertolote, J., Collings, S., Amadeo, S., Chan, S., . . . Wang, X. (2013). The WHO START study: Suicidal behaviors across different areas of the world. *Crisis, 34,* 156-163. doi: 10.1027/0227-5910/a000193

Downs, M. F., & Eisenberg. D. (2012). Help seeking and treatment use among suicidal college students. *Journal of American College Health, 60,* 104-112. doi: 10.1080/07448481.2011.619611

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J., . . .Wechsler, H. (2012). Youth risk behavior surveillance: United States, 2011. *MMWR Surveillance Summaries, 61,* 1-43.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39,* 175-191.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Thousand Oaks, California: SAGE Publications, Inc.

Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmuller, A., Frey, D., . . . Kainbacher, M. (2011). The Bystander-Effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin, 137,* 517-537.

Fleischmann, A., & Saxena, S. (2013). Suicide prevention in the WHO Mental Health Gap Action Programme (mhGAP). *Crisis, 34,* 295-296.

Freedenthal, S., & Stiffman, A. R. (2010). "They might think I was crazy" Young American Indians' reasons for not seeking help when suicidal. *Journal of Adolescent Research, 22,* 58-77.

Garroutte, E. M., Goldberg, J., Beals, J., Herrell, R., Manson, S., & AI-SUPERPFP Team. (2012). Spirituality and attempted suicide among American Indians. *Social Science & Medicine, 56,* 1571-1579.

Gary, F. A. (2005). Perspective on suicide prevention among American Indian and Alaska Native children and adolescents: A call for help. *Online Journal of Issues in Nursing, 10*, 170-211.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology & Metabolism, 10*, 486-489. doi: 10.5812/ijem.3505

Goldney, R. D., & Fisher, L. J. (2008). Have broad-based community and professional education programs influenced mental health literacy and treatment seeking of those with major depression and suicidal ideation? *Suicide and Life-threatening Behavior, 38*, 129-142.

Goldney, R. D., Fisher, L. J., Wilson, D. H., & Cheok, F. (2002). Mental health literacy of those with major depression and suicidal ideation: An impediment to help seeking. *Suicide & Life-Threatening Behavior, 32,* 394-403.

Gunn, J. F., III, Lester, D., & McSwain, S. (2011). Testing the warning signs of suicidal behavior among suicide ideators using the 2009 National Survey on Drug Abuse and Health. *International Journal of Emergency Mental Health, 13*, 147-154.

Hammerschlag, E., Larson, A., Danielson, J., Kealy, K., Brown, A., & Ganley, E. (2015). Fairbanks Wellness Coalition suicide prevention needs assessment report (prepared by the Goldstream Group and Information Insights). Retrieved from http://www.fairbankswellness.org/sites/default/files/2016-04/2015%20FWC%20CBHPEI%20Needs%20Assessment.pdf

Hart, L. M., Jorm, A. F., Paxton, S. J., & Cvetkovski S. (2012). Mental health first aid guidelines: An evaluation of impact following download from the World Wide Web. *Early Intervention in Psychiatry, 6,* 399-406.

Hawks, S. R., Peck, S. L., & Vail-Smith, K. (1992). An education test of health behavior models in relation to emergency helping. *Health Psychology, 11,* 396-402.

Henry, D., Allen, J., Fok, C. C. T., Rasmus, S., Charles, B., & People Awakening Team. (2012). Patterns of protective factors in an intervention for the prevention of suicide and alcohol abuse with Yup'ik Alaska Native Youth. *The American Journal of Drug & Alcohol Abuse, 38*, 476-482.

Hirsch, J. K., Visser, P. L., Chang, E. C., & Jeglic, E. L. (2012). Race and ethnic differences in hope and hopelessness as moderators of the association between depressive symptoms and suicidal behavior. *Journal of American College Health, 60*, 115-125.

Hooven, C. (2013). Parents-CARE: A suicide prevention program for parents of at-risk youth. *Journal of Child & Adolescent Psychiatric Nursing, 26,* 85-95.

Hull-Jilly, D., & Saxon, S. (2010). Suicide epidemiology update: Alaska, 2004-2008. *State of Alaska Epidemiology Bulletin, 28.* Retrieved from http://www.epi.alaska.gov/bulletins/docs/b2010_28.pdf

Hull-Jilly, D., & Saxon, S. (2013). AKVDRS suicide update: Alaska, 2007-2011. *State of Alaska Epidemiology Bulletin, 3.* Retrieved from http://www.epi.alaska.gov/bulletins/docs/b2013_03.pdf

Isaac, M., Elias, B., Katz, L., Belik, S.-L., Deane, F. P., Enns, M. W., . . . Swampy Cree Suicide Prevention Team. (2009). Gatekeeper Training as a preventative intervention for suicide: A systematic review. *La Revue Canadienne de Psychiatrie, 54*, 260-268.

Isometsa, E. (2014) Suicidal behavior in mood disorders: Who, When, and Why? *La Revue Canadienne de Psychiatrie, 59*, 120-130.

Jashinsky, J., Burton, S. H., Hanson, C. L., West, J. Giraud-Carrier, C., Barnes, M. D., & Argyle, T. (2014). Tracking suicide risk factors through Twitter in the US. *Crisis, 35,* 51-59.

Kalafat, J., Elias, M., & Gara M. A. (1993). The relationship of bystander intervention variables to adolescents' responses to suicidal peers. *Journal of Primary Prevention, 13,* 231-244.

Kaplan, M. S., McFarland, B. H., Huguet, N. Conner, K., Caetano, R., Giesbrecht, N., & Nolte, K. B. (2013). Acute alcohol intoxication and suicide: A gender-stratified analysis of the National Violent Death Reporting System. *Injury Prevention, 19,* 38-43.

Katz, J. (1994). Mentors in Violence Prevention (MVP) Trainer's Guide. Boston, MA: Northeastern University's Center for the Study of Sport in Society.

Kitchener, B. A., & Jorm, A. F. (2006). Mental health first aid training: Review of evaluation studies. *Australian & New Zealand Journal of Psychiatry, 40*, 6-8.

Kochanek, K. D., Murphy, S.L., Xu, J. & Tejada-Vera, B. (2016). Deaths: Final data for 2014. *National Vital Statistics Reports, 65,* 1-122.

Lester, D., McSwain, S., & Gunn, J. F., III. (2011). A test of the validity of the IS PATH WARM warning signs for suicide. *Psychological Reports, 108*, 402-404.

Links, P. S., Kolla, N. J., Guimond, T., & McMain, S. (2013). Prospective risk factors for suicide attempts in a treated sample of patients with Borderline Personality Disorder. *The Canadian Journal of Psychiatry, 58*, 99-106.

Luoma, J. B., Martin C. E., & Pearson. J. L. (2002). Contact with mental health and primary care providers before suicide: A review of the evidence. *American Journal of Psychiatry, 159,* 909-916.

May, P. A., Serna, P., Hurt, L., & DeBruyn, L. M. (2005). Outcome evaluation of a public health approach to suicide prevention in an American Indian tribal nation. *American Journal of Public Health, 95*, 1238-1244.

McConnaughy, E.N., Prochaska, J.O., & Velicer, W.F. (1983). Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research and Practice, 20,* 368-375.

McFaul, M. B., Mohatt, N. V., & DeHay, T. L. (2014). Development, evaluation, and refinement of the Suicide Prevention Toolkit for Rural Primary Care practices. *Journal of Rural Mental Health, 38,* 116-127. http://dx.doi.org/10.1037/rmh0000020

Miller, D. N., Eckert, T. L., & Mazza, J. J. (2009). Suicide prevention programs in the schools: A review & public health perspective. *School Psychology Review, 38*, 168-188.

Miranda, R., & Shaffer, D. (2013). Understanding the suicidal moment in adolescence. *Annals of the New York Academy of Sciences, 1304*, 14-21.

Mohatt, G. V., Fok, C. C. T., Henry, D., Allen, J., & People Awakening Team (2014). Feasibility of a community intervention for the prevention of suicide and alcohol abuse with Yup'ik Alaska Native Youth: The Elluam Tungiinun and Yupiucimta Asvairtuumallerkaa Studies. *American Journal of Community Psychology, 54*, 153-169.

Moore, J. T., Cigularov, K. P., Chen, P. Y., Martinez, J. M., & Hindman, J. (2011). The effects of situational obstacles and social support on suicide-prevention gatekeeper behaviors. *Crisis, 32*, 264-271.

Muehlenkamp, J. J., Marrone, S., Gray, J. S., & Brown, D. L. (2009). A college suicide prevention model for American Indian students. *Professional Psychology: Research & Practice, 40*, 134-240.

Myer, D. G. (2010). *Psychology Ninth Edition in Modules.* New York, NY: Worth Publishers.

Nasir, B. F., Hides, L., Kisely, S., Ranmuthugala, G., Nicholson, G. C., Black, E., . . . Toombs, M. (2016). The need for a culturally-tailored gatekeeper training intervention program in preventing suicide among Indigenous peoples: A systematic review. *BMC Psychiatry, 16,* 1-7. doi: 10.1186/s12888-016-1059-3.

O'Donnell, S., Meyer, I. H., & Schwartz. S. (2011). Increased risk of suicide attempts among Black and Latino lesbians, gay men, and bisexuals. *American Journal of Public Health, 101*, 1055-1059.

Pasco, S., Wallack, C., Sartin, R. M., & Dayton, R. (2012). The impact of experiential exercises on communication and relational skills in a suicide prevention gatekeeper-training program for college resident advisors. *Journal of American College Health, 60,* 134-140.

Pelkonen, M., Karlsson, L., & Marttunen, M. (2011). Adolescent suicide: Epidemiology, psychological theories, risk factors and prevention. *Current Pediatric Reviews, 7*, 52-67.

Polanin, J. R., Espelage, D. L., & Pigott, T. D. (2012). A meta-analysis of school-based bullying prevention programs' effects on bystander intervention behavior. *School Psychology Review, 41,* 47-65.

Prochaska, J. O. (2013). Transtheoretical model of behavioral change. In M. D. Gellman & J. R. Turner, Eds. *Encyclopedia of Behavioral Medicine* (pp. 1997-2000). New York, NY: Springer Science + Business Media.

Prochaska, J. O., & Norcross, J. C. (2007). Comparative conclusions: Toward a Transtheoretical therapy. *In Systems of Psychotherapy: A Transtheoretical Analysis* (6th ed.). Belmont, CA: Thomson Brooks/Cole.

Prochaska, J. O., Redding, C. A., & Evers. K. E. (2008). The transtheoretical model and stages of change. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health Behavior and Health Education: Theory, research, and practice* (4th ed.) pp. 97-121. San Francisco, CA: Jossey-Bass. Retrieved from http://soh.iums.ac.ir/uploads/beeduhe_0787996149.pdf

Rasmus, S. M. (2014). Indigenizing CBPR: Evaluation of a Community-Based and Participatory Research Process Implementation of the Elluam Tungiinun (Towards Wellness) Program in Alaska. *American Journal of Community Psychology*, *54*, 170-179.

Rasmus, S. M., Charles, B., & Mohatt, G. V. (2014). Creating Qungasvik (A Yup'ik Intervention "Toolbox"): Case Examples from a Community- Developed and Culturally- Driven Intervention. *American Journal of Community Psychology*, *54*, 140-152.

Rivkin, I. D., Lopez, E., Quaintance, T. M., Trimble, J., Hopkins, S., Fleming, C., . . . Mohatt, G. V. (2011). Value of community partnership for understanding stress and coping in rural Yup'ik communities: the CANHR study. *Journal of Health Disparities Research & Practice*, *4*, 2.

Ross, A. M., Hart, L. M., Jorm, A. F., Kelly, C. M., & Kitchener, B. A. (2012). Development of key messages for adolescents on providing basic mental health first aid to peers: A Delphi consensus study. *Early Intervention in Psychiatry, 6*, 229-238.

Rudd, M. D., Berman, A. L., Joiner, T. E., Jr., Nock, M. K., Silverman, M. M., & Mandrusiak, M. (2006). Warning signs for suicide: Theory, research, and clinical applications. *Suicide & Life-Threatening Behavior, 36*, 255-262.

Sareen, J., Isaak, C., Bolton, S.-L., Enns, M. W., Elias, B., Deane, F., . . .Katz, L. Y. (2013). Gatekeeper training for suicide prevention in First Nations community members: A randomized controlled trial. *Depression & Anxiety, 30*, 1021-1029.

Slaby, R., Wilson-Brewer, R., & DeVos, H. (1994). Final report for Aggressors, Victims, and Bystanders Project. Newton, MA: Education Development Center.

Snarr, J. D., Heyman, R. E., & Slep, A. S. (2010). Recent suicidal ideation and suicide attempts in a large-scale survey of the U.S. Air Force: Prevalences and demographic risk factors. *Suicide & Life-Threatening Behavior, 40*, 544-552.

Statewide Suicide Prevention Council. (2012). Casting the net upstream: Promoting wellness to prevent suicide. Alaska state suicide prevention plan, 2012-2017, annual implementation report 2012. Retrieved from http://dhss.alaska.gov/SuicidePrevention/Documents/CTN_Implementation_Report_2012.pdf

Statewide Suicide Prevention Council (2016). Casting the net upstream: Promoting wellness to prevent suicide. Alaska state suicide prevention plan, 2012-2017, annual implementation report 2016. Retrieved from http://dhss.alaska.gov/SuicidePrevention/Documents/pdfs/CTN_Implementation_Report_2016.pdf

Sue, S., Cheng, J. K. Y., Saad, C. S., & Chu, J. (2012). Asian American mental health: A call to action. *American Psychologist, 67*, 532-544.

Taub, D. J., Servaty-Seib, H. L., Miles, N., Lee, J.-Y., Wachter Morris, H. A., Prieto-Welch, S. L., & Werden, D. (2013). The impact of gatekeeper training for suicide prevention for university resident assistants. *Journal of College Counseling, 16*, 64-78).

University of Alaska Fairbanks. (2013). UAF Facts and Figures: Data as of Fall 2013. Retrieved from http://www.uaf.edu/facts/

Unger, D. G., & Wandersman, A. (1982). Neighboring in an urban environment. *American Journal of Community Psychology, 10*, 493-509.

Vaillancourt, C., Stiell, I. G., & Wells, G. A. (2008). Understanding and improving low bystander CPR rates: A systematic review of the literature. *CJEM, 10*, 51-65.

Voracek, M. (2007). The nexus of suicide prevalence, helping behavior, pace of life, affluence, and intelligence: Country results from comparisons across nations and within the United States. *Perceptual and Motor Skills, 105*, 1119-1126.

Wallack, C., Servaty-Seib, H. L., & Taub, D. J. (2013). Gatekeeper training in campus suicide prevention. *New Directions for Student Services, 141*, 27-41.

Walrath, C., Garraza, L. G., Reid, H., Goldston, D. B., & McKeon, R. (2015). Impact of the Garrett Lee Smith youth suicide prevention program on suicide mortality. *American Journal of Public Health, 105*, 986-993.

Wexler, L., McEachern, D., DiFulvio, G., Smith, C., Graham, L. F., & Dombrowski, K. (2016). Creating a community of practice to prevent suicide through multiple channels: describing the theoretical foundations and structured learning of PC CARES. *International Quarterly of Community Health Education*, *36*, 115-122.

Wexler, L., Silveira, M. L., & Bertone-Johnson, E. (2012). Factors associated with Alaska Native fatal and nonfatal suicidal behaviors 2001-2009: Trends and implications for prevention. *Archives of Suicide Research, 16*, 273-286.

Wexler, L., White, J., & Trainor B. (2015). Why an alternative to suicide prevention gatekeeper training is needed for rural Indigenous communities: Presenting an empowering community storytelling approach. *Critical Public Health, 25,* 205–217. http://dx.doi.org/10.1080/09581596.2014.904039

Wintersteen, M. B., & Diamond, G. S. (2013). Youth suicide prevention in primary care: A model program and its impact on psychiatric emergency referrals. *Clinical Practice in Pediatric Psychology, 1*, 295-305.

Appendix A

Institutional Review Board Approval Letter

UNIVERSITY OF ALASKA FAIRBANKS

(907) 474-7800
(907) 474-5444 fax
uaf-irb@alaska.edu
www.uaf.edu/irb

Institutional Review Board

909 N Koyukuk Dr. Suite 212, P.O. Box 757270, Fairbanks, Alaska 99775-7270

September 7, 2016

To:	Kendra Campbell, Ph.D. Principal Investigator
From:	University of Alaska Fairbanks IRB
Re:	[597661-9] Safety net skills for suicide prevention: A training to increase recognition and response to signs of suicide risk among peers.

Thank you for submitting the Continuing Review/Progress Report referenced below. The submission was handled by Expedited Review under the requirements of 45 CFR 46.110, which identifies the categories of research eligible for expedited review.

Title:	Safety net skills for suicide prevention: A training to increase recognition and response to signs of suicide risk among peers.
Received:	September 5, 2016
Expedited Category:	7
Action:	APPROVED
Effective Date:	September 7, 2016
Expiration Date:	October 1, 2017

This action is included on the October 4, 2017 IRB Agenda.

No changes may be made to this project without the prior review and approval of the IRB. This includes, but is not limited to, changes in research scope, research tools, consent documents, personnel, or record storage location.

Appendix B

Recruitment Script

INFORMED CONSENT
Approved for use through 10/1/2016
Safety Net IRB protocol #597661-1

Principal Investigator
Kendra Campbell, Ph.D.
kendra.campbell@alaska.edu.
University of Alaska Fairbanks
Psychology Department
Office: 704B Gruening Building
Phone: 474-1588
Fax: 474-5781

Student Investigator
Rebekah Burket, M.S.
rlburket@alaska.edu

Purpose
You have been invited to participate in a research project that will help us better understand how to teach people to talk with each other about suicide prevention. This study will serve as Rebekah Burket's dissertation research project requirement for the Ph.D. in Clinical-Community Psychology. This consent document will explain what is expected of participants and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. **Please read this consent form carefully and ask any questions if you need more clarification.**

What is Expected of Participants
Participants come to an in-person information session on suicide prevention held at the UAF campus. You will be provided with facts about suicide risk, facts about how to respond to someone who is showing signs of risk or talking about suicide, and then debrief. You must be 18 years old or older, not considering suicide yourself, and able to give about 3 hours of your time to participate in the research. The research questions will be evaluated from the answers that participants provide on a survey. You will complete a 20-minute survey on a computer before and after the information session. You will be asked to provide your contact information so that you can be contacted regarding research meeting times. There are no monetary costs associated with participation and no experience is necessary.

Compensation
Your participation in the study is valued and your time will be compensated. You will be offered $15 in the form of a VISA or MasterCard gift card after completion of the info session and both surveys. You will need to provide your name and signature in order to receive the $15. If your instructor offers credit for participating in research, you will be offered a coupon for credit in your course after completion of the info session and both surveys.

Risks
The risks of this study are minimal. Although we do not anticipate that the material will be upsetting, some people may be bothered by topics in the survey and information session. You may decline to answer any or all questions and you may stop your involvement at any time if you choose. There may be unforeseeable risks that are not anticipated. Every effort will be made to minimize any risks. The trainer has a Master's degree in clinical psychology and a licensed psychologist from the UAF Psychology Department will be on call throughout the project.

Benefits
You will not directly benefit from this study other than the compensations offered. However, you may benefit in knowing that you have contributed to the research base on suicide prevention.

Confidentiality
We value your confidentiality and privacy. All survey responses will be assigned a code and kept confidential. Your identity will not be linked to your answers and your answers will be combined with other responses before use in future reports, publications, and presentations. The researcher and members of the research team will review the researcher's collected data. Your participation will be disclosed only to the extent necessary to award the gift card compensation if you choose or to receive extra credit in a college course. There is no way to link disclosing the fact that you participated with any of your specific responses. The researchers are mandatory reporters and will not keep confidential any reports of harm to youth, elders, or serious threats of harm to self or others.

Data Storage
Electronic data will be password protected. Hard copy data will be stored at the UAF Psychology Department in a locked office, 101H Gruening, in a locked filing cabinet. The data will be saved for five years after publication of the research results.

Voluntary Nature of the Study
Your decision to take part in the study is voluntary. You may choose to stop your participation at any time for any reason. If you would like to stop, you can either tell us or leave the session. If you ask to be removed from the study, we will delete any data we have collected from you up to that point. There are no consequences to you academically or personally if you choose to withdraw from this study.

Questions
If you have any questions you may contact the student researcher, Rebekah Burket, at rlburket@alaska.edu or the research advisor, Dr. Kendra Campbell, at kendra.campbell@alaska.edu. The UAF Institutional Review Board (IRB) is a group that examines research projects involving people. This review is done to protect the rights of people like you who are involved in the research. The committee wants to help make the project the best it can be for you and the researchers. You can contact the UAF Office of Research Integrity at 474-7800 in the Fairbanks area, 1-866-876-7800 toll free outside the Fairbanks area, or by email at uaf-irb@alaska.edu if you have questions or concerns about your rights as a research participant.

Statement of Consent
Please check all that apply:

□ I am 18 years old or older.

□ I am not suicidal at this time.

□ I have not considered harming myself in the last 12 months.

□ I can give about 3 hours of my time for in-person sessions on the UAF campus.

□ I can complete a 20-minute, online survey before and after the informational session.

I have read this informed consent document. I understand the study purpose and the procedures described above. The risks and benefits have been explained to me. I agree to take part in this study.

Please Print Your Name Contact Information

_____ _____

Participant's Signature Date

_____ _____

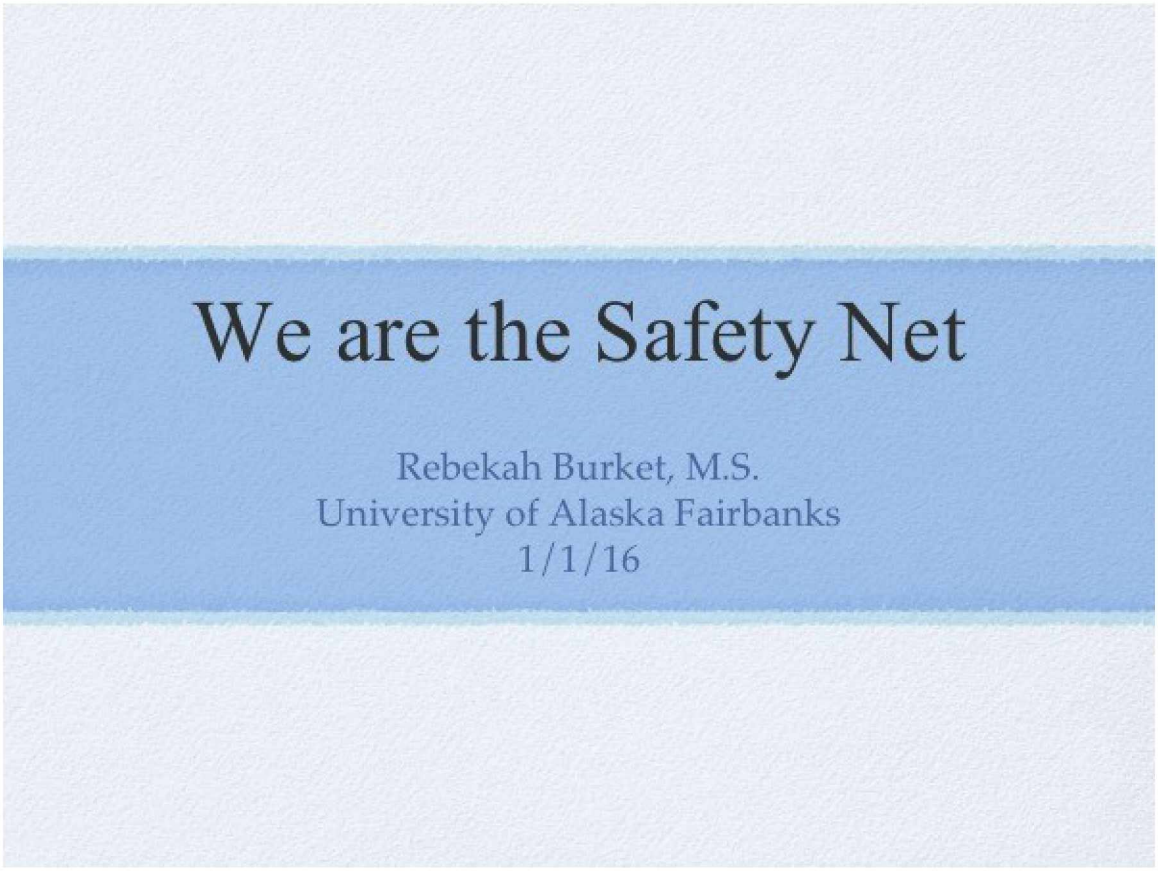
Witness Signature Date

Appendix C

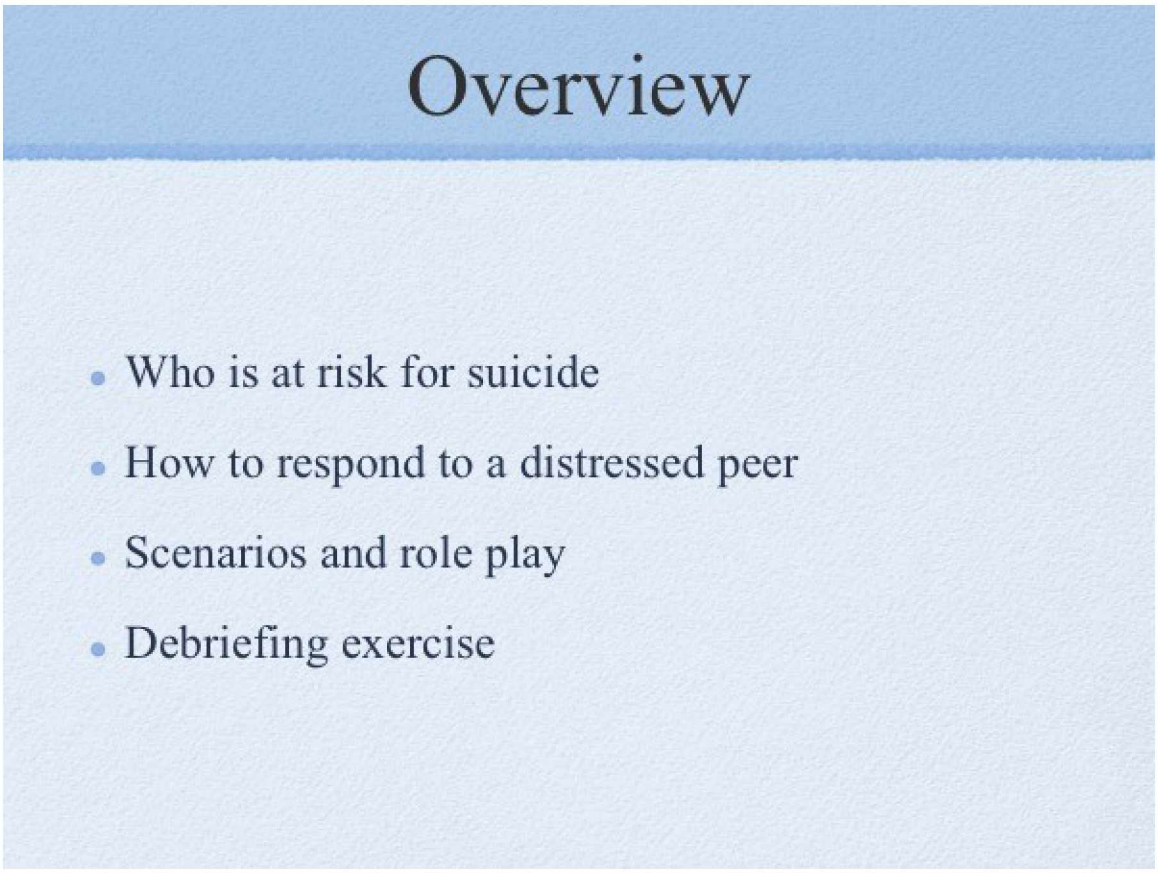
Training Script

Goal: Participants will be confident in providing assistance to a peer who is having a suicidal crisis or is at serious risk for having one. Participants will be equipped to notice and respond to peers at risk for suicide.

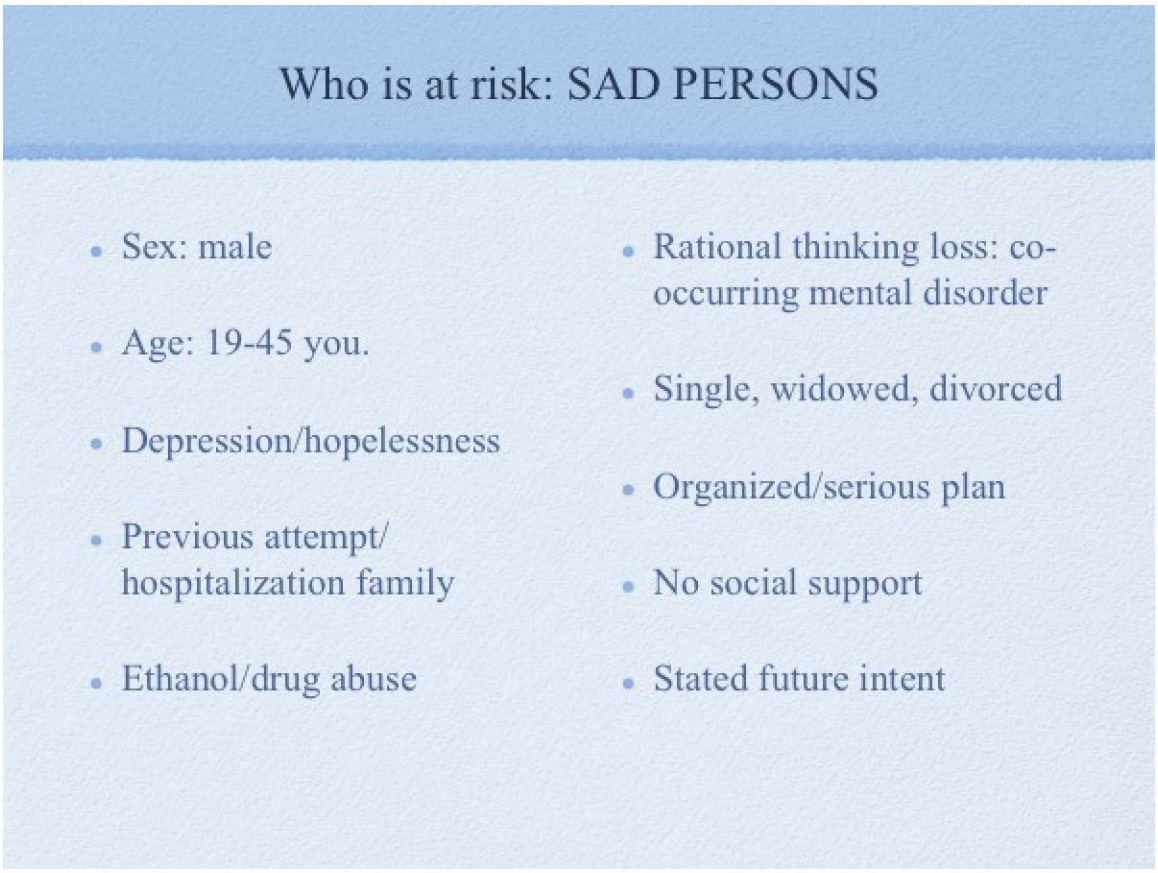
Supplies: snacks and beverages, handouts of materials and resource information, ball of yarn, balloon, pens, paper, whiteboard and markers, PowerPoint presentation if preferred.



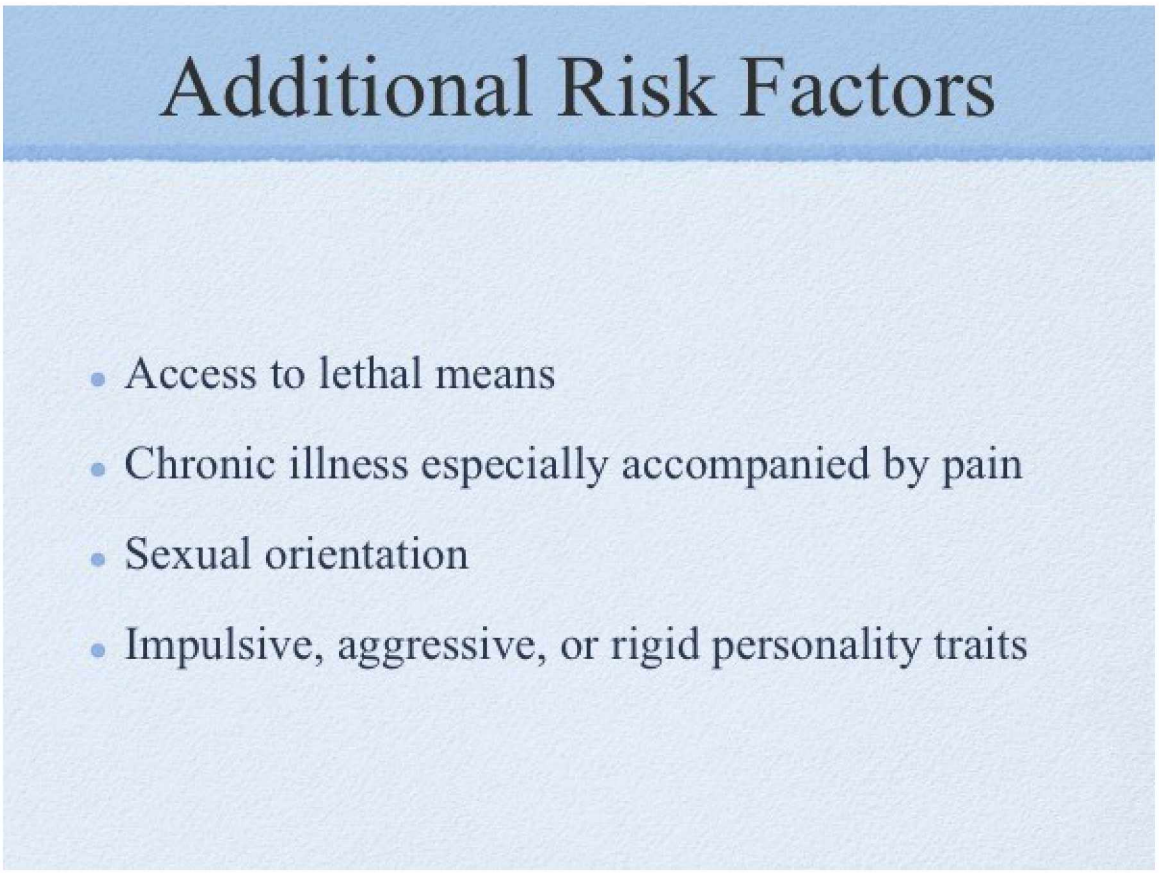
Hi, I'm Rebekah Burket. I have a master's degree in clinical psychology and I'm doing a suicide prevention research project as part of my work towards becoming a psychologist. Today I'd like to share with you some information on how to respond to people you may care about who are at risk for suicide. This topic is one of my passions and I hope that you find the information useful. [Presenter Note: discuss confidentiality and what the group will and will not cover].



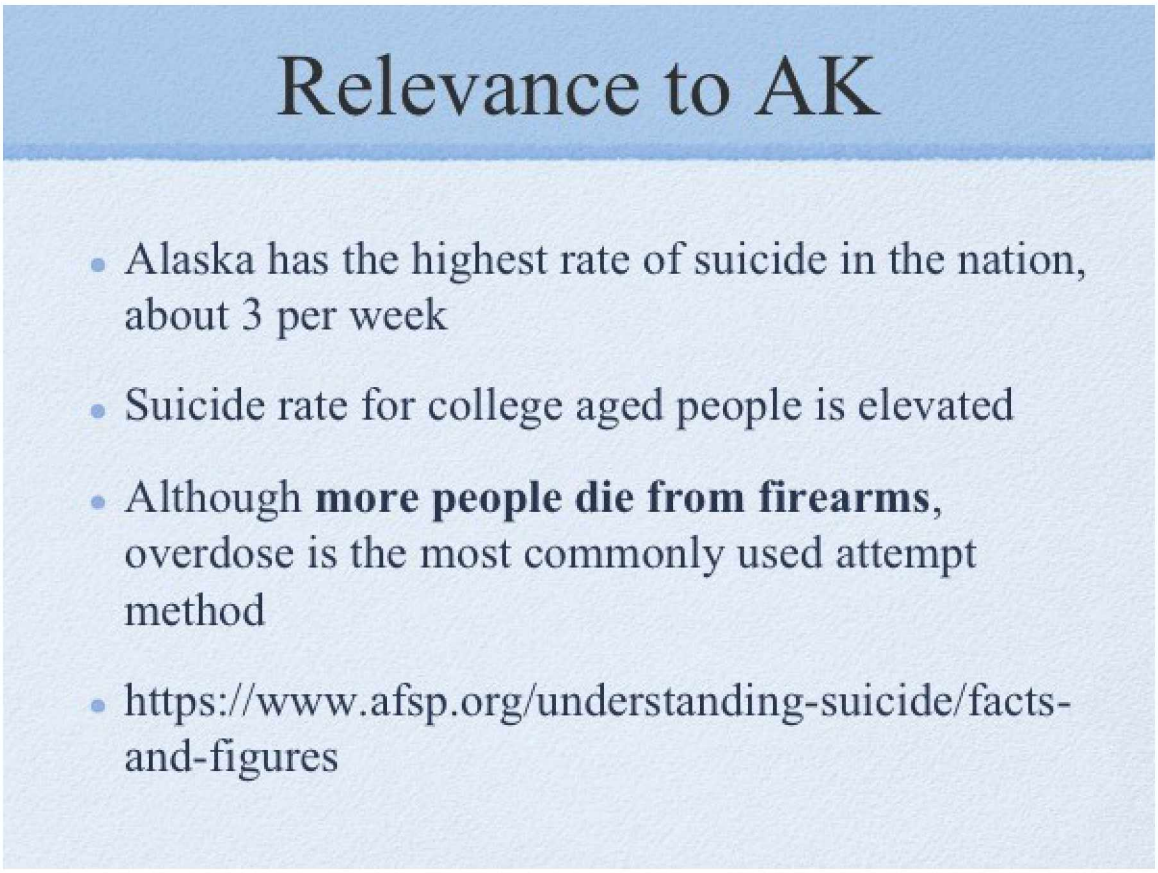
First I will describe the basic risk profile for suicide. Then I will get into the details of how to talk with and take responsible action with someone who is thinking about suicide. Next we will practice applying the information with a fictitious scenario. We will end with a debriefing exercise. [Presenter Note: In a small group the following example is a feasible icebreaker. Please say your name and share a comment or question. Perhaps you'd like to share a favorite food since it is dinnertime, raise a question that you hope we will answer through the course of this information session, or share your experience with suicide prevention]. Please feel free to ask questions or make comments as we go along.



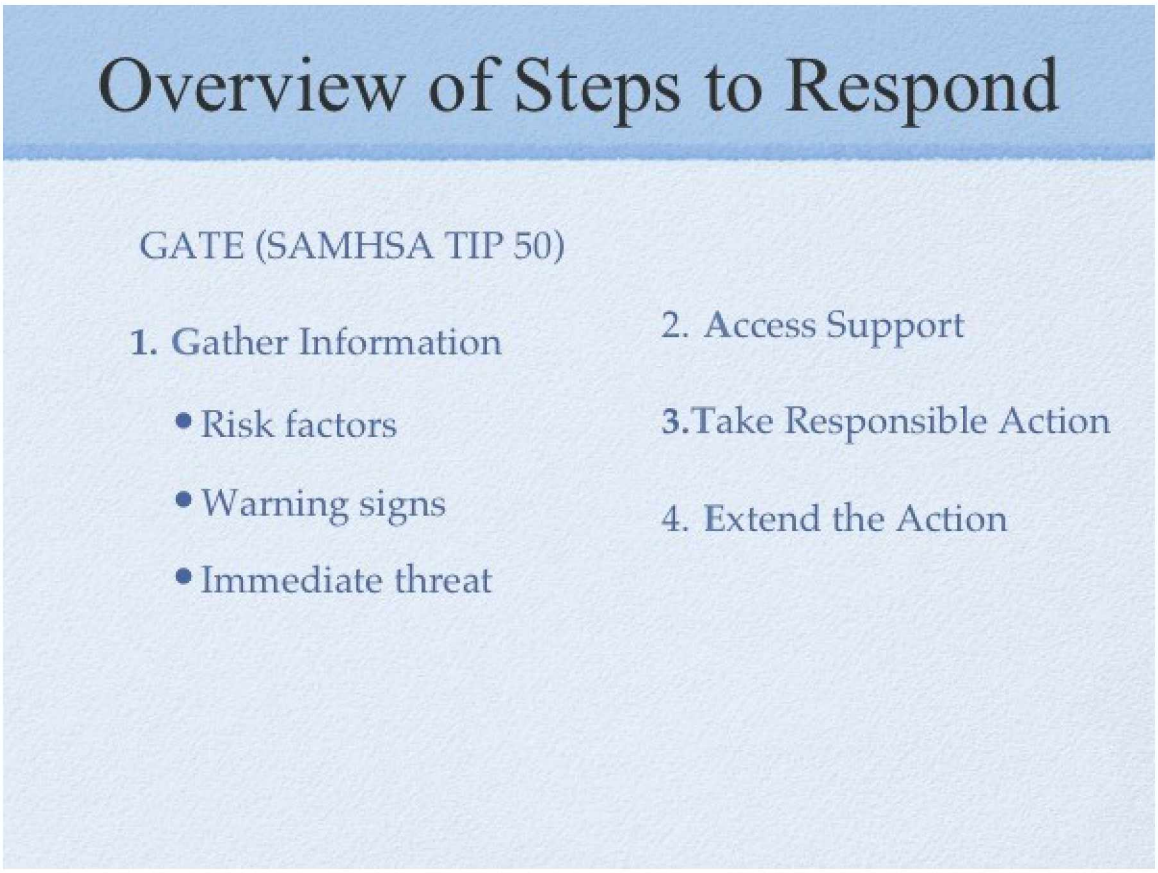
Who is at risk? SAD PERSONS are at risk for suicide. SAD PERSONS is a mnemonic that you can use to remember the major risk factors for suicide. Having risk factors present in one's life does not equal being suicidal. However there is a group of characteristics that are associated with vulnerability to death from suicide. Being male is a risk factor. More men die from suicide than women but more women make suicide attempts. Being young is a risk factor. People ages 19 to 45 are more at risk than any other age, although this can vary by race. For example, 15 to 24 year old Alaska Native men have the highest rate of suicide in the nation. Likewise Caucasian males over the age of 70 are at elevated risk. Depression or hopelessness are closely associated with suicide. Previous attempts are very big red flags including previous attempts by immediate family members. Excessive alcohol and/or drug abuse is associated with suicide because inhibitions are low when under the influence. Excessive use of substances is associated with other factors that increase suicide risk such as history of sexual abuse and mental disorder diagnosis. Rational thinking loss is a risk factor. This is essentially referring to a mental disorder or an organic problem that would affect thinking. Examples are serious mental illness that may be accompanied by anxiety and psychotic breaks or dementia. Having no spouse is a risk factor. People who are single, widowed, or divorced are more at risk because there are greater chances that they will get seriously depressed before someone else notices. An organized, specific suicide plan is a big red flag. A specific plan would include method, place and time. No social support and stressful life circumstances are risk factors. Examples are a break up or conflict with a significant other, job loss, and financial hardship. These issues tie into feelings of depression and hopelessness. Stated intent to die with determination or ambivalence is a serious red flag for suicide risk.



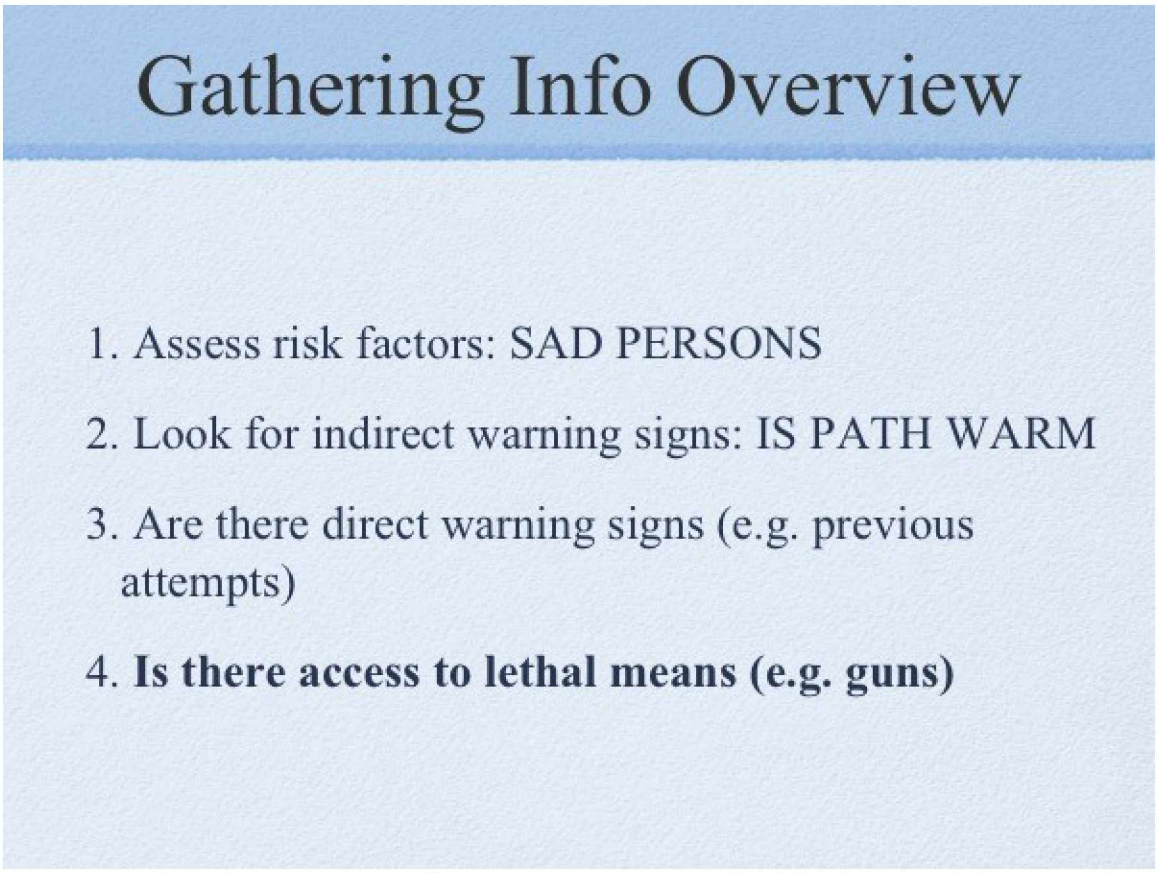
Other notable risk factors are access to lethal means such as a firearm. Chronic illness and conditions that are accompanied by chronic pain, stigma, and low chances of a good prognosis are risk factors. Certain sexual orientations are associated with higher risk such as being lesbian, gay, or bisexual. Having personality traits such as impulsivity, aggressiveness, and rigidity are also risk factors.



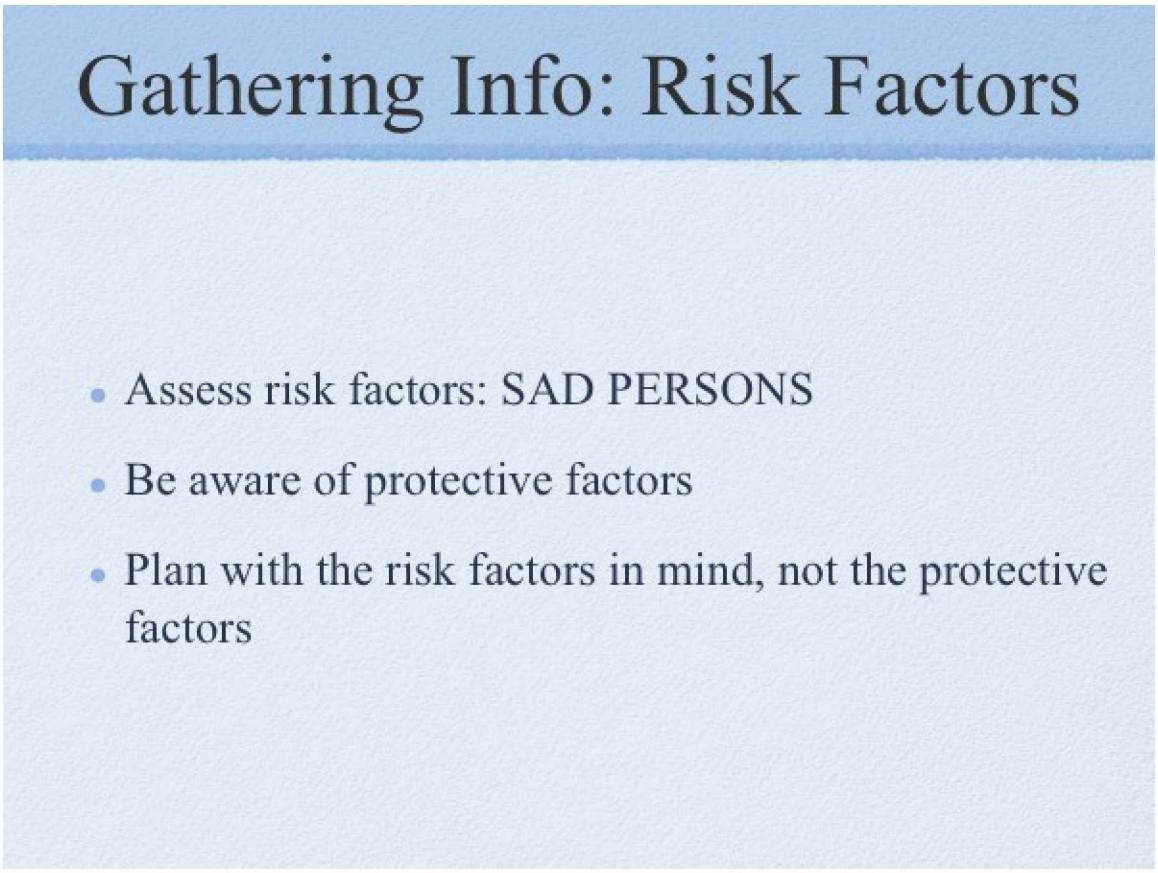
What does this mean for us here in Alaska? When compared to the national average, suicide risk is elevated for Alaskans and college-age people. Alaska has the highest rate of suicide in the nation. The most common suicide attempt method is overdose and over half of suicides are carried out with firearms. Next lets talk about how to respond to a peer who is at risk for suicide.



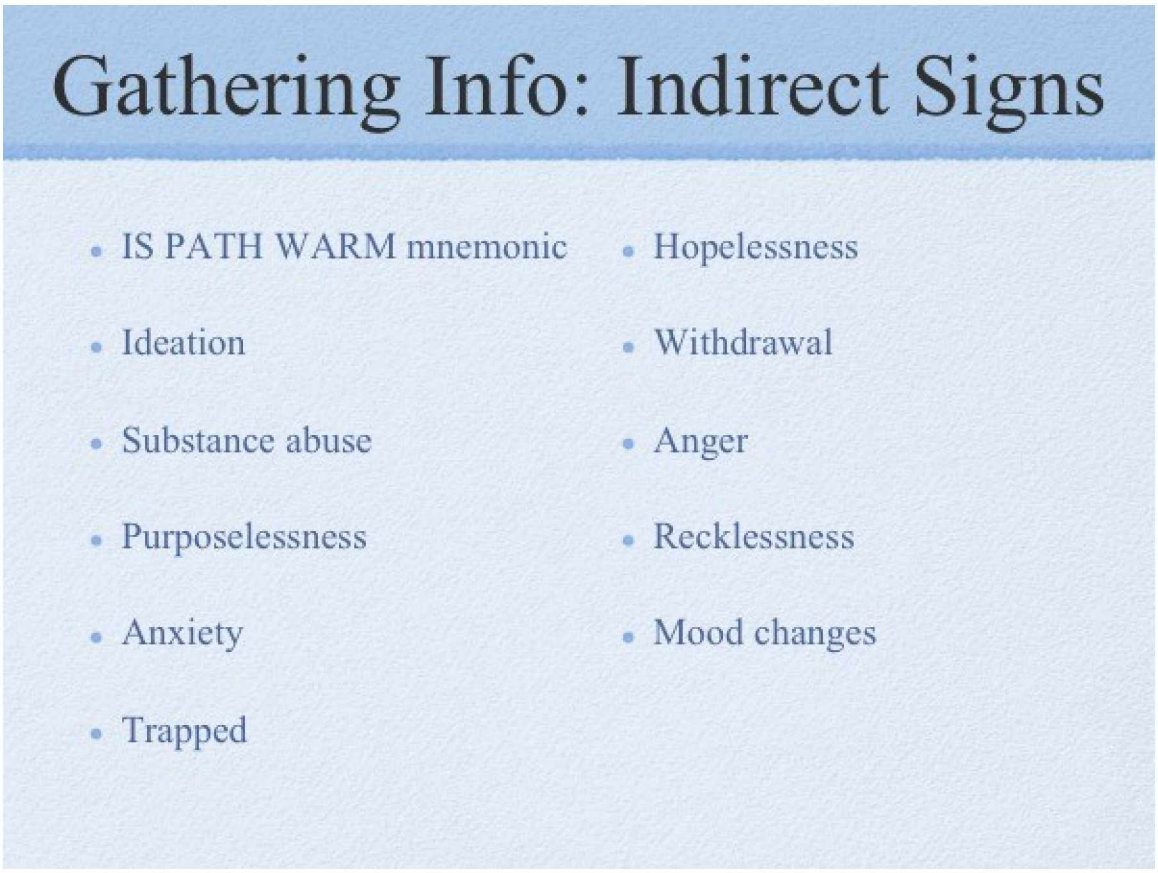
The mnemonic GATE is an easy way to remember the main bases that you can cover when talking with a peer about suicide. GATE comes from the Substance Abuse and Mental Health Services Administration's TIP 50 and stands for gather information, access support, take responsible action, and extend the action.



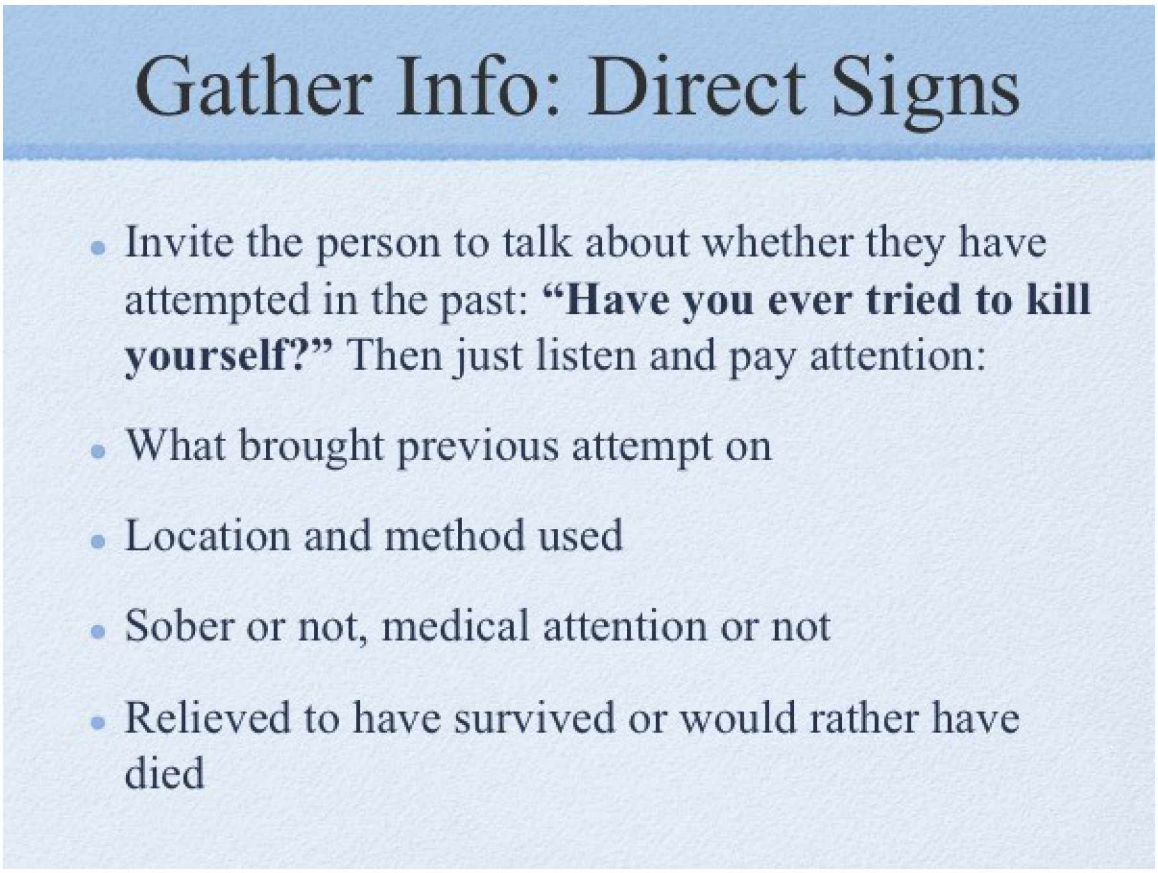
The first step of GATE is to gather information. All the other steps of GATE hinge on accurate information. Will asking directly about a suicide plan put the person at greater risk for suicide? No, it will alleviate stress for your peer and provide you with good information that will allow you to make a solid decision on how to respond to the person's needs (DeCou, Skewes, Lopez, and Skanis (2013)). Gathering information you can directly and thoroughly ask about 4 main areas: 1) risk factors, 2) indirect warning signs, 3) direct warning signs, and 4) risk of imminent harm. If you need to pick only one thing to ask about, then talk about where and how the guns are stored!



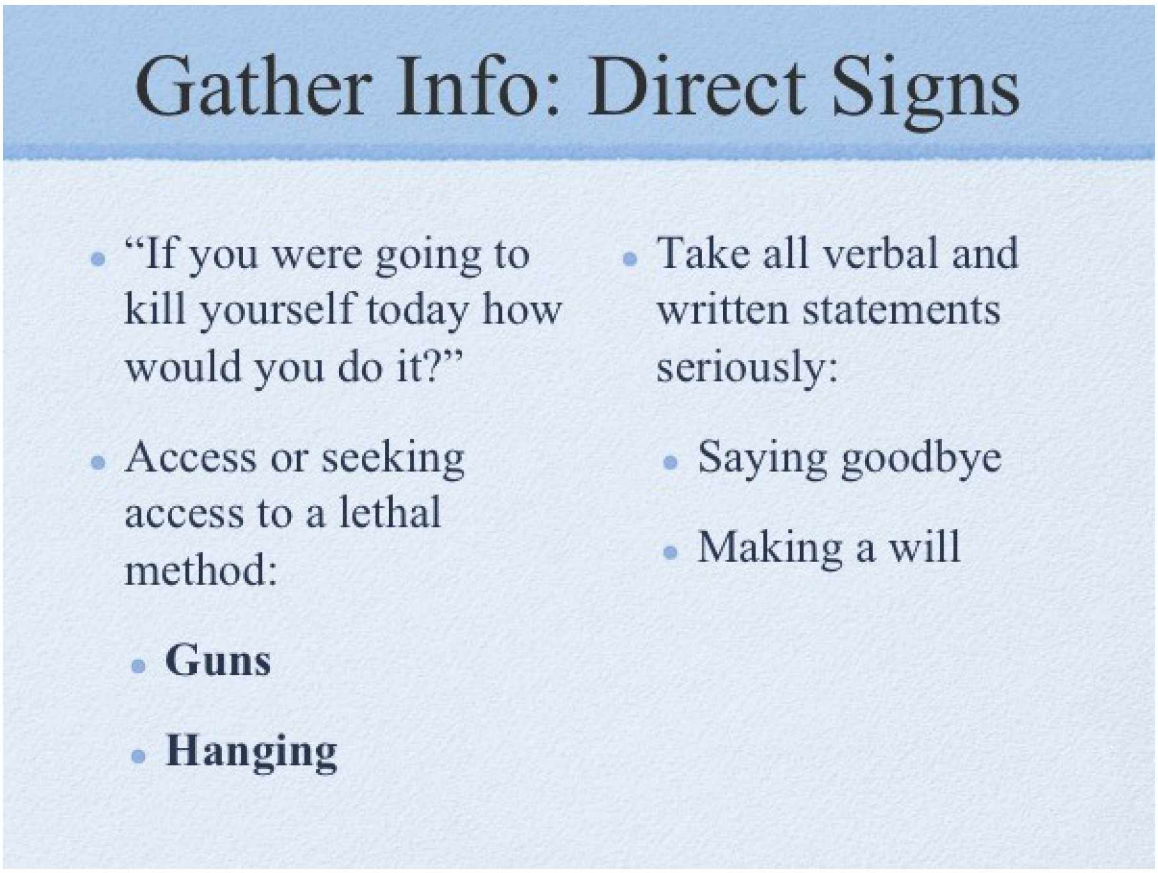
We already talked in detail about the SAD PERSONS risk factors. I want to mention protective factors as well. These are essentially the inverse of the risks, being socially connected, having a spouse and job, no drug abuse, etc. Even though people may have a whole constellation of protective factors it is always best to plan with the risk factors and warning signs in mind. Let us look now at the specific warning signs for suicide.



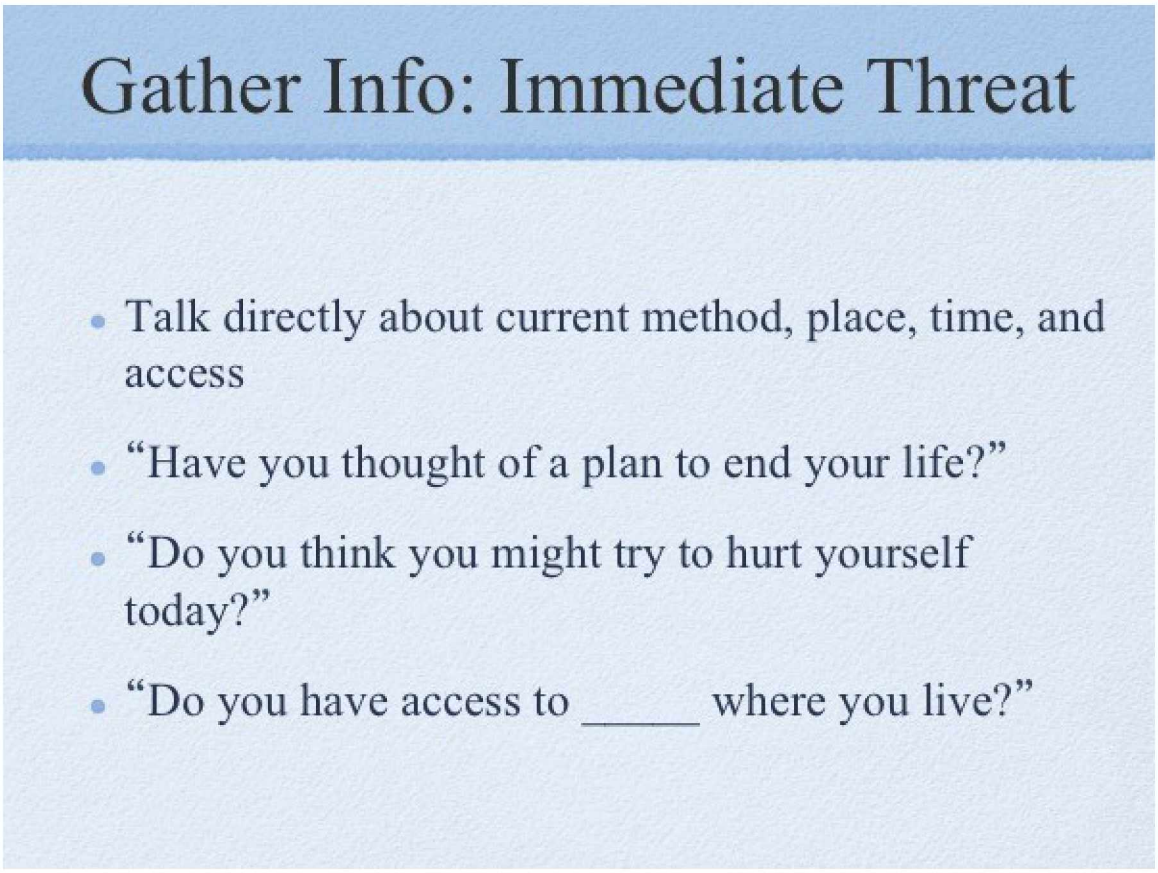
Suicide can seem like an out of the blue behavior. However, people who are at risk generally exhibit clusters of indirect and direct warning signs. Indirect warning signs can be remembered with the mnemonic IS PATH WARM. Ideation is thinking about death and suicide; for example, "maybe everyone would be better off without me." Substance abuse, especially severe addiction that involves multiple substances is a warning sign. Substances that lower inhibitions such as alcohol are especially problematic when someone has suicide on their mind. Purposelessness is a warning sign. This can look like someone who just lost a job or spouse and is feeling with out connection or purpose in the world. Anxiety and depression are clearly linked to suicide. Feeling trapped is a warning sign. People can get tunnel vision and lose sight of their options. For example, after losing a job someone might start thinking, "I'll never find another job" and feel trapped. Then suicide can seem like a reasonable solution to the situation. Hopelessness ties in here. For example, if the person needed a lot of training to enter the job market then the person will certainly start to feel hopeless and trapped. Withdrawal goes hand in hand because when a person believes in the hopeless outlook then there is no reason to continue with goal-oriented action and they begin to avoid social interactions. Anger and mood changes are hallmarks of depression associated with suicide. Recklessness ties into the lack of inhibitions and can be more problematic when coupled with substance use. When you have a SAD PERSON who is presenting with IS PATH WARM indirect signs that is your cue to find out about direct warning signs and if there is any plan.



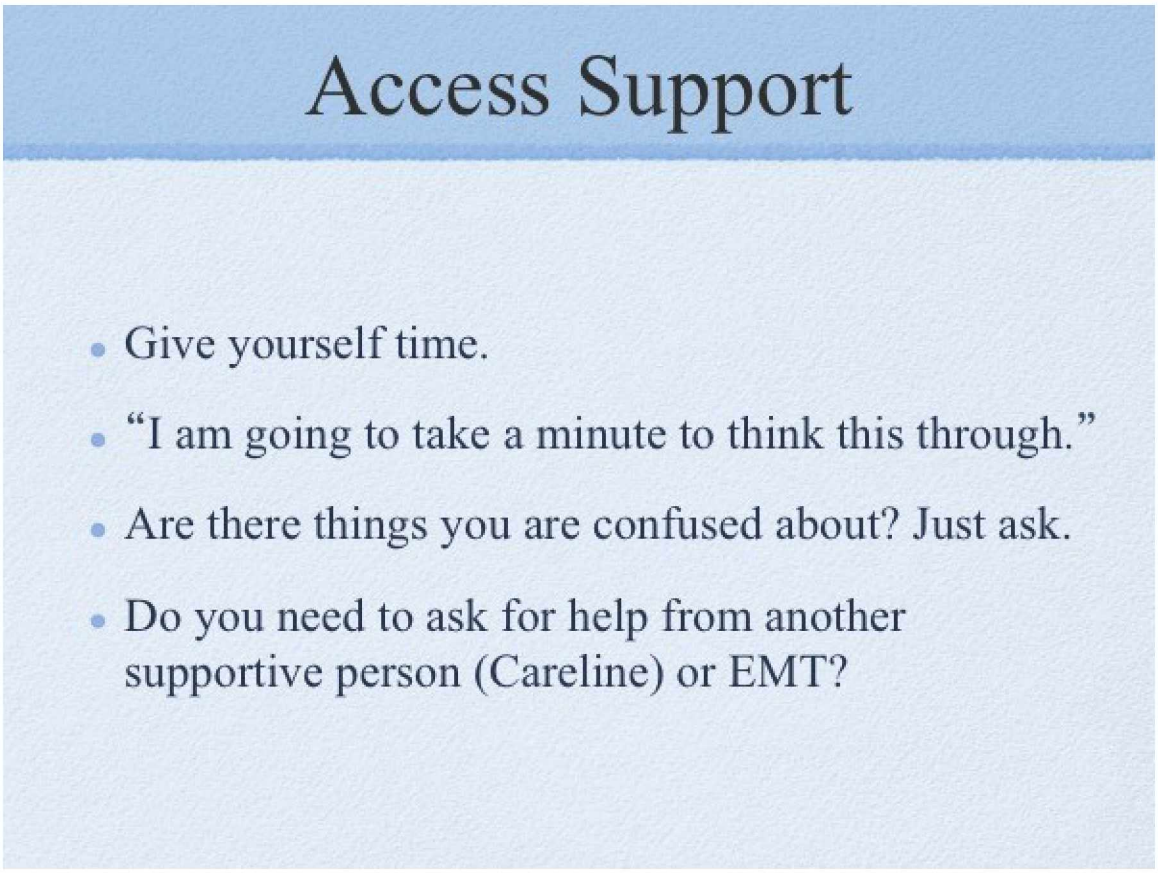
The biggest direct warning sign for suicide is a previous attempt. Stories about previous attempts tell a lot. If you are conversing with a peer about a previous attempt, listen for what triggered the previous attempt and what method was used. Pay attention to location, who they were with, and whether they were high or not. Find out about how they felt about surviving (were they relieved or disappointed). This information can help give a picture of how urgent it is to connect the peer to professional support.



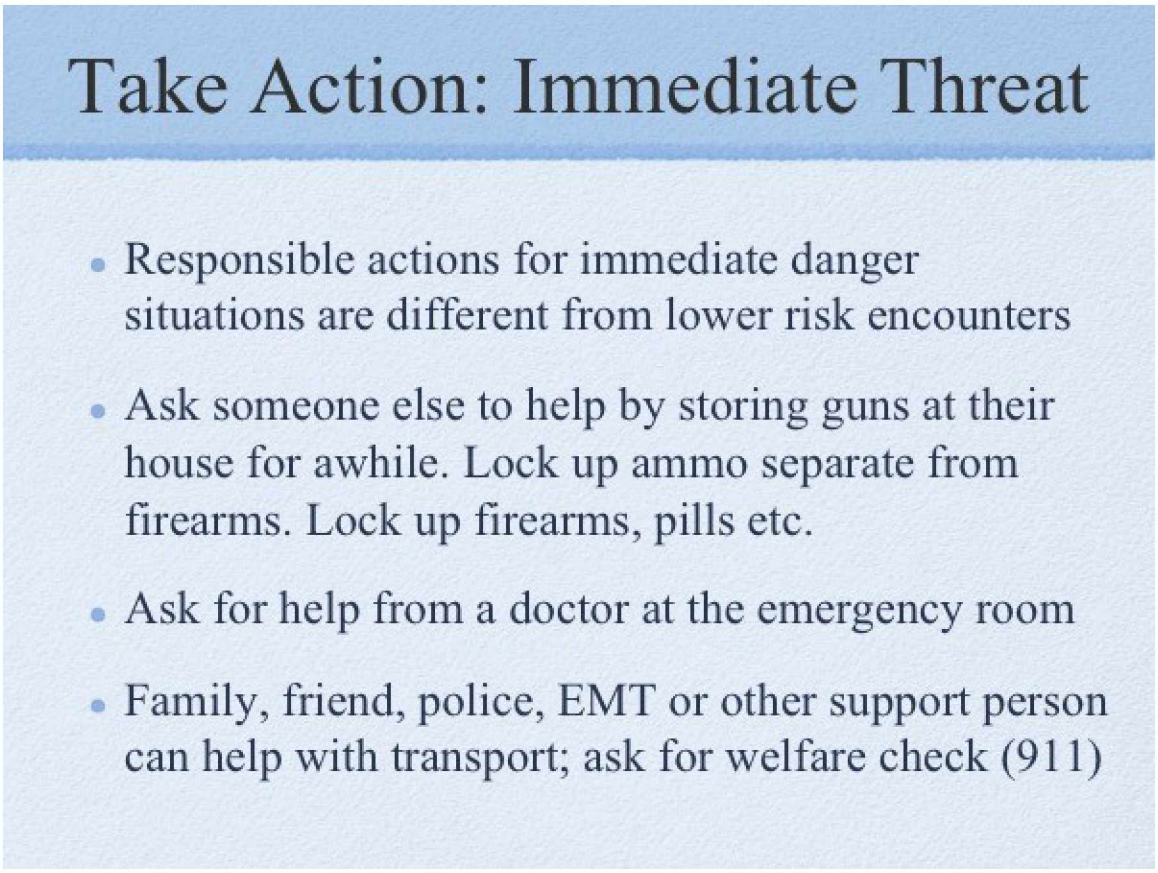
Possession or seeking access to lethal methods are the next biggest direct warning signs for suicide. What is a lethal method? Guns and hanging are the most lethal methods. The most common attempt method is overdose and the second is cutting. Women make more suicide attempts than men but more men die from suicide. Why do you think that is? Men tend to attempt with extremely lethal means such as guns and women tend to favor pills, which are still lethal, but have a wider margin for intervention. Possession of a gun, large quantities of pills, drugs, or actively seeking these means out are direct warning signs for suicide. All verbal and written statements about desire to die or benefits of ending life should be taken as a direct warning sign.



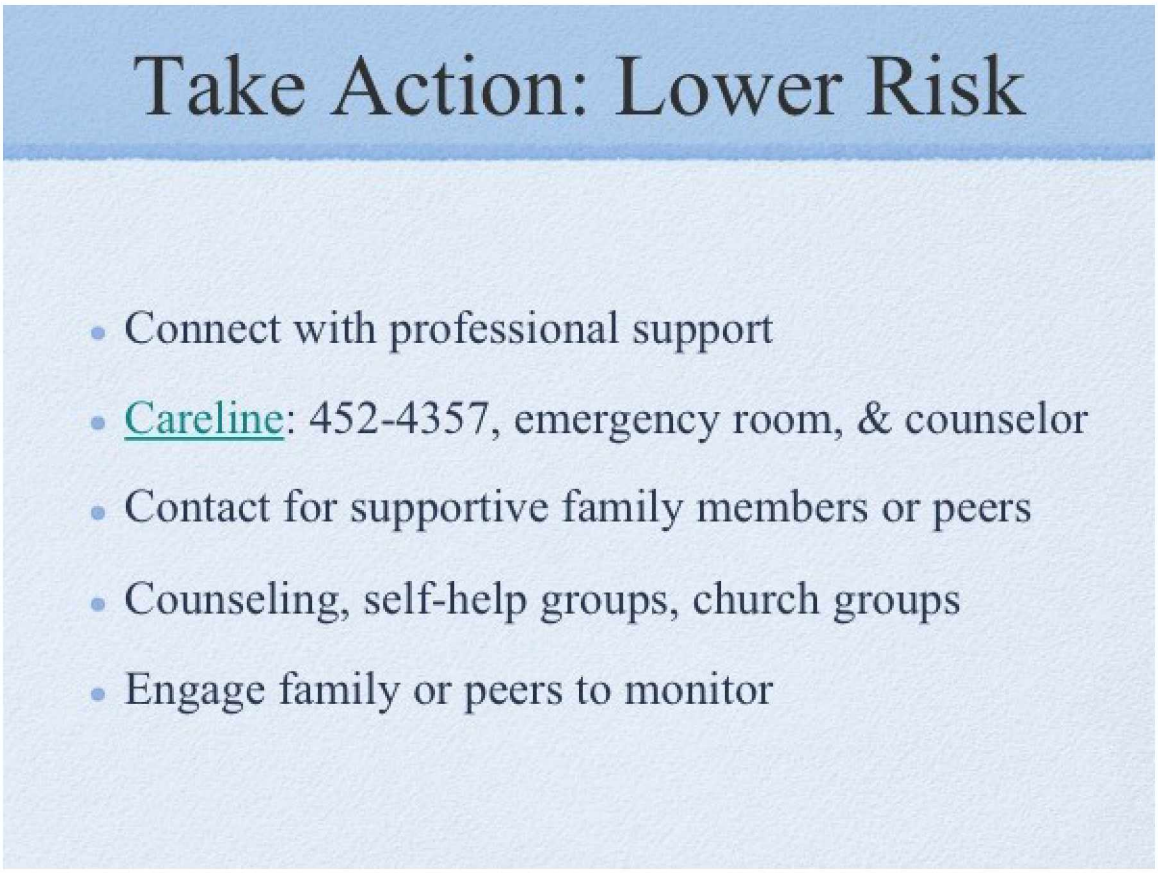
If you have a SAD PERSON who IS walking down a WARM PATH and has direct warning signs for suicide then it becomes quite important to find out about what kind of plan the peer may have for ending his or her life. Review: Will asking direct questions about suicide cause a person to kill him/herself or increase the chances of suicide? No, in fact asking directly is the major way to prevent death and the person may actually be relived to have someone to talk to about the problem. Ask questions that will get you an idea of how specific the plan is. Do they have a method, place and time, and access to the method? Questions such as "have you thought of a plan to end your life" and "do you think you might try to hurt yourself today" are good questions to ask.



Once you have gathered all the information stay calm and stay in contact. There is no rush, take a moment and sift though all the information. The next step is to talk with someone supportive about what action to take. Recent suicide attempts and direct suicide warning signs (previous attempt, access to lethal means) means that you need to connect with a professional without delay. This may mean going to the hospital emergency room. Passive ideation, indirect warning signs, or being a really SAD PERSON means that the person needs to be connected with help as soon as possible. Call the local clinic and say I need to talk to someone because I am having thoughts of suicide.



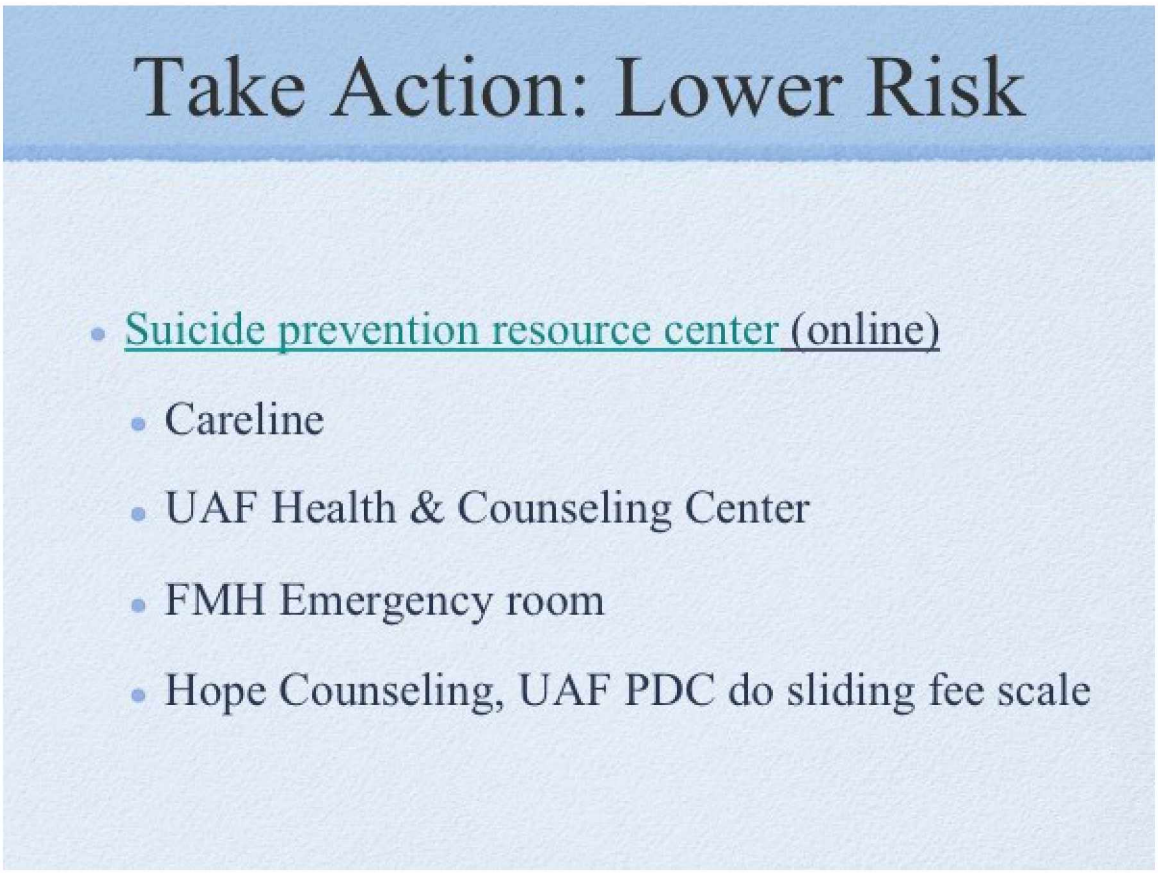
The next step in GATE is to take action. When direct indications of suicide are present in combination with SAD PERSONS risk factors and IS PATH WARM indirect indicators, the risk level is high and action is needed in some form to protect the peer especially if the person has a specific plan to end his or her life. If the person is willing to talk to a doctor the best plan is to go to the emergency room at the hospital and ask for a doctor to see the person right away. It is important to ask for someone to help secure any firearms and stay with the person until the person is better and has connected with professional help. Ammunition and guns can be temporarily stored in another location or locked separately. A family member, friend, or member of the clergy may be willing to help. Usually people are cooperative when presented with options but be prepared to call 911 to get help from an Emergency Medical Technician (EMT) or the police if someone is in direct danger to themselves or others and is unwilling to seek help.



Imminent threat situations are the ones that we worry about the most but are less common. More frequently you will encounter situations where there is risk and the appropriate actions are to connect the person with resources and professional services. In these situations the most effective thing to do is brainstorm resources with the peer. Make a list of the people and places that are resources in their life and how to get in contact with them.

Practical Tips

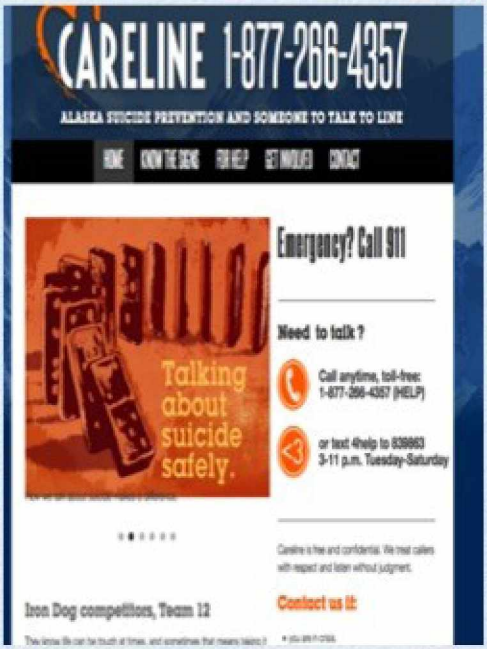
- Stay calm, stay in contact.
- If you are talking on the phone write down the peer's phone number, name, location, and any other information that may be needed if you need to ask for an ambulance to come help the person.
- Stay with the person or arrange for someone to be with them. If you are on the phone keep talking with them and find another phone to call 911 if you believe that they need immediate assistance.
- If interpersonal violence or other crime is part of the situation encourage the person to call the police for help at the moment if they are afraid for their safety or document with the police after the situation has passed.
- You can reassure the person that talking about the problem is appropriate, and help is available and listen to what they have to say in a calm manner.
- Continue to stay in contact even if another support person is called into the conversation. Ask if there is anything else you can do. Ask what the person needs the most in that moment and if possible and if safe help them meet his or her needs.



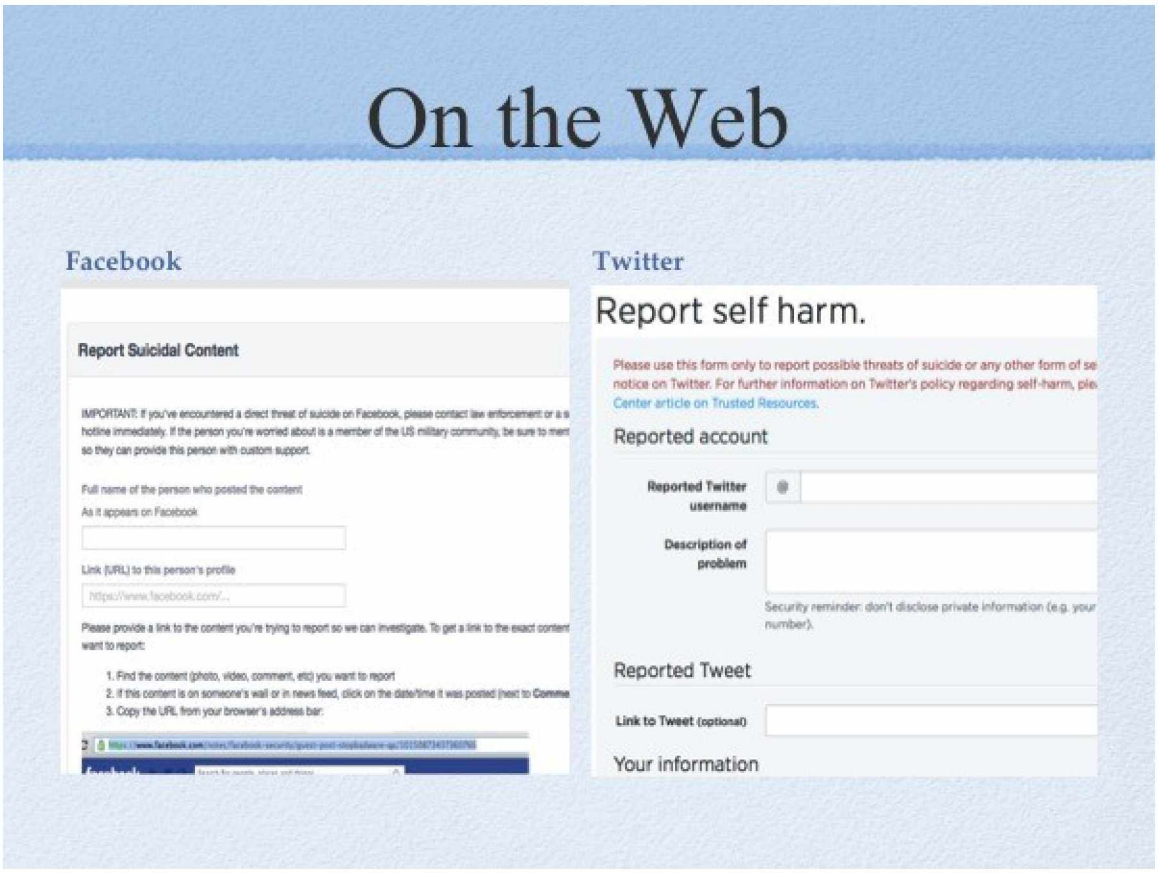
There are a variety of places where you can get low or no cost counseling. Ask if the peer would be willing to make an appointment or help find the number to call and make an appointment. Remember to mention that suicidal thoughts are happening so that they can be seen as soon as possible. You can help the person look in the phone book under "counselors" or do a Google search for mental health resources, support groups, church functions or other community supports that could help the person in their local area. Ask for help from family and friends to stay with the person until they are feeling better. You can call 211 to ask for a listing of resources in your area. Ask the person to call a doctor or counselor and make an appointment while they are with you or help them with scheduling and getting to the meeting if need be. Asking supportive family members to accompany the person to an appointment can also be helpful if the person is really struggling with withdrawal and depression.

On the Phone

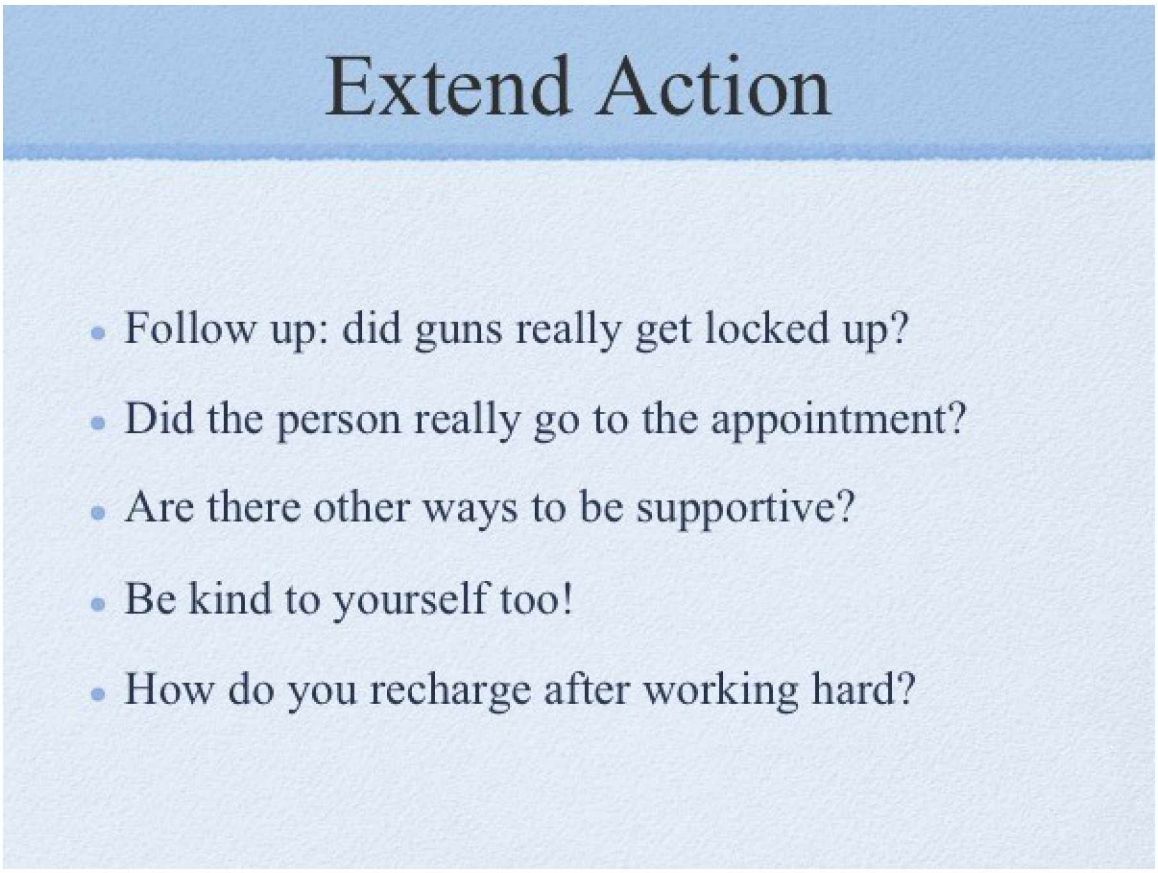
- Stay calm, stay in contact.
- Stay on the call, ask someone else to help
- Write phone number, name, location, and any other information down



Resources are available 24 hours a day with the Careline phone number and website.

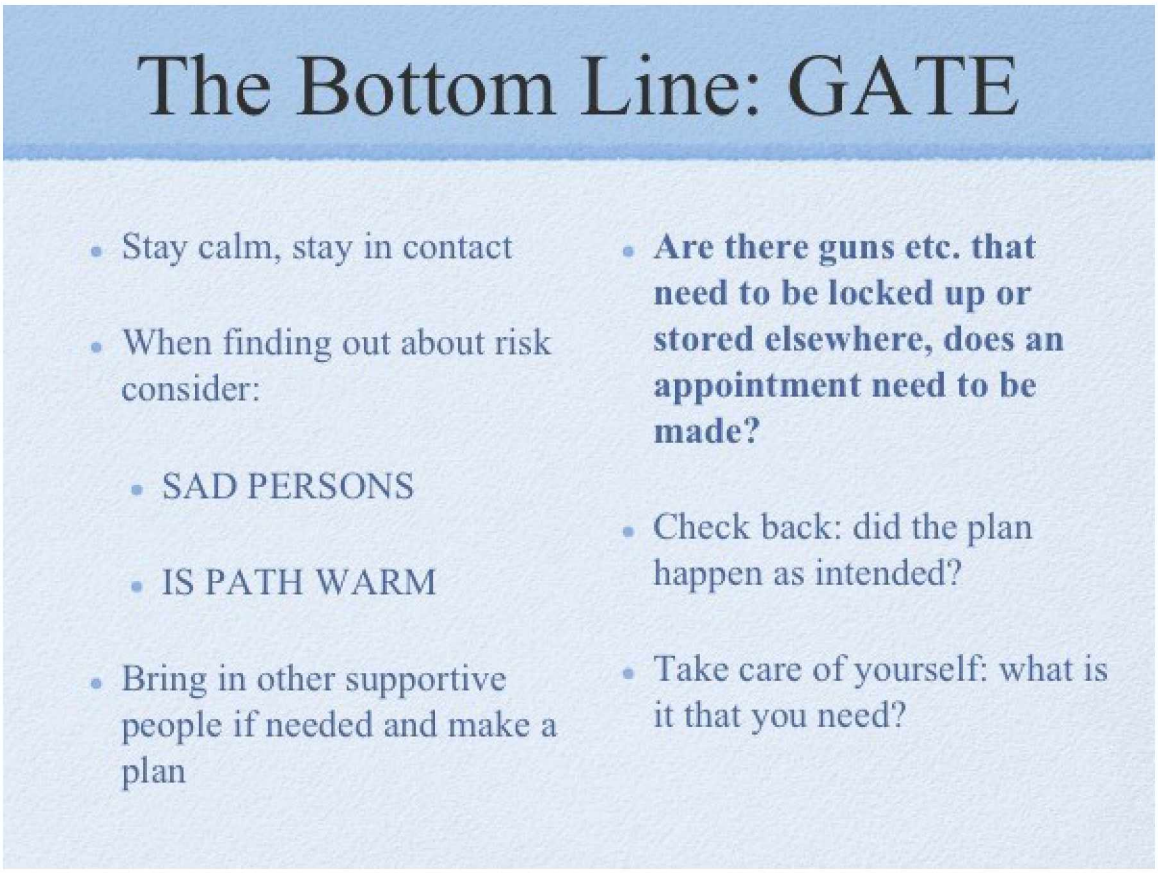


Both Facebook and Twitter have a mechanism for bringing suicidal content to the attention of administrators. The bottom line is that if you are concerned about someone you can talk with them, encourage them to connect with help, or call 911 and ask for a welfare check on their behalf if you are concerned that they are in immediate danger.



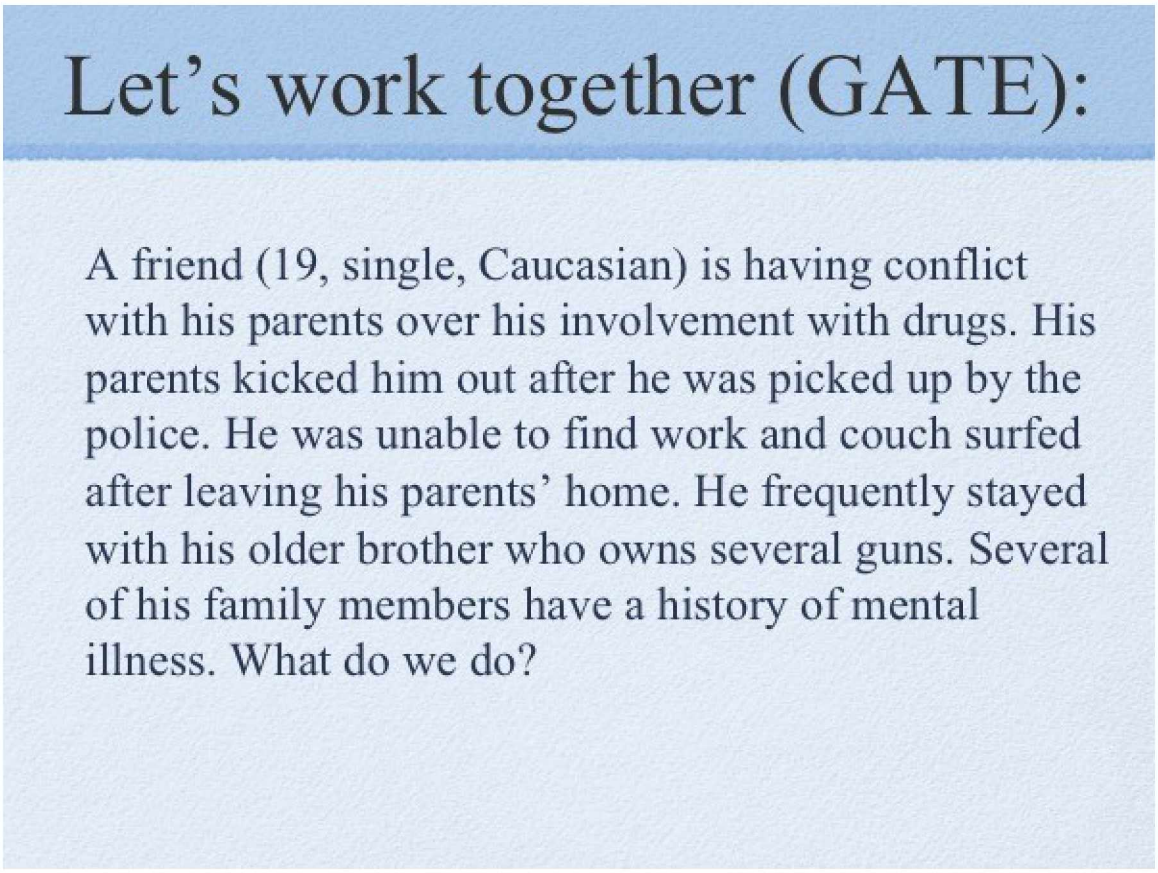
The final step of GATE for responding to a suicidal peer is to extend the action. This is checking back to see how the plan was carried out. For example, did the gun get locked up in someone else's house or did they make it to their counseling appointment? Check in to let them know you are still thinking about them and aren't afraid to talk with them about suicide. Do they need help connecting with providers due to long wait lists or reluctance to talk about how serious the situation is?

Be sure to get support for yourself after you have assisted someone. Self-care is important. Assisting someone in crisis or helping someone connect with help to prevent crisis is demanding. What are the things you need to keep yourself safe and strong? We cannot truly contribute to the safety net in our community if we are neglecting to care for our own part of the web.



Using the four steps of GATE (gather information, access support, take responsible action and extend the action) can make a big difference for people. Once someone has survived a suicide attempt they are much less likely to try to kill themselves again. This means that getting someone support during a low spot can give him or her time to rethink things. Also, making sure they can't get ahold of a gun can go a long way to helping someone survive because they may not attempt at all or may attempt with another method that is not as lethal and get a chance to recover.

In a few minutes we will work together to apply the GATE approach to a fictitious scenario. Right now I want to open the floor for questions and discuss the potential barriers to responding to a peer who is at risk. [Presenter's note: For large groups do a quick think-pair-share on the question above. Revisit concerns raised in initial discussion on what folks think might be some barriers to responding to someone at risk for suicide.]

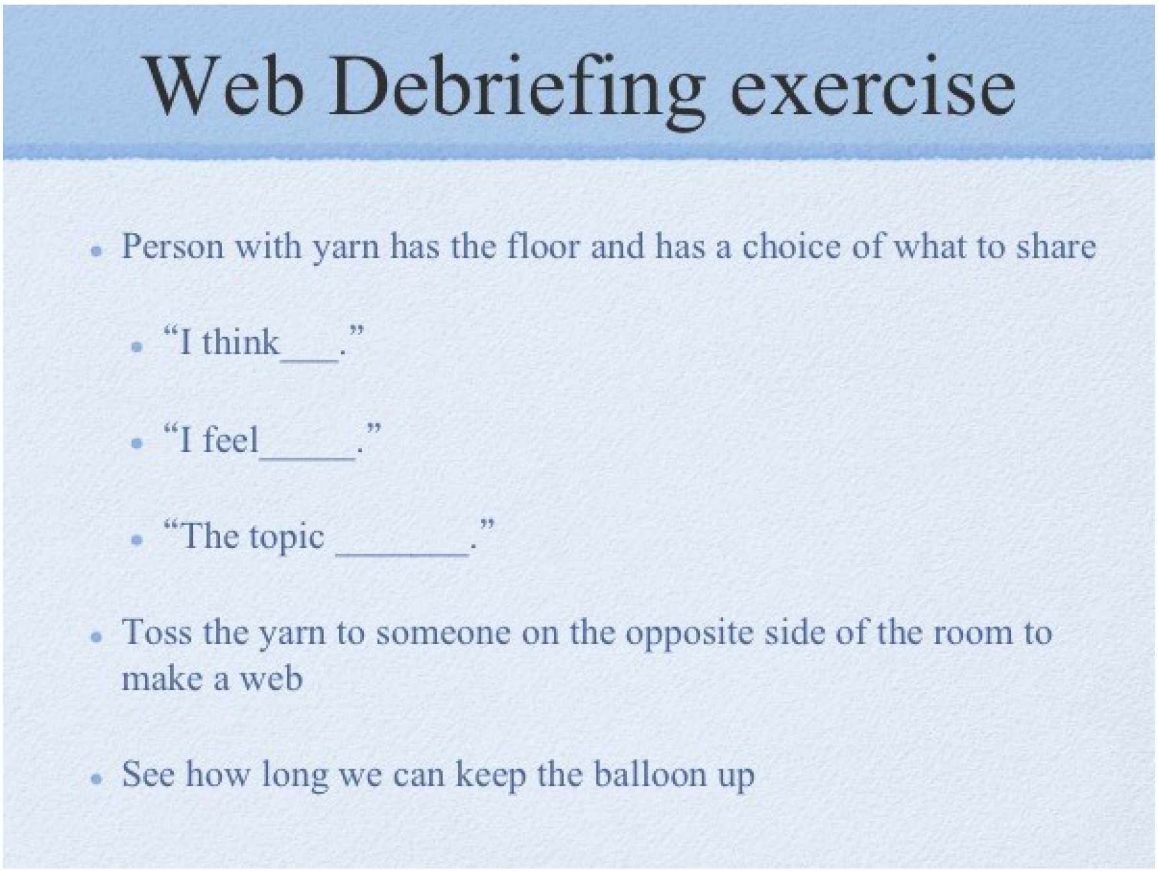


Now we are going to look at an imaginary scenario and apply the information we have learned to the story. [Presenter Note: Use the GATE framework to brainstorm steps for taking action and extending the action. Using the example, assist the group to use the SAD PERSONS and IS PATH WARM mnemonics to gather information. Use visual aids such as the whiteboard to organize the information. In a large group, break out into smaller groups of 4 to 5 and role-play responding to an at-risk peer with the resources available to you in your location. Assess with SAD PERSONS cards and IS PATH WARM and direct warning signs. Propose support and action plan. What would extending the action look like? Review care in the local area. For Fairbanks this includes Careline, FMH emergency room, sliding fee scale at FBH, Hope Counseling, UAF PDC and SHC. TCC and CAIHC offer additional services for IHS beneficiaries. Bassett Army Hospital and family support programs are available to military service members.]

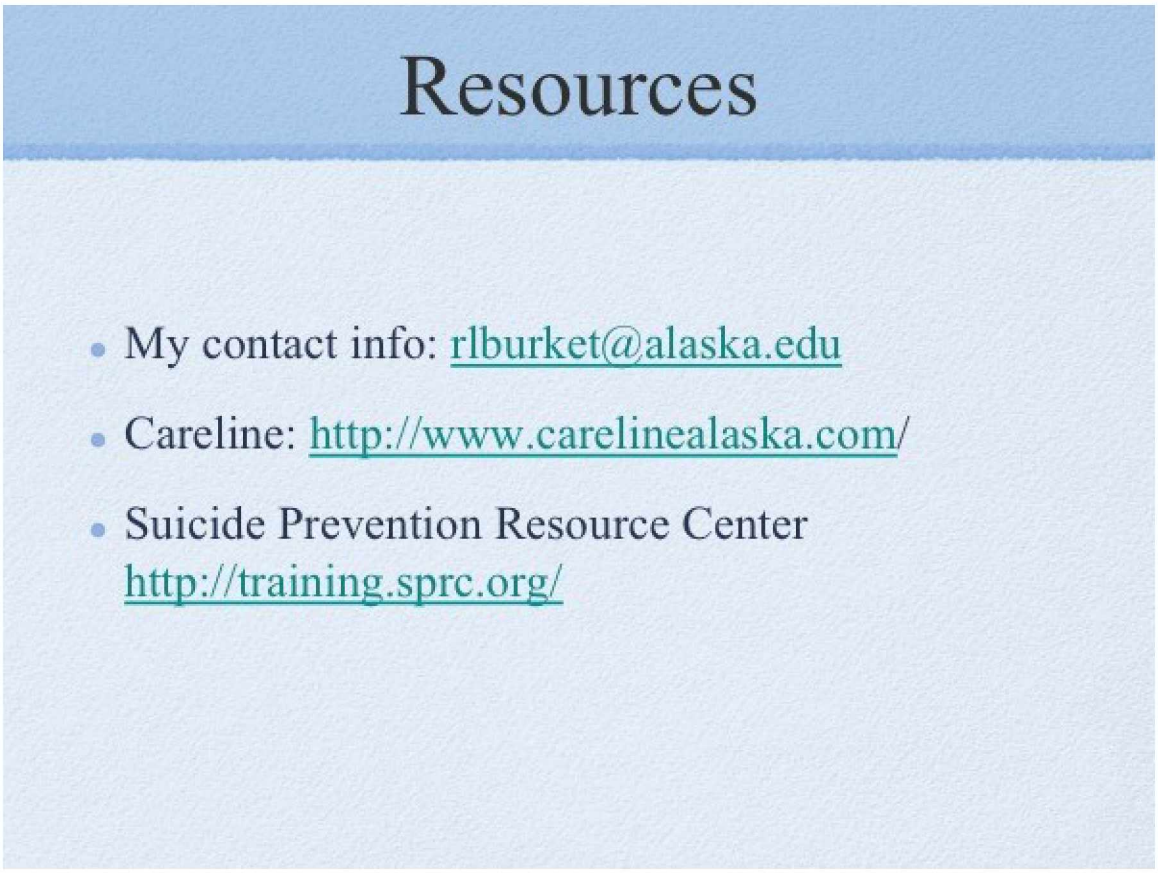
Summary

It you remember one thing from today I would encourage you to remember to stay calm and stay in contact. Rely on your natural capacity to care and listen. If you pull out the listening card all the other pieces will fall into place because people who are in distress fundamentally need to be heard. Directly talking about suicide can be a relief to them because they probably want to talk about what's going on but don't know whom they can trust to listen. Through that process of listening you will likely get all the information you need without even asking directly about the SAD PERSONS risk factors, the IS PATH WARM indirect warning signs and the direct warning signs like access to a gun or specific plan for suicide. Once you feel like you understand the

situation you can ask the person you care about if you have an accurate understanding and then help them come up with a plan to stay safe and get needed help. Finally check back in to see if the plan actually happened as intended. Are there any other questions before we do the debriefing exercise?



[Presenter note: this exercise allows experiential integration of the material, including the importance of self-care, and allows for identification of any adverse reactions. Start with an icebreaker round (favorite food, favorite way to relax) and plan for several rounds if the group is small. The effort to keep the balloon off the ground should be humorous and provide transition from the material to everyday life. Allow multiple tries or brief problem solving if necessary with web malfunctions]. Ask participants to stand and form a circle and give the following directions: We are going to toss this ball of yarn to each other to make a web to see how long we can keep the balloon up. The person holding the yarn has the floor and has a choice of what to share. There are 3 options to choose from. You can do an "I think" statement or an "I feel" statement about what you are thinking or feeling right now, especially anything that seemed particularly useful or anything that bothered you, you can share your favorite relaxation strategies, or you can pass. Toss the yarn to someone on the opposite side of the room to make a web. The presenter starts first to model the type of disclosures that are appropriate and show how to pass across the circle to form a web. When the web is finished the presenter tosses the balloon onto the web and the group works together to keep the balloon up.



That's all I have for you. Has everyone received the cards? Thanks for listening and participating! [Presenter's Note: Give out Careline cards, business cards, and SAMHSA cards. The SAMHSA TIP 50 is downloadable and available in hard copy free of charge in the public domain from the Substance Abuse and Mental Health Services Administration at http://store.samhsa.gov/product/TIP-50-Addressing-Suicidal-Thoughts-and-Behaviors-in-Substance-Abuse-Treatment/SMA15-4381].

Appendix D

Demographics Measure

Welcome to the questionnaire. The questions take about 15 minutes to complete. Please make your best effort to answer each item as it relates to you. Your responses will be used to better understand suicide prevention. Your participation is voluntary. Although there are no expected risks, the subject matter may be unsettling to some. You may choose to discontinue your participation at any time. If you have an unexpected response, please let a member of the research team know immediately. Your answers are confidential but not anonymous. Your identifying information will be stored separately from your answers and your answers will be reported in group form. You are welcome to contact us for any reason regarding this questionnaire.

Student Investigator: Rebekah Burket, rlburket@alaska.edu
Primary Investigator: Kendra Campbell, kkcampbell3@alaska.edu
UAF Office of Research Integrity, 474-7800 or uaf-irb@alaska.edu

Please read the following statement and indicate if you wish to begin the questionnaire. I have read and understand the informed consent above. I agree to participate in the questionnaire.

- ❍ Yes
- ❍ No

Age ____

Sex ____

Year in school:
- ❍ Freshman
- ❍ Sophomore
- ❍ Junior
- ❍ Senior
- ❍ Graduate student
- ❍ Other _____

Indicate how you identify:
- ❍ Alaska Native/American Indian
- ❍ Caucasian/European American
- ❍ Asian American
- ❍ Hispanic
- ❍ African American
- ❍ Other_____

What was the approximate yearly income in your home when you were about 16 years old?

- ❍ under $30,000
- ❍ $30,000 to $49,999
- ❍ $50,000 to $74,999
- ❍ $75,000 to $99,999
- ❍ $100,000 to $149,999
- ❍ $150,000 to $199,999
- ❍ $200,000 and above

Please read the following questions and answer by indicating "yes" or "no."

	Yes	No
Are you a member of an athletic team?	❍	❍
Are you a member of a fraternity or sorority?	❍	❍
Do you participate in university-sponsored extracurricular activities?	❍	❍
Do you have a faith affiliation?	❍	❍
Do you participate in faith-related activities regularly?	❍	❍
Do you plan to participate in suicide prevention activities in the future, other than this one?	❍	❍
Have you participated in other suicide prevention activities in the past, other than this one?	❍	❍

Please name the previous suicide prevention activities in which you have participated:

_____

When was the last suicide prevention activity in which you participated?

- ❍ Within the last 7 days
- ❍ Within the last 4 weeks
- ❍ Within the last 6 months
- ❍ Within the last year

How often have you interacted with someone who was thinking about killing him or her self?

- ❍ Never
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ All of the time

Instructions: Please read each statement and then choose the answer that is closest to what is true for you and your beliefs.

	Not at all likely	Slightly likely	Moderately likely	Very likely	Extremely likely
How likely would you be to contact Careline for crisis support at 1-877-266-4357 if you were thinking about suicide?	❍	❍	❍	❍	❍
How likely would you be to contact Careline for crisis support at 1-877-266-4357 if someone you know was thinking about suicide?	❍	❍	❍	❍	❍
How likely do you think it is that suicide is a problem on this campus?	❍	❍	❍	❍	❍

Appendix E

Readiness to Change Measure

This measure was adapted from Banyard, Plante, and Moynihan (2005).

Please read each statement and then choose the answer that is closest to what is true for you and your beliefs.

	Not at all true	Slightly true	Moderately true	Very true	Extremely true
I don't think suicide is a big problem on campus.	❍	❍	❍	❍	❍
I don't think there is much I can do about suicide prevention on campus.	❍	❍	❍	❍	❍
There isn't much need for me to think about suicide prevention on campus, that's the job of the counseling center.	❍	❍	❍	❍	❍
Sometimes I think I should learn more about suicide prevention.	❍	❍	❍	❍	❍
I think I can do something about suicide and am planning to find out what I can do about the problem.	❍	❍	❍	❍	❍
I am planning to learn more about the problem of suicide.	❍	❍	❍	❍	❍
I am really working hard to change suicide.	❍	❍	❍	❍	❍
I am actively involved in projects that deal with suicide on campus other than the current research.	❍	❍	❍	❍	❍
Anyone can talk about changing suicide; I'm actually doing something about it.	❍	❍	❍	❍	❍

Appendix F

Sense of Community Measure

This measure was adapted from Unger and Wandersman (1982).

Instructions: Please read each statement and then choose the answer that is closest to what is true for you and your beliefs.

	Not at all	Slightly	Moderately	Mostly	A great deal
I feel a sense of community with other people on campus (for example, you share interests and concerns with them).	❍	❍	❍	❍	❍
How important is it to you to feel a sense of community with people on this campus?	❍	❍	❍	❍	❍
Some people care a lot about the kind of campus they live on. For others the campus is not important. How important is the campus atmosphere to you?	❍	❍	❍	❍	❍

Appendix G

Decisional Balance Scale

This measure was adapted from Banyard, Plante, and Moynihan (2005).

Please read each statement and choose the answer that best describes how much you believe each statement to be true for you when deciding whether to intervene.

	Not at all true	Slightly true	Moderately true	Very true	Extremely true
If I intervene regularly I can prevent someone from being hurt.	❍	❍	❍	❍	❍
It is important for all community members to play a role in keeping everyone safe.	❍	❍	❍	❍	❍
Friends will look up to me and admire me if I intervene.	❍	❍	❍	❍	❍
I will feel like a leader in my community if I intervene.	❍	❍	❍	❍	❍
I like thinking of myself as someone who helps others when I can.	❍	❍	❍	❍	❍
Intervening would make my friends angry with me.	❍	❍	❍	❍	❍
Intervening might cost me friendships.	❍	❍	❍	❍	❍
I could get physically hurt by intervening.	❍	❍	❍	❍	❍
I could make the wrong decision and intervene when nothing was wrong and feel embarrassed.	❍	❍	❍	❍	❍
People might think I'm too sensitive and am overreacting to the situation.	❍	❍	❍	❍	❍
I could get in trouble by making the wrong decision about how to intervene.	❍	❍	❍	❍	❍

Appendix H

Plan Assessment Measure

Please take a moment to imagine a situation where you might interact with someone who is thinking about killing him or her self.

	Yes	No
Do you have a plan for helping as a bystander (someone who is aware of someone in need of help)?	❍	❍

How confident you are that you could carry out this plan?

- ❍ Not at all certain
- ❍ Somewhat uncertain
- ❍ Neutral
- ❍ Somewhat certain
- ❍ Completely certain

Appendix I

MVP Efficacy Scale

This measure was adapted from Katz (1994).

Please read each statement and choose the answer that best describes your level of agreement with each of the following statements.

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I can help prevent suicide in my community.	❍	❍	❍	❍	❍
It is intimidating to think about trying to stop someone from committing suicide.	❍	❍	❍	❍	❍
Someone at risk would listen to me if I confronted him/her about suicide.	❍	❍	❍	❍	❍
I have the skills to make a safety plan with someone who is suicidal.	❍	❍	❍	❍	❍
The fear of being laughed at would prevent me from helping someone who is suicidal.	❍	❍	❍	❍	❍
I don't think I could stop someone from committing suicide.	❍	❍	❍	❍	❍
I would be comfortable helping my friend to lock up lethal means (e.g. guns, pills, knives).	❍	❍	❍	❍	❍
I believe my peers will listen to me if I speak out against suicide.	❍	❍	❍	❍	❍
I have the confidence to tell someone who is suicidal about help that is available.	❍	❍	❍	❍	❍
It would be too hard for me to confront someone who needs help staying safe from themselves.	❍	❍	❍	❍	❍

Appendix J

Bystander Efficacy Scale

This measure was adapted from Banyard, Plante, and Moynihan (2002).

Please read each of the following behaviors. Indicate how confident you are that you could do each behavior.

	Can NOT do (0 – 29% confident)	Quite uncertain (30 – 49% confident)	Moderately certain (50 – 69% confident)	Very certain (70 – 89% confident)	Can do (90 – 100% confident)
Express my discomfort if someone makes a joke about suicide.	❍	❍	❍	❍	❍
Express my discomfort if someone says that suicide victims are to blame for their death.	❍	❍	❍	❍	❍
Call for help (i.e. 911 or Careline at 1-877-266-4357) if someone threatens to carry out a plan to die.	❍	❍	❍	❍	❍
Talk to a friend who I suspect is considering suicide.	❍	❍	❍	❍	❍
Get help and resources for a friend who tells me he/she wants to die.	❍	❍	❍	❍	❍
Ask stranger who looks very upset at a party if they are OK or need help.	❍	❍	❍	❍	❍
Ask a friend if he/she needs help staying safe from themselves.	❍	❍	❍	❍	❍
Ask a stranger if he/she needs help staying safe from themselves.	❍	❍	❍	❍	❍
Speak up in class if a professor is providing misinformation about suicide.	❍	❍	❍	❍	❍
Criticize a friend who tells me that they told someone to kill themselves.	❍	❍	❍	❍	❍
Do something to help a very drunk person who is talking about suicide at a party.	❍	❍	❍	❍	❍
Get help if I hear of a suicide plan in my dorm or apartment.	❍	❍	❍	❍	❍
Tell an RA or other campus authority about information that might help prevent a suicide even if pressured by my peers to stay silent.	❍	❍	❍	❍	❍

Appendix K

Slaby Bystander Efficacy Scale

This measure was adapted from Slaby, Wilson-Brewer and DeVos (1994).

Please read each item and choose the answer that best describes your level of agreement with each of the following statements. You will be asked about what you think about suicide prevention. Suicide is when people kill themselves. Suicide prevention means attempting to keep suicide from happening or stop suicide before it starts.

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
People's suicidal behavior can be prevented.	❍	❍	❍	❍	❍
There are certain things a person can do to help prevent suicide.	❍	❍	❍	❍	❍
I myself can make a difference in helping to prevent suicide.	❍	❍	❍	❍	❍
People can be taught to help prevent suicide.	❍	❍	❍	❍	❍
Doing or saying certain kinds of things can work to help prevent suicide.	❍	❍	❍	❍	❍
I can learn to do or say the kinds of things that help prevent suicide.	❍	❍	❍	❍	❍
People can learn to become someone who helps others avoid suicide.	❍	❍	❍	❍	❍
Even people who are not affected by suicide can do things that help prevent suicide.	❍	❍	❍	❍	❍
Even when I'm not involved and it's not about me I can make a difference in helping to prevent suicide.	❍	❍	❍	❍	❍

Appendix L

Social Desirability

This measure is from Crowne & Marlowe (1960).

Please read the following list of statements and indicate whether each statement is true or false in terms of your own behavior.

	True	False
Before voting I thoroughly investigate the qualifications of all the candidates.	❍	❍
I never hesitate to go out of my way to help someone in trouble.	❍	❍
It is sometimes hard for me to go on with my work if I am not encouraged.	❍	❍
I have never intensely disliked anyone.	❍	❍
On occasion I have had doubts about my ability to succeed in life.	❍	❍
I sometimes feel resentful when I don't get my way.	❍	❍
I am always careful about my manner of dress.	❍	❍
My table manners at home are as good as when I eat out in a restaurant.	❍	❍
If I could get into a movie without paying and be sure I was not seen I would probably do it.	❍	❍
On a few occasions I have given up dong something because I thought too little of my ability.	❍	❍
I like to gossip at times.	❍	❍
There have been times when I felt like rebelling against people in authority even though I knew they were right.	❍	❍
No matter who I'm talking to I'm always a good listener.	❍	❍
I can remember "playing sick" to get out of something.	❍	❍
There have been occasions when I took advantage of someone.	❍	❍
I'm always willing to admit it when I make a mistake.	❍	❍
I always try to practice what I preach.	❍	❍
I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.	❍	❍
I sometimes try to get even rather than forgive and forget.	❍	❍
When I don't know something I don't at all mind admitting it.	❍	❍
I am always courteous even to people who are disagreeable.	❍	❍
At times I have really insisted on having things my own way.	❍	❍
There have been occasions when I felt like smashing things.	❍	❍
I would never think of letting someone else be punished for my wrongdoings.	❍	❍

I never resent being asked to return a favor.	❍	❍
I have never been irked when people expressed ideas very different from my own.	❍	❍
I never make a long trip without checking the safety of my car.	❍	❍
There have been times when I was quite jealous of the good fortune of others.	❍	❍
I have almost never felt the urge to tell someone off.	❍	❍
I am sometimes irritated by people who ask favors of me.	❍	❍
I have never felt that I was punished without cause.	❍	❍
I sometimes think when people have a misfortune they only got what they deserved.	❍	❍
I have never deliberately said something that hurt someone's feelings.	❍	❍

Appendix M

Literacy of Suicide Scale

This measure is from Calear, Batterham, and Christensen (2012).

Instructions: Please read the following statements and indicate whether you think the statement is true, false, or do not know.

	True	False	Don't Know
Nothing can be done to stop people from making the attempt once they have made up their minds to kill themselves.	❍	❍	❍
If assessed by a psychiatrist, everyone who suicides would be diagnosed as depressed.	❍	❍	❍
Seeing a psychiatrist or psychologist can help prevent someone from suicide.	❍	❍	❍
Most people who die by suicide are psychotic.	❍	❍	❍
Only experts can help people who want to die by suicide.	❍	❍	❍
The drug most commonly found in suicide victims is alcohol.	❍	❍	❍
People who talk about suicide rarely kill themselves.	❍	❍	❍
People who want to attempt suicide can change their mind quickly.	❍	❍	❍
Talking about suicide always increases the risk of suicide.	❍	❍	❍
A person who has made a past suicide attempt is more likely to attempt suicide again than someone who has never attempted.	❍	❍	❍
Media coverage of suicide will inevitably encourage other people to attempt suicide.	❍	❍	❍
Not all people who attempt suicide plan their attempt in advance.	❍	❍	❍
People who have thoughts about suicide should not tell others about it.	❍	❍	❍
Very few people have thoughts about suicide.	❍	❍	❍
People who are anxious or agitated have a higher risk of suicide.	❍	❍	❍
Most people who die from suicide are younger than 30.	❍	❍	❍
Men are more likely to die from suicide than women.	❍	❍	❍
People with relationship problems or financial problems have a higher risk of suicide.	❍	❍	❍
Most people who die from suicide do not make future plans.	❍	❍	❍
If you asked someone directly ‘‘Do you feel like killing yourself?’’ it will likely lead that person to make a suicide attempt.	❍	❍	❍
A suicidal person will always be suicidal and entertain thoughts of suicide.	❍	❍	❍

Suicide rarely happens without warning.	❍	❍	❍
A person who dies by suicides is mentally ill.	❍	❍	❍
A time of high suicide risk in depression is at the time when the person begins to improve.	❍	❍	❍
Motives and causes of suicide are readily established.	❍	❍	❍
Most people who attempt suicide fail to kill themselves.	❍	❍	❍
Those who attempt suicide do so only to manipulate others and attract attention to themselves.	❍	❍	❍
Most people who die by suicide are in a relationship.	❍	❍	❍
Substance abuse is a risk factor for suicide.	❍	❍	❍

Appendix N

Stigma Of Suicide Short Form

This measure is from Batterham, Calear and Christensen (2013b).

Instructions: Please read each term and rate how much you agree that the word is an accurate description of suicide.

	Strongly disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
brave	❍	❍	❍	❍	❍
cowardly	❍	❍	❍	❍	❍
dedicated	❍	❍	❍	❍	❍
an embarrassment	❍	❍	❍	❍	❍
immoral	❍	❍	❍	❍	❍
irresponsible	❍	❍	❍	❍	❍
isolated	❍	❍	❍	❍	❍
lonely	❍	❍	❍	❍	❍
lost	❍	❍	❍	❍	❍
noble	❍	❍	❍	❍	❍
pathetic	❍	❍	❍	❍	❍
shallow	❍	❍	❍	❍	❍
strong	❍	❍	❍	❍	❍
stupid	❍	❍	❍	❍	❍
vengeful	❍	❍	❍	❍	❍

Thank you for participating. Please close your browser to ensure confidentiality.

Appendix O

Figures Showing Analysis Outcomes

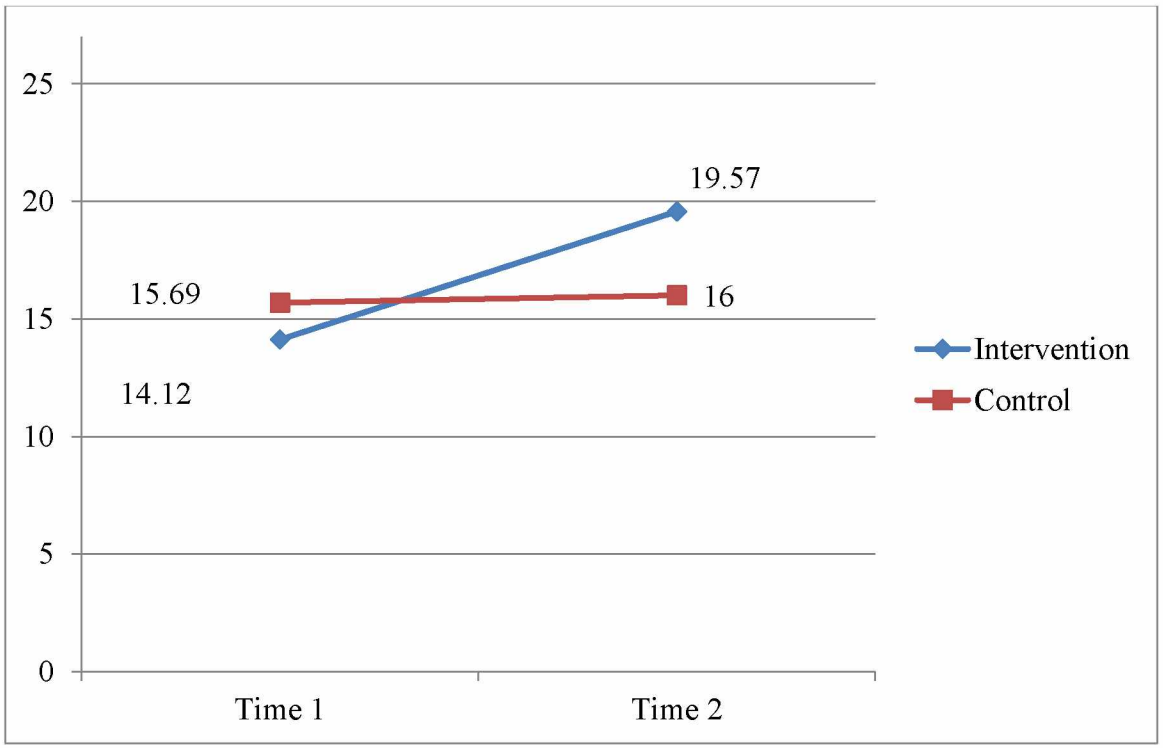


Figure 1. Suicide Literacy. Line graphs showing interaction effect between intervention and control group for outcome variable suicide literacy.

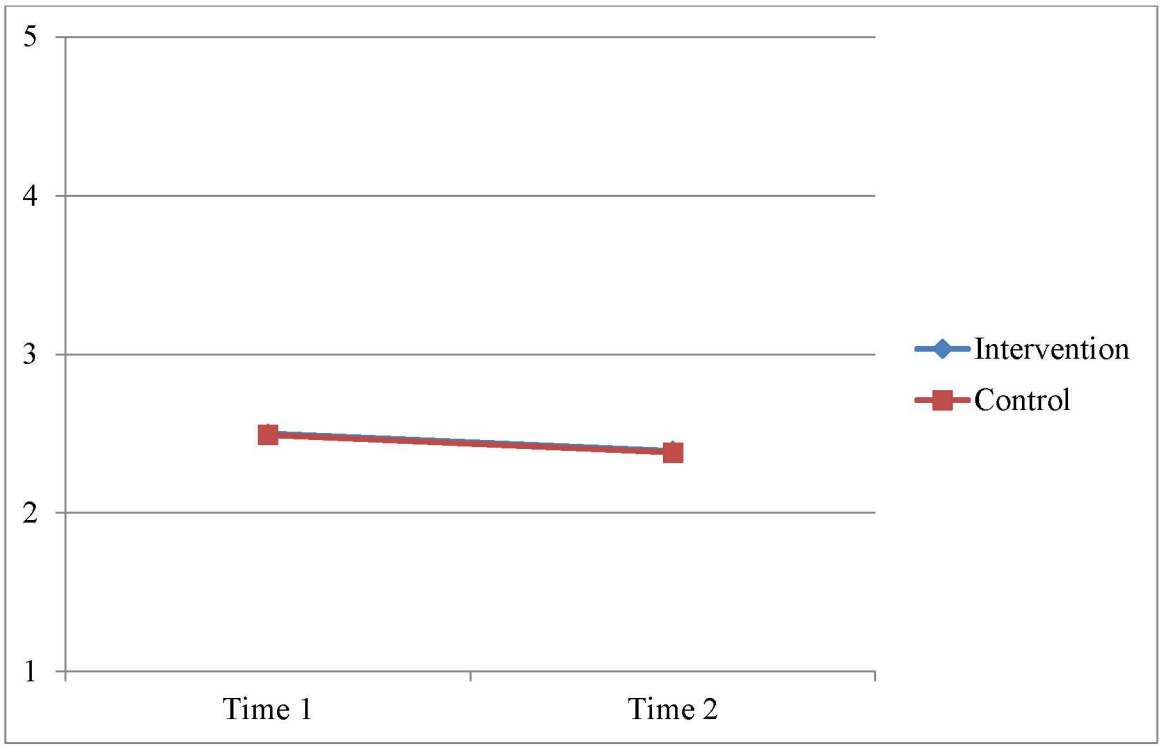


Figure 2. Stigma of Suicide Scale (SOSS): Stigma. Line graphs showing no significant difference between intervention and control group for outcome variable stigma of suicide, subscale stigma.

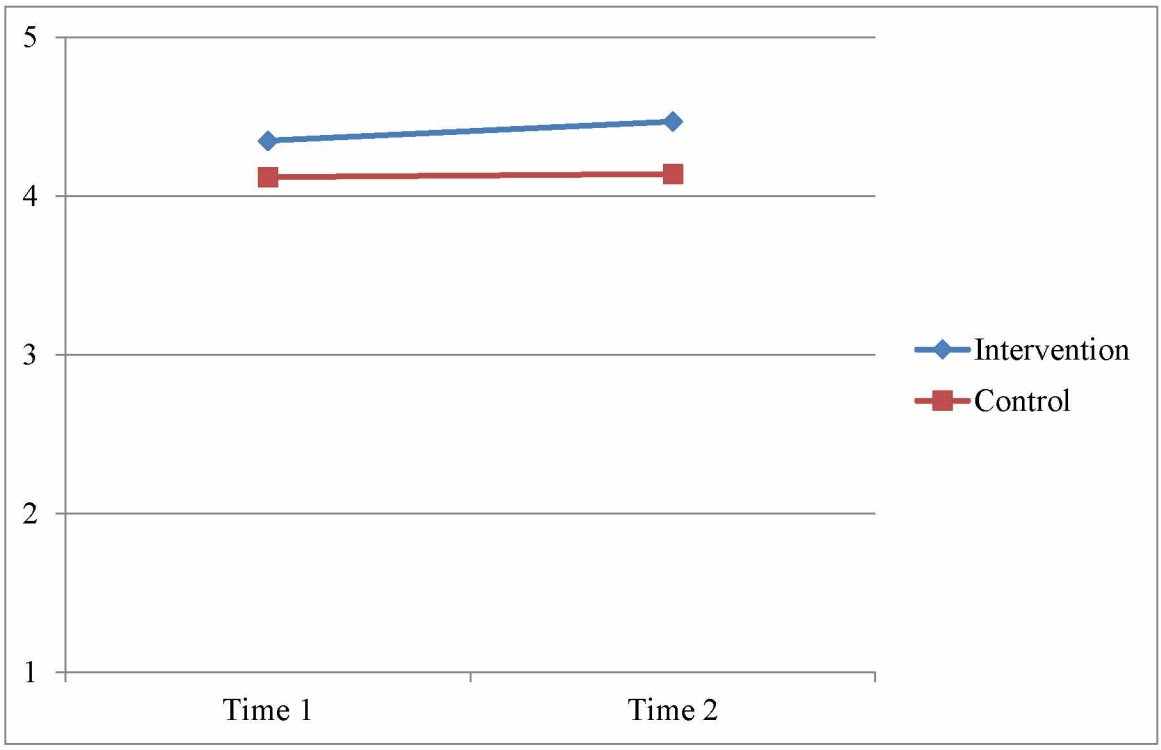


Figure 3. SOSS: Isolation. Line graphs showing no significant difference between intervention and control group for outcome variable stigma of suicide, subscale isolation.

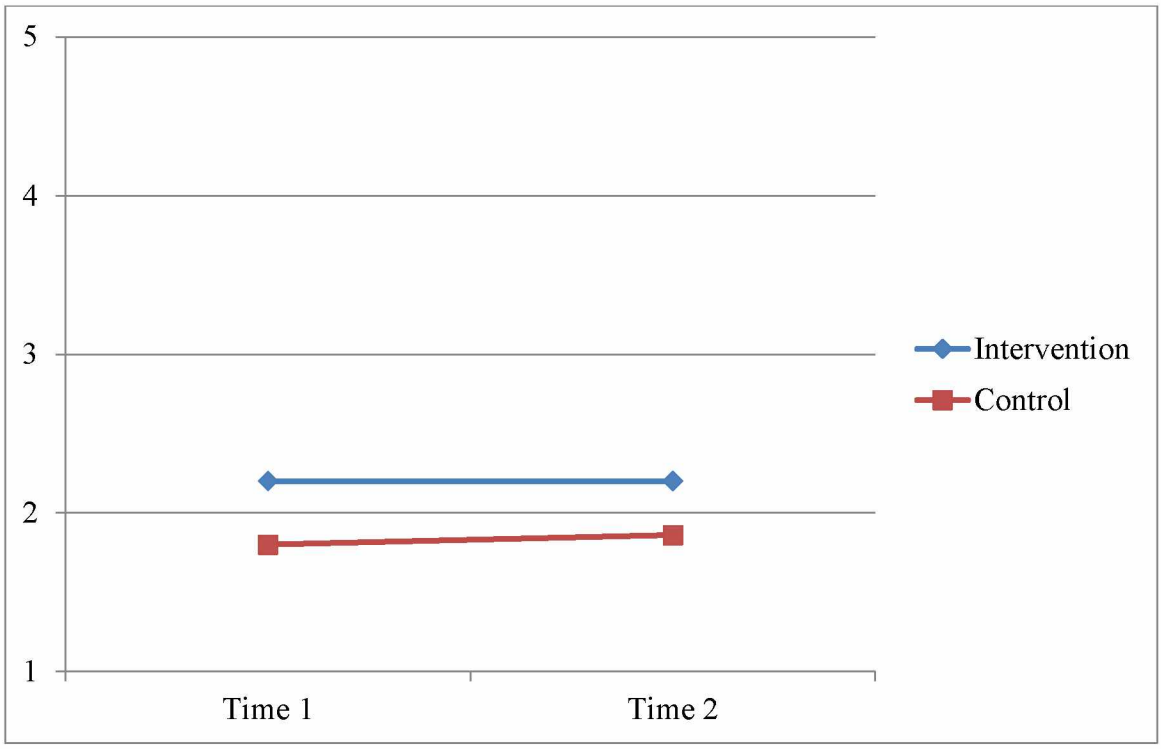


Figure 4. SOSS: Glorification. Line graphs showing no significant difference between intervention and control group for outcome variable stigma of suicide, subscale glorification.

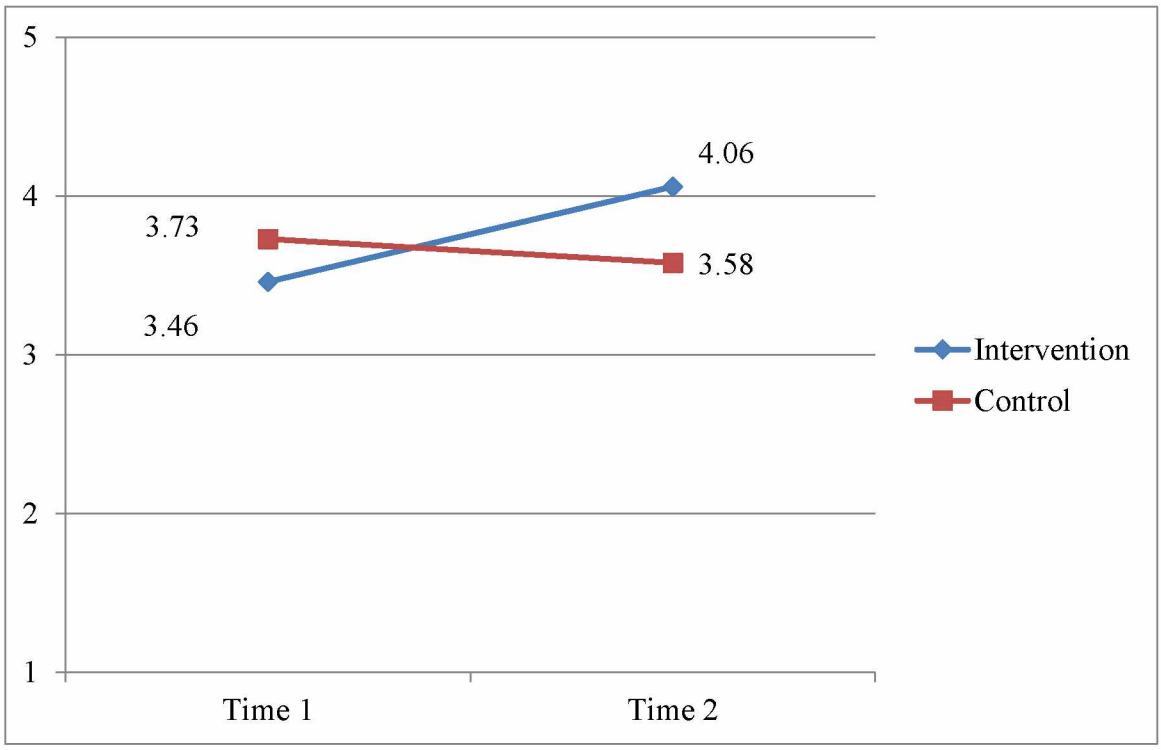


Figure 5. Awareness of Suicide. Line graphs showing interaction effect between intervention and control group for outcome variable awareness of suicide.

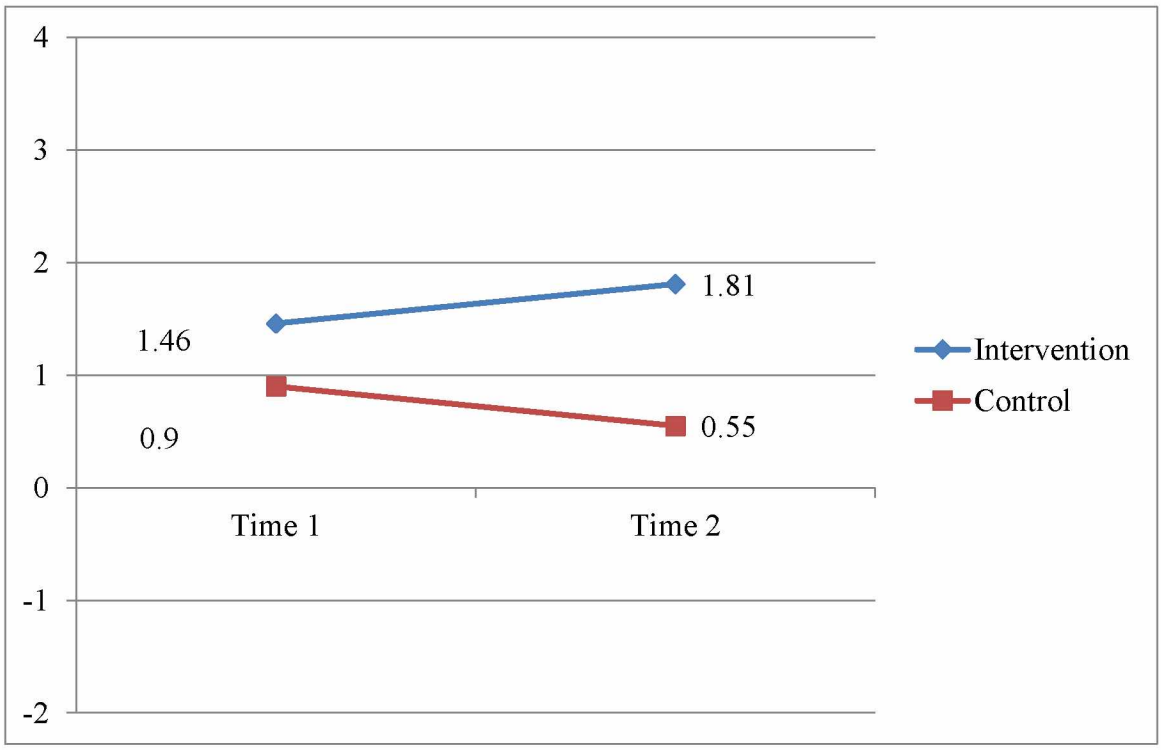


Figure 6. Decisional Balance. Line graphs showing significant increase in decisional balance scores for intervention group when compared to control group.

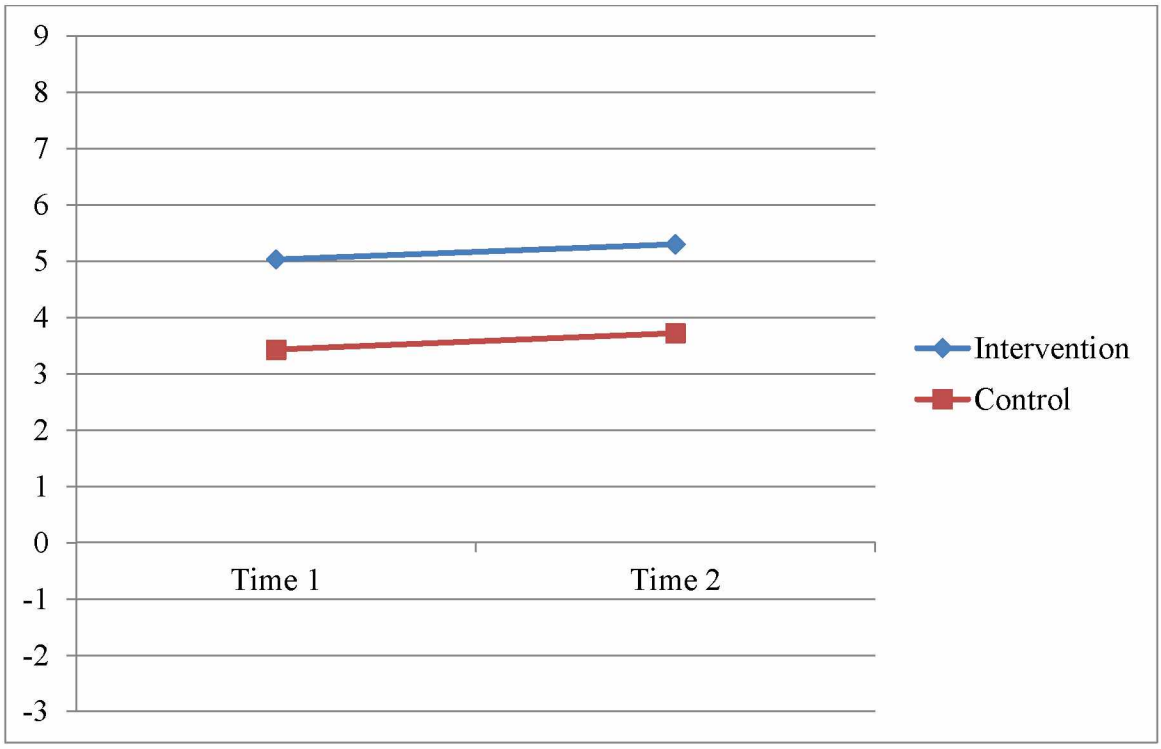


Figure 7. Readiness to Change. Line graphs showing no significant difference between intervention and control group for outcome variable readiness to change.

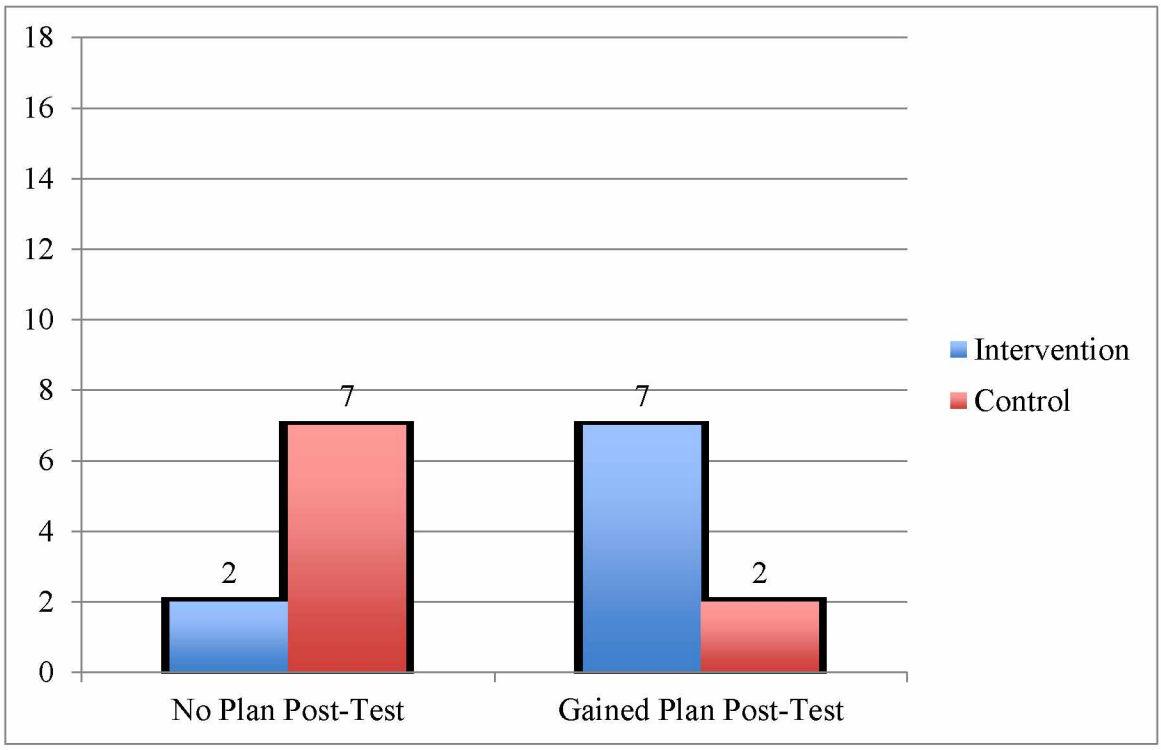


Figure 8. Change for Subset with No Plan. Bar charts showing plan gain for intervention and control group participants who entered the study with no plan for assisting a peer at risk for suicide.

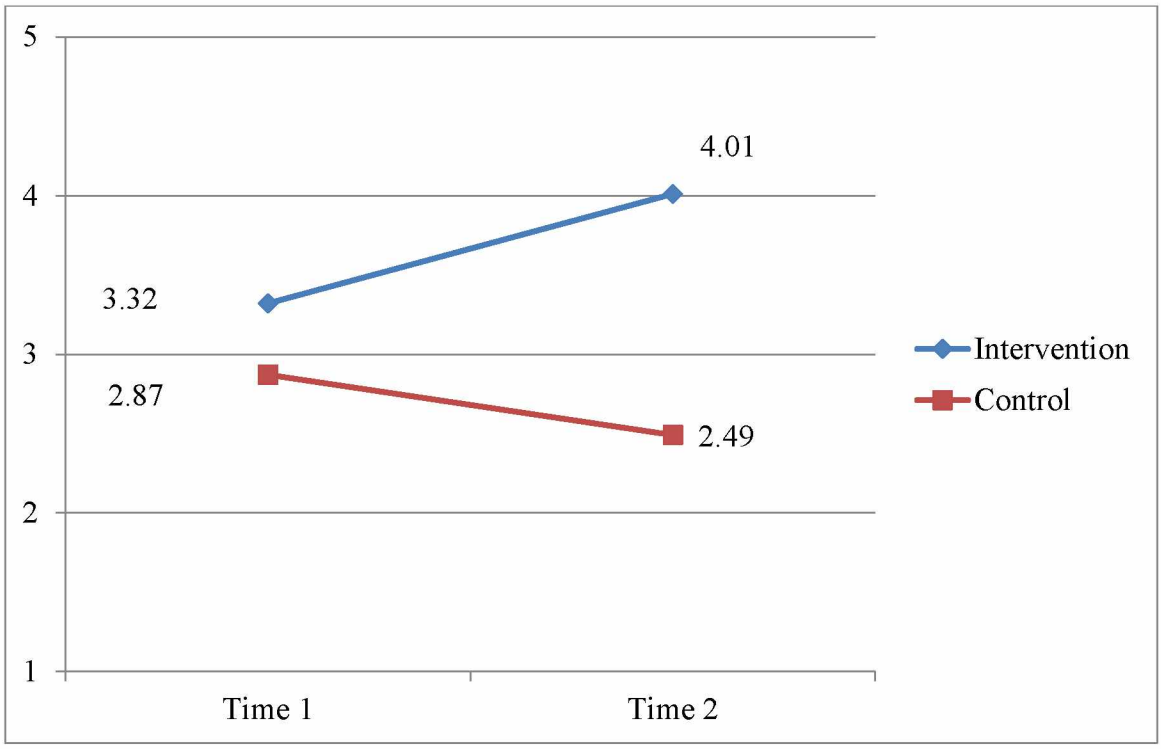


Figure 9. Plan Confidence. Line graphs showing significant increase in plan confidence scores for intervention group when compared to control group.

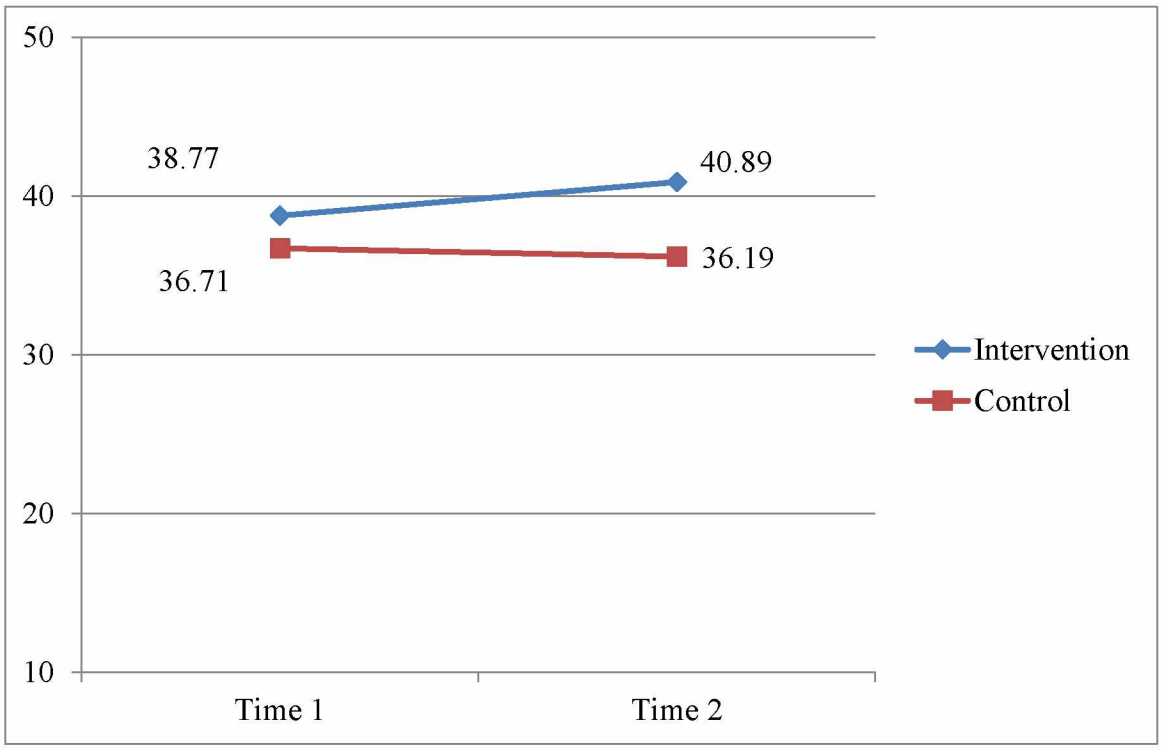


Figure 10. Self-efficacy. Line graphs showing significant increase in self-efficacy scores for intervention group when compared to control group.

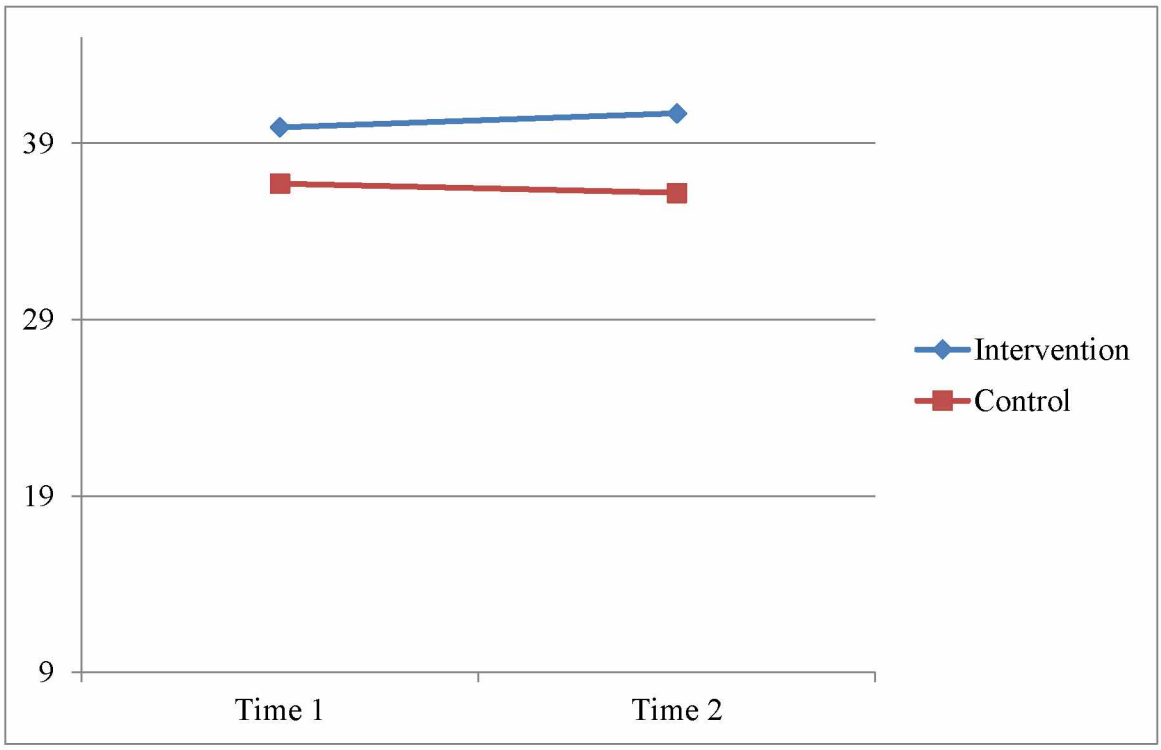


Figure 11. Prevention Efficacy. Line graphs showing no significant difference between intervention and control group for outcome variable prevention efficacy.

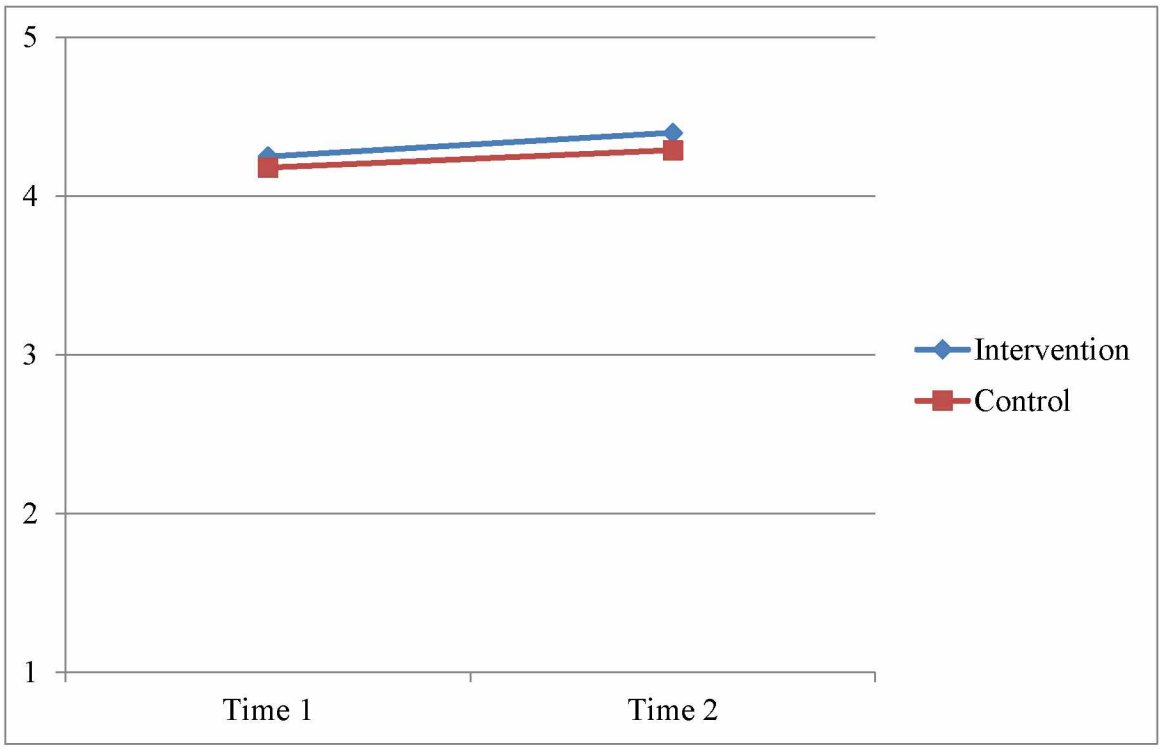


Figure 12. Bystander Effectiveness. Line graphs showing no significant difference between intervention and control group for outcome variable bystander effectiveness.

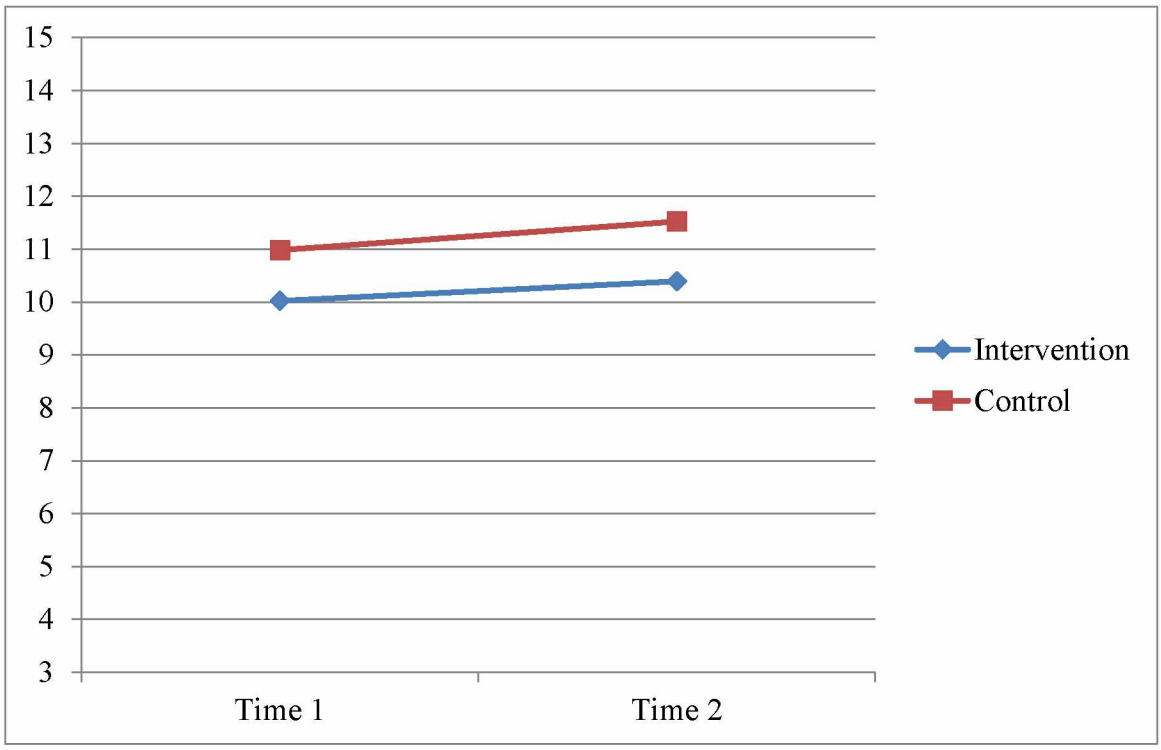


Figure 13. Sense of Community. Line graphs showing no significant difference between intervention and control group for outcome variable sense of community.