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ACCEPTANCE

This dissertation, APPLIED SUICIDE INTERVENTION TRAINING FOR INCLUSIVE POST-SECONDARY EDUCATION STAFF: INTERVENTION SKILL MEASUREMENT, SKILL RETENTION AND STAFF ATTITUDES, by MACKENZIE SUTTLES, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree, Doctor of Philosophy, in the College of Education and Human Development, Georgia State University.

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APPLIED SUICIDE INTERVENTION TRAINING FOR INCLUSIVE POST-SECONDARY
EDUCATION STAFF: INTERVENTION SKILL MEASUREMENT, SKILL RETENTION AND STAFF
ATTITUDES

by

MACKENZIE SUTTLES

Under the Direction of Dr. Dennis Gilbride

ABSTRACT

Suicide is the tenth leading cause of death in the United States and the second leading cause of death for college age students through young adulthood (Centers for Disease Control [CDC], 2016; Turner, Leno, & Keller, 2013). This age group experiences higher levels of depression and anxiety compared to the general population. Within this age group is a relatively under-studied sub-population – individuals with intellectual disabilities (ID) who are increasingly attending college programs and are nearly twice as likely to develop mental health disorders than their peers. There is widespread recognition of the importance of suicide prevention programs for college students, yet there has been no systematic assessment of suicide or suicidal ideation among student with ID attending inclusive post-secondary education (IPSE) programs. According to the Interpersonal Theory of Suicide (Joiner, 2005), individuals at risk are more likely to disclose suicidal thoughts to someone with whom they have a relationship (Barnes, 2001). The current study examined the potential of a standardized suicide prevention curriculum with IPSE staff who work closely with students with mild ID at increasing mental health and suicide awareness.

Applied Suicide Intervention Skills training (ASIST) is a 14-hour, 2-day standardized, and manualized training designed to train people in the helping professions to identify and effectively intervene with people considering suicide (LivingWorks, 2013). In this study, ASIST was evaluated in the context of IPSE staff and their preparedness to deal effectively with individuals with disability who experience suicidal ideation.

This study evaluated the use of ASIST by IPSE staff with both suicidal and non-suicidal clients and examined how ASIST led measurable improvements in IPSE staff sensitivity, awareness, and intervention skills in responding to persons-at-risk, for both suicide and other

significant mental health issues. This study assesses the retention of ASIST skills over a ten-week period. This is the first study to evaluate the utilization and generalizability of ASIST by IPSE staff in practice and over time.

INDEX WORDS: Suicide, Non-Suicidal, Inclusive Post-Secondary Education Program (IPSE), Applied Suicide Intervention Skills (ASIST), Mild Intellectual Disability (MID)

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2020

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DEDICATION

This dissertation is dedicated to my parents (Terry and Ruthanne Suttles), my sister (Molly), my fiancé (Edward) and my grandfather (Frank Skinner). Words cannot express the gratitude and appreciation for your enduring support and unfailing encouragement throughout this wild and crazy journey to my Ph.D.

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Atlanta, GA

2019

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¹ SUICIDE TRAINING: DUAL DIAGNOSIS FOR COLLEGE STUDENTS WITH MILD INTELLECTUAL DISABILITIES

A disability is often defined as it relates to the physical, sensory, cognitive and/or mental disorders that substantially limit one or more major life activity (US Department of Health and Human Services, 2005). An intellectual disability (IDs) is a disability characterized by significant limitations in both intellectual functioning and in adaptive behavior, affecting a range of everyday social and practical skills, originating before the age of 18 (AAIDD, 2019). Intellectual disabilities are characterized by social, cognitive and adaptive skills deficits (Matson, 2009) that are often accompanied by stereotypies and challenging behaviors (Lee, Harrington, Chang, & Conners, 2008; Matson et al., 1997). Young adults with intellectual disabilities (ID; indicated by intelligence quotient (IQ) score of 75 or below and adaptive functioning deficits), are often delayed in reaching milestones such as living independently or reaching financial independence. (Floyd et al. 2009; Gray et al. 2013). The Center for Disease Control and Prevention (CDC, 2019) estimates that 6.5 million persons aged 6 to 64 in the United States have ID with it being the most common developmental disability.

ID is often accompanied by comorbid psychopathologies of various types such as anxiety and depression (Matson, 2009). Studies have shown that individuals with ID experience more health difficulties resulting in high mortality rates, shorter life expectancies and excess premature mortality, with estimates of increased risk ranging between 3 and 18 times higher than those of

the general population (Tyrer et al, 2007; Hollins, 1998; Patja, 2001). Even though studies show these increased rates, the U.S. Public Health Service, has been unable to report on the health status of individuals with ID, one of the most vulnerable populations (CDC, 2016).

Dual Diagnosis: Intellectual Disabilities and Mental Health

The CDC reported in general, about 1 out of every 6 adults will have depression at some time in their life (Kessler, 2005). Depression affects about 16 million American adults every year and can happen to anyone at any age (SAMHSA, 2014). Often, anxiety disorders are comorbid with depression as individuals struggle with intense and uncontrollable feelings of fear, worry and panic (APA, 2013) Young adults are nearly twice as likely to develop such mental health disorders (Meltzer et al. 2000; Goldney et al. 2010; Austin, 2018). Suicide is the third leading cause of death in students aged 10-24, with 90% of those dying by suicide having an underlying mental illness (SAMHSA, 2013). When compared to the general population, young adult with mild intellectual disabilities are estimated to be around three times higher with almost one-third of 19-33-year olds with ID having psychopathology (Einfield, et al. 2006). Even with consistent results from studies indicating the higher rates of mental health diagnoses, there is a lack of research delineating the factors that contribute to mental health disorder in young adults with intellectual disabilities (Austin, 2018). The lack of research, funding, community awareness and treatment accessibility is further complicated by the underdiagnosed and underestimated prevalence rates of mental health disorders in individuals with ID (Hermans et al., 2013).

For young adults with mild ID, the transition from high school to college may present a variety of challenges, and increasing incidences of mental health disorders (Austin, 2018). Bostrom et al. (2018) found students with ID reported significantly more mental health problems and less positive experiences of peer relationships than students without ID. However, there was

no difference in how students with and without ID reported their experiences in the school environment.

During a time when young adults would traditionally be gaining independence, individuals with mild intellectual disability (MID) face additional challenges, making this transition even more difficult (Austin, 2018). Having a mental health diagnosis or difficulty can reduce the ability a person with ID to successfully integrate in a school or work environment by exacerbating already existing difficulties such as communication, self-care, decision-making, social interaction and occupational performance impairments (APA, 2013). This developmental transition to adulthood marks a period of self-discovery and increased independence for individuals between 18 and 30 years old. This time of important decision making often presents challenges for some, especially for those with an intellectual disability (Austin, 2018).

While individuals with ID may be a higher risk, an Australian study found that individuals with intellectual disabilities were more likely to seek mental health services compared to individuals without intellectual disabilities (Howlett et al., 2015; Man, 2020). Treatment for depression often includes medication, cognitive behavioral therapy, and other methods based on psychodynamic approaches, but no large-scale studies have targeted suicidality approaches specifically for people with ID (Merrick et al., 2006). Ali et al. (2013) found there is a general consensus that individuals with ID require adaptation to mainstream practice to meet their needs. Based on the limited research on interventions for suicidal behavior in the ID population, interventions should consider risk factors for suicide and intervene in relation to such factors (Man, 2020). Individuals with intellectual disabilities are less responsive to psychotherapeutic treatments and pharmacological interventions (Wilkins et al., 2010) which often increases caregiver pressure and reduces their well-being (Cadman et al., 2012). Despite

substantially higher rates of depression and anxiety compared to the general population, persons with intellectual disabilities have received little attention in suicide research and literature (Giannini, 2010). These comorbid diagnosis can reduce an individual's feelings of inclusion by exacerbating difficulties in communication, self-care, decision-making, social interaction and occupational performance impairments (APA, 2013). In light of these findings and the increasing numbers of students with ID attending college, there is an increased need for more support and research as suicide is currently the second leading cause of death among college students (Turner, Leno, & Keller, 2013).

Encountering Suicide (Individuals with ID)

The transition to adulthood is a major developmental milestone, typically occurring between 18 and 30 years of age. This is marked as a time of self-discovery and increased independence, when important decisions about housing, employment and further education are made. Understandably, this period can be difficult for some young adults, especially for those with intellectual disabilities. These challenges put young adults with intellectual disabilities at high risk for mental health diagnoses.

Suicide is a rising mental health concern among young adults (CDC, 2015). Approximately 24% of 12-17-year old's have considered suicide and up to 10% have attempted suicide (Shannonhouse, 2017). While suicide is the third leading cause of death after accidental injury and homicide for young adults aged 15-26 (CDC 2015), it is the second leading cause of death among college students. According to Drum et al (2009) up to 48% of college students report thoughts of death with 6% seriously considering attempting suicide over the course of one year. Alarmingly, less than half of suicidal college students seek professional help, which drastically increases the risk for death (Rallis, 2017). A variety of research studies (Stack 1998a,

b; Zhang et al., 2014; Lund, 2016) indicate college students experience a number of proximal risk factors for suicide including depression, relationship problems, academic problems, psychiatric conditions requiring medication and previous hospitalizations.

While suicide is diagnosed across all levels of intellectual disability [i.e., mild (IQ between 50 and 70), moderate, (IQ between 35 and 50) and severe (IQ below 35)], it is most common among persons with mild intellectual disabilities (Giannini, 2010; Walters, 2010;). Researchers have reported a high prevalence of suicide risk factors while recognizing that suicidal ideation and gestures are underreported in this population (Giannini, 2010; Kemp 1999;). In a study by Giannini et al. (1999) identified 233 adolescents ages 4-21 with intellectual disabilities also experiencing suicidal ideations. Of those adolescents, thirty percent of the adolescents were diagnosed with depressive disorders, 6% with post-traumatic stress disorder, and 2% with psychiatric disorders. Walters et al (1999) noted that family discord, bereavement, history of physical or sexual abuse, and medications are also associated with suicidality. Despite substantially higher rates of depression and anxiety compared to the general population, Giannini (2010) concluded that persons with MID have received little attention in suicide research and literature.

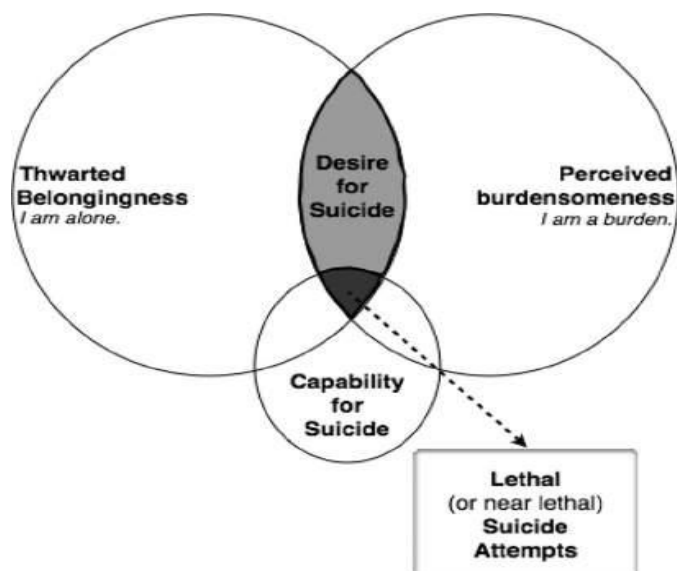
Suicide Preparation in College Campus

The transition to college can be particularly stressful as young adults are challenged with relational and developmental issues. The Interpersonal Theory of Suicide (ITS) (Joiner, 2005; Van Orden et al., 2010) provides a theoretical framework that may explain why individuals die by suicide. According to the ITS, two interpersonal constructs are necessary for suicidal desire to occur, *perceived burdensomeness* and *thwarted belongingness* as well as the capability to engage (Reference Figure 1.). Perceived burdensomeness refers to an individual's belief that he or she is

a burden to others, to the point the other person would benefit from his/her death. Perceived burdensomeness has been observed as a suicide risk factor across diverse samples, including university students (Van Orden, Witte, Gordon, Bender, & Joiner, 2008), deployed military personnel (Bryan, Clemans, & Hernandez, 2012) and older adults (Cukrowicz, Jahn, Graham, Poindexter, & Williams, 2013). This concept can also be applied to situations in which people truly depend on others for continued assistance.

Figure 1.

Assumptions of the interpersonal theory of suicide



Thwarted belongingness refers to feelings of isolation, loneliness and lack of reciprocal caregiving relationship (Stewart, 2017). In ITS, both perceived burdensomeness and thwarted belongingness are critical, proximal risk factors for suicidal desire. While there is no research regarding ITS and individuals with disabilities, it is possible that these individuals experience more thoughts of being a burden and isolation (Khazem, 2015). The Interpersonal-Psychological

Theory of Suicide highlights the importance of relationships and connectedness in reducing suicide risk (Shannonhouse, 2017).

Perceived Burdensomeness

Burdensomeness is defined as a perception that someone is a liability on friends, family, and/or society and generates self-hatred within the individual. According to the Interpersonal Theory of Suicide (Joiner, 2005), increased perceived burdensomeness is a risk factor for suicidal ideation. This perception may stem from the belief that one creates hardship for others by requiring assistance of time, finances and accommodations. Previous research has proposed that BP and depressive symptoms may contribute to suicide ideation in this population (Meltzer et al., 2012). Dempsey et al. (2012) found an association between functional impairment for individuals with physical disabilities and perceived burdensomeness. Individuals with disabilities may believe that their conditions cause a burden to others and in turn, these beliefs of burdensomeness may prompt the development of depressive symptoms and ultimately suicidal ideation. Further research is needed to understand the role perceived burdensomeness may play in the development of suicide ideation in individuals with disabilities (Khazem et al, 2017).

Recent literature heavily focuses on the burden families and caretaker experience rather than the experience of the individual. A US report surveyed 5,000 family members of individuals with ID and found the vast majority of unpaid caregiver's report feeling tired and stressed some or most of the time (Anderson et al, 2011; Robinson et al, 2015). These feelings often report leading to parents feeling considerable burden, defined as “the perception of psychological distress, anxiety, depression, demoralization and general loss of personal freedom attributed directly to caregiving”. Many studies have shown social support may improve feelings of burden for parents of individuals with ID. Robinson (2015) found that, as individuals with intellectual

disabilities age, they may provide more tangible and emotional supports for their parents (Weeks et al., 2008). This greater support from the adult child with ID has been related to lower levels of parents' reported burdensomeness. (Heller et. al., 1997b)

Thwarted Belongingness

During the last century, many countries have adopted a policy committed to the inclusion of people with intellectual disabilities through the closure of institutions and community living (Mansell & Ericsson, 2013; Power, 2013) as well as enhancing the rights of individuals with intellectual disabilities. While these efforts have had many positive benefits, research consistently reveals that many individuals with intellectual disabilities continue to experience isolation, unemployment, poverty and abuse (McVilly, Stancliffe, Parmenter, & Burton-Smith, 2006; Power, 2013). The culture in which we are born and live positions individuals into particular groupings of class, ethnicity, gender, sexual preference, age, disability, etc. These positioning often become internalized by individuals (Bourdieu, 2001). This is significant as it relates to those with marginalized identities that are attached to a stigmatizing label (Goodey, 2015), specifically those with intellectual disabilities. Thus, an individual's identity is both shaped by and is dictated by a sense of belonging, influenced by their own selves and a wider connection in the world (Strnadova et al., 2018).

Many scholars argue that developing a sense of belonging is a necessary but challenging endeavor for individuals from historically marginalized social identity groups (Hurtado & Carter, 1997; Maestas, Vaquera, & Zehr, 2007; Strayhorn, 2012). Common to the literature, higher education research suggests that the development of a sense of belonging is key to academic success, motivation and persistence (Freeman et al, 2007). Studies have examined sense of belonging for students of color (Hausmann et al, 2007, Hurtado & Carter, 1997; Johnson et al.,

2007; Locks, Hurtado, Bowman, & Oseguera, 2008; Núñez, 2009; Strayhorn, 2008/2012), gay students (Strayhorn, 2012) and students from lower-socioeconomic statuses (Ostrove & Long, 2007).

While these are great advances in the literature, little is known about students with intellectual disabilities sense of belonging as they transition to college. Wagner et al., (2005) found that 25% of students with disabilities pursue education after high school. Since the amendment to the Higher Education Opportunity Act (2008), which granted students with intellectual disabilities more access to higher education, we can imply that the percentage of students in higher education has increased. Tinto's model of student retention (1987) suggests that students tend to leave universities if they fail to become integrated into social and academic life while other research indicates belonging is fostered through campus involvement (Hurtado & Carter, 1997; Johnson et al., 2007; Strayhorn, 2012). Similarly, Strnadvoča et al., (2018) found that individuals with disabilities relate the concept of belonging to (a) a relation to place; (b) as being part of a community; (c) as having relationships; (d) as identity. There are many barriers to full inclusion that still exist for individuals with disabilities as they frequently experience prejudice and bullying (Strnadvoča et al., (2018) as well as limited access to social networks, education, and employment (Björnsdóttir and Traustadóttir 2010). As individuals with disabilities continue to experience discrimination and stigma, developing a sense of belonging or place they can be themselves, make choices about their activities and the ways they might want to express themselves, becomes implausible.

In a national survey of counseling centers, less than one-fifth of students who died by suicide had a prior relationship with campus mental health resources (Gallagher, 2009). As the

interpersonal-psychological theory of suicide suggests, students-at-risk are more likely to disclose suicidal thoughts to individuals with whom they have a relationship rather than seeking out a counseling professional (Barnes, 2005). As individuals with intellectual disabilities have the opportunity to participate in higher education and have high rates of depression and anxiety, inclusive post-secondary education programs need to equip staff with the ability to identify the suicide risk of students they regularly interact with (Cimini, 2001; Shannonhouse, 2017).

Inclusive Post-secondary Education Programs

The prevalence of individuals with intellectual disabilities and developmental disabilities in the United States is estimated to range from 4.6 to 7.7 million (Morstad, 2012). The current trend for this population is for continued increase in inclusive education, workplace integration and individualized support programs. Community inclusion has been at the forefront of these initiatives, allowing for more exposure and interaction between individuals with disabilities and the mainstream population (Metzel & Walker, 2001).

As individuals with disabilities age out of high school, there has been a lack of community support and resources. Educational experiences for individuals with intellectual disabilities do not need to end at high school, students with mild ID can be supported in comprehensive, integrated, person-centered, specifically-designed programs in general postsecondary education settings (Grigal, Hart & Weir, 2013) The Higher Education Opportunity Act of 2008 (HEOA; PL 110-315) provides broad authority to the Secretary of Education to waive certain sections of the law that would normally prevent students with intellectual disabilities from attending institutions of higher education (Gibbons, 2015). Because of these changes, students with intellectual disabilities are attending college with increasing frequency (Grigal & Hart, 2010). Students with ID have many of the same motivations for attending

college as their peers without a disability: they are motivated to get a better job, make more money, learn about the world, get an education and learn about things that interest them (May et al, 2017). While students with ID may be less likely to play intramural sports, participate in Greek like and join a student club than their peers, May et al (2017) found that students with ID were more motivated to meet new people, live on their own, and be like their siblings. Think College (2019) database reported that there are currently over 289 identified higher education (PSE) programs in the United State for individuals who have an intellectual disability. This increasing option has become available due to changes in federal funding, access to Title IV aid, as well as state legislation and leadership. With the increasing number of inclusive post-secondary education programs across the United States, individuals with ID have more opportunities than at any other time in history to realize these benefits by participating in an inclusive society thanks to the enactment of various laws (Individuals with Disabilities Education Improvement Act of 2004; Americans with Disabilities Act of 1990).

Higher education provides one of the most important avenues for the development of an individual's personal skills development, vocational skills and social participation (Westling, 2013). There are many advantages of postsecondary education for the individuals attending inclusive postsecondary programs on college campuses. Students report strong academic success as well as rewarding and meaningful social lives (May et al., 2017). Following graduation, students with ID who participated in IPSE experience higher employment, better wages, and increased community engagement (Eisenman, Tanverdi, Perrington, & Geiman, 2009; Migliore, Butterworth, & Hart, 2009). May (2012) found that individuals with ID attending colleges also has a profound effect on individuals without disabilities. Students or peer mentors who take a course with a student with an ID or are involved with an IPSE have been shown to be more

welcoming and have an increasingly more positive opinion of individuals with ID (Bouck, 2017). Overall, IPSE program peer mentors report an increase in their experience of campus unity and social development when students with mild intellectual disabilities are on campus (May & Pittard, 2012).

Disability and Suicide

Enormous gaps exist in the understanding of the relationship between disability and suicide (Giannini, et al. 2010). While there is a lack of national data on suicide and disability, the small number of studies on this topic have shown significantly higher suicide rates among persons with disabilities compared to the general population (Kaplan, 2007). More research is necessary to identify the true rates of suicidal ideation and suicide among this potentially higher-risk subpopulation. Although information on suicidal ideation and suicide rate within the entire population with individuals with ID is limited, focusing on individuals' comorbid diagnosis may be most effective in suicide prevention (Giannini, et al. 2010). While students in inclusive postsecondary programs are experiencing an array of opportunities, they also are exposed to the difficult transitions as young adult's grapple with relational and developmental issues. Underdiagnosis, reduced treatment accessibility and reduced awareness of co-morbid mental health disorders and ID among young adults is problematic.

Applied Suicide Intervention Skills Training (ASIST)

ASIST is a 2-day, 14-hour evidence-based suicide intervention training model used in several states and has been adopted by the Center for Disease Control and the U.S. Armed Forces, and crisis centers across the nation (LivingWorks, 2013). ASIST is an interactive workshop that teaches suicide risk awareness and uses simulations and role-play scenarios to teach suicide intervention (Lang et al., 2013). ASIST addresses reasons for suicide through an

accepting relationship often with a *natural helper*, who is an emotionally invested responder (Wyman, 2008). The goal of ASIST is to “train participants who are willing, ready, and able to provide life-assisting, suicide first-aid” (LivingWorks, 2014, p.2). This goal is achieved by allowing participants to unfold their feelings, attitudes, and beliefs about suicide and learn the Pathway for Assisting Life (PAL). PAL emphasizes three core phases: connecting with suicide, understanding choices, and assisting life. Through each of these phases, the importance of making a connection with the person at risk is strongly emphasized (Snyder, 1971). Snyder emphasized that this interaction “has to be genuine” (p.40). Rogers (2010) found that the quality of the interaction between the caregiver and the person-at-risk is essential and has the potential to reduce the risk of suicide through connection and safety planning. This belief is consistent with the research of Joiner et al. (2006) and the Interpersonal Theory of Suicide.

ASIST intentionally scaffolds the suicide intervention model, teaching content, using simulations to practice each component of the model, followed by role play and group supervision to help participants tie each phase of the training together (Elston, 2019). Having been tested in a variety of settings, ASIST proves to be effective based on pre-post differences in participants confidence responding to a person-at-risk (Rogers, 2010). ASIST trainees show increased SI-skills in their response to simulated suicide interventions (Tierney RJ, 1994) as well as express feeling more competent and confident in approaching a person at risk of suicide (Griesbach, 2009).

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2 EVALUATING APPLIED SUICIDE INTERVENTION TRAINING FOR INCLUSIVE POST-SECONDARY EDUCATION STAFF: INTERVENTION SKILL MEASUREMENT, SKILL RETENTION AND STAFF ATTITUDES

Introduction

With almost one million cases reported per year, which is one person every 40 seconds, (World Health Organization (WHO), suicide is a serious global health problem and the tenth leading cause of death in the wider population throughout the lifespan (WHO, 2016). For individuals between the age of 15 to 29 years old, it is the second leading cause of death and the tenth leading cause of death in the wider population (WHO, 2016). In the last several decades, there has been a 60 percent increase in completed suicides with estimated of 8 to 25 times as many suicide attempts as there are deaths (Moscicki, 2001). Of the percentage that attempt suicide and suicide-related behaviors, between 17-68 percent of individuals who successfully complete suicide have made a previous attempt to take their own life (Cavanagh et al., 1999; Swahn and Potter 2001). Research into suicide has a long and complex history and researchers' understanding of risk factors continues to increase (Lunksy et al., 2012). Depression, severe anxiety, poor education, hopelessness, helplessness, worthlessness, (Hall et al., 1999), social isolation, physical illness and substance use (Mann, 2002; WHO, 2005, 2011; Mann et al., 2011) all attribute to an individual having an increased risk for suicide.

As recent as the 1980s, it was believed that individuals with intellectual disabilities (ID) did not have the cognitive capacity to experience any type of mental health problems (Smiley, 2005). More specifically the cognitive impairment was thought to have acted as a buffer against

suicide-related behavior (Walters, et al., 1995; Merrick et al., 2005, 2006). In a literature review covering 1993-2013, Mollison (2014) found that risk factors for individuals with intellectual disabilities were similar to the general population, including clinical depression, self-harm, unemployment, loneliness, and increased need for support from others. Specifically risk factors for individuals with intellectual disabilities included death of a loved one, relationship discord, trauma, and physical or sexual abuse (Bongar, 2002). Research suggests that individuals with an ID do think about, plan and act on suicidal behaviors, some which have fatal outcomes (Mollison, 2014). Despite substantially higher rates of depression and anxiety compared to the general population, persons with ID have received little attention in suicide research and literature (Merrick et al., 2006).

Inclusive post-secondary education programs (IPSE) are now providing individuals with ID the opportunity to attend college. Research suggests individuals with ID are nearly twice as likely to develop mental health disorders as their peers without ID. If students with ID are more likely to experience mental health and suicide-related behaviors, IPSE staff and support need to be trained in mental health and suicide prevention. Annually, 1,100 college students die by suicide and 23.1% of college students report seriously contemplating suicide (Cimini et al., 2014). Research shows that students at risk are more likely to disclose suicidal thoughts to individuals with whom they have a relationship rather than seek out counseling center services (Shannonhouse et al., 2017). The Interpersonal-Psychology Theory of Suicide highlights this importance of relationships and connection in reducing suicide risk (Joiner, 2005).

As colleges consider the best way to support general students and students with mild intellectual disabilities, they might pursue training *natural helpers*--those “who already have

close communication with students either through their ongoing job role or by virtue of personal qualities, such as warmth and empathy” (Wyman, 2008; p.114). Applied Suicide Intervention Skills Training (ASIST), an empirically supported training, may provide a systemic method to help increase campus-wide identification of at-risk-students that staff interact with regularly (Wyman, 2008). ASIST is a Centers for Disease Control-certified, 14-hour training model that is used nationwide by the U.S. Armed Forces and in crisis centers. ASIST-trained individuals report feeling more competent and confident in approaching a person at risk of suicide (Griesbach, 2009). ASIST has been applied in many settings and evaluations consistently show pre-post differences in trainee confidence as well as increased suicide intervention (SI) skills in their response to simulated suicide interventions. Shannonhouse et al. (2017) found that ASIST fosters knowledge about suicide and results in more helpful intervention attitudes among trainees. ASIST-trained caregivers and staff employ the Pathway for Assisting Life (PAL) model for suicide first aid, an intervention that helps a person-at-risk chose “safe for now” (Lang et al., 2013; Shannonhouse, 2017). “Safe for now” equips the helper to focus on the interaction between the helper and person at risk by engaging in an in the moment intervention, while moving the suicidal person from thoughts of the past to engagement in the future (Rogers, 2010). The ASIST PAL model has three phases *connecting with suicide, understanding choices, and assisting life*. A core component of the ASIST PAL model is the “quality of the interaction between the caregiver and the person-at-risk” (p.9). This intentional interaction between caregiver and person-at-risk helps identify unique protective and risk factors, immediate and long-term needs, and resources and supports to create a customized safe-plan.

There is an increased need for more support and research as more students with ID continue to attend college, and may potentially be at the same risks as their peers (Turner, Leno,

& Keller, 2013). Inclusive postsecondary education staff work closely with students with mild ID, so being ASIST-trained can help programs increase mental health and suicide awareness. In light of this, the current research study addressed the following research questions:

Research Question 1: Is ASIST effective at improving inclusive post-secondary education staff's suicide intervention skills, attitudes, knowledge, comfort, competence, and confidence? Hypothesis 1: ASIST-trained participants levels of skills, attitudes, knowledge, comfort, competence and confidence will be statistically significantly higher than non-ASIST-trained staff.

Research Question 2: Are observed pre–post changes in IPSE staff maintained at a 3-month follow-up? Hypothesis 2: IPSE trained staff observed pre–post changes will be maintained at a statistically significant difference at a 10-week follow up.

Research Question 3: Do IPSE staff who have successfully completed ASIST training report higher numbers of students with ID having suicidal behaviors than their non-ASIST-trained staff? Hypothesis 3: IPSE staff who have successfully completed ASIST training will report a statistically significant higher number of students with intellectual disabilities with suicidal behaviors than their non-ASIST-trained staff.

Research Question 4: Do IPSE staff who have successfully completed ASIST training refer more students to the counseling center and/or report higher rates of mental health concerns in the students with whom they interact? Hypothesis 4: IPSE staff who have successfully completed ASIST training will report statistically significantly more students referred to the

counseling center and/or report higher rates of mental health concerns in the students they interact with than non-ASIST trained staff.

Method

This is a quasi-experimental study with a matched comparison group. Experimental and comparison participants were matched based on the characteristics of the IPSE program they worked for, their position/role within the program, the number of students in the program, and hours of direct contact with students. Approval from the institutional review board (IRB), at researcher's institution, was secured prior to the start of the study.

Participants

A *priori* power analysis conducted using G*Power 3.1 indicated that a minimum sample size of 34 would be sufficient to predict a medium effect size with two groups. This assumed the model would be tested at $\alpha = .05$ and $1 - \beta = .80$. This study employed purposeful sampling instead of randomization, therefore contamination, self-selection bias, and sample homogeneity are potential limitations.

Experimental Group

A list of IPSE programs contacts was obtained from the Southeast Postsecondary Education Alliance (SEPSEA) website in order to recruit for the experimental group participants. Interested participants filled out an inclusion survey followed by a demographics survey. Twenty participants that had participated in 14-hour, 2-day Applied Suicide Intervention Skills Training (ASIST) workshop in October 2019 agreed to participate in post-training surveys. The identified participants were asked to participate in a survey at two different time points over 10 weeks. The

researcher requested permission from each participant for their pre- and post-ASIST training evaluation data to use as the first data collection time point.

Comparison Group

Comparison group participants were recruited through the list of Southeast IPSE program contacts as well as recommendations from the experimental participants (i.e., IPSE ASIST-trained staff). In order to meet criteria for the comparison group, participants indicated they were staff at an IPSE program in the Southeast, worked directly with IPSE students, and did not completed an intensive, formal suicide training program. Every effort was made to recruit comparison group participants with job titles, student contact levels, and training/education (except for ASIST, or other formal suicide training) similar to the experimental group participant. As an incentive, comparison participants were offered the opportunity to participate in an ASIST training in the Spring of 2020. In order to limit attrition over the 10 weeks, comparison and experimental participants were offered \$5 per time period completed.

The participants included 40 staff members from 18 IPSE programs in the southeast. Over the three data collection points, 19 experimental participants completed the survey all three times and two completed the survey two times. A total of 11 comparison participants completed the survey all three times, and six completed the survey twice, and three completed only the first survey.

As displayed in Table 1., the 40 participants ranged in age from 19 - 63 (*Mean* = 32, *Mode* = 23, *SD* = 10.44). Females comprised the majority of participants; 85.4% (n = 35) of the sample were women, while men represented 9.8% (n= 4) of participants and 2.4% (n = 1) identified as transgender. In terms of race and ethnicity, approximately 78% (n = 32) self-identified as Caucasian/White, 14.6% (n = 6) identified as Black or African American, 4.8% (n =

2) were Caucasian/white/biracial, and one individual identified as Hispanic or Latino.

Straight/heterosexual participants comprised 87.8% (n = 36) of the sample, with 9.8% (n =4) of participants were bisexual/pansexual/omni-sexual, and 2.4% (n = 1) identified as gay/lesbian.

Additionally, 12% (n = 5) of participants identified as living with a chronic illness or disability (CID), while the majority of participants [88%, (n = 36)] did not. Across both experimental and comparison groups, 16 different programs were represented from North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama and Arkansas. Out of the sixteen programs, the mean year the programs were established was 2014 with an average of 20 students in the programs.

Thirty-eight out of the 40 participants responded to the demographic information questionnaire (Appendix A). Out of the 38 responses, there were 8 program directors, 11 program coordinators, 2 academic teachers/lectures, 8 graduate research assistants, 6 peer mentors, and 3 identified as other (e.g., program assistant, data specialist, and social work intern). Educational level was varied with 8% (n=3) of participants reporting they had an associate degree, 42 % (n=16) had a bachelor's degree, 37% (n=14) had a master's degree and 10% (n=4) had a Doctorate degree.

The average participant worked 29 hours a week and reported having contact with 15 students per week. Participants reported having an average of 10 direct (i.e., one-on-one) contact hours with IPSE students per week and 6.25 group contact hours per week. The types of student contact varied, 82% of the participants were involved in individual planning meetings with students, 58% of the participants teach in the classroom, 42% were involved in extracurricular

activities, 34% individually tutored IPSE students, 29% were involved in advisement, check-ins, internship support and goal setting, and 16% were involved in fitness activities (Table 2).

Table 1
Participant Demographic Information

		Comparison (N = 20)		Experimental (N = 21)	
Age					
	Range	22-45		19-63	
	M	33		31	
	Mode	25		23	
	SD	7.7		12.7	
Gender					
		N	%	N	%
	Female	14	70%	21	100%
	Male	4	20%	0	-
	Transgender	1	5%	0	-
Sexual Orientation					
	Heterosexual	17	86%	19	90
	Homosexual/Gay	1	5%	0	-
	Pansexual/Omnisexual	1	5%	1	4.7%
	Other	1	5%	1	4.7%
Racial/Ethnic Identification					
	Black/African American	3	15%	3	14%
	Caucasian/White	16	80%	16	76%
	Caucasian/White, Biracial	1	5%	1	4.7%
	Hispanic or Latino	0	-	1	4.7%
Ability Status					
	Identifies with a Chronic Illness, Medical Condition or Disability	1	5%	4	19%
	Does not identify with a Chronic Illness, Medical Condition or Disability	19	95%	17	81%

Table 2
Activity Breakdown Per Week with IPSE Students

Activity	N engaged in activity	Percentage
Individual Planning Meetings	31 participants	82%
Teach in the Classroom	22 participants	58%

Extracurricular Activities	15 participants (9 group, 6 individual)	42%
Individual Tutoring	13 participants	34%
Group Tutoring/Study Hall	12 participants	32%
Other (Advisement, Internship support/meetings, goal setting)	11 participants	29%
Fitness Activities	6 participants (4 group, 2 individual)	16%

Participants were asked about their prior suicide training experience and 58% (n=22) reported no prior suicide training, 21% (n=8) had taken an education class the included content related to suicide and 8% (n=3) indicated other (e.g., Question, Persuade and Refer (QPR) Training, continuing education course).

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Ability Status					
Identifies with a Chronic Illness, Medical Condition or Disability	1	5%	4	19%	
Does not identify with a Chronic Illness, Medical Condition or Disability	19	95%	17	81%	

Procedures

All participants completed a 14-item informational survey electronically to confirm eligibility for the study. The informational survey included: (1) Name; (2) Email Address; (3) IPSE College Affiliation; (4) IPSE Program Name; (5) Year IPSE Program was Established; (6) IPSE Job Title; (7) Number of students in IPSE Program; (8) Hours worked per week for IPSE; (9) IPSE student caseload; (10) Individual Direct Hours with IPSE Students per week; (11) Group Direct Hours with IPSE Students per week; (12) Type of contact with IPSE students weekly; (13) Formal Degree Received; (14) Prior suicide trainings. Responses to the informational survey were used to match experimental and comparison participants (Appendix A).

Over the 10-week period, participants were asked to complete a behavior survey (Appendix D) and an activity suicide survey (Appendix E) on Qualtrics at two different time points. The behavior survey gathered information regarding students' risk of suicide and behaviors over the past 5 weeks. The activity survey collected information regarding number of students seen over the past five weeks, whether students had sought out any mental health services, and if there were any presenting concerns over the past month. Collecting data two times over the duration of 10 weeks allowed for a more comprehensive view of the number of potentially suicidal students IPSE staff encountered closer to real time.

Instruments

Demographic Survey: Questions in the demographic survey are adapted from the ASIST pre-and-post-training survey questionnaire (SIRI-2; Neimeyer et al., 1997; Elston, 2019), which was adapted from the Youth Suicide Prevention Program: Annual Evaluation Report 2001-2001(ORS, 2002). These data were only collected at time 1 (see Appendix B for this survey).

Two additional instruments were used to investigate the effect of the ASIST training: The Suicide Intervention Response Inventory – Second Edition (SIRI-2; Neimeyer & Bonnelle, 1997) and the pre- and post-follow-up training surveys (Organizational Research Service (ORS), 2002).

Suicide Intervention Response Inventory – Second Edition

This 24-item scale assesses suicidal intervention (SI) skills by evaluating the appropriateness of a natural supporter's response to a person at risk of suicide. Participants are provided with 24 statements that a person at risk of suicide may make, each having two possible natural helper responses that participants must rate from –3 to +3. The total score is the accumulation of divergence between the ratings of the participants and those of an expert suicidologist panel (lower SIRI-2 scores represent higher SI skills).

The 24 questions are excerpts from counseling sessions and give the test-user two areas for potential responses. SIRI-2 has been described as a “well-validated and reliable measure of ability to intervene with suicidal [persons]” (Fenwick et al., 2004) and has been used extensively in the SI literature (e.g., Pasco, Wallack, Sartin, & Dayton, 2012) with college Resident Assistants (Pasco et al., 2012), high school students (Stuart et al., 2003), K-12 faculty/staff (Shannonhouse et al., 2017), psychiatric nurses (Fenwick et al., 2004), and in public health studies (Scheerder, 2010). The Neimeyer and Bonnelle (1997) SIRI-2 validation study explored

construct and discriminant validity, and their assertions were corroborated by a large study of Dutch health workers ($N = 980$; Scheerder, Reynders, Andriessen, & Van Audenhove, 2010). In that study, Scheerder et al. (2010) compared SIRI-2 scores with participant demographics, helper vocation (e.g., nurses, crisis line responders), and training and practical experiences, noting acceptable internal consistency ($\alpha = .75$) and evidence of construct validity.

The SIRI-2 is a revision of the original ceiling-limited SIRI which asked participants to choose the better of two responses (Neimeyer & Bonnelle, 1997). After studies with K-12 school staff (Shannonhouse, Lin, Shaw, & Porter, 2017) and university employees (Shannonhouse, Lin, Shaw, Wanna, & Porter, 2017), a new potential scoring limitation to the SIRI-2 was identified. Studies found that some participants scored worse on the SIRI-2 after ASIST training; participants “overestimated the helpfulness or harmfulness of responses at posttest, becoming more discrepant from the average expert scores” (Shannonhouse, Lin, Shaw, & Porter, 2017, p. 11). Although this scoring pattern has now been observed in two separate populations, other pre-post SI studies using the SIRI-2 (e.g., Pasco et al., 2012) have neither noted this effect nor parsed score accumulation in this manner. To address this, Shannonhouse et al, (2017) proposed that each response is rated from +3 to -3, with the value compared to criterion ratings from suicide prevention experts. The final SIRI-2 score is the sum of those differences that display the skill level of the participants (lower SIRI-2 scores indicate higher SI skills). This revised scoring protocol was utilized in this study.

The Pre and Post Training Surveys

The Pre- and post-training surveys were adapted from tools used in the Youth Suicide Prevention Program (Organizational Research Service [ORS], 2002). These surveys are 15- and

18-item self-report scales that are designed to assess an individual's (a) attitude toward suicide (e.g., People with intellectual disabilities have the right to suicide); (b) knowledge about suicide (e.g., Suicide warning signs...); and (c) level of comfort in responding, competence at responding, and confidence at attempting response to a person at risk of suicide (e.g., How comfortable would you feel helping this suicidal person?).

Although these constructs are commonly discussed in the SI literature, there is no consensus on how to assess them.

Attitudes Toward Suicide Scale (Eskin, 2004) – Eskin's scale consists of 24 statements using a 5-point rating scale from 1 (strongly disagree) to 5 (completely agree). This scale measures six factors (1) Acceptability of suicide; (2) suicide as a sign of mental health; (3) the belief that the persons who commit suicide will be punished after death; (4) Communicating psychological problems; (5) Hiding Suicidal behavior; (6) suicide as a solution. (Appendix C)

Table 3
6 Factors in Attitudes Toward Suicide Scale (Eskin, 2004)

Factors	<i>H, p and a</i>	Sample Question
Acceptability of suicide	$H=.59; p = .91; a = .89$	Someone suffering from an incurable illness has the right to kill him/herself
Suicide as a sign of mental health	$H=.83; p = .93; a = .92$	People who attempt suicide are mentally ill
The belief that the persons who commit suicide will be punished after death	$H=.82; p = .94; a = .93$	People who think and plan suicide are going to be punished in the other world
Communicating psychological problems	$H=.61; p = .86; a = .84$	People should tell their psychological problems to their friends
Hiding Suicidal behavior	$H=.89; p = .91; a = .90$	Families whose daughter or son attempts suicide should hide this from their neighbors

Suicide as a Solution

$H=.31; p = .46; a = .42$

The matter of suicide should be discussed openly among friends

Suicidal Behaviors Survey. This data collection survey was used with the ASIST activity survey to track the increased awareness and behaviors of IPSE students. Participants were asked to respond “yes” or “no” This survey was adapted a study from Elston et al. (2019) in which counselors in training tracked their client’s behavior. This survey addressed three questions: (1) Thinking back over the last two weeks, did any of your students appear at risk of suicide? (2) Did any of your students say they were thinking of killing themselves/ending their life/dying by suicide? (3) Did any of your students’ complete suicide? (Appendix D)

IPSE Staff Activity Survey. Participants were asked to report the number of students they saw during the prior month and issues/disorders observed by entering numeric values. This survey was adapted from Elston, et al. (2019) study that measured counselor’s behavior based on client presentation. This data collection survey tracked the mental health concerns, needs and resources of IPSE students by asking (1) How many students with ID did you work with over the last month? (2) If yes, for what reason? (3) Please indicate which mental health concerns your student with ID presented with over the last month:

- | | | | |
|------------------------------|--|-----------------------------|---|
| (a) ADHD | (b) Anxiety | (c) Bipolar Disorder | (d) Depression |
| (e) Developmental Transition | (f) Disability Or Chronic Health Condition | (g) Feeding/Eating Disorder | (h) Homicidal |
| (i) Learning Disability | (j) Personality Disorder | (k) Relational Issues | (l) Schizophrenia/Severe Mental Illness |
| (m) School Concerns | (n) Spouse/Partner Issues | (o) Substance-Related And | (p) Suicide |

- (q) Trauma/PTSD (r) Work/Employment Issues (s) Addictive Disorders, Other, Please Specify

For these questions’ participants were asked to enter a numeric response (see Appendix E). At the end of the survey, participants had the option to provide additional open-ended comments to ensure a full description of students’ mental health concerns over the last 4 weeks.

Data Collection

Data collection took place beginning the second week of October 2019 and concluded ten weeks later in the third week of December 2019. In October, participants responded to the demographic survey, the SIRI-2, the ORS (2002), and Attitudes Toward Suicide Scale (Eskin, 2004). During the second data collection, participants completed the Suicide Behaviors Survey and the ASIST Activity Survey (Elston, 2019). The last data collection consisted of the Suicide Behaviors Survey and the ASIST Activity Survey, SIRI-2, ORS, Attitudes Toward Suicide Scale.

Table 4
Data Collection Timeline For Experimental and Control Group

October 21	November 11	December 9
Demographics	Suicidal Behaviors Survey	Suicidal Behaviors Survey
SIRI – 2	ASIST Activity Survey	ASIST Activity Survey
Pre & Post Survey (ORS)		Retention of Skills (SIRI, ORS)
IDAS (Attitudes Survey)		IDAS (Attitudes Survey)

The demographics and data collection were formatted into a questionnaire using Qualtrics, a secure, online survey platform, which generated a link for the experimental group and a separate link for the comparison group participants. At the beginning of each survey, participants had to consent to participate in the survey by checking “agree”. Participants completed the demographic and data collection tools for survey one. Reminder emails were sent

to participants 24 hours after, and again three days after each data collection period. Initial data were gathered via a link on the following dates: (1) October 21, 2019, (2) November 11, 2019 (3) December 9, 2019. On December 9th, participants were asked to fill out the ASIST feedback form to ascertain the social validity of ASIST with IPSE programs. Participants were able to provide additional open-ended comments at the end of the feedback survey.

In an effort to avoid attrition, an incentive was provided to participants to complete all three data collection points. Participants were offered the option to receive monetary incentive of \$5 per survey, for a total of 15 dollars if they completed all three surveys over the duration of the fall semester. Either an Amazon gift card or a charitable donation to the Georgia Crisis and Access Line were available as options. At the conclusion of the study, the researcher used the unique identification code to document the completion of the surveys during the course of the semester and provided electronic gift cards or the charitable donation to participants.

Analysis

This study used a quasi-experimental research design consisting of pre-, post-, and follow-up assessments with training and control groups. Prior to data analysis, descriptive statistics were obtained to identify outliers, assess for normality, and test for kurtosis and skewness. Descriptive statistics, t-tests, analysis of variance (ANOVA), and repeated measures ANOVA, were used to analyze participant demographics and explore differences over the three data collection points. The following analyses were used to address each research questions:

Research Question 1: Is ASIST effective at improving inclusive post-secondary education staff SI skills, attitudes, knowledge, comfort, competence, and confidence?

Hypothesis 1: ASIST-trained IPSE staff will have higher skills, attitudes, knowledge, comfort, competence and confidence regarding suicide than those who have not been ASIST-trained.

A univariate analysis of covariance (ANCOVA) was conducted to analyze score changes and explore training effect from pre- to posttest for experimental and control groups on the SIRI-2 and the ORS. Among experimental participants three had prior experiences in suicide prevention training including an intensive suicide workshop that was at least eight clock hours (N=1), training in suicide through a course lesson in an education class (N=2), and thus we used one-way analysis of variance (ANOVA) to explore whether prior experience influenced the ASIST training effect.

We conducted repeated measures analysis of variance to explore training effect pre-post and at retention (i.e., for the 13 control and 20 experimental participants who provided follow-up data) (Fields, 2013). Partial eta squared was calculated as the effect size indicator to represent the magnitude of treatment effect differences. Skewedness and kurtosis coefficients for pre-test data fell between -1.29 and 2.8, indicating no violation of normality. Means and standard deviations of each group on each variable are presented in Table 1.

An ANOVA was performed with the independent variable as time and treatment condition while the dependent variables were participants' SI skills (measured by the SIRI-2); attitudes toward suicide; knowledge about suicide; and level of comfort, competence, and confidence at responding to a person at risk (measured by training surveys and follow up surveys). The response dates were prior to ASIST training, post ASIST training and at a 10-week follow-up post ASIST training.

Due to the multiple statistical analyses in this study, the Bonferroni procedure was used, with $p < .05$ applied as the cutoff for statistical significance to diminish Type 1 error possibility (Schochet, 2009).

Research Question 2: Are observed pre–post changes maintained at a 3-month follow-up?

An analysis of variance (ANOVA) was used pre/post to explore training effect retention over the three months using ORS and the SIRI-2 with the 30 experimental participants who provided follow-up data.

Hypothesis 2: ASIST-trained IPSE staff who have lower rates of SIRI-2 scores (indicating higher SI skills) after the training will have higher rates of skill retention at the 3-month follow up.

Research Question 3: Do IPSE staff who have successfully completed ASIST training have higher reports of students with intellectual disabilities with suicidal behaviors than their non-ASIST-trained peers?

A One-way ANOVA to test the difference between ASIST and non-ASIST-trained participants was conducted to test this research question.

Hypothesis 3: ASIST-trained IPSE staff will have higher reports of suicidal students than those who have not been ASIST-trained.

Research Question 4: Do IPSE staff who have successfully completed ASIST training have higher reports of students referred to the counseling center and/or report higher rates of mental health concerns in the students they interact with.

A one-way ANOVA to measure the difference between ASIST-trained staff and those who are not ASIST-trained who refer students to the counseling center and/or identify health concerns in their students was utilized to test this research question.

Hypothesis 4: ASIST-trained IPSE staff will have reported more IPSE students to counseling than those who are not ASIST-trained and those who have had ASIST training will report higher levels of other mental health concerns among their students than control participants who have not had ASIST training.

Results

Preliminary Comparison of Experimental and Control Groups and Missing Data

Overall, as indicated in Table 1, the experimental group consisting of 21 participants and control group made up of 19 participants were comparable in terms of age, race, gender, sexual orientation, IPSE role/position and prior suicide training. Missing data and outliers were evaluated. Data were cleaned and analyzed to explore normality; no concerns were identified. The data was explored to understand how participants responded and if any patterns of missing data were found. Forty-one participants were recruited and filled out the inclusion criteria, but one control participant did not record any data over the ten-week period so a total of 40 participants were included in the data analysis. Five control participants did not fully complete one of the three data ASIST collection surveys and two experimental participants did not complete the follow up ASIST retention survey ten weeks after the ASIST training. The two experimental participants were excluded from the retention data set as they did not respond to 4 or more survey questions.

For participants who were not found to have a pattern of missing data, missing data was addressed using mean imputation (Rogers et al, 2019; Sterner, 2011; Tabachnick & Fidell,

2007). Data were transformed in SPSS using the mean score for the missing item. In order to assess for any significant differences, the original item was compared to the transformed item using paired sample *t* tests. The *t* tests found that the standard errors of difference were 0, meaning there was no significant difference in the original and mean imputation transformed item (Rogers, 2019).

Research Question 1

Research question one aimed to understand if ASIST is effective at improving inclusive post-secondary education staff's suicide intervention skills, attitudes, knowledge, comfort, competence and confidence.

Suicide Intervention Skills

A one-way repeated measures ANOVA was conducted to compare the effect of time on suicide intervention skills. The new SIRI-2 scoring (Shannonhouse, 2018) was utilized and revealed statistically significant interaction effect between treatment conditions across time ($F[2,16] = 6.529; p=.008; \text{Wilk's Lambda} = .551, \text{partial } \eta^2 .449$).

Attitudes about suicide

Table 5

Mean and Standard Deviation – Knowledge About Suicide (Pre & Post Survey; ORS)

Experimental

	Facts about suicide prevention...		Suicide warning signs...		How to ask someone about suicide...		How to get help for someone who may be suicidal...		Information about local resources for help with suicide...	
	M	SD	M	SD	M	SD	M	SD	M	SD
Pre	2.68	0.67	3.05	0.91	2.58	1.07	2.79	0.92	2.84	1.07
Post	4.68	.48	4.84	0.37	4.89	0.32	4.79	0.42	4.32	0.75
Retention	.26	0.65	4.53	0.51	4.58	0.61	4.58	0.61	4.21	0.79
Control										
	Facts about suicide prevention...		Suicide warning signs...		How to ask someone about suicide...		How to get help for someone who may be suicidal...		Information about local resources for help with suicide...	
	M	SD	M	SD	M	SD	M	SD	M	SD
Pre	.11	0.83	3.22	0.94	2.89	1.02	3.50	0.99	3.33	1.03
Post	3.15	1.07	3.31	0.75	3.23	1.17	3.54	1.05	3.08	1.26
Retention	2.87	1.06	3.33	1.05	3.27	0.96	3.60	0.99	3.20	1.08

A statistically significant result of the RMANOVA was found on the experimental participants' attitudes about suicide between treatment conditions across time ($F[2, 14] = 3.94$; $p < .001$) $p = .044$. The corresponding extremely large effect ($\eta_p^2 = .360$; power $> .999$) indicated improvement in self-reported helpful attitudes about suicide.

Knowledge of suicide

Table 6

Knowledge Total Score (Pre & Post Survey; ORS)

		N	Mean	SD
Experimental	Pre Asist-Training	19	13.95	3.58
	Post Asist-Training	19	23.53	1.57
	Retention Follow-up	19	22.16	2.31
Control	Pre Asist-Training	18	16.06	3.98
	Post Asist Training	13	16.31	4.31
	Retention Follow-up	15	16.27	4.53

Table 7

One-way Analysis of Variance Summary Table for Total Knowledge Score

	Source	df	SS	MS	F	p
Experimental	Between Groups	2	1024.83	512.415	73.94	.000
	Within Groups	3	367.295	6.930		
	Total	5	1392.125			
Control	Between Groups	2	.592	.296	.016	.984
	Within Groups	43	784.647	18.248		
	Total	45	785.239			

Note. * $p < .05$

From the ANOVA results, we found a statistically significant difference of the knowledge about suicide for the experimental group over time ($F[2, 53] = 73.94; p < .000$) (Table 7). The comparison group results were not significant over time for knowledge ($F[2, 43] = .016; p = .984$) (Table 7). The extremely large effect ($h_p^2 = .736$;) for the experimental group indicated noteworthy increases on knowledge about suicide between pre-test, post-test and retention.

Comfort, competence, and confidence responding to persons-at-risk

Table 8

Comfort, Competence and Confidence Mean and Standard Deviation (Pre & Post Survey; ORS)

Experimental	Comfort			Competence			Confidence	
			SD		SD		SD	
Pre	19	.95	1.13	2.42	0.77	3.74	1.28	
Post	19	4.37	0.60	4.47	0.51	4.79	0.42	
Retention	19	4.26	0.73	4.32	0.48	4.47	0.77	
Control	Comfort			Competence			Confidence	
			SD		SD		SD	
Pre	18	3.39	1.09	2.67	1.03	4.06	.998	
Post	13	3.15	1.14	2.38	1.04	4.15	.987	
Retention	15	3.47	1.19	3.20	1.08	4.07	.961	

Table 9

Comfort, Competence and Confidence Total Score (Pre & Post Survey (ORS))

		N	Mean	SD
Experimental	Pre ASIST-Training	19	9.11	2.60
	Post ASIST- Training	19	13.63	.96
	Retention Follow-up	19	13.05	1.62
Control Group	Pre ASIST-Training	18	10.11	2.78
	Post Asist-Training	13	9.69	2.72
	Retention Follow-up	15	10.73	2.92

Table 10

Comfort, Competence and Confidence ANOVA (Pre & Post Survey; ORS)

	Source	df	SS	MS	F	p
Experimental	Between Groups	2	217.122	108.561	28.862	.000
	Within Groups	55	206.878	3.761		
	Total	57				
Control	Between Groups	2	7.759	3.879	.491	.615
	Within Groups	43	333.48	7.895		
	Total	45	347.239			

*Note. *p<.05*

Statistically significant differences were found on all three between-treatment conditions across time for the experimental group. There was medium effect size for the total comfort, competence, and confidence score (η^2 .512), which indicated significant positive training impacts on these variables, particularly on competence, the self-reported ability to respond to a student-at-risk of suicide.

There was a statistically significant difference between control and experimental groups as determined by one-way ANOVA ($F(2, 55) = 28.86, p=.000$). A Tukey post-hoc test revealed that confidence, competence and comfortability for the experimental group were statistically significant compared to the pre-ASIST training ratings (pre to post, $p=.000$; pre to retention, $p=.000$). There was not a statistically significant difference between post-ASIST training and Retention ($p=.603$)

Research Question Two

Research question two assessed whether the pre-post changes were retained at a 10-week follow up measurement point. The experimental group demonstrated a statistically significant difference in comfort, competence and confidence from before the training compared to after the training and from before the training to the retention 10 week follow up independently and as a total score. There was no significant difference for any comfort, competence and confidence scores over time for the control group.

Table 11.

Summary of the means and standard deviations of SIRI-2, Attitudes, Knowledge, Comfort, Competence and confidence and the RMANOVAs results

			Pre-test Mean (SD)		Post-Test Mean (SD)		Retention Mean (SD)	F-test	p Value
Skills (SIRI-2)									
	Control	5	31.17 (9.39)	4	32.27 (12.77)	3	28.89 (11.73)	.25	.333
	Treatment	9	32.55 (10.87)	0	28.45 (6.53)	8	26.06 (6.62)	.44	.059
SIRI-2 Overestimate									
	Control	5	5.87 (3.47)	4	6.74 (4.51)	3	6.97 (3.86)	.15	.173
	Treatment	9	5.69 (3.34)	20	11.20 (2.57)	8	10.69 (3.30)	0.7	.000
SIRI-2 Underestimate									
	Control	5	22.15 (11.40)	4	22.89 (14.95)	3	19.40 (12.89)	486	.630
	Treatment	9	23.65 (12.80)	20	13.07 (7.19)	18	11.47 (8.20)	13.65	.000
Attitudes about Suicide									
	Control	8	61.28 (6.01)	3	60.38 (4.37)	5	61.37 (5.40)	.262	.774
	Treatment	8	64.17 (5.34)	7	57.94 (6.03)	19	60.53 (5.11)	3.94	.044
Knowledge about Suicide									
	Control	8	16.06 (3.98)	13	16.31 (4.37)	5	16.27 (4.53)	.016	.984
	Treatment	9	13.25 (3.58)	9	23.53 (1.58)	8	23.39 (2.32)	73.94	.000
Comfort									
	Control	8	3.39 (1.09)	3	3.15 (1.14)	5	3.47 (1.19)	.282	.755
	Treatment	0	3.05 (1.19)	0	4.40 (.59)	18	4.28 (.75)	13.96	.000
Competence									
	Control	8	2.67 (1.03)	3	2.38 (1.04)	15	3.20 (1.08)	2.22	.121
	Treatment	0	2.50 (.83)	0	4.45 (.51)	8	4.33 (.485)	59.09	.000
Confidence									
	Control	8	4.06 (.998)	3	4.15 (.99)	15	4.07 (.96)	.042	.958
	Treatment	0	3.80 (1.28)	20	4.80 (.41)	18	4.50 (.41)	6.43	.003

Preliminary Analysis for questions three and four

Experimental participants reported seeing 4 – 40 ($M = 14.4$, $SD = 8.27$, $Mode = 10$) students, and control participants reported seeing 3 – 30 ($M = 12.62$, $SD = 7.94$, $Mode = 10$) students at the time of the first behavior and activity survey (Table 12). In completing the measure, participants included a student they met with at any point over the past four weeks. The experimental group reported seeing 4-41 ($M = 14.45$, $SD = 9.05$) students and control participants reported seeing 3-25 ($M = 11.15$, $SD = 6.74$) students in the second month of the study.

The results from Levene's Test for Equal Variances suggest that equal variances are assumed. There was no significant difference in the number of students seen for experimental ($M = 14.43$, $SD = 8.56$) and control ($M = 11.88$, $SD = 7.26$) groups; $t(64) = -1.25$, $p = .216$.

Table 12
Number of students participates saw over the last month

	<i>N of students</i>	<i>M</i>	<i>SD</i>	<i>Mode</i>
Experimental Nov	288	14.40	8.27	10
Control Nov	164	12.62	7.94	10
Experimental Dec	289	14.45	9.05	10
Control Dec	145	11.15	6.74	3
Experimental Total	577	14.42	8.56	10
Control Total	309	11.88	7.26	3

Research Question Three

Research question three aimed to understand if ASIST-trained IPSE staff reported more clients with suicidal behaviors than non-ASIST-trained IPSE staff. In terms of suicidal behaviors over the course of the semester, experimental participants reported 0-5 ($M = .13$, $SD = .10$) students at risk and 0-4 ($M = .10$, $SD = .30$) students demonstrating suicidal ideation. The control participants reported 0 – 5 ($M = .16$, $SD = .37$) students appeared at risk and 0 – 5 ($M = .29$, $SD = .37$) reported demonstrating suicidal ideation. There was no statistically significant difference in number of reported students with suicidal behaviors between the non-ASIST-trained IPSE and trained IPSE staff (Table 13).

Table 13
Means and Standard Deviation of Students at Risk and Experiencing Suicidal Thoughts

<i>Students at Risk</i>			
	<i>N Reported</i>	<i>M</i>	<i>SD</i>
Experimental Group	5	.13	.335
Control Group	5	.19	.402
<i>Students Reported Suicidal Thoughts</i>			
	<i>N Reported</i>	<i>M</i>	<i>SD</i>
Experimental Group	4	.10	.304
Control Group	8	.31	.549

A one-way ANOVA (Table 14) was conducted to test the difference between ASIST and non-ASIST-trained participants reported observation of suicidal behavior (Risk and Thoughts). There was not a statistically significant difference at the $p < .05$ level between the experimental and control groups, $F(1, 65) = 2.150, p = .147$

Table 14
One-way Analysis of Variance Summary Table for Students with Risk and/or Suicidal Behavior

Source	df	SS	MS	F	<i>p</i>
Between Groups	1	1.192	1.192	2.150	.147
Within Groups	64	35.475	.554		
Total	65	36.667			

Note. * $p < .05$

Two additional questions were asked to explore suicidal behaviors: 1) “Thinking back over the past month, did any of your students appear at risk of suicide? And 2) “Thinking back over the past month, did any of your students say they were thinking of killing themselves, ending their life, or dying by suicide?” Participants had the option to respond “yes” or “no”. There was no statically significant difference in participants reporting seeing more students who appeared at risk of suicide or more students that stated they wanted to die by suicide (Table 15). Therefore, the null hypothesis is accepted, there is no difference between the control and experimental group in suicidal behavior over ten weeks.

Table 15
Observed Frequencies of Student Suicidal Behavior

	Experimental			Control		
	Yes	No	%	Yes	No	%
Clients Appeared at Risk of suicide	5	572	.87%	5	376	1.3%
Clients stated they wanted to die by suicide	5	572	.87%	8	373	2.1%

Note. Groups are unequal.

Research Question Four

Research question four explored the types of mental health issues encountered by IPSE students and whether students were seeking mental health counseling. The means and standard deviations were examined for 18 mental health categories. Participants were asked to self-report a numerical value (i.e., a frequency count) for the students they encountered with each of the listed issues and needs.

Over the 10 weeks, the experimental participants reported referring 16 students to counseling services ($M = .40$, $SD = .50$) and the control group referred 8 students ($M=.19$, $SD=.40$). Overall, depression and anxiety were the most commonly observed by the experimental and control group participants. In both groups, anxiety and depression in the experimental group, anxiety ($M=1.65$, $SD = 2.02$) was more prominent than depression ($M = .88$, $SD = 1.83$) and overall, the control group reported seeing more reports of anxiety ($M = 2.46$, $SD = 3.15$) and depression ($M = 1.47$, $SD = 3.85$) than the experimental group.

Other mental health issues and concerns that ranked at the top of the list for the experimental group included bipolar disorder ($M = .18$, $SD = .55$), relational issues ($M=.85$, $SD = 1.81$), school concerns ($M = 3.95$, $SD = 8.91$), and work and employment ($M=2.33$, $SD = 6.87$).

Table 16
Mean and Standard Deviation of Mental Health Related Concerns

	Experimental	Control
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	N	M	SD	N	M	SD
Mental Health Concerns						
Learning Disability	266	6.65	10.81	132	4.40	7.47
Disability	252	6.30	10.14	111	3.70	8.73
ADHD	78	1.95	4.18	28	.93	2.51
Anxiety	66	1.65	2.02	69	2.46	3.20
Depression	35	.88	1.83	44	1.43	3.85
Bipolar Disorder	7	.18	.55			
Personality Disorder	2	.05	.22	1	.03	.18
Severe Mental Illness	1	.03	.16			
Substance/Addiction	1	.03	.16			
Other Concerns						
School Concerns	158	3.95	8.91	116	3.87	4.88
Work/Employment	93	2.33	6.87	50	1.67	3.72
Developmental Transition	40	1.00	1.89	43	1.43	2.96
Relational Issue	34	.85	1.81	23	.77	1.52
Partner	12	.30	1.32	1	.03	.18
Trauma/PTSD	4	.10	.30	2	.07	.37
Other:	4	.17	.50	6	.15	.48
Eating Disorder	1	.03	.16			

Note. ADHD = attention deficit hyperactivity disorder; PTSD = post-traumatic stress disorder

In order to assess the differences between experimental and control groups, an ANOVA was conducted. No significant difference was found for anxiety, $F(1,64) = .763, p = .386$ or depression, $F(1,64) = .797, p = .375$.

Control participants reported referring nine students for counseling services. Participants stated:

- “they sought it for depression, but they do not have access (to campus counseling services). A community referral was made to the student.”
- “The students were experiencing these things, but I am not a mental health professional who provides direct service for these areas.”
- “I do not generally work with students on a daily basis as a part of my role. We have had more than 3 students to visit counseling in the last 4 weeks (than those I have seen or met with).”

These data highlighted the mental health issues students with intellectual disabilities are experiencing in college as well as differences in identifying student's mental health concerns between ASIST-trained IPSE staff and non-ASIST-trained IPSE staff. Table 16 shows that being ASIST-trained did not increase the number of students identified with mental health concerns over ten weeks of this study.

Discussion

This study investigated how ASIST may heighten IPSE staff awareness and sensitivity and increase their skills when working with inclusive students who present suicidal behaviors or other mental health concerns. More specifically, this study sought to better understand if participants who have completed the 2-day, 14-hour suicide intervention ASIST training noticed more students with suicidal behaviors, suggesting an increased awareness of mental health issues and concerns. Results from this study provide one of the first empirical glimpses into the mental health needs of students with mild intellectual disabilities in IPSE programs. This study also adds to the research evidence for the potential impact and use of ASIST, and how it may be applicable and beneficial to individuals who work with individuals with intellectual disabilities. Suicide is devastating, so preparing IPSE staff to know the signs of suicide and how to intervene is critical. This is the first study to evaluate the use of ASIST or any manualized evidence-based training, specifically with college students with intellectual disabilities. This study also provided an overview of the different mental health concerns college students with intellectual disabilities are experiencing.

Research question one addressed the program's effectiveness at improving IPSE program staff in all of the ASIST-measured constructs, including suicide intervention skills, attitudes, knowledge, comfort, competence, and confidence. The results of this study indicated that

ASIST-trained IPSE staff members' comfort, competence, confidence, attitudes and knowledge regarding suicide all demonstrated statistically significant increases. The experimental groups largest change was in competence with an 84.7% increase, followed by comfort with a 48.1% increase and confidence increased by 28.1%. The overall total score, which combines the comfort, competence, and confidence scores, increased 43.2%.

Int their responses to open-ended survey items, several experimental participants provided addition comments regarding their improved confidence after completing the ASIST training. One participant noted, "I received more out of this than I had anticipated. I had some knowledge before coming into this training, but now I feel so confident about my ability to help an individual who feels suicidal." Another participant stated, "Thank you so much for this training!! I have learned so much. I am now much more confident in helping others address the topic of suicide. A third participant commented, "I really loved this training- suicide is an issue that we, unfortunately, face more often than we should. Thank you for this opportunity! I feel much more confident about talking to somebody who is at risk for suicide".

Responses on all five knowledge questions significantly increased at post-training for the experimental group as well. Experimental participants had an extremely large increase of 89.5% about how to ask someone about suicide, followed by another large increase with facts about suicide prevention (74.6%), and how to get help for someone who may be suicidal (71.9%). There also was a 58.7% increase in knowledge for participants understanding warning signs and a 52.1% increase regarding information about local resources for help with suicide. Overall, the total knowledge for experimental participants increased 58.9% immediately following the ASIST

training. One participant reported in the open-ended response item, “It really helped me in understanding that suicide can and should be talked about openly and directly.”

These findings are consistent with previous research indicating that individuals training in ASIST report feeling more comfortable, competent, and confident in intervening with a person at risk of suicide (Griesbach et al., 2008; Rodgers, 2010). In addition, results from this study align with research findings showing that individuals trained in ASIST become more knowledgeable about suicide prevention/intervention and develop more helpful attitudes or beliefs about suicide (ORS, 2002). These results also support previous research finding which show that individuals training in ASIST have increased suicide intervention skills (Illich, 2004; Tierney, 1994; Turley et al., 2000). By separating the two measured processes (underestimation versus overestimation), the SIRI-2 new scoring protocol (Shannonhouse, 2019) found a statistically significant difference for ASIST-trained experimental group when examining their pre-/post and pre/follow-up responses. Prior to the training, participants were mistaking harmful responses for helpful ones (or vice versa). After the training, SIRI-2 scores show that ASIST-trained participants are less likely to mistake a harmful response for a helpful one, yet also more likely to overstate how helpful (or harmful) a response is. Furthermore, this research may point to the need for formal training for college counselors, staff and faculty to respond to college students at risk of suicide. As more students with mental health treatment history are entering college (Haas et al., 2013), evidence suggests that campus counseling centers are facing more complex and severe mental health concerns (Benton et al., 2003). But as other studies have found, students at risk for suicidality are more likely to disclose suicidal thoughts to individuals with whom they have a relationship (Barnes, 2001). For example, students feel more comfortable sharing their suicidal thoughts with their peers (Sylvava, 2019; Hoven, 2009) rather than

approaching a mental health professional when they are experiencing suicidal ideations (Condrón et al., 2014). This suggests that campus-wide prevention programs such as ASIST may provide a systematic method of increasing the skills of university staff in responding to students at risk.

Research question two explored whether the observed pre-post changes in suicide intervention skills, attitudes, knowledge, comfort, competence, and confidence between the experimental and control group were retained at a 10-week follow up. Every individual component and factor were retained across the six different areas. The control group demonstrated no change across the three different data collection points (pre, post, follow-up) where the experimental group saw a large increase in knowledge, attitudes, comfort, competence, and confidence. Results show that the increase from pre to post was retained at the 10-week follow up. The increase among the six areas was a statistically significant from pre-training to follow-up, while no significant differences were observed between reported post-training scores and those at 10-week follow up.

This study supported the limited research regarding retention of SI-skills, attitudes, and knowledge (Shannonhouse et al, 2017). Examining the follow-up data for the control group, control participants reported no increase of knowledge or SI skills over time while the experimental group reported meaningful change from pre to post training. It is important to note that, at pre-training, the groups were equivalent and there was no statistically significant difference across the various measures. At post-training, groups were no longer equivalent and there was a statistically significant difference in competence, confidence, comfort and knowledge; a similar difference between groups was observed at follow-up. These results

suggest that participants are retaining the skills, knowledge, and increased levels of comfort, confident and competence acquired via the ASIST training over time.

Research question three sought to explore if ASIST-trained participants identified more clients with suicidal behaviors than the non-ASIST-trained IPSE staff. The study results did not support the hypothesis that ASIST-trained IPSE staff would identify more students at risk of suicide. The data did show that over a 10-week period, across the 40 total participants (i.e., both intervention and comparison groups), they saw 10 students who were at-risk for suicide and 13 students who had suicidal behaviors. However, in this study the rate of suicide risk was much lower than observed in other studies of suicide in college-aged populations. The American College Health Association noted in 2015, that 8.9% of the general college student population had “seriously consider(ed) suicide” within the previous year (ACHA, 2015). Moreover, for students first seeking services at college counseling centers, the percentage rises to 25% within a 4-week timeframe (Center for Collegiate Mental Health, 2016). Elston (2019), in her study of counseling students in community and school settings, also found much higher rates of suicide. Elston (2019) found differences in her ASIST and non-ASIST-trained participants’ identification of students’ suicidal behaviors, leading us to speculate that in the current study no difference was found due to the very low rates of suicide.

Although no significant difference was found between the control and experimental group on identification of students at risk for suicide, the results of this study document that there are IPSE students who are experiencing suicidal thoughts. Specifically, in this study, there was almost one student in each program (N=16) who experienced suicidal ideations over a 10-week period.. If ASIST has the potential to heighten suicide awareness, mental health awareness, and increase comfort and competence among IPSE staff, the provision of ASIST or other evidence-

based training should be considered very seriously by IPSE programs and counseling centers on campuses across the country.

To further understand how IPSE staff handled students at risk of suicide and students with mental health concerns, participants were asked if they referred any students to the counseling center in the past four weeks. Sixteen experimental participants reported referring a student with ID to the counseling center on campus and nine control participants provided students with referrals. The ASIST-trained group referred twice the number of students for counseling services. While not statistically significant, these results may imply that ASIST-trained IPSE staff feel more comfortable with students that are at risk or suicide. One participant stated, “I’ve been to many types of professional development. This is one of the only ones that provided information I was actively using within days. It also provided me with more confidence in addressing how people talk about mental health. If I continue to be silent, I’m arguably complicit in allowing harmful rhetoric to exist. This training helped me speak up with absolute assurance of the truth of my words.”

This study is the first to provide IPSE programs with an overview of mental health concerns students with ID may be experiencing as well as inform needed services and resources for these individuals. Research question four sought to examine mental health issues and concerns observed by IPSE staff. Across 18 different issues and disorders, there were no statistically significant differences between the control and experimental groups. Based on the report of the 40 participants in this study, there are several mental health concerns IPSE staff and supporters need to be attuned to as the number of IPSE programs continues to grow. Bipolar disorder and partner issues were meaningful for the experimental group but was not a significant

difference. Anxiety and depression were the most frequently observed mental health concerns by ASIST-trained and comparison group participants. Across the two groups, experimental participants reported seeing more mental health/concerns in 10 of the 18 categories. This could point toward heightened sensitivity and awareness of ASIST-trained IPSE staff versus non-ASIST-trained IPSE staff. But the differences were not statistically significant, so research question four was not generally supported by the results of this study.

Of the 886 total IPSE students worked with by participants over 10 weeks of the study, 14% were experiencing anxiety, 12% reported experiencing ADHD, and 8% were showing signs of depression. It should be noted that research on ASIST (LivingWorks, 2013) and other studies (Joiner, 2005; Rodgers, 2010) suggest depression is not a necessary or consistently reliable factor for suicidal behavior. Feelings of not belonging, perceived burdensomeness, and a host of other life factors (e.g., financial issues, loss of employment, bullying, acquiring an illness, etc.) are all potential factors that may lead someone to consider suicide. It is important to note, both the experimental and control group reported suicide issues on this survey of the study. While this is important to note, it does not differentiate whether a student was at risk or having suicidal ideations. There are also noted concerns in other areas of these students lives, 29% had school concerns, 16% had work/employment concerns and 6% had relational issues. This descriptive data is significant as this is the first study to measure real time mental health and other concerns of IPSE students. More research is warranted as students with MID continue to attend college and experience stressors just like their peers.

Finally, one of the most unique aspects of this study is the real-time data collected for student interactions over the duration of the semester at two different time points. Rather than

ask IPSE staff to recall their student interactions at the end of the semester, and risk participants under or over estimating their self-report data, the researcher asked IPSE staff to report over time, which may have resulted in a more accurate snapshot of staff/student interactions. Rarely do studies collect real-time data about mental health issues observed in students. Collecting data in real-time, over the course of a ten-week period, can help gain insight into the types of issues faced by students with intellectual disabilities.

Limitations and Future Research

These results provide insight into the frequency of suicide ideations and mental health concerns for students in IPSE programs. However, there are limitations that may affect the results generalizability. For example, this study included SEPSEA members who were staff from 16 southeastern programs, who may not fully represent the demographics of the 289 programs across the country. Thus, this study needs to be replicated across different IPSE programs and regions to further assess the needs and concerns of IPSE students.

Due to the small sample size, there was minimal gender diversity as participants predominately identified as female. Further, the variety of IPSE staff roles across participants may have made it difficult to conduct meaningful analysis on some measures due to the range of students seen and contact hours with students.

Although ASIST is standardized, and measures were taken to ensure training was provided with fidelity, there may have been facilitator effects as participants experienced a combination of five different trainers. Additionally, none of the trainers had background in working directly with individuals with disabilities. As more IPSE staff continue to be trained, it may be necessary to identify trainers with experience with this population and to develop more applicable cases related to IPSE contexts. One participant stated, “I really enjoyed this training--

it would be helpful if there was a modified version that was specific to the I/DD community as well.” Similarly, another wrote: “In order to really apply this to working with young adults in IPSE programs, I would suggest having the groups come up with example situations that could happen in IPSE programs. I think it could also be helpful to discuss different communication techniques that could be helpful in communicating and having these conversations with students in IPSE programs. I believe the model can definitely be applied to our jobs to help with suicide prevention and crisis management.”

This study also relied on self-report, potentially creating methodological challenges in the accuracy of data. Participants may rate their skills, knowledge, comfort, competence and confidence lower or higher than students would report. This could also be true with regard to the number of students experiencing mental health concerns as the majority of participants are not clinically trained professionals. It has been common in the literature to assess training impacts using self-report of participants for attitudes, comfort, competence and confidence at responding to a person-at-risk (Griesbach, 2009; ORS, 2002). Finally, control participants may have been sensitized and their awareness may have been heightened to student’s mental health concerns over the 10 weeks simply by asking direct questions about suicide and related concerns.

Conclusion

Although the current study has limitations, this is the first ASIST study in the field of disability, and one of the first to identify mental health concerns of students in IPSE programs. These findings have several implications in preparing IPSE program staff to address mental health needs of students with mild intellectual disabilities as well as appropriately train staff to provide suicide intervention for those at risk.

The CDC (2015) reports suicide as the second leading cause of death for young adults, yet this finding has been under-appreciated, and under-studied for young adults with ID during their transition years (Austin, 2018). While there is a lack of national data on suicide and disability, studies have shown significantly higher suicide rates among persons with disabilities compared to the general population (Kaplan, 2007). Considering the stigma of suicide and the marginalization experienced by individuals with ID (Lysaght et al., 2016; Australian Institute of Health & Welfare 2008; Emerson et al., 2009), training IPSE staff in ASIST may prove beneficial for students who are at such a high risk for suicide and related mental health concerns.

As Xiao (2017) reported in a study evaluating national mental health and treatment trends in college counseling centers, college student mental health is frequently labeled as “crisis” as the demand for services and severity of symptomology have increased in recent decades. As the number of college students concerns continues to rise, college counseling centers may be unable to effectively provide services to all of the students in need.

While university counseling centers are not always equipped with adequate suicide intervention training for college students (Barrio Minton & Pease-Carter, 2011) and more specifically students with ID, it is imperative for educational professionals to learn how to recognize when someone is at risk, connect in a supportive manner and engage in a suicide intervention. If colleges and universities are unable to assist students with ID, IPSE programs must be aware of community resources, and depending on the need, have the skills and awareness to connect students with appropriate mental health providers.

With the increase in suicide in the U.S. (Drapeau and McIntosh, 2017) and worldwide (WHO, 2014), suicide intervention training for everyone can help reduce the fatality of suicide.

Although there have been numerous studies evaluating ASIST and suggesting more suicide intervention trainings for marginalized populations, there is considerable work to be done to understand suicide and mental health concerns for individuals with disabilities. Students in IPSE programs, like all college students, can experience numerous and complex personal issues and challenges. The lack of research in this area reflects a lack of appreciation of the complexity of these students' needs and this study is the first to capture the needs in real time. This study was successful in identifying many of them but in order to get a better grasp of these concerns, more research in this area is necessary.

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Appendix A

Inclusion and Matching Survey

1. Name
2. Email Address
3. What university/college you are affiliated with?
4. What is the name of the Inclusive Post-Secondary Education Program you work for?
5. What year was your program established?
6. What is your job title for the IPSE program?
7. How many IPSE students are in your program this year?
8. How many hours do you work per week?
9. On average, how many different IPSE students do you interact with per week?
10. On average, how many individual direct contact hours do you have with IPSE students per week?
11. On average, how many group direct contact hours do you have with IPSE students per week?
12. Please select the different type(s) of contact you have with IPSE students weekly:
13. What is your highest degree earned?
14. Have you completed any prior suicide trainings or other formal/manualized counseling system training?
15. Please provide any additional information you would like us to know prior to this training.

Appendix B

Demographics Survey

1. What is your age in years?
2. What is your ethnic and cultural identity?
3. What is your gender identity?
4. Which of the following describes your sexual orientation?
5. Do you identify as a person with a chronic illness, medical condition or disability?

Appendix C

Youth Suicide Prevention Program (Organizational Research Service [ORS], 2002)

Suicide Signs

What 3 signs would you look for to know if this person might be in danger?

1. First Sign
2. Second Sign
3. Third Sign

Attitudes

Imagine yourself in a situation where you might be able to help a suicidal person. Please answer the questions below by selecting the choice that best fits you.

(1=Not at all, 3=Moderately, 5=Fully)

1. How COMFORTABLE would you feel helping this suicidal person?
2. Considering your current knowledge and skills, how COMPETENT would you feel helping this suicidal person?
3. Overall, how CONFIDENT are you that you would try to help this suicidal person?

General Knowledge

Please rate your level of knowledge about the following on a scale from 1 to 5 where (1=VERY LOW; 5 = VERY HIGH):

1. Facts about suicide prevention...
2. Suicide warning signs...
3. How to ask someone about suicide...
4. How to get help for someone who may be suicidal...
5. Information about local resources for help with suicide...

Attitudes

Please select HOW STRONGLY YOU AGREE with each of the following statements about suicide prevention and intervention: (1= Strongly Agree, 2 = strongly disagree, 3 = disagree, 4 = strongly disagree)

1. Suicide is preventable in the majority of situations
2. Suicide among individuals with disabilities is a major issue in my community
3. The problem of suicide for individuals with disabilities should be addressed in my community
4. If someone I knew told me that they were thinking of suicide, I would want to get more information about their plan
5. It is harmful for a helper to engage in open communication when dealing with someone at risk of suicide
6. If someone I knew was showing suggesting signs of suicide, I would raise the question of suicide with them
7. If someone I knew was at risk of suicide, I would encourage them to talk about their wish to die

Please select HOW STRONGLY YOU AGREE that the following words describe individuals who suicided: (1= Strongly Agree, 2 = strongly disagree, 3 = disagree, 4 = strongly disagree)

1. Pathetic
2. Shallow
3. Immoral
4. An embarrassment
5. Irresponsible
6. Stupid
7. Cowardly
8. Vengeful
9. Lonely
10. Isolated
11. Lost
12. Disconnected
13. Strong
14. Brave
15. Noble
16. Dedicated

Appendix C

Attitudes Toward Suicide Scale (Eskin, 2004)

(1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree)

1. Someone who has gone bankrupt has the right to kill him=herself.
2. Someone who is tired of living has the right to kill him=herself.
3. Someone who dishonored his=her family has the right to kill him=herself.
4. Someone suffering from an incurable illness has the right to kill him=herself.
5. Suicide can be a solution to some problems.
6. Suicide can be the only way out of life's problems.
7. People have the right to kill themselves.
8. Killing oneself by committing suicide is a right behavior.
9. People who attempt suicide are mentally ill.
10. People who kill themselves by committing suicide are mentally ill.
11. People who think and plan suicide are mentally ill.
12. People who attempt suicide are going to be punished in the other world.
13. People who kill themselves are going to be punished in the other world.
14. People who think and plan suicide are going to be punished in the other world.
15. People who kill themselves by committing suicide are sinful.
16. There is a life after death.
17. A person who thinks and plans suicide should tell this to his=her friends and thereby ask for help.
18. People should tell their psychological problems to their friends.
19. Young people should tell their psychological problems to their parents.
20. A young person who thinks and plans suicide should tell this to his=her parents
21. Families whose daughter or son attempts suicide should hide this from their neighbors.
22. Families who lose a daughter or son from suicide should hide this from their neighbors.
23. Suicide news should be written openly in the newspapers.
24. The matter of suicide should be discussed openly among friends.

Appendix D
Suicide Intervention Response Inventory-2
(Free response 1-5; rate response appropriateness 6-24)

1. Student: I really need help... it's just... [voice breaks: silence]
2. Student: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!
3. Student: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!
4. Student: I tried going to a therapist once before, but it didn't help... Nothing I do now will change anything.
5. Student: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?
6. Student: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.
 - a. Helper: Can you tell me more about your suicidal feelings?
7. Student: No one can understand the kind of pain I've been through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.
 - a. Helper: But you're so young, you have so much to live for. How can you think of killing yourself?
8. Student: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably had it pretty soft.
 - a. Helper: You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.
9. Student: And now my health is going downhill too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world
 - a. Helper: You must feel pretty lonely and afraid of what might happen.
10. Student: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have been doing well. They get good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore...
 - a. Helper: Considering all you have going for you; your problems can't be all that serious. Try to focus more on the positive aspects of your situation.
11. Student: My life has been worthless ever since my wife, Emma, died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.
 - a. Helper: It sounds like everything just collapsed around you when Emma died... But what has happened recently to make things even worse, to make you think that dying is the only way out?
12. Student: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.
 - a. Helper: Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.
13. Student: [Over telephone] It's hard to talk here, with all these people.
 - a. Helper: Why don't you call back some other time when you can talk more easily?

14. Student: Is it really true, that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas
- Helper: It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.
15. Student: I don't think there's really anyone who cares whether I'm alive or dead.
- Helper: Why do you think that no one cares about you anymore?
16. Student: I'm so lonely, so tired [crying]. There just isn't anywhere left to turn.
- Helper: You seem so alone, so miserable. Have you been feeling suicidal?
17. Student: [Voice is slurred, unclear over telephone.]
- Helper: You sound so tired. Why don't you get some sleep and call back in the morning?
18. Student: But my thoughts have been so terrible... I could never tell them to anybody.
- Helper A: You can tell me. I'm a professional and have been trained to be objective about these things.
 - Helper B: Some of your ideas seem so frightening to you, that you imagine other people would be shocked to know that you are thinking such things.
19. Student: When you sum up my problem like that, it makes it seem less confusing and not so scared.
- Helper A: See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?
 - Helper B: Sometimes talking about problems does make them a bit clearer. I think you realize how dangerous your suicidal feelings were, that's why you decided to contact me.
20. Student: How could you ever help me? Have you ever wanted to kill yourself?
- Helper A: It sounds like you're concerned about whether I can understand and help you.
 - Helper B: Sure. I've thought about suicide sometimes. But I always found more realistic solutions.
21. Student: I don't know... this whole thing with my wife really gets to me. [Sobs] I try so hard to keep from crying...
- Helper A: Do you think that the reason it's hard for you to cry is because you're a man?
 - Helper B: With all the hurt you're feeling, it must be impossible to hold those tears in.
22. Student: Why should you care about me, anyway?
- Helper A: I've been trained to care about people. That's my job.
 - Helper B: Because I think your death would be a terrible waste, and it concerns me that things are so bad that you are considering suicide. You need help to get through this critical period.
23. Client: I can't talk to anybody about my situation. Everyone is against me.
- Helper A: That isn't true. There are probably lots of people who care about you if you'd only give them a chance.
 - Helper B: It must be difficult to find help when it's so hard to trust people.
24. [Voice is slurred, unclear over the phone]
- Helper A: You sound so tired. Why don't you get some sleep and call back in the morning?

- b. Helper B: Your voice sounds so sleepy. Have you taken anything?

Appendix E

Suicidal Behaviors (Elston, 2018)

Questions:

1. Thinking back over the last two weeks, did any of your students/clients appear at risk of suicide?
2. Did any of your students/clients say they were thinking of killing themselves/ending their life/dying by suicide?
3. Did any of your students/clients' complete suicide?

Appendix F

ASIST Activity Survey (Elston, 2018)

1. How many students did you meet with over the last month?
2. Did any of the students you saw in the last month seek counseling services from the college counseling center?
3. What did the student(s) seek counseling for?
4. In the past four weeks, please indicate how many students you have seen with the following concerns. Only enter a numerical response in the text box, if you have seen clients with that concern:

ADHD	Anxiety	Bipolar	Depression
Developmental Transition	Disability or Chronic Illness	Feeding/Eating Disorder	Homicidal
Learning Disability	Personality Disorder	Relational Issue	Schizophrenia
School Concerns/Issues	Spouse/Partner Concerns	Substance-Related and Addictive Disorders	Suicide
Trauma/PTSD	Work/Employment Issues	Other	

Appendix G

Follow-up Feedback Form

On a scale of 1-10, please rate the number that best describes your response to the question:

1. How would you rate ASSIT? (1= did not like it at all... 10 = liked it a lot)
2. Would you recommend ASIST to others? (1 = definitely no... 10 = definitely yes)
3. This workshop has practice use in my personal life. (1 = definitely no... 10 = definitely yes)
4. This workshop has practice use in my work life. (1 = definitely no... 10 = definitely yes)
5. My having had this training has benefited my students. (1 = definitely no... 10 = definitely yes)
6. Please provide any additional comments you may have about the ASIST workshop or clarify any of your responses.