ARE SCHOOLS PREPARED FOR SUICIDE CONTAGION EFFECTS?
AN ANALYSIS OF SCHOOL PSYCHOLOGISTS’ PERCEIVED COMPETENCY IN POSTVENTION RESPONSE

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ABSTRACT

(Under the direction of Dr. Steve Knotek)

Suicide is a leading cause of death of school-aged youth, with adolescent and young adult populations considered to be most at risk for suicide clusters and contagion effects (CDC, 2015; Insel & Gould, 2008). Suicide clusters have been documented in school districts across the U.S., though the degree to which schools are prepared to provide postvention services in the wake of a suicide is presently unclear (Canady, 2016; Robinson et al., 2013; Stack, 2003). Due to the lack of evidenced-based postvention programs, school-based clinicians rely upon their clinical judgement to effectively and responsibly provide postvention services to a school community following a suicide. School psychologists are considered integral members of the crisis response teams that are charged with conducting this sensitive response effort, though the current literature is largely absent of works that address their beliefs about their knowledge, confidence, and preparedness to provide postvention services (Debski et al., 2007; Schmidt, 2016).

For the present study, the Postvention Competency Survey was developed and administered to 111 school psychologists to ascertain their perceived knowledge and self-efficacy in suicide postvention and suicide contagion effects. In addition, school psychologists reported on their school districts’ approach to preparing for postvention response through training opportunities, the presence of postvention protocols, and the establishment of crisis teams. Regression analyses were also conducted to identify factors predictive of postvention competency.
Descriptive results indicated that all school districts had established crisis teams, yet only half of the respondents endorsed that their district had a protocol to guide the response efforts. Nearly 70% of the sample indicated formal training in postvention, though over 50% reported that their district had not offered such training in the past four years. The majority of respondents endorsed less than moderate knowledge, preparedness, and confidence in suicide postvention, and even lower degrees of competency in suicide contagion effects. Regression analyses supported formal training as a significant predictor of both perceived knowledge and self-efficacy, while the presence of a postvention protocol was not significant for either outcome. Overall, results suggest that schools may benefit from improving their approach to preparing for student suicides, and particularly suicide contagion effects. Recommendations to enhance school psychologists’ postvention competence are offered, and directions for future research to expand upon this preliminary work are discussed.
ACKNOWLEDGEMENTS

Suicide researchers use statistical terminology and academic jargon to describe the rates, trends, risk and protective factors, and the outcomes of prevention and intervention efforts of which they study. It is paramount to maintain that each and every statistic of suicide research represents human lives. In adolescent suicide research, these data are the manifestation of young lives that have tragically perished early in life, and often before graduating high school. The statistics encapsulate not only those who have died by suicide, but the countless survivors of those connected to the deceased that have experienced unfathomable pain in the wake of their loss. It is my hope that this study may contribute to improving our understanding of how we approach the prevention and intervention of youth suicide. This manuscript is dedicated to the friends and family members of those who have died by suicide, and to those who continue to battle suicidality.

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CHAPTER I: INTRODUCTION

Introduction

Suicide is the second leading cause of death for adolescents and young adults ages 15-24, and the third leading cause of death in children ages 10-14 in the United States, making school-aged populations critical foci for prevention, intervention, and postvention initiatives (CDC, 2015; Joshi, S., Hartley, S., Kessler, M. & Barstead, M., 2015). Further troubling, approximately 17% of U.S. teens report having seriously considered attempting suicide, while 8.0% report having actually made an attempt at taking their own life, accounting for nearly one million suicide attempts by school-aged children and adolescents each year (CDC, 2014; Lieberman, Poland, & Cassel, 2008).

Perhaps even more concerning is the phenomena of suicide clusters. Suicide clusters occur when there is an increase in the number of suicides than would otherwise be expected in proximity to a given time period or geographic area (Cox et. al., 2012; Insel & Gould, 2008; Joiner, 1999). For the last several decades, suicide clusters have been documented in various settings across the United States, including school systems, firmly evidencing the presence of aberrant clusters of self-inflicted teenage death (Canady, 2016; Fowler, Crosby, Parks, Ivey, & Silverman, 2013; Cheng et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Gould, Kleinman, Lake, Forman, & Midle, 2014; Hacker et al., 2008; Haw et al., 2013; Hittner, 2005; Insel & Gould, 2008; Phillips, 1974; Poijula, Wahlber, & Dyregrov, 2001; Stack, 2003). In an attempt to understand, explain, and conceptualize these clusters, suicide experts have theorized imitative behavior as a possible pathway, supporting the notion of contagious and transmittable suicidal
behavior known as a suicide contagion effect (AFSP et al., 2015; CDC, 1994; Cox et al., 2012; Gould et al., 1990b; Haw et al., 2012; Insel & Gould, 2008; Phillips, 1974; Stack, 2003; Swanson & Colman, 2013).

In addition to being a high-risk population for suicide in general, adolescents are considered to be the most vulnerable and susceptible demographic among all other age ranges with regard to suicide contagion effects (Canady, 2016; Fowler et al., 2013; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Insel & Gould, 2008; Poijula et al., 2001; Swanson & Coleman, 2013). Given the seriousness of this phenomenon in relation to school-aged populations, schools have a unique opportunity and ethical responsibility to play a critical role in suicide prevention, intervention, and postvention (Aguirre & Slater, 2010; Brock, 2002; Haw et al., 2013; Insel & Gould, 2008; Katz et al., 2013; Kleinman, 2015; Mauk et al., 1994; Miller, 2011, 2012; Niedzwiedz et al., 2014; SAMHSA, 2012). This is particularly relevant in the context of suicide contagion mitigation, as suicide clusters have been evidenced in school systems across the country, and as recently as 2016 (Canady, 2016; Fowler et al., 2013; Haw et al., 2013; Kleinman, 2015; Niedzwiedz, Haw, Hawton & Platt, 2014; Poijula et al., 2001).

To address this imperative, school systems may look to the abundance of universal, selected, or individualized suicide prevention and intervention programs designed and intended to promote prosocial behavior, increase help-seeking, educate students and staff, and reduce suicidal ideation, attempts, and deaths (Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2012; Robinson et al., 2013). However, the evaluative literature on school-based suicide prevention and intervention programs suggests that while such programming may be successful in addressing many of their stated outcomes, empirical evidence supporting a
reduction or prevention of student deaths by suicide remains unclear (Caine, 2013; Cox et al., 2012; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan, Klingbeil, & Meller, 2013; Miller, 2011, 2012; Miller et al., 2009; Owens, 2014; Poijula et al., 2001; Robinson et al., 2013; Wasserman et al., 2015; Wei, Szumilas, & Kutcher, 2010; Wethington et al., 2008; Wyman, et al., 2010; Wyman et al., 2008). Researchers point to the inherent challenges, both ethically and pragmatically, in conducting suicide research in schools as a primary factor influencing the equivocal understanding of programmatic outcomes (Caine, 2013; Cox et al., 2016; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2011, 2012; Owens, 2014; Poijula et al., 2001; Robinson et al., 2013; Wasserman et al., 2015; Wei et al., 2010; Wethington et al., 2008; Wyman et al., 2008).

In contrast to the abundance of suicide prevention and intervention programming (despite their efficacy), there is a paucity of crisis postvention programs (Robinson et al., 2013; Szumilas & Kutcher, 2011). The limited postvention programs that have undergone empirical validation have yielded mixed results, and were hampered by the same methodological constraints of suicide prevention and intervention programming (Andriessen, 2014; Cox et al., 2016; Hazell & Lewin, 1993; Poijula et al., 2001; Robinson et al., 2013; SAMHSA, 2016; Szumilas & Kutcher, 2011;). This conspicuous gap in research and understanding of how such programs address school and student needs has resulted in suicide experts recommending the use of published postvention toolkits equipped with guidelines and recommendations to respond to a school in the wake of a student suicide, and notably, to prevent future suicides by way of a contagion effect (AFSP & SPRC, 2011; Cox et al., 2012; Cox et al., 2016; Robinson et al., 2013; SPRC, 2014).

The implementation of such response efforts is predominately deferred to school crisis teams, and by extension, mental health practitioners such as school psychologists who often
serve primary roles in crisis response (Adamson & Peacock, 2007; Allen et al., 2002; Brock et al., 2002; Debski, Spadafore, Jacob, Poole, & Hixon, 2007; Kellner, 2001; Miller, 2012; Nickerson & Zhe, 2004; Owens, 2014; Schmidt, 2016; Stein-Erichsen, 2010). School psychologists have a professional and ethical responsibility to conduct suicide postvention, and therefore may be expected to possess adequate knowledge and competency in suicide postvention response actions, including suicide contagion mitigation measures. To date, there is scarce evidence in the literature that adequately ascertains school psychologists’ perceived knowledge of postvention response, and their self-efficacy to implement such actions (Debski et al., 2007; Schmidt, 2016; Stein-Erichsen, 2010).

The present exploratory study seeks to address these gaps in knowledge by surveying school psychologists in the state of North Carolina in regards to their perceived knowledge and self-efficacy associated with suicide postvention response. Descriptive, associational, and predictive analyses will be conducted to explore how training in postvention, certification in crisis response, experience with postvention, and quality of available postvention protocols in their respective school districts may predict provider knowledge and self-efficacy. Additionally, due to the paucity of literature on this topic, the exploratory nature of the study will provide valuable additions to the understanding of school psychologists’ experiences with postvention response, as well as their respective school districts approach to professional development and training within this domain. In doing so, the information and findings obtained from this study will not only provide notable additions to the research base, but may elucidate gaps in knowledge that can guide graduate training programs, school districts, and programming developers in their approach to equipping school psychologists with the necessary skills to effectively respond to student suicides.
CHAPTER II: REVIEW OF LITERATURE

Youth Suicide in America

The World Health Organization (2014) has deemed suicide a “global imperative.” Over 800,000 people (three people every two minutes) died by suicide across the globe in 2012 (WHO, 2014), making suicide the second leading cause of death worldwide for people ages 15-29, with a global death rate of 11.4 per 100,000 people (WHO, 2014). Perhaps most troubling about this macabre statistic is the emphasis from researchers that youth suicide may well be largely preventable (Shahtamasebi, 2015; Zenere, 2009). In support, in 2013 the Sixty-sixth World Health Assembly adopted the first Mental Health Action Plan of the WHO with an operational goal of reducing global suicide rates across countries by 10% by the year 2020 (WHO, 2014).

Suicide is not just a global imperative, but has also been deemed a national imperative in the United States as evidenced by federally funded research and legislation (e.g., Garrett Lee Smith [GLS] Memorial Act) aimed to expand the knowledge and understanding of the phenomenological construct, and prevent future suicidal behavior (Caine, 2013; Goldsmith, Pellmar, Kleinman & Bunney, 2002). Despite these efforts, the United States posts higher statistics compared to global reports in respect to aggregate suicide rates without stratifying by race, ethnicity, gender, or age (13.41 per 100,000 in 2014; CDC, 2015). In the US, suicide is the second leading cause of death among persons ages 15-24, the third leading cause of death for children ages 10-14 (CDC, 2013), and accounts for more deaths for persons ages 10-24 (8.51 per
100,000 in 2014) than all natural causes do combined (CDC, 2015; Joshi, S., Hartley, S., Kessler, M. & Barstead, M., 2015).

As striking as these figures may be, further evidence suggests this number may be an underestimate of the true number of deaths by suicide due to underreporting associated with the stigma of suicide (Joiner, 2010; WHO, 2014). Despite the reliability of this estimate, the prevalence of suicidal behavior (including ideation, attempts, and suicide plan development) among school-aged children and adolescents is alarming, and highlights the vulnerability of this population within the United States.

According to the National Youth Risk Behavior Survey (YRBS) conducted by the Center for Disease Control, 17% of high schoolers seriously considered attempting suicide in 2013 (CDC, 2014). Furthermore, 13.6% of high school students reported having developed a plan to attempt suicide, while 8.0% reported having carried out an attempt at suicide one or more times within the past 12 months; equating to nearly one million youth suicide attempts each year (Lieberman, Poland, & Cassel, 2008). Self-reports indicate that 2.7% of high school-aged teens reported having required medical treatment following an attempt at taking their own life (CDC, 2014). The physical consequences of such attempts are substantial, with many youth suffering from serious injury, brain damage, broken bones, or organ failure, in addition to the emotional and social distress preceding and following an attempt (Miller, 2012). Furthermore, suicide attempts serve as a primary risk factor for suicide (WHO, 2014), with estimates suggesting that 0.5-1.0% of attempters die by suicide each year; a substantial increased compare to the general population (Hawton et al., 2003; Otto, 1972 as cited in Bridge, Goldstein & Brent, 2006).

Significantly increased variations in suicide behavior rates have also been documented in the literature, supporting further emphasis on this national imperative (Askland, Sonnenfeld &
Crosby, 2003; Hacker, Collins, Gross-Young, Almeida, & Burke, 2008). For example, in a sample of 311 high school students, Askland et al. (2003) found that 28% of high school juniors and seniors reported suicidal ideation within the past four weeks, with 7% of high school students reporting having attempted suicide in the past four weeks (compared to an 8% national average over a 12 month period). These statistics provide a sobering insight to the prevalence and seriousness of suicidal behavior among youth across the country.

In North Carolina, adolescent suicidal behavior is generally reflective of the national trends in respect to serious thoughts about suicide, and death by suicide (CDC, 2014; CDC, 2015). However, according to the YRBS, 5.3% of North Carolina teens (approximately two times the national average) reported attempting suicide that resulted in an injury requiring medical treatment. What’s more, self-reports from North Carolina middle schoolers (grades 6-8) suggests that nearly 20% have thought seriously about attempting suicide, and 10.5% report having made an actual attempt (CDC, 2014).

Unfortunately, the current rates of suicide mark a dramatic increase over the past several decades (Abrutyn & Mueller, 2014a; Aseltine & DeMartino, 2004; Berman et al., 2006; Gould, Wallenstein, Kleinman, O’Carroll & Mercy, 1990b), further substantiating the deemed imperative of suicide prevention. Rates have risen particularly high among youth, with suicide deaths having tripled among adolescents since the 1950s (Abrutyn & Mueller, 2014a; Aseltine & DeMartino, 2004). According to Owens (2014), the National Institute of Mental Health estimates that suicide rates for children between the ages of 15 and 19 were seven times the rate for children ages 10-14, supporting the notion that suicide prevention, intervention, and postvention protocols are essential to secondary school populations. Subsequently, the epidemiological
significance of this lethal phenomenon has made youth suicide research, prevention, and intervention a societal priority on global, national, state, and community levels.

**Suicide Clusters**

Suicide clustering is a specific aspect of youth suicide research that is distinct, and may be defined generally as a grouping of suicides that occur closer to a given time or space (e.g., geographical location) than would be expected (Cox et. al., 2012; Insel & Gould, 2008). Suicide clustering may be further defined and classified into two types: mass clusters and point clusters (Joiner, 1999). Mass clusters refer to the unexpected increase in observed suicides restricted to a given time period, often linked to and occurring following media publication of a suicide (Gould, Wallenstein & Kleinman, 1990a; Gould et al., 1990b; Joiner, 1999; Phillips, 1974).

Point clusters, or time-space clustering, may be defined by an unusually high concentration of suicides within a restricted geographic area and within a shorter time period than would be expected (Joiner, 1999; Gould et al., 1990a). There is a preponderance of evidence supporting the presence of statistically significant cluster effects with documented spikes in suicides at given times (i.e., mass clusters) and by time and location (i.e., time-space clusters; Canady, 2016; Fowler, Crosby, Parks, Ivey, & Silverman, 2013; Cheng et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Haw et al., 2013; Hittner, 2005; Insel & Gould, 2008; Phillips, 1974; Poijula, Wahlber, & Dyregrov, 2001; Stack, 2003), with 53 documented suicide clusters over an eight year period having occurred within the US alone (Gould, Kleinman, Lake, Forman, & Midle, 2014).

The observed phenomenon has prompted experts and researchers to hypothesize the pathway(s), or mechanism(s) of action responsible for catalyzing such spikes. However, a considerable gap in knowledge exists in understanding such mechanisms, as the factors that
influence suicide clusters currently remain largely unknown (Gould et al., 2014). Attempts to theorize suicide clusters have focused on imitative behaviors, leading to the conceptualization of a contagion effect (AFSP et al., 2015; CDC, 1994; Cox et al., 2012; Gould et al., 1990b, Haw et al., 2012; Insel & Gould, 2008; Phillips, 1974; Stack, 2003; Swanson & Colman, 2013).

The Center for Disease Control and Prevention (CDC) defines suicide contagion as “a process by which exposure to suicide or suicidal behavior of one or more persons influences others to commit or attempt suicide” (CDC, 1994, para. 3). Insel & Gould (2008) posit that suicide contagion is the actual process of one suicide influencing the occurrence of subsequent suicides, encompassing the assumption of direct awareness of the preceding suicide, contact or friendship with the suicide victim, knowledge of the suicide through word of mouth, or indirectly transmitted through media coverage of the suicide (Insel & Gould, 2008). Notably, as evidenced by the definition outlined by the CDC, this contagion effect has been demonstrated not only with deaths by suicide, but also in suicide attempts (Gould, Petrie, Kleinman & Wallenstein, 1994; Insel & Gould, 2008).

Despite decades of documented suicide clustering, researchers suggest that the study of contagion effects, and the factors that contribute to the observed effects of clusters, is in its infancy (Bohanna, 2013). However, what has become clear is the vulnerability and susceptibility of adolescent populations, above and beyond all other age groups, to suicide clusters hypothesized to be influenced by a contagion effect (Canady, 2016; Fowler et al., 2013; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Insel & Gould, 2008; Poijula et al., 2001; Swanson & Coleman, 2013)

In support, Poijula et al. (2001) found suicide rates in a given high school to be 62 times the expected average, and 617 times the expected rate for two specific classrooms (i.e., isolated
classroom shared by teens who died by suicide). In the same community at a neighboring middle school, the suicide rate was found to be 307 times the expected rate (Poijula et al., 2001). From 2000-2005, a community in Maine experienced a dramatic increase in adolescent suicides prompting a community lead response with recommendations from the CDC (Hacker et al., 2008). In the first quarter of 2012, eight youth suicides were observed within two neighboring counties in Delaware (Fowler et al., 2013). The spike is suicides was double the expected median yearly rate, and prompted an epidemiological investigation from the CDC (Fowler et al., 2013). And recently, the CDC has investigated a cluster of suicides in California that involved four student deaths within two neighboring schools over the course of a single school year (Canady, 2016). In respect to time-space clustering of suicide attempts, Gould et al. (1994), using national statistics, established a cluster effect for suicide attempts and found such effects to be strongest among teenagers and young adults. These topical examples further support the importance of systematically conducting research and implementing policy and programming designed to mitigate contagion effects within school-aged populations.

While the presence of suicide clustering in adolescent populations appears evident, estimates regarding the rate of deaths by way of contagion, or empirically linked to cluster effects, is less clear. Given the limited understanding of the influential factors associated with cluster or contagion effects, it is perhaps unsurprising that approximations of the rate of suicides accounted for by clustering ranges greatly by year and location (Gould et al., 1990b; Gould et al., 1994). Estimates suggest that cluster effects may account for as little as less than 1%, and up to 13% of teenage suicides, with considerable variation by year and by state within the US (Gould et al., 1990b; Gould et al., 1994). And while clustering has been empirically evidenced at 7, 14, and 30 day intervals (following a suicide), descriptive research has documented purported
contagion effects within community high schools up to four months following preceding teenage suicides (Gould et al., 1990b; Poijula et al., 2001). Despite the variability and perhaps small percentage of teenage suicides attributable to contagion effects, suicide clustering in teens is of particular interest because of the preventable and avoidable nature that contagion effects represent. That is, if maladaptive, high-risk behavior such as suicide may be “contagious,” than it is reasonable to expect that prosocial, adaptive, and help-seeking behavior to prevent suicide may also be learned, acquired, and reinforced.

**Suicide Risk Factors**

With such variability and context associated with cluster effects, understanding risk and protective factors associated with the increased or decreased likelihood of contagion is paramount. Van Orden and colleagues (2010) define risk factors as “variables that are associated with an increased probability that an outcome will occur, whereas causal processes explain an outcome” (Van Orden et al., 2010, p. 576).

Characteristics of risk factors associated with suicide clusters include many variables that are also known risk factors for non-cluster suicide behavior (Haw et al., 2013), warranting considerable attention to general risk factors for adolescent suicidal behavior. A prior attempt at suicide is largely considered to be perhaps the most indicative risk factor for future suicide behavior in the general population, as well as in youth populations (Bridge et al., 2006; Miller, 2012; Van Orden, 2010; WHO, 2014). Suicide attempters have been shown to be more likely to believe that suicide may serve as a solution to their perceived problem(s) compared to non-attempters (Shaffer et al., 1990), with highly lethal, multiple, and most recent attempts serving as the greatest concern in predicting future suicidal behavior (Bridge et al., 2006). However, it is
important to note that despite the significance of past attempts serving as a primary risk factor, the majority of young adults who die by suicide are first-time attempters (Berman et al., 2006).

The presence of a mental health condition, particularly depressive disorders, anxiety disorders, and certain conditions associated with inhibited impulse control (e.g., substance use disorders, conduct disorder) are also considered significant risk factors for suicidal behavior (Haw et al., 2013; Miller, 2012; Van Orden et al., 2010). Notably, findings from psychological autopsies conducted for teens that died by suicide suggested that approximately 90% of adolescents met criteria for a mental health or substance abuse condition at the time of their death (Berman et al., 2006). And while depression is often cited as the most common comorbid mental health condition with suicide, research suggests that depression is most likely associated with the development of the desire for suicide, while conditions with symptomology more closely aligned with agitation, anxiety and impulsivity may be associated with the increased risk of acting on suicidal ideation (Boccio, 2015; Nock, Hwang, Sampson, & Kessler, 2010; Van Orden et al., 2010).

Latent variables, which may be less conspicuous than observable behaviors, including social isolation (e.g., loneliness, social withdrawal, limited social support, residing in a non-intact family), and hopelessness have also been heavily associated with the prediction of suicidal ideation, attempts and deaths in adolescent populations (Labelle, Breton, Pouliot, Dufresne, & Berthiaum, 2013; Van Ordon et al., 2010).

**Suicide Cluster Risk Factors**

In congruence with general suicide risk factors for teens, Haw et al.’s (2013) meta-analysis identified many shared risks factors for suicide and suicide contagion effects including
family history of suicide and alcohol abuse, experienced death of a loved one, unstable home environment, and psychological factors such as poor self-esteem and emotional lability.

In addition, key risk factors for suicide contagion effects include the vulnerability of the individual, age, gender, knowing someone who’s attempted or died by suicide, and the perception of the presence of a suicide cluster itself (Abrutyn & Mueller, 2014b; Bernburg, Thorlindsson, & Sigfusdottir, 2008; Haw, 1994; Kleinman, 2015; Mueller, Abrutyn, & Stockton, 2015; Zenere, 2009). Consistent with the definition of contagion effect, having an awareness of someone who has died by suicide is requisite to establish a contagion effect. However, the nature of the relationship with the suicide victim has been shown to significantly influence the likelihood of suicidal behavior in the subsequent individual, with both knowledge of attempts and actual deaths serving as predictors (Kleinman, 2015; Mueller et al., 2015; Swanson & Colman, 2013).

In assessing the impact that peers’ suicidal behavior have on teens, Abrutyn and Mueller (2014b) found that awareness of a role model’s (peers and family members) suicide attempt is associated with future suicidal ideation, and in some cases actual attempts. This effect was found to be strongest with peers serving as the role model who had engaged in suicidal behavior (though an effect was also found for family members), with females (compared to males) being more likely to develop and maintain suicidal behavior over time (up to 6 years for females). This finding lead the authors to conclude that peers may be more meaningful social models, thereby making peer suicidal behavior a stronger predictor of future suicidal behavior in the individual than compared to familial role model suicidality exposure (Abrutyn & Mueller, 2014b).

In support, Mueller and colleagues (2015) further explored this topic and reached similar findings that teens who are exposed to a close friend or family member who have attempted
suicide are more likely to report suicidal ideation and attempts, even after controlling for
demographics, sociological factors, and known adolescent psychological risk factors (e.g.,
depression, child abuse, familial conflict, own suicidality history; Mueller, Abrutyn & Stockton,
2015).

However, additional research suggests that simply knowing a person, without regard for
model status, who has attempted or died by suicide remains a significant risk factor (Kleinman,
2015; Swanson & Colman, 2013). Using a national youth survey database (i.e., National
Annenburg Survey of Youth), Kleinman (2015) found that adolescents who reported knowing
someone who attempted or died by suicide were 2.28 to 3.53 times more at-risk for serious
suicidal thoughts or planning, than compared to those who did not report being exposed to an
individual with suicidal behavior. Swanson and Colman (2013) in their study on the exposure to
suicide as a predictor for future suicidal behavior in adolescents found that personally knowing
the victim was less predictive of suicidal behavior than simply knowing a schoolmate who died
of suicide. Notably, Swanson and Colman’s (2013) results suggest that any proximity to an
individual who dies by suicide is significant, and those who are impacted by suicide remain at an
increased risk of engaging in suicidal behavior at least two years following the suicidal event.
These findings provide a considerable basis for the importance of universal and sustained
prevention, intervention, and postvention response when a suicide occurs within the milieu of a
community or school.

Some shared risk factors for suicide may also increase in significance within the context
of contagion effects. For example, Ma-Kellams and colleagues (2016) found that following a
widely publicized suicide, individuals with higher levels of depression are more likely to exhibit
positive attitudes toward suicide (Ma-Kellams, Baek & Or, 2016). That is, individuals with a
preexisting risk factor of depression also demonstrated changes in attitudes, effectively increasing the risk level. These findings further exemplify the multiple pathways and confluence of factors relating to the acquisition and development of suicidality.

The Internet and its role and function in influencing contagion effects through the spread of information, exposure, and awareness of suicidal behavior among individuals has begun to gain traction in the literature (Heffel, 2014; Robertson, Skegg, Poore, Williams, & Taylor, 2012). Robertson et al. (2012) found that the Internet was an integral component to the spread of information, and misinformation, in response to a suicide cluster. With the perception or knowledge of a cluster serving as a risk factor in itself (Haw, 1994), the use of technology to propagate knowledge of the occurrence, accurately or inaccurately, may well be influential (Heffel, 2014; Robertson et al., 2012). At the very least, such technological factors impacting the dissemination of information make geographic concentration of clusters less relevant in the context of cyber social network connectivity. It is for this reason, among others, that experts have recommended the monitoring of social networking sites in the wake of a teenage suicide (AFSP & SPRC, 2011; Cox et al., 2016; Heffel, 2014; Robertson et al., 2012; The Campus Suicide Prevention Center of Virginia, n.d.). This recommendation is particularly relevant to schools or other communities that strive to understand the culture and climate of their population (e.g., students) in order to respond effectively with appropriate methods of support and intervention in the aftermath of a suicide.

Suicide Clusters in Schools

Outside of individual risk factors, community risk factors as well as the method, nature, and scope of response to a suicide have been shown to influence future suicidal behavior (Kleiman, 2015; Haw et al., 2013; Insel & Gould, 2008; CDC, 1994). Insel and Gould (2008)
suggest that small communities may be particularly susceptible to cluster effects due to how quickly knowledge of the suicide spreads in more closely connected networks. In addition, clusters have been repeatedly documented within homogenous communities in general (Haw et al., 2013). With schools generally serving as small, homogeneous, and closely connected communities, it is perhaps not surprising that suicide clustering has been established to have occurred within school systems across the country (Canady, 2016; Fowler et al., 2013; Haw et al., 2013; Kleinman, 2015; Niedzwiedz, Haw, Hawton & Platt, 2014; Poijula et al., 2001).

While individual and community facets may serve as the proximal risk factors for replicated suicidality, the ways in which communities respond to suicide are paramount. In accordance with the national imperative to reduce suicide, and in acknowledgement of the preventable nature of suicide contagion effects, the CDC has issued a number of recommendations for the media on how to report on suicides so as to minimize the possibility of a contagion effect (CDC, 1994). Notably, these safe and responsible reporting recommendations (APPENDIX 1) were crafted in collaboration with a number of suicide researchers and experts, with the intention of providing guidelines that would minimize risk factors associated with the reporting of a suicide. According to the CDC (1994), the following actions associated with responding to suicides can promote suicide contagion, thereby constituting risk factors, and are hence critical to avoid when responding to suicides within a community: a) presenting simple explanations for the suicide, b) repeatedly exposing individuals to the report of suicide, c) sensationalizing the suicide, d) providing details on the method of suicide, e) glorifying the suicidal act or person, f) focusing solely on the positive characteristics of the deceased. Further recommendations for the responsible reporting on suicide have been offered by the American Foundation for Suicide Prevention in consultation with additional prevention and intervention
associations, universities, suicide experts, and government agencies (AFSP et al., 2015; APPENDIX 1). Additional risk factors which have been identified specifically within the context of suicide contagion among teens include household poverty, residential mobility, parental conflicts, and being female (Bernburg et al., 2008), and should be considered in assessing risk and conceptualizing this construct.

Taken together, these findings of risk factors associated with adolescent suicide contagion effects support the dire importance of including suicide postvention programing in secondary schools to target those who are most at-risk of influential suicidal behavior. Furthermore, researchers have demonstrated the long lasting effects of such risk factors (up to 6 years for teenage females and at least 12 months for teenage males), making systems that interact with teens continuously and in longevity, such as schools, critical platforms to prevent, intervene, and responsibly respond to suicidality, and provide the necessary care and continued follow-up for such populations (Abrutyn & Mueller, 2014b; Hart, 2012; Swanson & Colman, 2013).

Theoretical Conceptualizations for Contagion Effects

To conceptualize and explain the phenomena of suicide, researchers have looked to various theoretical orientations such as biological, cognitive-behavioral, developmental, and systemic etiologies (Van Orden et al., 2010). However, with the variability of risk factors (e.g., previous attempts as a primary risk factor, yet most individuals die with first attempt), and the absence of a definitive cause of suicidal behavior, it has been suggested that suicidality likely results from an interaction of multiple factors including but not limited to demographics, socioeconomics, environmental, and cultural, which have an effect at both the individual and contextual levels (Niedwiedz, Haw, Hawton, & Platt; 2014). In examination of suicide contagion
effects, theories that are predicated on multiple levels of risk factors and interactions, as well as social learning, modeling, and imitative behavior through observation have been offered (namely Joiner’s [2005] interpersonal-psychological theory of suicide, and Bandura’s [1977; 1986] social learning and social cognitive theories; Boccio, 2015; Insel & Gould, 2008; Lahad & Cohen, 2006; Ma-Kellams et al., 2016; Pirkis & Robinson, 2014; Van Orden et al., 2010).

Social cognitive theory contends that human behavior is a function of personal and environmental factors, which interact within individuals and bidirectionally influence behavior of others (Bandura, 1986; Ma-Kellam et al., 2016). That is, not only are individuals influenced by interactions of personal and environmental factors, but they are also influenced by the behavior of others, resulting in reciprocal interactive influences between people. Similarly, Bandura’s (1977) earlier work in observational learning gave rise to social learning theory, which asserts that individuals learn through observing models, evidencing the influential nature of behavior.

Taken together, these theories provide a logical conceptual model for which to work from in explaining and understanding how suicidal behavior can be affected from one individual to the next. Accordingly, these theories posit that the model and the personal attributes of the observer are critical components to the transmissibility and subsequent imitation of the behavior (in this case, suicide), predicated on the assumption that the observer identifies with the model based on shared characteristics (Bandura, 1977; Ma-Kellams et al., 2016; Pirkis & Robinson, 2014).

Proponents of applying this theory to suicide contagion effects point to the evidence of shared characteristics between individuals associated with mass and point suicide clusters, as well as the finding that peers as models have the strongest effect on subsequent suicidal behavior in teens (Abrutyn & Mueller, 2014b; Insel & Gould, 2008; Pirkis & Robinson, 2014).
Furthermore, social learning theory states the behavior is influenced by reinforcement, with observers being more likely to imitate the observed behavior if they perceive the model to be rewarded for their action (Bandura, 1977; Pirkis & Robinson, 2014). This is consistent with the contextual response risk factors identified by the CDC, supporting the importance of responding to suicides in a manner that does not promote imitation or reinforce the act of suicide among others.

The interpersonal theory of suicide, an extension of the interpersonal-psychological theory of suicide (Joiner, 2005), is comprised of three facets (i.e., thwarted belongingness, perceived burdensomeness, acquired capability) that together are used to explain the construct of suicidality (Boccio, 2015; Joiner, 2005; Van Orden et al., 2010). Thwarted belongingness refers to the belief that an individual is unloved, does not belong, or is not socially connected, while perceived burdensomeness regards an individual’s belief that they are a burden to others. Acquired capability is attained through desensitization and habituation of the fear response associated with death and self-inflicted pain (Boccio, 2015; Joiner, 2005; Van Orden et al., 2010). The interpersonal theory of suicide asserts that the presence of the first two components, thwarted belongingness (e.g., “I am alone”) and perceived burdensomeness (e.g., “I am a burden”) comprises the desire for suicide, while the third component (i.e., acquired capability) provides the means to attempt a suicide, with multiple attempts further habituating the fear response and increasing the risk of future attempts and death (Van Orden et al., 2010). The confluence of these three factors provide a window into those who may be most at-risk for engaging in suicidal behavior, with known risk factors (e.g., social isolation, previous suicide attempts, mental health disorder, hopelessness, family conflict) embedded within the primary
components, serving as evidence for the presence of the primary components (Van Orden et al., 2010).

This theoretical model accounts for suicide contagion effects and ascribes the phenomena to the acquired capability component. Accordingly, “exposure to others who have engaged in suicidal behavior may activate habituation to the fear of suicidal behavior, thus accounting for clustering of suicidal behavior as a byproduct of elevated acquired capability.” (Van Orden et al., 2010, p. 13). Furthermore, the authors of the interpersonal theory of suicide purport that the theory affords targeted intervention in accordance with the observed presence of critical components, allowing for sensitivity and specificity of treatment at an individualized level, as well as at the universal prevention level (Van Orden et al., 2010).

An additional method of conceptualization regarding at-risk populations for suicide contagion has been offered by the Community Stress Prevention Center in Kiryat Shmona, Israel (Lahad & Cohen, 2006). This model, known as the Circles of Vulnerability, emphasizes the importance of an individual’s geographic proximity to the death, psychosocial proximity (family, friend, other form of relationship to victim) and previously established at-risk populations (e.g., individuals with prior suicidal behavior). This model suggests that the interaction of the three domains may serve to identify individuals that are most in need of intervention. That is, those who are closest to the victim in physical proximity, psychosocial proximity, and have pre-existing risk factors of suicidal behavior, may be most at-risk of engaging in suicidal behavior following the observed death.

**Additional explanations for contagion effects.** While these theories provide useful paradigms for which to work from in explaining, understanding, and conceptualizing suicide cluster and contagion effects, the distinct mechanisms responsible for these phenomena are still
unknown, and therefore remain theoretical (Bohanna, 2013; Insel & Gould, 2008). However, experts who have attempted to provide expanded explanations for these effects upon the basis of such theoretical orientations (Gould et al., 2014; Haw et al., 2013; Kleinman, 2015). Gould et al. (2014) offer multiple possible mechanisms of action. In citation of Lake & Gould (2014), Gould et al. (2014) suggests that repeated, detailed and explicit reporting on suicide may normalize the behavior for vulnerable individuals, particularly adolescents, and reduce their ability to inhibit imitation of the model (i.e., victim of suicide). Alternatively, Gould et al. (2014) also points to Haw et al.’s (2013) explanation of the possibility of priming, in that the reporting of suicide in a certain manner may trigger “preprogramed thoughts in suicidal youth” (p. 41).

Insel & Gould (2008) suggest that while modeling and imitation may be possible underlying mechanisms for cluster effects, “assortative relating,” may also account for such effects (Joiner, 2003). Assortative relating asserts that individuals with similar personality traits and interests are more likely to belong to the same peer group (Joiner, 2003). Therefore, it is possible that vulnerable adolescents may belong to the same peer group(s) prior to a suicide occurring, making such individuals particularly at-risk given the significance of peer models or simply knowing someone who has attempted or died by suicide. Notably, Insel & Gould (2008) suggest that modeling and imitation, and assortative relating are not mutually exclusive, and may compound each other in the development of a pathway to clustered suicidality.

Kleiman (2015) has offered the concept of acceptability and idealization as a possible pathway to suicide contagion. The author suggests that an individual must view suicide as an acceptable reaction to negative events of psychopathology. He posits that this acceptance may be strongest when the individual has personal knowledge of someone for whom they idealize that has attempted or died by suicide. In witnessing an idealize figure engaging in suicidal actions,
the individual’s beliefs of suicide may shift to a form of acceptance, thereby increasing their risk of engaging in suicidal behavior themselves. In testing this hypothesis, Kleiman (2015) found that suicide acceptability served as a partial mediator between knowing someone who has engaged in suicidal behavior, and engaging in suicidal actions themselves, leaving the author to conclude that this factor may serve as one potential pathway to suicide clustering.

**Vulnerability of Adolescents**

The evidence of adolescents being at the greatest risk for suicide clusters is substantial (Canady, 2016; Fowler et al., 2013; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Insel & Gould, 2008; Poijula et al., 2001; Swanson & Coleman, 2013). Much of the literature speaks to the importance of vulnerability as a risk factor for teens, pointing to the objective of identifying vulnerable individuals as a primary step in mitigating contagion effects (AFSP & SPRC, 2011; Brock et al., 2002; Cox et al., 2016; Cox et al., 2012; Hart, 2002). But what makes adolescent populations more vulnerable or at-risk that other age groups? There are clear developmental differences between children, adolescents and adults, leading researchers to posit how such distinctions may influence vulnerability and level of risk (Blakemore & Choudhury, 2006; Cannon & Hudzik, 2014; Daniel & Goldston, 2009; Insel & Gould, 2008;). Psychosocial and neurodevelopmental characteristics of teenagers may further elucidate the distinct elevations in risk for this particularly vulnerable age range.

**Psychosocial considerations.** Abrutyn and Mueller (2014b) posit that teens may be particularly susceptible to suicide contagion effects due to the significant importance of social status and social relationships during adolescence, in concert with the propensity for teens to be influenced by their peer’s actions and beliefs. Additionally, adolescent’s continually developing sense of self may make them especially susceptible to peer influences (Giordano, 2003). As teens
negotiate social interactions and attempt to gain peer approval, they may feel pressured to belong to a peer group (regardless of the positive or negative influences or characteristics of the group), and may also enter into situations that increase stress (Daniel & Goldston, 2009). These outcomes, while stress inducing, may also increase the likelihood of affiliating with peers who engage(d) in suicidal behavior, and subsequently increase the risk of suicide for themselves (Daniel & Goldston, 2009).

**Neurodevelopmental considerations.** Outside of peer influences on identify, choices, and actions, adolescents may also be at greater risk compared to adults due to neurodevelopmental factors such as increases in impulsivity, difference in perspectives of time, and the tendency to focus on more immediate rather than long term consequences when problem solving (Nurmi, 1991; Reyna & Farley, as cited in Daniel & Goldston, 2009). Postmortem brain studies of teens suggest that the development of cognitive processes, via synaptic pruning, that are associated with self-regulation and problem solving continue throughout adolescence and into young adulthood (Blakemore & Choudhury, 2006; Wyman et al., 2010). Grey matter density in the frontal lobes of the brain peaks at puberty, followed by a plateau, and a continual decline through adolescence and into early adulthood, coinciding with increases in white matter (Blakemore & Choudhury, 2006). These neurobiological mechanisms are hypothesized to relate to changes in emotional, behavioral, and metacognitive regulatory processes (Blakemore & Choudhury, 2006). Deficits in such cognitive processes have been identified as possible risk factors for teens engaging in suicidal behavior, and are also hypothesized to increase the susceptibility of teens in imitating suicidal behavior of others (Insel & Gould, 2008; Wyman et al., 2010).
Notably, the propensity to behave impulsively may well increase contextual stress and the likelihood of having to manage distressful situations (Daniel & Goldston, 2009). In further support of this pathway to risk, universal intervention programs implemented with elementary aged children designed to improve self-regulation have yielded significant reductions in suicidal behavior 15 years later (Wyman, et al., 2010).

**Suicide Prevention and Intervention in Schools**

The literature base on suicide and suicide clusters clearly delineates adolescents as a primary risk group for suicide, the most at-risk age group for cluster effects, and has documented cluster effects within secondary school systems across the nation (Canady, 2016; Fowler et al., 2013; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Insel & Gould, 2008; Poijula et al., 2001). From a social cognitive and social learning theory perspective, school systems provide increased opportunities for teens to learn or imitate behavior through social observation given the frequency in which they are exposed to peer models that may share relatable characteristics. In the context of the interpersonal theory of suicide, students in schools may also have increased opportunities to be thwarted from belonging to peer groups that demonstrate social status and the powerful protective factor of belongingness (Van Orden et al., 2010). Additionally, schools serve as social systems whereby hundreds if not thousands of teenage students may interact with one another daily, or at the most basic level, may have knowledge of school culture, climate, events, and news (e.g., a student suicide). This level of connectedness (achieved by attending the school) may increase the opportunities for teenaged students to become aware, either personally or through word of mouth, of individuals who have engaged in suicidal behavior (a known risk factor for observed suicidality in adolescents).
As noted, school systems often serve as small, closely connected, homogeneous communities in the context and consideration of point clusters, making such settings a reasonable and arguably critical platform for intervention (Aguirre & Slater, 2010; Brock, 2002; Haw et al., 2013; Insel & Gould, 2008; Kleinman, 2015; Mauk et al., 1994; Miller, 2012; Niedzwiedz et al., 2014). In addition to the fact that school communities do experience suicide clusters, additional factors support the inclusion of suicide prevention and intervention models within the educational setting (Brock, 2002; Mauk et al., 1994; Miller, 2011, 2012). Such factors include the substantial portion of their days that students spend in school interacting with school personnel capable of conducting intervention, the ethical responsibility school professionals have to provide a safe school environment, and the concurrent benefit of suicide prevention and intervention programs reinforcing the principals identified in other student wellness programming (Katz et al., 2013, Mauk et al., 1994; Miller, 2011; SAMHSA, 2012). Additionally, the implementation of prevention programs in normative social systems like schools may yield the broadest impact on suicide, especially in consideration that multiple risk factors, such as emotional and behavioral disorders, are typically evident in individuals prior to completing secondary school (Wyman, 2014).

The confluence of these factors supports the need of high quality, evidenced based prevention, intervention, and postvention programming to support student and community needs. Further, it has been documented that mental health functioning, thought to be a contributing factor in the majority of deaths by suicide, can negatively impact learning, while a negative perception of academic achievement can also impact mental health and suicidal behavior (Field, Diego & Sandres, 2001; Miller, 2011). Even in the apparent absence of academic difficulties or mental health concerns, non-supportive environments that do not allow students to express
themselves at times of grief may result in deleterious effects on the individual’s mental health functioning (Poijula et al., 2001).

In response to the importance of these factors, over 90% of school districts in the United States have some form of a crisis plan to address the vast needs of students influenced by crises (Nickerson & Gurdineer, 2012; U.S. Government Accountability Office, 2007). And while there is no federal law requiring schools to maintain crisis intervention plans to respond to critical incidents such as student suicides, 32 states have enacted laws or policies requiring such protocols (Brock, Nickerson, Reeves, Savage, & Woitaszewski, 2011).

**School-based prevention and intervention programs.** Despite their ubiquity in secondary schools across the country, the degree to which prevention, intervention, and postvention policies and plans are effective in achieving their stated outcomes remains unclear, with available research suggesting limited empirical validation and mixed efficacy (Caine, 2013; Cox et al., 2012; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan, Klingbeil, & Meller, 2013; Miller, 2011, 2012; Miller et al., 2009; Owens, 2014; Poijula et al., 2001; Robinson et al., 2013; Wasserman et al., 2015; Wei, Szumilas, & Kutcher, 2010; Wethington et al., 2008; Wyman, et al., 2010; Wyman et al., 2008). The Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP) lists 20 evidence-based suicide prevention/intervention programs (inclusive of all settings, ages, and populations) under their legacy programs; programs admitted using 2008-2015 review criteria (SAMHSA, 2016). Of these 20 programs, zero programs reported reductions in mortality, and just two were identified as reducing suicidal ideation or suicidal attempts in school-aged populations (SAMHSA, 2016).
However, only four suicide prevention and intervention programs were identified as evidence-based under the most recent review criteria (September, 2015) by SAMHSA NREPP, with only one of these interventions designed for school-aged populations (i.e., Signs of Suicide) (SAMHSA, 2016). This program produced favorable outcomes with respect to reductions in suicidal attempts, but has yielded mixed results with respect to reductions in reported suicidal ideation. No programs under the current or previous review criteria have demonstrated significant effects for reductions in mortality among school-aged populations (SAMHSA, 2016).

Numerous systematic literature reviews have recently been conducted to identify the programs most prevalent in the literature and research base, and to ascertain the effectiveness of school-based suicide prevention, intervention, and postvention programs (Cox et al., 2012; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller et al., 2009; Robertson et al., 2013; Szumilas & Kutcher, 2011; Wei et al., 2010). School-based suicide prevention and intervention programs are commonly represented by and classified in a three tier hierarchical model (i.e., universal, selective, targeted/indicated)(Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2012; Robinson et al., 2013). Universal programs serve as the first tier, and are intended to target all students within the school (Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2012; Robinson et al., 2013), followed by selective programs that are designed to address at-risk students. The third tier, known as targeted or indicated interventions, are aimed at students that require increasing levels of intervention based on risk and need, and are individualized (typically with a greater level of intensity/support) in order to meet identified needs (Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2012; Robinson et al., 2013).
Findings from these systemic reviews indicate the most common forms of suicide prevention programs to include curriculum-based psychoeducation for all students (universal), public service announcements (universal), screening programs for at-risk students (selective), gatekeeper training to teach faculty and staff how to identify at-risk students and connect to necessary resources (selective), and gatekeeper peer training programs to teach students how to assist in referring their peers for support (selective) (Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2012; Robinson et al., 2013).

Generally, these literature reviews have identified considerable gaps in knowledge and a paucity of research assessing and establishing the efficacy of such programs in respect to suicide related outcomes (e.g., deaths, attempts, ideation, knowledge, attitudes, help-seeking behaviors). While some universal programs have yielded positive effects in respect to improving knowledge and attitudes, there is a conspicuous absence of evidence demonstrating such programs influence on critical suicide behaviors including attempts, help-seeking, and death rates (Klimes-Dougan et al., 2013). However, a recent study of the universal prevention program known as Youth Aware of Mental Health Programme (YAM) yielded promising results with a reduction in suicide attempts and ideation among teens, though due to ethical reasons the control group was also exposed to educational posters in their classrooms (Wasserman et al., 2015). While the effect of public service announcement approaches, such as educational posters, is unclear (Klimes-Dougan et al., 2013), this aspect of the design exposes the study to the possibility of treatment diffusion and may benefit from future replication to fortify the initial findings.

The effects of selective programs on critical suicide related behaviors are equally dubious. Similar to the universal programs, only one selective intervention (i.e., Signs of Suicide) identified in the recent systemic literature reviews and by SAMHSA NREPP, has been
shown to reduce suicide attempts (Aseltine & DeMartino, 2004; Katz et al., 2013; Klimes-Dougan et al., 2013). Signs of Suicide (SOS) is a two facet intervention that provides universal psychoeducation followed by screenings to identify at-risk students (Aseltine & DeMartino, 2004). While SOS was found to be successful in reducing self-report attempts and increasing knowledge and attitudes towards suicide and help-seeking, it did not yield significant effects for suicidal ideation or help-seeking behaviors (Aseltine & DeMartino, 2004; Katz et al., 2013). Gatekeeper programs for school faculty and staff have been shown to significantly increase participant knowledge, and self-perceived preparedness to identify warning signs and effectively intervene (e.g., make appropriate referrals) (Caine, 2013; Robinson et al., 2013; Wyman et al., 2008). However, such programs have not consistently demonstrated desired effects of reducing suicidal behavior or increasing help-seeking behavior among students (Caine, 2013; Klimes-Dougan et al., 2013).

Gatekeeper programs involving student leaders have yielded encouraging results with noted increases in student perceptions of adults as helpers (i.e., Sources of Strength), though such programs are less common in the suicide prevention and intervention literature, and by extension may likely be less commonly implemented in schools (Wyman et al., 2010).

Research on targeted/indicated programs is scarcer compared to the more common universal and selective interventions, the latter of which generally lack rigorous empirical validation (Cox et al., 2012; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller et al., 2009; Robertson et al., 2013; Szumilas & Kutcher, 2011; Wei et al., 2010). Katz et al. (2013) and Miller et al.’s (2009) literature reviews did not identify any studies assessing the effectiveness of indicated school-based suicide interventions, though Robinson et al.’s (2013) review identified three such programs that involved intensive psychoeducation and regular
counseling sessions, which were found to be effective in reducing psychopathology (risk factor for suicide) or producing favorable changes in attitudes towards suicide (Eggert, Thompson, Herting & Nicholas, 1995; Robinson et al., 2013; Tang, Jou, Ko, Huang & Yen, 2009; Thompson, Eggert, Randell & Rike, 2001).

**School-based postvention programs.** Suicide postvention may be defined as “those activities developed by, with, or for suicide survivors, in order to facilitate recovery after suicide, and to prevent adverse outcomes including suicidal behavior” (Andriessen, 2009, p. 43). In this definition, suicide survivors refers to individuals other than the deceased or attempter, and includes those who may be impacted in some way by the observed suicide. Suicide postvention is a vital component to comprehensive suicide prevention and intervention programming, and has been especially emphasized in the literature regarding its role in minimizing the potential of suicide cluster effects in schools (Aguirre & Slater, 2010; Brock, 2002; Hart, 2012; Joshi et al., 2015; Mauk et al., 1994; Miller, 2011, Poijula et al., 2001; Szumilas & Kutcher, 2011).

Hart (2012) has identified five core goals of suicide postvention: (1) returning the focus of the school to education, (2) preventing suicide contagion or imitative behaviors, (3) facilitating natural coping responses of those affected, (4) providing resources for those affected, (5) identifying ongoing needs of the school community. Unfortunately, the degree to which postvention programming in schools meets these stated goals remains unknown due to the dearth of evaluative research in this domain (Andriessen, 2014; Cox et al., 2016; Robinson et al., 2013; SAMHSA, 2016; Szumilas & Kutcher, 2011). The Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP) does not include any postvention programs in their evidence-based registry, nor do they list any suicide prevention or intervention programs that include postvention components.
Szumilas & Kutcher (2011) conducted a systemic literature review to identify postvention programs evident in the literature, assess their efficacy in achieving stated outcomes, and specifically to examine the degree to which suicide postvention programs in schools reduce future incidents of suicide attempts and deaths (i.e., contagion effects). The authors concluded “that the literature does not provide support for any evidence-based suicide postvention program that reduces the incidence of suicide or suicide attempts and/or reduces suicide contagion” (p. 27). Accordingly, Szumilas & Kutcher (2011) determined that the quality of available evidence for postvention programming ranges from very low (case studies) to moderate (pre/post test design with control), and void of any rigorous experimental designs or methodology (e.g., randomized controlled trials).

In support, Robinson et al.’s (2013) systemic review identified only two studies of school-based postvention programs in the literature, noting that the “continued lack of evidence pertaining to suicide postvention is disappointing” (p. 178). Of the studies identified, one was conducted in schools within seven days following student suicides (Hazell & Lewin, 1993). The postvention treatment involved school-based group counseling sessions (90 minutes) for at-risk students, which were identified by school staff primarily based on their proximity to the deceased (e.g., peers). This study was of moderate experimental rigor, as it included a controlled reference group, though no differences were noted for students who received the counseling and those who did not (Hazell & Lewin, 1993). Furthermore, the control group was found to have students of similar risk level, suggesting that school staffs’ method of identifying students based on proximity to the deceased was insufficient (Hazell & Lewin, 1993).

The other evaluative postvention study present in the literature provides more favorable results, but lacks rigorous experimental design and methodology, limiting the generalizability or
inferential power associated with the results (Poijula et al., 2001; Robinson et al., 2013; Szumilas & Kutcher, 2011). Poijula et al.’s (2001) study was conducted in three schools in response to an established cluster of suicides, and involved a combination of mental health professionals and/or teachers entering classrooms to provide psychoeducation, talk through the event(s) with the students, and provide psychological debriefings (Poijula et al., 2001). Not all schools received postvention in the same manner, though each school that received postvention response reported no additional suicides at the four-year follow-up review, with one notable exception. In one school, classroom meetings were conducted in all but one 8th grade classroom. Tragically, a student from the classroom room that did not receive postvention response died by suicide two months later (Poijula et al., 2001). While this study design and methodology do not afford casual inference, the morbid results elucidate the critical importance of responsible and effective response to adolescent suicides within school systems.

Suicide Research Limitations

The clear lack of empirical support for school-based suicide prevention, intervention, and postvention programming is troubling. This gap in knowledge stems from the scarcity of rigorous experimental designs used to evaluate the programs, the uncertainty of fidelity of implementation, and the general challenges inherent in conducting suicide prevention, intervention and postvention research or evaluation (Caine, 2013; Cox et al., 2016; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Miller, 2011, 2012; Owens, 2014; Poijula et al., 2001; Robinson et al., 2013; Wasserman et al., 2015; Wei et al., 2010; Wethington et al., 2008; Wyman et al., 2008).

Caine (2013) outlined five such challenges in conducting suicide prevention and intervention research: (1) High rate of false positives when using risk factors to predict suicidal
behavior, (2) the high rate of false negatives despite targeted intervention, (3) the lack of interaction between clinicians and those in need of intervention, (4) the general lack of knowledge of the definitive pathways to suicidality, and (5) the lack of coordination between local, regional, state, and national agencies and organizations in addressing these needs. In addition, researchers point to the absence of psychometrically sound measures to assess suicide, the ethical dilemma associated with conducting randomized controlled trials (RCT) that incorporate potentially life-saving interventions, low base rates of teen suicides minimizing the statistical power of studies. They also point to the unpredictable and rare nature of adolescent suicide complicating the development of rigorous perspective study designs, and the diversity of those influenced by or engaging in suicidality limiting the generalizability of programming to all students (Andriessen, 2014; Caine, 2013; Cox, et al., 2016; Glenn & Nock, 2014; Klimes-Dougan et al., 2013; Nickerson & Gurdineer, 2012).

Additional factors impeding progress in the development or evaluation of empirically supported interventions includes the historically reactionary approach of schools to implement programming in response to a crisis as oppose to in preparation of a crisis (Adamson & Peacock, 2007), as well as a national trend for researchers to focus on suicide prevention with a “short-lived focus” (Classen, 2013). Classen (2013) in citation of Varmus in the US Library of Medicine (2010) states, “scientific breakthroughs typically result from ‘inspired, persistent, and often unforeseen explorations by researchers free to follow curiosity, instincts, and findings over many years” (pg. 147). Accordingly, Classen (2013) suggests that such factors are often absent from suicide research, which impedes progress in empirically validated interventions. With the lack of empirically validated, evidence-based interventions for suicide prevention in schools, and to a greater degree, the absence of evidence-based postvention programming, school
professionals are left to interpret and implement recommendations from researchers, experts, and organizations using their clinical judgment in order to prevent suicide and mitigate suicide clusters and contagion effects.

**Postvention Recommendations**

Without evidence-based postvention programs for schools, school districts and their crisis responders are advised to refer to published toolkits, general guidelines for community responses, broad adaptation of evidence-based prevention and intervention methods, and expert recommendations for conducting postvention within schools. These recommendations serve to guide school-based programming and response approaches, particularly in respect to the mitigation of suicide clusters and contagion effects (Cox et al., 2012; Robinson et al., 2013). In their systemic literature review, Cox and colleagues (2012) identified six main approaches that were consistently associated with postvention responses by communities and schools, and may serve as a framework for schools in conceptualizing and designing their response efforts. The approaches include: (1) the development of a community response plan, (2) educational/psychological debriefings, (3) the provision of both individual and group counseling, (4) screening of high-risk students, (5) responsible reporting of the suicide, (6) and the promotion of health recovery in the community to prevent future suicides.

These general approaches align with Hart’s (2012) goals of postvention (returning the focus of the school to education, preventing suicide contagion or imitative behaviors, facilitating natural coping responses of those affected, providing resources for those affected, identifying ongoing needs of the school community), but lack specificity in guiding schools to effective response. However, Hart (2012) has also outlined a detailed postvention protocol example that may be adopted and applied by schools (APPENDIX 2). In addition, there are published toolkits,
handbooks, checklists, training programs, and expert generated guidelines specifically developed
and intended to support schools in their postvention programming (AFSP & SPRC, 2011; Cox et
al., 2016; SPRC, 2014). These published materials identify essential components of suicide
postvention, with detailed best-practice recommendations for engaging in postvention actions
across a variety of settings and circumstances. They come equipped with key considerations,
facts and warning signs, checklists, additional resources, samples of safe messaging for students,
staff, parents, and the community, as well as samples and recommendations for media statements
(AFSP & SPRC, 2011; SPRC, 2014).

Most recently, Cox et al. (2016) employed a methodology known as the Delphi method,
which involved a panel of suicide experts who draw upon on their own knowledge and
experience to rate the approval of recommended actions in order to further identify the most
effective and critically important components of postvention response. Following the initial
independent ratings, the experts received feedback on their ratings as a whole group, and
collaborated until a consensus regarding the approval of specific actions was reached (Cox et al.,
2016). The actions that the experts reviewed were generated from a comprehensive literature
search, with 548 actions emerging as postvention guidelines per the expert consensus
recommendations (Cox et al., 2016). These actions were grouped into 20 critical components of
postvention response (APPENDIX 3), and include guidelines on the development and response
of crisis teams and protocols, notifying staff, students, parents, and the community, identifying
student and community needs, providing support for staff and students, dealing with the media
and social media/internet response, handling of funerals/memorials, the continued monitoring of
students and staff, the review of the postvention response, and measures to prevent future
suicides (Cox et al., 2016). Notably, the confluence of these guidelines, with specific actions
embedded in each component, is intended to mitigate one of the essential goals of suicide postvention: controlling and preventing suicide contagion effects.

**Specific suicide contagion recommendations.** As noted, a fundamental component and goal of suicide postvention is to minimize the risk of suicide contagion effects, and to prevent future suicides (AFSP & SPRC, 2011; Brock, 2002; Cox et al., 2012; Cox et al., 2016; Hart, 2012; Miller, 2012; SPRC, 2014). To this end, there are a number of recommendations, considerations, and actions that have been identified in the literature as protective factors to mitigate a subsequent contagion effect within a school setting (AFSP & SPRC, 2011; Brock, 2002; Cox et al., 2016; Hart, 2012; Heffel, 2014; Miller, 2012; SPRC, 2014; The Campus Suicide Prevention Center of Virginia, n.d.). These recommendations are as follows:

(APPENDIX 4)

1) Follow safe messaging/reporting guidelines in all communications associated with the suicide

2) Identify at-risk students

3) Contact and partner with local mental health providers/facilities to support the referral of students in need

4) Manage emotional responses of students with the provision of school-based individual and group counseling for those in need

5) Monitor media coverage of the suicide and encourage responsible reporting

(APPENDIX 1 & APPENDIX 5)

6) Work with student liaisons to utilize social networking sites in order to identify at-risk students, and propagate mental health resources, warning signs, and recommendations
7) Communicate with friends and family of the deceased to manage memorials (see APPENDIX 2)

8) Build a community coalition committee to address greater needs of the community.

School-Based Mental Health Providers Role

Crisis prevention, intervention, and postvention programs are intended to address a myriad of circumstances and situations in school systems (Brock, 2002; Miller, 2012). Crisis teams are typically multidisciplinary, including administrators, school-based mental health providers, school police, and additional school-based faculty and staff who may be uniquely situated to support diverse student needs and school response efforts (Brock, 2002; Miller, 2012). Notably, the school-based mental health providers, and specifically school psychologists, are typically considered integral members of such crisis response teams (Adamson & Peacock, 2007; Allen et al., 2002; Brock et al., 2002; Debski et al., 2007; Kellner, 2001; Nickerson & Zhe, 2004; Owens, 2014; Schmidt, 2016; Stein-Erichsen, 2010). Adamson & Peacock (2007) demonstrated that in a sample of 214 school psychologists, 91.4% identified themselves as crisis team members (second only to principals [91.9%]). Furthermore, 90.2% of the respondents identified themselves as a crisis team leader/coordinator, while 87% regarded themselves as being responsible for providing psychological first aid and services as part of their roles and responsibilities in conducting crisis response efforts. The inclusion of mental health providers on crisis teams is particularly important and necessary given that suicide related events (i.e. attempts and deaths) rank among the top encountered school crises reported by school psychologists (Adamson & Peacock, 2007; Nickerson & Zhe, 2004).

The frequency of suicide related events in schools promotes school-based mental health professionals, including school psychologists, as leaders in the development, provision, and
evaluation of crisis response efforts (Nickerson & Zhe, 2004). School-based mental health
providers are prominent agents in the detection and intervention of suicidal students, with school
psychologists, school social workers, and school counselors typically serving as the most well
suited and appropriate personnel for conducting suicide related responses (Liebling-Boccio &
Jennings, 2013; Miller, 2012).

Given these factors, in addition to the dearth of evidence for empirically validated crisis
response programs, it is increasingly important that school psychologists are adequately trained
and prepared to implement effective suicide prevention, intervention, and postvention responses.
Additionally, there is a paucity of empirically supported tools to synthesize risk factors in
assessing the risk for future suicidal behavior, which is considered a fundamental aspect of
suicide prevention (Glen & Nock, 2014). Notwithstanding, it is the ethical and professionally
responsible of school psychologists to be knowledgeable and competent in assessing suicidality
in students (Boccio, 2015). In the absence of such tools and evidence-based crisis response
programs, school psychologists are often times left to rely upon clinical judgment in the
assessment of risk and provision of response efforts (Glen & Nock, 2014). These determinants
strongly support the notion that school psychologists must be adequately prepared and competent
to develop and implement response programming that is sensitive to suicide postvention and
emphasizes mitigating suicide contagion effects.

The available literature provides equivocal evidence for school psychologists’
preparedness to carry out such tasks, which underscores the crucial factors of knowledge and
self-efficacy associated with effective implementation of suicide response efforts by school
psychologists in schools (Adamson & Peacock, 2007; Allen et al., 2002; Berman, 2009; Debski
et al., 2007; Kellner, 2001; Miller 2011; Nickerson & Zhe, 2004, Schmidt, 2016; Stein-Erichsen,
Research investigating school psychologists’ preparedness in crisis prevention, intervention, and postvention suggests that providers are highly knowledgeable of suicide facts such as warning signs and risk factors, but are less knowledgeable with regard to intervention strategies, irrespective of years of work experience (Kellner, 2001; Debski, et al., 2007). In addition, distinct differences in self-report preparedness for postvention response compared to the handling of referrals for students at-risk of suicide have been identified (Debski et al. 2007; Stein-Erichsen, 2010). In surveying a random sample of 184 school psychologist NASP members (National Association of School Psychologists), Debski and colleagues (2007) found that the majority of school psychologists reported feeling “well prepared” (50%) or “somewhat prepared” (43%) to handle referrals for students who may be at-risk for suicide, with only 6% of school psychologists reported to “not at all” feel prepared. In contrast, nearly twice as many respondents reported feeling “not at all prepared” (11%) for postvention response in the wake of a suicide (Debski et al., 2007). Notably, while the majority of school psychologist participants in this study were able to correctly identify recommended postvention practices, only half of the clinicians, who largely reported being active members of crisis intervention teams, were familiar with suicide contagion mitigation strategies such as preventing the glamorization of the student death (Debski et al., 2007). In support, Stein-Erichsen (2010) yielded similar findings with nearly 50% of NASP member school psychologists in her sample (n = 78) reporting to be either “somewhat knowledgeable” (30.8%) or have “little or no knowledge” (16.7%) in suicide postvention, with considerably higher knowledge scores reported for suicide evaluation and intervention (Stein-Erichsen, 2010). In respect to confidence in one’s professional skills to conduct postvention services, 20.5% of respondents endorsed “not confident” and 32.1% reported being “somewhat confident” (Stein-Erichsen, 2010). That is, over 50% the sample of
NASP member school psychologists did not report being at least “confident” in their professional skill set to provide postvention response services following a student suicide, despite previous studies indicating that student suicides are one of the leading crisis events encountered by school psychologists (Adamson & Peacock, 2007; Nickerson & Zhe, 2004; Stein-Erichsen, 2010).

This finding provides a critical insight into the discord between provider knowledge and self-efficacy of suicide intervention, and the actual practice of employing methods that are recommended to prevent the spread of subsequent suicides. That is, if providers are unaware of specific suicide contagion mitigation strategies, report low confidence levels in their professional skill set to provide postvention, and report questionable levels of knowledge associated with postvention, how well can they effectively implement such methods as part of a comprehensive postvention response?

This question highlights the importance of understanding school psychologists’ experience and training in crisis prevention, intervention, and postvention. There has been considerable variation in reports of school psychologists training experiences within this domain (Allen et al., 2002; Debski et al., 2007; Kellner, 2001; Stein-Erichsen, 2010). The limited available literature that has investigated school psychologist crisis prevention and intervention training indicates that the majority of practitioners have received this type of training most commonly through local professional development workshops and in-service training, the self-study of academic literature and consultation with colleagues, and through graduate training programs (Allen et al., 2002; Debski et al., 2007; Kellner, 2001; Stein-Erichsen, 2010). Importantly, the findings from these studies indicate that the majority of school psychologists received such training predominately through professional development activities at the local and
district levels after becoming a practitioner, as opposed to formal graduate training before entering the workforce (Allen et al., 2002; Debski et al., 2007; Kellner, 2001). Specifically in regards to postvention training, Debski et al. (2007) found that 7% of a sample of NASP member school psychologists (N = 162) reported no training in postvention, less than one fourth received training at the graduate level, and approximately half of respondents reported professional development and self-study as their methods of training and education within this domain. Furthermore, Allen and colleagues (2007) found that only 2% of their total sample, which was comprised of Nationally Certified School Psychologists, reported feeling “well prepared” or “very well” prepared to deal with school crises as a result of their graduate training. This clear reliance on professional development activities post-graduate study to cultivate the essential knowledge of suicide prevention, intervention, and most notably, postvention, accentuates the importance of continuing education experiences for mental health providers with regard to suicide response efforts in schools.

**Professional Development and Training**

The need for effective professional development activities that provide the knowledge and training to implement suicide prevention, intervention, and postvention actions in schools has been repeatedly stressed by researchers (Allen et al., 2002; Brock, Nickerson, Reeves, Savage, & Woitaszewski, 2011; Debski et al., 2007; Kellner, 2001; Suldo et al., 2010). While mental health providers such as school psychologists appear to obtain the majority of their suicide prevention training through such experiences, the degree to which practitioners received empirically validated and effective professional development within this domain is less clear (Armistead, Castillo, Curtis, Chappel, & Cunningham, 2010). Research investigating the frequency, types, and content focus of professional development activities among 510 NASP
member school psychologists found that only 84 practitioners (16%) reported receiving crisis intervention professional development on a yearly basis, ranking crisis intervention 13 out of 18 in frequency of professional development topics (Armistead et al., 2010). While the emphasis that crisis intervention receives in comparison to alternative professional development topics (e.g., response to intervention, academic and behavioral interventions, assessment, consultation, ethics) is discouraging, a further concern regards the evidence of effective crisis response training programs.

In congruence with the paucity of empirical evidence for suicide prevention, intervention, and postvention programs, it is perhaps unsurprising that the available literature on crisis response training programs is sparse. However, two evaluations of training programs evident in the literature do suggest favorable outcomes and gains among mental health practitioner participants (Suldo et al., 2010; Brock et al., 2011). Suldo and colleagues (2010) employed an evaluative study on a suicide prevention, intervention, and postvention professional development training for school psychologists, which was the product of a university-school district partnership program. Participants of the training reported lasting effects of increases in preparedness to engage in suicide prevention, assessment, coordinating referrals to agencies, conducting school-based counseling, and providing effective postvention response (Suldo et al., 2010). The authors noted statistically significant gains in content knowledge across prevention, assessment/intervention, and postvention facets upon immediate completion of the training, though these gains were maintained only for the assessment and intervention activities at nine month follow-up (Suldo et al., 2010). Accordingly, the authors posited that the inclusion of increased opportunities to apply suicide assessment and intervention skills after the training explained the sustained gains, with the absence of such opportunities for prevention and
postvention explaining the regressed content knowledge for these respective domains (Suldo, et al., 2010).

In addition, participants identified the following components of the training as particularly useful: comprehensive information based on empirical research and best-practices, the inclusion and presentation of a manual, and diverse learning procedures (e.g., role plays). It is worth noting that the participants appreciated specific aspects of the manual including step-by-step procedures and guidelines, district sanctioned activities, and the inclusion of useful forms (Suldo, et al., 2010). This information, in addition to the noted opportunities to apply knowledge gained, may serve as important characteristics of professional development training models specific to suicide prevention, intervention, and postvention in schools.

Brock et al. (2011) conducted an evaluation on the comprehensive school crisis prevention and intervention training curriculum called PREPaRE, which was developed by the National Association of School Psychologists. The PREPaRE model includes two workshops; a 6.5-hour workshop on comprehensive school safety and prevention for various school-based staff (i.e., Workshop 1), and a 13-hour workshop for school-based mental health providers addressing their role in crisis intervention and recovery (i.e., Workshop 2).

Similarly to Suldo et al.’s (2010) evaluation of the university-school district partnership training, Brock et al. (2011) reported statistically significant gains in participant knowledge of crisis intervention procedures for both workshops. Workshop 1 participants reported increases in their perceived preparedness and confidence in their ability to conduct crisis prevention activities, with Workshop 2 participants having reported significant increases in confidence in responding to a crisis, as well as significant decreases in fear and anxiety regarding the provision of crisis intervention (Brock et al., 2011).
Furthermore, participants endorsed the following components of the evaluation as being particularly useful and preferred: the curriculum’s amenability to be implemented in their respective work practice, active engagement during training (e.g., role plays), and the dissemination of materials that can be applied directly to their future work (Brock et al., 2011). These components mirror that of the preferences identified by participants in Suldo et al.’s (2010) study, and further support their inclusion in school districts approaches to training school psychologists in suicide prevention, intervention, and postvention.

**Study Rational**

The review of literature in the areas of adolescent suicidality and school-based suicide prevention, intervention, and postvention elucidate critical gaps in knowledge and research that require further attention and emphasis by the academic and policy development communities. Suicide is a leading cause of death for teenagers, and adolescents and young adults are the most vulnerable to suicide clusters and contagion effects compared to any other age group (CDC, 2015; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Insel & Gould, 2008). Adolescent suicide clusters have been repeatedly documented to occur within secondary school communities, and have required action and intervention from outside national organizations such as the Center for Disease Control to mitigate future suicides (Canady, 2016; Fowler et al., 2013; Cheng et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Gould et al., 2014; Hacker et al., 2008; Haw et al., 2013; Hittner, 2005; Insel & Gould, 2008; Poijula et al., 2001; Stack, 2003). The engagement of epidemiological organizations and outside expertise suggests that schools may not be fully equipped to address suicide clusters in their communities. School efforts to prevent and effectively respond to suicides may be evident in the implementation of prevention, intervention, and postvention programming. However, the empirical evidence to support the
efficacy of such programs in reducing suicidal behavior, particularly in regards to postvention response, is less than adequate (Cox et al., 2012; Kalafat, 2003; Katz et al., 2013; Klimes-Dougan et al., 2013; Poijula et al., 2001; Robinson et al., 2013; Wasserman et al., 2015; Wei, Szumilas, & Kutcher, 2010; Wethington et al., 2008; Wyman, et al., 2010; Wyman et al., 2008). Furthermore, it is unclear as to the degree to which school districts, and by extension school-based mental health providers, are prepared to implement postvention responses that are consistent with best-practice recommendations (Debski et al., 2007; Schmidt, 2016; Stein-Erichsen, 2010).

This void of evidence-based practices to which schools may refer to promotes clinical judgment and subjective implementation of best-practice strategies by school psychologists who are charged with supporting the safety and welfare of the student body. However, school psychologists’ knowledge of and self-efficacy in conducting postvention strategies in order to restore normalcy, respond to student needs, and mitigate future suicidal behavior by students is currently unclear (Debski et al., 2007; Schmidt, 2016; Stein-Erichsen, 2010). With crisis responders reporting that the majority of their crisis training is provided through professional development opportunities post-graduate study while in the workforce (Allen et al., 2002; Debski et al., 2007; Kellner, 2001; Stein-Erichsen, 2010), school districts, perhaps inadvertently, may be charged with the responsibility of providing training and experiences for mental health providers to cultivate their expertise and skills within this domain.

**Research questions and hypotheses.** Given the critical importance and unique factors of youth suicidality, the status of empirically supported school-based suicide response efforts, and in consideration of the identified limitations of the current literature base, the present study seeks to ascertain the degree to which school psychologists are prepared, with regard to professional
knowledge, skills, and self-efficacy, to effectively implement postvention programing in the wake of a student suicide, and mitigate suicide contagion effects.

The exploratory nature of the current study permits general guiding research questions supplemented by an operationally defined analytic question and hypotheses. The general research questions are as follows:

1) How do school psychologists rate their perceived knowledge in suicide postvention and suicide contagion effects?

2) How do school psychologists rate their self-efficacy in conducting suicide postvention within and without the context of a suicide contagion effect?

The present study will also seek to answer the following analytic research question:

1) Does the type of training in postvention, experience with providing postvention, and the presence of a postvention protocol, significantly predict school psychologists’ perceived knowledge and self-efficacy in suicide postvention response over and above the following variables: frequency of training offered by school, number of years worked, membership on a crisis team, and the age of students on providers’ caseloads?

_Hypothesis 1a:_ The following set of variables, provider training in postvention, provider experience with providing postvention, and the presence of a postvention protocol, will significantly predict school psychologists’ perceived knowledge in postvention response over and above the variables including: frequency of training offered by school, number of years worked, membership on a crisis team, and the age of students on providers’ caseloads.

_Hypothesis 1b:_ The following set of variables, training in postvention, experience with providing postvention, and the presence of a postvention protocol, will significantly predict
school psychologists’ self-efficacy in postvention response over and above the variables including: frequency of training offered by school, number of years worked, membership on a crisis team, and the age of students on providers’ caseloads.

Contributions to the profession. In answering these research questions, the present study contributes to the suicide prevention, intervention, and postvention literature base with significant and novel additions. To the author’s knowledge, this is the first study to date to specifically assess school psychologists’ perceived knowledge and self-efficacy of suicide contagion recommended practices, and perceived preparedness of implementing such actions. Additionally, it provides useful information with regard to factors that predict perceived knowledge and preparedness, and elucidates important components of school districts that relate to provider competency (e.g., opportunities for training, years experience, member of crisis team, presence of postvention protocol, etc.). In answering such questions, results may be used to guide school psychologist training and school district crisis prevention, intervention and postvention response efforts.
CHAPTER III: METHODS

Design

The present study answered the stated research questions through descriptive and predictive methods by analyzing participant responses on the Postvention Competency Survey (see APPENDIX 6). Given the exploratory nature of the study, descriptive results are considered to be particularly relevant in advancing the knowledge and understanding of school psychologists’ competency in conducting suicide postvention in schools, as well as their general experience and training associated with this professional role and responsibility. Predictive analyses were conducted to ascertain the degree to which predictor variables contributed to provider’s perceived knowledge and self-efficacy of suicide postvention response.

Participants and Procedures

Schools psychologists employed by a public school system in the state of North Carolina during the 2016/2017 school year were invited to participate in the study (i.e., approximately 640). Crisis intervention, and by extension postvention, is considered a professional responsibility of school psychologists, and school psychologists may be called to respond to crises that are not within their assigned schools or age range (e.g., elementary school psychologist responding to a high school suicide). As such, school psychologists were included in the study regardless of their school placement, age of student body, or designation as a crisis team responder.

Recruitment methods. Participant recruitment was conducted with the assistance of the North Carolina Department of Public Instruction (NC DPI). An email outlining the purpose of
the study, assurance of confidentiality, request for participation, and a link to the online Qualtrics Postvention Competency Survey (APPENDIX 6) was sent to the NC DPI lead psychologist distribution list by the NC DPI consultant for school psychology. The lead psychologist distribution list is comprised of 115 individuals who serve as the primary point of contact for school psychologists for each school district in North Carolina, and is used to disseminate information to school psychologists statewide.

Recipients of the lead psychologist distribution list were asked to complete the survey and forward the email to all school psychologists within their respective school districts (i.e., approximately 640). This method of recruitment was recommended by the NC DPI school psychology consultant and the North Carolina School Psychologist Association, and was considered to be the best approach to reach all school psychologists employed by a public school system in North Carolina. It is likely that many lead school psychologists may have also served as the direct supervisor of the school psychologists to whom they forwarded the request for participation. Care was taken to outline the voluntary nature and anonymity of participating in the study. An explicit statement outlining the study purpose, along with assurance that it would not be used for employee evaluative purposes was also included. Participants were asked to click on a Qualtrics link that brought them to the survey that was independent of their email address or any additional identifiable information. Participants were given the option to provide an email address of their choosing for the purposes being placed in a drawing based on chance for a $50 gift card after completing the survey.

Two follow-up email requests were sent using the same method. The first of which was distributed two weeks after the initial request, and the second and final request was sent five weeks following the initial invitation. This recruitment method produced 155 total responses,
127 of which identified as school psychologists, 28 identified as lead psychologists, and two identified as neither.

**School psychologist sample.** Data was screened for missing values and respondents with missing data, as well as those who did not identify as a school psychologist, were omitted from subsequent analyses. This resulted in a complete sample of 131 respondents, 111 of which identified as school psychologists and 20 that identified as lead psychologists. The school psychologist practitioner sample (n = 111) was used for all subsequent analyses, and descriptives and multivariate statistics are provided based on the 111 school psychologist sample.

Over half of the sample reported employment in large districts of 30,000 students or more (n = 57, 51.4%), and 31% of the sample endorsed medium sized district between 10,000 and 29,999 students (n = 35, see Table 1). The remaining 19% of respondents reported employment in small districts of 9,999 students or lower (n = 19). Sixty percent of the sample reported serving high-school aged or younger student populations, 28% reported placements with middle school aged students or younger, and 12% of the sample reported serving only elementary or younger student populations (see Table 1). School psychologist participants had an average of 3.8 years of work experience ($Mdn = 0$, $SD = 8.5$, range = 0-35 years, see Table 3).

**Ethical Guidelines**

All participant data was kept confidential and anonymous. Participants were notified of their rights, risks, and potential benefits of participating in the study. Completed survey data was stored securely with all personal identifying information omitted (e.g., provider name, provider school district). This study was approved by the UNC Institutional Review Board (Study# 16-3045).
Measures

**Postvention Competency Survey.** A 31-item Postvention Competency Survey (APPENDIX 6) was developed and used to collect participant data in respect to demographic variables, predictor variables, and outcome variables. The questionnaire was modeled after preexisting surveys established in the literature used to assess preparedness of school psychologists or other school-based mental health providers in providing crisis intervention (Adamson & Peacock, 2007; Allen et al., 2002; Debski et al., 2007; Kellner, 2001; Nickerson & Zhe, 2004; Schmidt, 2016; Stein-Erichsen, 2010). The Postvention Competency Survey contains items that assess school psychologists’ experience with postvention response, extent of training specific to this domain, and origins of training (e.g., graduate school, district-sponsored professional development, local, state, or national conferences, self-education through academic literature review). Respondents were asked to report the training opportunities and resources (e.g., frequency, type of training activities, available resources) related to suicide postvention within their respective school districts. In addition to including items from previously validated instruments, the survey also includes novel and revised items targeting knowledge and preparedness in postvention response, including contagion effects. Of the 31 items, four questions were taken directly from previous surveys, seven questions were revised from previous questionnaire items, and 20 questions were newly developed.

To validate the novel and revised items, a psychometrician and survey developer reviewed the instrument for clarity and biases. The survey was then assessed by a director of psychological services in a large North Carolina school district, as well the NC DPI consultant for school psychology to validate its use with North Carolina school psychologists. Additionally, the instrument was reviewed by a North Carolina school district Crisis Team Leader to further
assess its validity with respect to crisis postvention response efforts in public schools in the state of North Carolina.

The survey was pilot tested with a convenience sample \((n = 10)\) of school psychologists from the mid-Atlantic U.S. to assess for internal consistency, comprehension, and general readability. Feedback from pilot test participants prompted the re-wording of one item to improve clarity and comprehension, with generally positive feedback regarding the readability of questionnaire items and answer choices. Internal consistency was assessed using Cronbach’s alpha for each dependent variable scale: \textit{Perceived Knowledge} and \textit{Self-Efficacy}. Results from the pilot test sample yielded strong reliability coefficients of .90 and .87, respectively.

\textbf{Variables.} All variables were derived from the Postvention Competency Survey. Two dependent variables were included in the design: (1) perceived knowledge and (2) self-efficacy. Perceived Knowledge is defined as the degree to which providers rate their knowledge of postvention response and specific recommendations/guidelines for the prevention and mitigation of suicide contagion effects. The Perceived Knowledge scale consists of ten items using a 4-point likert scale with qualitative descriptors, and scores may range from a minimum value of 10 to a maximum value 40. The scale includes items relating to general knowledge about postvention responses, as well as specific questions relative to best-practice recommendation/guidelines for responding to suicide contagion effects. For the school psychologist sample \((n = 111)\), the Perceived Knowledge scale yielded a Cronbach’s alpha coefficient of .91, suggesting a high degree of internal consistency.

The second dependent variable, Self-Efficacy, is defined as the degree to which providers rate themselves as being confident and prepared in conducting postvention response activities, and providing postvention response in the context of a suicide contagion effect. The Self-
Efficacy scale consists of eight items using a 4-point likert scale with qualitative descriptors, allowing for a range of scores from 8 (min) to 32 (max). The items include general questions regarding self-efficacy in providing postvention response following the death of a student by suicide, leading a school’s response in the wake of a student suicide, and one item assessing providers’ perceived preparedness to respond to a hypothetical student suicide scenario. Cronbach’s alpha was calculated at .95 for the Self-Efficacy scale, supporting strong internal consistency for both dependent variable scales (i.e., Perceived Knowledge and Self-Efficacy).

The questionnaire included 12 demographic items that were selected based on previously validated instruments and a review of the postvention literature. These items included job role/title (i.e., lead school psychologist or school psychologist), number of observed suicides in provider’s school districts, age of population served by provider, years worked, membership of a crisis team, crisis intervention certification, school district size, and questions relating to opportunities for training. Additional demographic items included participants’ report of their school districts approach to postvention response such as the establishment of crisis response teams and the quality of postvention protocols.

Three categorical predictor variables were measured using the Postvention Competency Survey: (1) postvention training, (2) postvention experience, and (4) postvention protocol (see APPENDIX 7). Postvention training is a four-level variable based on participants reported training in postvention response: Group 1 = formal training in postvention with contagion effects; Group 2 = formal training in postvention without contagion effects; Group 3 = no formal postvention training; Group 4 = no formal postvention training, but reported training in contagion effects. Participants were assigned to Group 4 if they reported that they had only
informal training in postvention, or no training in postvention at all, and also reported training in suicide contagion effects specifically on a separate question.

Provider experience is a two-level variable based on participants reported experience with conducting postvention response in a school following a death by suicide: Group 1 = has experience providing postvention response (at least one time); Group 2 = has not provided postvention response. Postvention protocol is also a binary a variable, and is based on the presence or absence of a formal postvention protocol within participant school districts: Group 1 = presence of a postvention protocol; Group 2 = absence of a postvention protocol.

**Analytic Approach**

All statistical analyses were executed using the statistical software program RStudio 1.0.143. To answer the stated research questions, descriptive and multivariate procedures were followed. All multivariate analyses were conducted with the school psychologist practitioner sample (n=111), without the inclusion of lead school psychologists or those who identified as other than a school psychologist. First, descriptive procedures were used to screen the data across all variables (demographic, predictor, and dependent variables). Continuous variables were assessed and screened with regard to central tendency, skewness, and kurtosis. Histograms were also generated and observed to further screen for normality. Frequency distributions were used to assess categorical variables for adequate sample sizes for subsequent multivariate analyses, and to assist in answering the first and second research questions. The postvention experience variable was initially constructed as a three level variable: postvention experience in the context of a contagion effect, postvention experience without a suspected contagion effect, and no postvention experience. Only three participants reported postvention experience in the context of a contagion effect, and the variable was therefore collapsed to two levels: postvention
experience, and no postvention experience. Multi-level categorical variables were collapsed to fewer categories, as needed, in order to reduce the number of variables and satisfy at least 10 observations per variable for multivariate analyses. Postvention protocol, initially constructed as a five level variable (i.e., protocol with contagion effect components, protocol without contagion effect components, protocol but not sure of contagion effect components, no protocol, unsure of protocol), was collapsed to two levels: presence of a protocol, and no protocol or unsure of the presence of a protocol.

Hierarchical linear regression modeling was used to answer the third research question with regard to each dependent variable (i.e. perceived knowledge and self-efficacy). Prior to constructing the models, a multiple regression power analysis was conducted with an estimated effect size of 0.2 and a significance level set at .05. With a total sample of 111, 10 variables were selected for inclusion in the model based on the hypothesized strength of relationship with the dependent variables. Variables estimated to have a weaker relationship with the dependent variables were omitted in favor of variables estimated to have stronger relationships. As a result, recency of training was omitted in favor of frequency of training, and provider certification was omitted in favor of the postvention training variable. The presence of crisis teams was omitted in favor of school psychologist membership on a crisis team. The following independent variables were entered into the model: Age groups served (i.e., high school or younger, middle school or younger, elementary school or younger), crisis team membership, years worked, frequency of postvention training, postvention training (i.e., formal training with contagion components, formal training without contagion components, no formal training, no formal training in postvention but training in contagion effects), postvention experience, and postvention protocol.
The regression models were constructed in two steps. In the first step, age groups served, crisis team membership, years worked, and frequency of postvention training opportunities were entered into the model. In the second step, postvention training, postvention experience, and postvention protocol variables were entered into the model. Multi-categorical variables were dummy coded resulting in 10 independent variables regressed onto the outcome variable. The assumptions of linearity, homoscedasticity, normality of the residuals, and influential outliers were assessed after step 1 and again after step 2 by observing linear regression plot outputs. A variance inflator factor was then conducted on the model to assess for multicollinearity. The adjusted R-squared values of the model were observed at steps 1 and 2, and p-values, t-values, and unstandardized beta weights were observed for each variable after each step. This process was repeated for both dependent variables, and differences between models with regard to significant predictors were analyzed.
CHAPTER IV: RESULTS

Characteristics Related to Suicide Postvention

Descriptive procedures were followed to further understand the school psychologist sample with regard to postvention response characteristics and experiences. All respondents indicated that their district had crisis response teams at either district level (n = 21, 18.9%), individual school level (n = 30, 27%), or at both levels (n = 60, 54.1%, see Table 1). Seventy percent of the sample reported being a member of a crisis team (n = 78), with the majority of respondents having indicated that they served on school level crisis teams only (n = 52, see Table 1). The majority of the sample reported having completed a crisis intervention training program (n = 60, 54%), with 41% of the sample certified in PREPaRE training specifically (n = 46, see Table 1).

Table 1

Descriptives for Demographic Categorical Variables  

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Groups Served</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or younger</td>
<td>67</td>
<td>60.4</td>
</tr>
<tr>
<td>Middle School or younger</td>
<td>31</td>
<td>27.9</td>
</tr>
<tr>
<td>Elementary School or younger</td>
<td>13</td>
<td>11.7</td>
</tr>
<tr>
<td>Membership on a Crisis Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>78</td>
<td>70.3</td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>29.7</td>
</tr>
<tr>
<td>*Both District and School</td>
<td>17</td>
<td>15.3</td>
</tr>
<tr>
<td>District Only</td>
<td>9</td>
<td>8.1</td>
</tr>
<tr>
<td>School Only</td>
<td>52</td>
<td>46.8</td>
</tr>
<tr>
<td>*Presence of Crisis Teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both District and School</td>
<td>60</td>
<td>54.1</td>
</tr>
<tr>
<td>District Only</td>
<td>21</td>
<td>18.9</td>
</tr>
<tr>
<td>School Only</td>
<td>30</td>
<td>27.0</td>
</tr>
<tr>
<td>School District Size</td>
<td>Participants</td>
<td>Training Frequency</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>500 - 1,999</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>2,000 - 3,999</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>4,000 - 7,999</td>
<td>7</td>
<td>6.3</td>
</tr>
<tr>
<td>8,000 - 9,999</td>
<td>5</td>
<td>4.5</td>
</tr>
<tr>
<td>10,000 - 16,999</td>
<td>12</td>
<td>10.8</td>
</tr>
<tr>
<td>17,000 - 29,999</td>
<td>23</td>
<td>20.7</td>
</tr>
<tr>
<td>30,000 +</td>
<td>57</td>
<td>51.4</td>
</tr>
<tr>
<td>*PREPaRE Certified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>46</td>
<td>41.4</td>
</tr>
<tr>
<td>No</td>
<td>65</td>
<td>58.6</td>
</tr>
</tbody>
</table>

*Note. *Omitted from regression models

**Postvention training.** Forty percent of participants reported having received formal training in postvention response that included suicide contagion effect prevention and response components (n = 45, see Table 2). Twenty-eight percent reported formal training in postvention response (i.e., through graduate coursework, school district sponsored training, or other professional development trainings), but without suicide contagion effect components (n = 31), and 25% reported no formal (e.g., self-study or no training at all, n = 28). Seven individuals indicated that they did not have any formal training in postvention response, but did have training specifically in suicide contagion effect response (6.3%). Further analysis showed that 69% of the sample had received some form of formalized training (n = 76), with school district sponsored and graduate training serving as the most common sources of formal postvention training. Forty-two respondents (37.8%) endorsed receiving formal training through graduate training, and 45 participants (40.5%) indicated that they received formal training through their school district. Notably, 24 respondents (21.6%) reported that their school district level training was the only formal training they had received in suicide postvention response. Fifteen participants (13.5%) reported informal training only, and 20 respondents reported no training at all (18%). Participants who indicated that they had received any formal training were also asked
report how recent their training had been (n = 76). Recency of training ranged considerably from 0 months to 16 years since last formal training (M = 28.66 months, Mdn = 16.5 months, SD = 34.86, skewness = 2.24, kurtosis = 5.76).

Table 2

*Descriptives for Predictor Categorical Variables*  

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Postvention Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, with contagion effect component</td>
<td>45</td>
<td>40.5</td>
</tr>
<tr>
<td>Yes, no contagion effect component</td>
<td>31</td>
<td>27.9</td>
</tr>
<tr>
<td>No formal training in postvention</td>
<td>28</td>
<td>25.2</td>
</tr>
<tr>
<td>No formal training in postvention, but training in contagion effects</td>
<td>7</td>
<td>6.3</td>
</tr>
<tr>
<td><em>Any formal training</em></td>
<td>76</td>
<td>68.5</td>
</tr>
<tr>
<td><em>Only informal training</em></td>
<td>15</td>
<td>13.5</td>
</tr>
<tr>
<td><em>No training</em></td>
<td>20</td>
<td>18.0</td>
</tr>
<tr>
<td><strong>Postvention Experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, any experience providing postvention</td>
<td>45</td>
<td>40.5</td>
</tr>
<tr>
<td>No experience providing postvention</td>
<td>66</td>
<td>59.5</td>
</tr>
<tr>
<td><strong>Postvention Protocol</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, district has postvention protocol</td>
<td>51</td>
<td>45.9</td>
</tr>
<tr>
<td>No, or unsure, district does not have postvention protocol</td>
<td>60</td>
<td>54.1</td>
</tr>
</tbody>
</table>

*Note. *Omitted from regression models

**Frequency of school district training.** All participants were asked to provide the frequency of training opportunities offered by their school district in suicide postvention response since the 2012/2013 school year (past 4 years). Again, values ranged considerably from 0 offerings (n = 59, 53.15%) to 50 offerings (n = 2, 1.8%) over the past 4 years, suggesting that the majority of districts did not offer any postvention training, and few districts offered training on a nearly monthly basis (M = 3.8, Mdn = 0, SD = 8.5, skewness = 3.80, kurtosis = 19.13, see Table 3). It is possible that school districts offered monthly postvention trainings, perhaps through online modules, though such high values should be interpreted with a degree of caution.
Table 3

Descriptives for Demographic Continuous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean/Median</th>
<th>SD</th>
<th>Skewness/Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD Frequency Offered</td>
<td>0</td>
<td>50</td>
<td>3.8/0</td>
<td>8.5</td>
<td>3.80/19.13</td>
</tr>
<tr>
<td>Years Worked</td>
<td>0</td>
<td>35</td>
<td>11.52/9</td>
<td>9.00</td>
<td>0.84/ 2.65</td>
</tr>
<tr>
<td>*Postvention Experience</td>
<td>0</td>
<td>20</td>
<td>1.5/0</td>
<td>3.02</td>
<td>3.24/16.14</td>
</tr>
</tbody>
</table>

Note. * Postvention Experience was entered as a categorical variable into regression models.

**Postvention protocol.** Forty-six percent of respondents (n = 51) reported that their school district had a postvention protocol, while 54% (n = 60) reported that they were either unsure if their district had a protocol (n = 46, 41.4%), or that their district did not have a postvention protocol (n = 12, 10.8%, see Table 2 and Table 4). Of the 51 respondents who indicated that their district did have a postvention protocol, 19 (37.3%) also reported that the protocol included specific components to address suicide contagion effects. However, 26 were not sure if their protocol included suicide contagion effect components, and six respondents indicated that it did not. Participants that endorsed the presence of a protocol were also asked to identify whether 10 key suicide contagion effect components were present in their protocol (see APPENDIX 4). On average, participants endorsed 6 of the 10 recommended suicide contagion components, with the following guidelines serving as the most commonly endorsed items (see Table 4):

1. Managing emotional responses of students with school-based counseling (n = 49)
2. Identifying at-risk students (n = 45),
3. Following safe reporting guidelines (n = 43)
4. Partnering with mental-health providers to refer students in need (n = 40)
5. Monitoring media coverage of the suicide (n = 37)
6. Communicating with friends and family of the deceased to manage memorials (n = 36)

In contrast, few respondents indicated that their protocol included guidelines for working with students to use social media to identify at-risk students (n = 6), the use of social media to provide mental health information and resources to students (n = 8), and emphasis on building a community coalition to address the greater needs of the community (n = 12, see Table 4).

Table 4

Postvention Protocol Components  

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow safe reporting guidelines in all communications associated with the suicide</td>
<td>43</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Identify at-risk students</td>
<td>45</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Contact and partner with local mental health providers to support the referral of students in need</td>
<td>40</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Manage emotional responses of students with the provision of school-based counseling for those in need</td>
<td>49</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Monitor media coverage of the suicide</td>
<td>37</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Encourage responsible reporting by the media of the suicide</td>
<td>28</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>Work with student liaisons to utilize social networking sites to identify at-risk students</td>
<td>6</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>Use social media to provide information about mental health resources, warning signs, and recommendations for help-seeking</td>
<td>8</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>Communicate with friends and family of the deceased to manage memorials</td>
<td>36</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Build a community coalition committee to address greater needs of the community</td>
<td>12</td>
<td>15</td>
<td>24</td>
</tr>
</tbody>
</table>

Suicide postvention experience. Frequencies of practitioners’ experience providing suicide postvention response ranged considerably from 0 to 20 times (\(M = 1.5, Mdn = 0, SD = 3.02, \) skewness = 3.24, kurtosis = 16.14, see Table 3). The majority of participants reported they
did not have any experience providing suicide postvention response services (n = 66, 59.5%, see Table 2). Approximately 38% of respondents indicated that they had provided postvention services one or more times in response to a suicide that was not suspected to be part of a contagion effect (n = 42), and only three participants (2.7%) reported having provided postvention response one or more times in the context of a contagion effect. That is, 45 individuals reported experience with postvention response (40.5%), and only 3 out of 111 school psychologists reported having experience in providing such services to combat a suspected contagion effect.

**School psychologists with postvention experience.** Considering 41% (n = 45) of the sample reported some experience in proving suicide postvention services, further analyses were conducted to assess the extent to which these responders reported having postvention training, if they were members of crisis teams, and if they reported having a suicide postvention protocol available through their school district (see Table 5). Recalling that 24 school psychologists reported that their formal training came only from school district sponsored professional development, it was found that the majority of these participants (n = 16) had experience providing postvention response. Five respondents who reported only having informal training also indicated that they had provided postvention response to a school following a student suicide. Four of these individuals reported one occasion of postvention response, though one participant reported to have provided postvention response 10 times, and without any formalized training.

Of the 45 psychologists who reported experience providing postvention, 18 (40%) did not have any certification, which includes PREPaRE training. Four of the 45 respondent subsample (8.8%) reported that they were not members of a crisis team (district or school), and eight
(17.8%) reported that their school district did not have a postvention protocol available to support and guide the postvention response efforts. Furthermore, an additional 8 of these 45 respondents (17.8%) indicated that they were unsure if their school district had a postvention protocol, despite also reporting having engaged in postvention response. This may suggest that these 16 practitioners (i.e., no to protocol or unsure of protocol) provided postvention response services without the use of a postvention protocol. Collectively, these 16 respondents (35.6%) reported providing postvention response services 30 times.

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide Responder - no formal training</td>
<td>5</td>
<td>11.1</td>
</tr>
<tr>
<td>Suicide Responder - no certification</td>
<td>18</td>
<td>40.0</td>
</tr>
<tr>
<td>Suicide Responder - no crisis team membership</td>
<td>4</td>
<td>8.8</td>
</tr>
<tr>
<td>Suicide Responder - no protocol in district</td>
<td>8</td>
<td>17.8</td>
</tr>
<tr>
<td>Suicide Responder - not sure of protocol in district</td>
<td>8</td>
<td>17.8</td>
</tr>
</tbody>
</table>

Research Question 1: How do school psychologists rate their perceived knowledge in suicide postvention and suicide contagion effects?

To answer the first research question, descriptive statistics were generated to assess the results of the Perceived Knowledge scale (see Table 6 and Table 7). Frequencies ranged from 10-38 with a mean of 23.8 ($Mdn = 24$, $SD = 6.1$, skewness = 0.03, kurtosis = 2.36), and 10 serving as the lowest possible score by endorsing “not at all knowledgeable” on all items, and 40 serving as the highest possible score by endorsing “very knowledgeable” on all items. Results on individual items that explicitly address the stated research question, as well as items that respondents rated as being most knowledgeable or least knowledgeable in are provided below.

Survey question: How would you rate your knowledge about suicide postvention?

When asked specifically about knowledge in suicide postvention, respondents largely endorsed
“slightly knowledgeable” (n = 51, 45.9%) or “moderately knowledgeable” (n = 41, 36.9%, see Table 7). Only six participants (5.4%) indicated that they were “very knowledgeable” about suicide postvention, while twice as many reported that they were “not at all knowledgeable” (n = 13, 11.7%). To put differently, less than half (n = 47, 42%) of school psychologists endorsed that they were at least “moderately knowledgeable” in the professional responsibility of postvention response.

Survey question: How would you rate your knowledge about suicide contagion effects? School psychologists reported considerably less knowledge about suicide contagion effects compared to general postvention response (see Table 7). The majority of all participants indicated that they were only “slightly knowledgeable” about suicide contagion effects (n = 63, 56.8%), with an additional 13% of participations (n = 14) reporting to be “not at all knowledgeable.” Together, these school psychologists account for 69% of the sample (n = 77). In contrast, only two respondents (1.8%) endorsed “very knowledgeable” for this item, while 29% of the sample (n = 32) indicated that they were “moderately knowledgeable.” Overall, frequencies of school psychologists’ responses on this item declined for both “very knowledgeable” and “moderately knowledge” categories, and increased for “slightly knowledgeable” or “not at all knowledgeable” when comparing answers to the general postvention response item. Only one-third of school psychologists reported to be at least “moderately knowledge” in suicide contagion effects; a core component of comprehensive suicide postvention response (AFSP & SPRC, 2011; Brock, 2002; Cox et al., 2012; Cox et al., 2016; Hart, 2012; Miller, 2012; SPRC, 2014).
**Highest reported knowledge level items.** School psychologists perceived their knowledge to be highest among 3 of the 10 items (see Table 7). Participants rated their knowledge highest on the following items:

1. Supporting the emotional and psychological needs of students (“very knowledgeable” = 37, 33.3%; “moderately knowledgeable” = 50, 45%).
2. Identifying students at risk for suicidal behavior (“very knowledgeable” = 31, 27.9%; “moderately knowledgeable” = 56, 50.5%).
3. Responding to student questions about suicide (“very knowledgeable” = 20, 18%; “moderately knowledgeable” = 51, 45.9%).

These items are less directly related to suicide contagion effect prevention and mitigation, and may be viewed as key response actions in general suicide postvention response. In contrast, school psychologists reported their lowest levels of perceived knowledge on items that are more directly related to suicide contagion prevention and mitigation.

**Lowest Reported Knowledge Level Items.** School psychologists rated themselves least knowledgeable on four specific items (see Table 7). The overwhelming majority of respondents indicated that they were only “slightly knowledgeable” or “not at all knowledgeable” on the following items.

1. Involving the community to respond to suicide contagion effects (“not at all knowledgeable” = 46, 41.4%; “slightly knowledgeable” = 46, 41.4%).
2. The responsible reporting of a suicide (“not at all knowledgeable” = 42, 37.8%; “slightly knowledgeable” = 36, 32.4%).
3. Handling funerals and memorials (“not at all knowledgeable” = 32, 28.8%; “slightly knowledgeable” = 41, 36.9%).
4. The use and monitoring of social media ("not at all knowledgeable" = 28, 25.2%; “slightly knowledgeable” = 55, 49.5%).

Table 6

Descriptives for Dependent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean/Median</th>
<th>SD</th>
<th>Skewness/Kurtosis</th>
<th>( \alpha )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Knowledge</td>
<td>10 - 40</td>
<td>10</td>
<td>38</td>
<td>23.8/24</td>
<td>6.1</td>
<td>0.03/2.36</td>
<td>.91</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>8 - 32</td>
<td>8</td>
<td>29</td>
<td>16.1/16</td>
<td>5.4</td>
<td>0.36/2.41</td>
<td>.95</td>
</tr>
</tbody>
</table>

Table 7

Perceived Knowledge Scale

<table>
<thead>
<tr>
<th>How would you rate your knowledge….</th>
<th>Not at all knowledgeable</th>
<th>Slightly knowledgeable</th>
<th>Moderately knowledgeable</th>
<th>Very knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>About suicide postvention</td>
<td>13 (11.7)</td>
<td>51 (45.9)</td>
<td>41 (36.9)</td>
<td>6 (5.4)</td>
</tr>
<tr>
<td>About suicide contagion effects</td>
<td>14 (12.6)</td>
<td>63 (56.8)</td>
<td>32 (28.8)</td>
<td>2 (1.8)</td>
</tr>
<tr>
<td>Handling funerals and memorials</td>
<td>32 (28.8)</td>
<td>41 (36.9)</td>
<td>31 (27.9)</td>
<td>7 (6.3)</td>
</tr>
<tr>
<td>Informing groups about a suicide occurrence</td>
<td>17 (15.3)</td>
<td>43 (38.7)</td>
<td>36 (32.4)</td>
<td>15 (13.5)</td>
</tr>
<tr>
<td>Identifying students at risk for suicide behavior</td>
<td>3 (2.7)</td>
<td>21 (18.9)</td>
<td>56 (50.5)</td>
<td>31 (27.9)</td>
</tr>
<tr>
<td>Supporting emotional and psychological needs of students</td>
<td>4 (3.6)</td>
<td>20 (18.0)</td>
<td>50 (45.0)</td>
<td>37 (33.3)</td>
</tr>
<tr>
<td>Responding to student questions about suicide</td>
<td>8 (7.2)</td>
<td>32 (28.8)</td>
<td>51 (45.9)</td>
<td>20 (18.0)</td>
</tr>
<tr>
<td>The responsible reporting of a suicide</td>
<td>42 (37.8)</td>
<td>36 (32.4)</td>
<td>26 (23.4)</td>
<td>7 (6.3)</td>
</tr>
<tr>
<td>The use and monitoring of social media after a suicide occurs</td>
<td>28 (25.2)</td>
<td>55 (49.5)</td>
<td>24 (21.6)</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Involving the community to respond to suicide contagion effects</td>
<td>46 (41.4)</td>
<td>46 (41.4)</td>
<td>14 (12.6)</td>
<td>5 (4.5)</td>
</tr>
</tbody>
</table>

Research Question 2: How do school psychologists rate their self-efficacy in conducting suicide postvention within and without the context of a suicide contagion effect?

Descriptive statistics of the Self-Efficacy scale were assessed to answer the second research question (see Table 6 and Table 8). Frequencies ranged from 8-29 with a mean of 16.1
(Mdn = 16, SD = 5.4, skewness = 0.36, kurtosis = 2.41), and eight serving as the lowest possible score by endorsing “not at all knowledgeable” on all items, and 32 serving as the highest possible score by endorsing “very knowledgeable” on all items. Results on individual items that explicitly address the stated research question, as well as items that respondents rated as being most and least competent in providing are described next.

Survey question: How prepared do you perceive yourself to be to provide postvention response following a student suicide? Approximately 75% of the sample rated themselves as either “slightly prepared” (n = 51, 45.9%) or “moderately prepared” (n = 32, 28.8%) to provide postvention response to a school following a student suicide (see Table 8). Only 10% of respondents reported being “very prepared” (n = 11), while 15.3% of the sample (n = 17) identified as being “not at all prepared” to engage in postvention response efforts. It is of note that 41% (n = 45) of the total sample indicated that they have provided postvention response, yet over 60% (n = 68) of the sample also indicated that they perceived themselves as “not at all” or only “slightly” prepared to the provide this form of crisis response service.

Survey question: How prepared do you perceive yourself to be to prevent and/or manage suicide contagion effects? Consistent with school psychologists reports of their knowledge of postvention response compared to suicide contagion effects specifically, lower scores were endorsed when questioned on perceived preparedness to handle suicide contagion effects (see Table 8). Eighty percent of school psychologists rated themselves as “not all prepared” (n = 29, 26.1%) or only “slightly prepared” (n = 60, 54.1%) to prevent or manage suicide contagion effects. Just four participants (3.6%) rated themselves as “very prepared” with the remaining 16% having indicated that they felt “moderately prepared” to address suicide contagion effects. The pattern of higher ratings for general postvention response questions and
lower ratings for items explicitly assessing competency in handling suicide contagion effects remained evident across all items of the Self-Efficacy scale.

**Highest reported self-efficacy items.** School psychologist rated themselves as most prepared and confident to provide postvention response when a suicide contagion effect was not explicitly introduced as a possible factor. The two items rated highest by school psychologist with regard to self-efficacy are as follows (see Table 8):

1. How prepared do you perceive yourself to be to provide postvention response following a student suicide? (“very prepared” = 11, 9.9%; “moderately prepared” (32, 28.8%).

2. How confident are you in your professional skills for providing postvention services? (“very prepared” = 11, 9.9%; “moderately prepared” = 39, 35.1%).

**Lowest reported self-efficacy items.** Five items on the Self-Efficacy scale explicitly dealt with suicide contagion effects (see Table 8). For all five items, at least 79% of the 111 school psychologists reported that they were either “slightly” or “not at all” prepared or confident to provide postvention services in the context of a suicide contagion effect. The two items with the lowest rated self-efficacy are as follows:

1. How confident are you in your ability to lead your school’s response to a suicide contagion effect? (“not at all confident” = 47, 42.3%; “slightly confident” = 46, 41.4%).

2. How prepared do you perceive yourself to be to implement procedures for mitigating a suicide contagion effect as part of postvention response? (“not at all prepared” = 47, 42.3%; “slightly prepared” = 45, 40.5%).

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Hypothetical scenario. Participants also reported their level of preparedness in response to a hypothetical scenario of a possible contagion effect (see Table 8). The scenario did not use the words “suicide contagion effect” and was presented as follows: “Three suicides occurred in one school in the first half of the school year. How prepared do you feel to respond?” Of note, participants rated themselves as somewhat more prepared to handle this situation (“not at all” = 28, 25.2%; “slightly” = 61, 55%; “moderately” = 20, 18%; “very” = 2, 1.8%) compared to their responses on items that explicitly asked about their preparedness or confidence in responding to a “suicide contagion effect,” rather than describing a probable contagion effect. It is possible that respondents did not interpret the scenario as a contagion effect, which may help explain the relatively higher reports of preparedness to effectively respond.

Leading a postvention response. School psychologists were also questioned about their self-efficacy in leading a school’s response to provide postvention services, and specifically in the context of a contagion effect. These questions were included based on findings from previous investigations that showed an overwhelming majority of school psychologists on crisis teams served as their school’s crisis team leader/coordinator (90.2%, Adamson & Peacock, 2007). In the present study, school psychologists reported lower degrees of confidence in leading their school’s postvention response, compared to simply providing postvention response (see Table 8). Nearly 70% of participants reported that they were either “not at all” (n = 32, 28.8%) or only “slightly” (n = 44, 39.6%) confident in their ability to lead their school’s response to a suicide, while just four individuals (3.6%) reported being “very confident” to lead the response efforts (“moderately confident” = 31, 27.9%). As previously noted, confidence ratings were lowest on the item that questioned school psychologist’s ability to lead a response to a contagion effect. On
this particular item, 0 of the 111 school psychologists indicated that they were “very confident” in their ability to do so, and 18 (20.7%) reported that they were “moderately confident.”

Table 8

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>How prepared do you perceive yourself to be to….</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide suicide postvention response</td>
<td>17 (15.3)</td>
<td>51 (45.9)</td>
<td>32 (28.8)</td>
<td>11 (9.9)</td>
</tr>
<tr>
<td>Prevent and/or manage suicide contagion effects</td>
<td>29 (26.1)</td>
<td>60 (54.1)</td>
<td>18 (16.2)</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Implement procedures for mitigating a suicide contagion effect</td>
<td>47 (42.3)</td>
<td>45 (40.5)</td>
<td>18 (16.2)</td>
<td>1 (0.9)</td>
</tr>
<tr>
<td>How confident are you in your….</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional skills for providing postvention</td>
<td>17 (15.3)</td>
<td>44 (39.6)</td>
<td>39 (35.1)</td>
<td>11 (9.9)</td>
</tr>
<tr>
<td>Ability to lead your school’s response to a suicide</td>
<td>32 (28.8)</td>
<td>44 (39.6)</td>
<td>31 (27.9)</td>
<td>4 (3.6)</td>
</tr>
<tr>
<td>Ability to provide postvention with a suspected suicide contagion</td>
<td>32 (28.8)</td>
<td>56 (50.5)</td>
<td>23 (20.7)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Ability to lead your school’s response to a suicide contagion</td>
<td>47 (42.3)</td>
<td>46 (41.4)</td>
<td>18 (16.2)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Hypothetical: Three suicides occurred in one school in the first half of the school year. How prepared do you feel to respond?</td>
<td>28 (25.2)</td>
<td>61 (55.0)</td>
<td>20 (18.0)</td>
<td>2 (1.8)</td>
</tr>
</tbody>
</table>

Research Question 3: Does the type of training in postvention, experience with providing postvention, and the presence of a postvention protocol, significantly predict perceived knowledge and self-efficacy in suicide postvention response over and above the following variables: frequency of training offered by school, number of years worked, membership on a crisis team, and the age of students on providers’ caseloads?

Hierarchical linear regression was used to answer the third research question. Prior to modeling, a power analysis indicated adequate power to detect moderate effects at the .05 level (n = 111, predictor variables = 10, alpha = 0.05, effect size estimate = 0.2, power = 0.896).
Regression models were constructed for both dependent variables; perceived knowledge and self-efficacy. Each model was constructed in two steps with the same sets of independent variables. The assumptions of linearity, homoscedasticity, normality of the residuals, and influential outliers were checked and met for each model by analyzing plot outputs, and variance inflation factor testing did not indicate the presence of multicollinearity (all VIF values < 1.59).

**Perceived knowledge.** At step one, age groups served, crisis team membership, years worked, and frequency of postvention training were entered into the model. All variables were statistically significant at the p < .05 level and accounted for 25% of the variation in perceived knowledge (F[5,105] = 8.481, p < .001, ΔR^2 = 0.254, see Table 9). At step two, postvention training, postvention experience, and postvention protocol variables were entered into the model. The model remained statistically significant and adjusted R^2 increased from 0.254 to 0.464, indicating that the full set of variables accounted for 46% of the variation in perceived knowledge (F[10,100] = 10.51, p < .001, ΔR^2 = 0.464, see Table 9).

Experience providing postvention (β = 1.99, t = 1.91, p = .059) and the presence of a postvention protocol (β = 0.26, t = 0.25, p = .81) were not significant predictors. However, formal training in postvention with contagion effect recommendations (β = 7.04, t = 5.55, p < .001), and formal training in postvention without contagion effect recommendations (β = 3.48, t = 2.84, p = .006), were both significant at the p < .01 level. Those who reported having training in postvention with contagion effect recommendations averaged 7.04 points higher on the Perceived Knowledge scale compared to those who reported no formal training, and those with formal postvention training without contagion effect recommendations were, on average, 3.48 points higher on the scale compared to those without formal training. Years worked (β = 0.125, t = 2.38, p = .019) and crisis team membership (β = 2.21, t = 2.05, p = .043) remained significant
predictors, while age groups served and frequency of training variables were no longer
significant in the full model. Based on these results, provider training in postvention response
serves as the strongest predictor of school psychologists’ standing on the Perceived Knowledge
scale.

Table 9

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>t</td>
<td>p</td>
<td>B</td>
</tr>
<tr>
<td>Served MS or younger students</td>
<td>3.59</td>
<td>2.01</td>
<td>0.047*</td>
<td>1.62</td>
</tr>
<tr>
<td>Served HS or younger students</td>
<td>3.96</td>
<td>2.46</td>
<td>0.016*</td>
<td>2.31</td>
</tr>
<tr>
<td>Crisis team member</td>
<td>3.52</td>
<td>3.03</td>
<td>&lt; .01**</td>
<td>2.21</td>
</tr>
<tr>
<td>Frequency of training</td>
<td>0.17</td>
<td>2.75</td>
<td>&lt; .01**</td>
<td>0.03</td>
</tr>
<tr>
<td>Years worked</td>
<td>0.13</td>
<td>2.20</td>
<td>0.03*</td>
<td>0.13</td>
</tr>
<tr>
<td>Formal postvention training with contagion effects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7.04</td>
</tr>
<tr>
<td>Formal postvention training without contagion effects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.48</td>
</tr>
<tr>
<td>No formal postvention training, but training in contagion effects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3.33</td>
</tr>
<tr>
<td>Experience providing postvention</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.99</td>
</tr>
<tr>
<td>Presence of postvention protocol</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.26</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.289</td>
<td>-</td>
<td>-</td>
<td>0.512</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.254</td>
<td>-</td>
<td>-</td>
<td>0.464***</td>
</tr>
</tbody>
</table>

*Note. *p < .05. **p < .01. ***p < .001

**Self-efficacy.** The same two step method was followed for the self-efficacy model. At
step one, all variables were statistically significant at the p < .05 level and accounted for 29% of
the variation in self-efficacy (F[5,105] = 10.17, p < .001, \( \Delta R^2 = 0.294 \), see Table 10). At step
two, the model remained statistically significant and adjusted \( R^2 \) increased from 0.294 to 0.618,
indicating that the full set of variables accounted for 62% of the variation in self-efficacy
(F[10,100] = 18.78, p < .001, \( \Delta R^2 = 0.618 \), see Table 10). Similarly to the perceived knowledge
model, formal training in postvention with contagion effect recommendations ($\beta = 6.91, t = 7.36, p < .001$), and formal training in postvention without contagion effect recommendations ($\beta = 3.80, t = 4.19, p < .001$), were both significant at the $p < .001$ level. In addition, years worked remained statistically significant ($\beta = 0.14, t = 3.50, p < .001$), as did the oldest age group variable, which included respondents who reported serving high school students or younger ($\beta = 2.32, t = 2.19, p = .031$). Provider experience in providing postvention was statistically significant in the self-efficacy model ($\beta = 1.98, t = 2.55, p = .012$), while the presence of a postvention protocol, frequency of training, and serving students middle school aged or younger were not significant predictors.

Table 10

<table>
<thead>
<tr>
<th>Self-Efficacy Model</th>
<th>$n = 111$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Model 1</td>
</tr>
<tr>
<td></td>
<td>$B$</td>
</tr>
<tr>
<td>Served MS or younger students</td>
<td>3.63</td>
</tr>
<tr>
<td>Served HS or younger students</td>
<td>3.74</td>
</tr>
<tr>
<td>Crisis team member</td>
<td>2.98</td>
</tr>
<tr>
<td>Frequency of training</td>
<td>0.15</td>
</tr>
<tr>
<td>Years worked</td>
<td>0.14</td>
</tr>
<tr>
<td>Formal postvention training with contagion effects</td>
<td>-</td>
</tr>
<tr>
<td>Formal postvention training without contagion effects</td>
<td>-</td>
</tr>
<tr>
<td>No formal postvention training, but training in contagion effects</td>
<td>-</td>
</tr>
<tr>
<td>Experience providing postvention</td>
<td>-</td>
</tr>
<tr>
<td>Presence of postvention protocol</td>
<td>-</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.326</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.294</td>
</tr>
</tbody>
</table>

Note. *$p < .05$. **$p < .01$. ***$p < .001$. 

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In both the perceived knowledge and self-efficacy models, formal training in postvention with and without contagion effect components, and years worked predicted psychologists’ standing on the outcomes. While both formal training variables (i.e., with, and without contagion components) were significant, formal training with contagion effect components was stronger in each model. Experience providing postvention services and serving high school students or younger were only significant for the self-efficacy model, and crisis team membership was only significant for the perceived knowledge model. In contrast to hypothesized results, the presence of a postvention protocol was not significant in predicting school psychologists’ perceived knowledge or self-efficacy.

Additional Analysis

Participants were also asked to report the number of suicides that occurred within their school district in the past two years. Of the 111 participants, 25 did not respond to this item, and the variable was omitted from multivariate analyses. However, descriptive results were obtained for the 86-person subsample that included values on the question regarding number of suicides observed in the past two years. School psychologists reported frequencies of suicides ranging from 0 to 30 (\(Mdn = 0, M = 3.47, SD = 5.56, \text{skewness} = 2.42, \text{kurtosis} = 6.79\)). Of this sample, 22 participants (25.6%) indicated that there had been at least one suicide in the past two years, but also reported zero training opportunities offered by their school district in the last four years. That is, over a quarter of school psychologists who responded to this question reported working in districts where, to their knowledge, suicide postvention training has not been offered in the past four years despite having experienced a recent suicide(s) within the district.
CHAPTER V: DISCUSSION

This study sought to explicate school psychologists’ competency in providing suicide postvention response by assessing their perceived knowledge and self-efficacy within the domain. In addition, school psychologists were asked to provide information regarding their experience and training with postvention, as well as their school districts approaches for preparing clinicians to provide postvention through opportunities for training and the establishment of postvention protocols. Particular attention was given to school district resources and provider competency regarding the prevention and mitigation of suicide contagion effects.

Interpretation of Results

All participants reported that their school districts had crisis teams in place to respond to student suicides (i.e., district level, school level, or both levels), which may serve as a key foundational component for effective postvention response efforts. Seventy percent of school psychologists in the current sample reported membership on these crisis teams, which is consistent with claims that school psychologists may be looked to as the most qualified and capable school personnel for leading postvention efforts (Liebling-Boccio & Jennings, 2013; Miller, 2012; Nickerson & Zhe, 2004). However, these results conflict with previous investigations which found that over 90% of school psychologists reported membership on crisis teams (Adamson & Peacock, 2007). Still, the finding that a substantial majority of school psychologists serve on crisis teams underscores the importance schools place on school psychologists’ role in responding to crises, and supports a tacit expectation that psychologists are
knowledgeable and prepared to carry out postvention response. In addition to crisis team membership, results showed that 41% of the sample had completed PREPaRE training, and nearly 70% of participants reported having formal training in postvention. While the recency of such training ranged significantly from within the month to over 15 years ago, it is reasonable to expect that a sizable majority of the current sample would be knowledgeable, prepared, and confident in suicide postvention.

**Perceived knowledge in postvention.** More than half of school psychologists reported that they were less than moderately knowledgeable about suicide postvention, despite well over 50% having reported formal training in postvention, and membership on crisis teams charged with conducting postvention response. These results are generally consistent with Stein-Erichsen’s (2010) findings that 30% of school psychologists identified as “somewhat knowledgeable” and 17% reported “little or no knowledge” in postvention. Furthermore, nearly 70% of respondents indicated that they were less than moderately knowledgeable about suicide contagion effects specifically; a result that is consistent with previous work that found that only half of nationally certified school psychologists were knowledgeable about suicide contagion mitigation strategies (Debski et al., 2007). These results are particularly troubling given that preventing suicide contagion effects is considered to be a core component of suicide postvention response (AFSP & SPRC, 2011; Brock, 2002; Cox et al., 2012; Cox et al., 2016; Hart, 2012; Miller, 2012; SPRC, 2014).

In general, school psychologists perceived themselves as most knowledgeable in aspects of postvention that address supporting student emotional needs, identifying at-risk students, and responding to student questions about suicide. Notably, school psychologists may be called upon to engage in such actions independent of a student death by suicide, providing them with more
opportunities to develop their knowledge and experience in these distinct areas. In contrast, school psychologists’ lowest levels of perceived knowledge were indicated for actions that are directly related to the response efforts after a student has died by suicide, and are key components of mitigating suicide contagion effects. These included knowledge about how to involve the community to respond to a contagion effect, the responsible reporting of a suicide, handling of funerals and memorials, and the use and monitoring of social media after a suicide has occurred. Over 60% of respondents reported less than moderate knowledge for each of these items. These results indicate that school psychologists may well lack the necessary knowledge to engage in the ethical and professional responsibility of postvention response, despite their membership on crisis teams and reports of formal training specifically in this domain.

**Self-efficacy in postvention.** The results of school psychologists’ self-efficacy in conducting postvention are of further concern. Sixty percent of respondents indicated that they are less than moderately prepared to provide postvention services, with 15% “not at all prepared.” These results are generally in line with Debski et al.’s (2007) findings that 11% of school psychologist were “not at all prepared” to engage in postvention response. Eighty percent reported less than moderate preparedness to prevent or manage a suicide contagion effect, and over a quarter of the respondents indicated they were “not at all prepared” to address a suicide contagion effect. These findings are particularly worrisome given that suicide related events rank among the most common crises encountered by school psychologists (Adamson & Peacock, 2007; Nickerson & Zhe, 2004), as well as the evidence of suicide contagion effects having occurred in schools across the U.S. (Canady, 2016; Fowler et al., 2013; Haw et al., 2013; Kleinman, 2015; Niedzwiedz, Haw, Hawton & Platt, 2014; Poijula et al., 2001).
Self-efficacy scores for leading postvention response, both with and without the context of a contagion effect, were considerably low with over 80% of respondents reporting to be only “slightly” or “not at all prepared” to lead such efforts. As previously noted, school psychologists are regarded as the most fitting school-based professionals to lead postvention response, which is evidenced by Adamson & Peacock’s (2007) finding that of school psychologists on crisis teams, over 90 percent served in leadership positions on their teams. However, the present results suggest that while the majority of school psychologists serve on crisis teams, they do not regard themselves as prepared to lead these teams to respond to a student suicide. Overall, these findings show that while school psychologists may be looked to as the primary responders in the event of a suicide (Boccio, 2015; Liebling-Boccio & Jennings, 2013; Miller, 2012), they do not feel prepared, nor do they perceive themselves as possessing the knowledge to execute the job to the extent that may be expected based on their title, training, and professional roles and responsibilities. Furthermore, shortcomings in perceived knowledge and self-efficacy by school psychologists appear to be magnified when considered in the context of suicide contagion effects.

**Predicting competency.** After explicating school psychologists’ perceived knowledge and self-efficacy in postvention service provision, the second purpose of the study was to identify factors that predict competency in this domain. Regression models were constructed using the Perceived Knowledge and Self-Efficacy scales of the Postvention Competency Survey as the dependent variables. It was hypothesized that formal postvention training, experience providing postvention, and the reported presence of a postvention protocol in respondents’ school districts would be predictive of each outcome above and beyond years worked, frequency of training, crisis team membership, and age groups served. Within the perceived knowledge
model, crisis team membership and years worked remained significant predictors after including the second set of variables. However, the formal training variables were the only other predictors that were significant in the model. These results suggest that training in postvention, and particularly training that includes suicide contagion effect content, is an important component that contributes meaningfully to school psychologists’ perception of their knowledge in suicide postvention.

Surprisingly, experience providing postvention was not predictive of perceived knowledge, nor was the reported presence of a protocol used to guide the response effort. One possible explanation for these results may have to do with the quantity of experience providers have with postvention. Postvention experience was entered as a binary variable with 45 respondents having reported that they had provided postvention, while 66 reported that they had not. When further analyzing the frequencies of response, it was found that 33 of those who did have experience had provided postvention less than five times, and 16 had provided it only once. While it was expected that any amount of postvention provision experience would predict perceived knowledge, it may be that multiple experiences, which allow for increased opportunities to develop knowledge and implement skills previously learned through training, are necessary to observe increases in providers’ knowledge, and by virtue perception of knowledge. Suldo and colleagues (2010) postulated this rationale after finding that knowledge in suicide prevention and intervention, which allows for increased opportunities for practice and application compared to postvention, were maintained after a training intervention while gains in postvention knowledge dissipated.

The hypothesized significance of school districts having postvention protocols was based on the reasoning that protocols would include specific steps, guidelines, and recommendations
that would inform providers’ knowledge. Those with postvention protocols may therefore perceive themselves as more knowledge than those without, under the assumption that providers are familiar with the contents of the protocol. However, descriptives statistics revealed that of those who endorsed that they did in fact have a postvention protocol in their district, many indicated that the protocol lacked critical components of postvention response, and even more reported that they were unsure about what components were or were not included in the protocol. Furthermore, and as a limitation of self-report scales, it is possible that providers assumed that their district had a protocol without ever having familiarized themselves with the document.

Similar results were yielded in the self-efficacy model with formal training variables and years worked serving as significant predictors. Though in contrast to the perceived knowledge model, postvention experience was also significant, as was working with high school aged students or younger. To put differently, when it comes to how school psychologists feel about their ability to provide postvention, formal training, working with older students, work experience in general, and specific experience in proving postvention serve as important predictors. These findings are logical in the sense that if a provider is formally trained in providing the service, works with older students who are more likely to die by suicide than younger students, and has actual experience in providing postvention, they may feel better prepared and confident in their abilities than those who do not possess such characteristics. It is interesting that postvention experience was predictive of self-efficacy, but not of perceived knowledge. One possible explanation for this outcome is that the threshold for developing feelings of preparedness and confidence through practical application may be lower than the development of knowledge in the domain. That is, even just one instance of providing
postvention may allow providers to feel that they would be prepared to engage in future postvention efforts.

Taken together, the results of the regression analyses suggest that having formal training, rather than informal training or no training at all, is an important component to developing competency in suicide postvention. While the presence of a postvention protocol did not predict perceived knowledge or self-efficacy, it is not to say that such documents do not have an impact on school psychologists’ ability to engage in postvention in an effective and responsible manner. By ascertaining the degree to which providers are familiar with and trained in their postvention protocols, as well as examining the actual postvention documents rather than relying on self-reports, future research may build upon this preliminary work to better understand how comprehensive postvention protocols may support school psychologists in their postvention response efforts.

**Postvention training and protocols.** The third purpose of the present study was to gather and analyze descriptive information including training opportunities and postvention protocols to better understand how school district’s attempt to prepare their clinicians to provide postvention services in the event of a student suicide. Encouragingly, nearly 70% of school psychologists reported formal training in postvention. Forty-two of those respondents endorsed receiving training from their graduate program, which accounts for 38% of the total sample and is considerably higher than previous research conducted 10 years ago which found that only 20% of school psychologists were trained in postvention by their graduate programs (Debski et al., 2007). While it may be preferred and expected that more than 38% of practitioners would have received such training through their graduate studies, these results include practitioners that have worked for in the field for decades, and are likely not reflective of the current trends and
practices of present day graduate training programs. Still, these findings are consistent with Allen et al.’s (2002) research which suggested upwards trends in graduate training programs inclusion of crisis intervention in their curriculum. Additionally, Allen et al. (2002) showed that suicide was overwhelming ranked by school psychologists as the most important crisis intervention topic to include in graduate training, and the present results may be an indicator of Universities responses to the recommendations made by practicing clinicians.

Calls for the need of effective professional development trainings to prepare school psychologists in postvention response have been made by scholars and practitioners for at least the past 16 years (Allen et al., 2002; Brock et al., 2011; Debski et al., 2007; Kellner, 2001; Suldo et al., 2010). School districts are uniquely positioned to answer this call given the prevalence of adolescent suicide, the evidence of suicide clusters within school communities, and the ethical and professional expectation that school employees will effectively provide postvention services in the wake of a student suicide. However, the current results suggest that school districts may not be answering this call to the extent that would be expected given the status of adolescent suicidality. Forty-five of the 76 formally trained school psychologists reported having training provided or sponsored by their school district, and 24 reported that the school district was the only source of their formal training. This is consistent with Debski et al.’s (2007) findings that 40% of a sample of nationally certified school psychologists reported receiving postvention training through school district in-services. The consistency of these findings over the past 10 years may suggest that school districts have continued work to do in preparing their employees for responding to student suicides.

Opportunities for growth in preparing clinicians through training may be further evidenced by school psychologists reports of the frequency that postvention training has been
offered by their districts. Over half of the school psychologists in the present study reported that their school districts did not offer any postvention training in the last four years. Given the results that formal training predicts both perceived knowledge and self-efficacy, it would seem that school psychologists may well benefit from increased opportunities for training through their respective school districts. This is particularly relevant as 20% of the sample reported that their school district training was the only formal training they had received. Without school districts providing or sponsoring professional development in suicide postvention, some clinicians may be called upon to conduct this critically important job, which when done effectively can protect against future suicides, without formal training in how to provide the service. The consequences of inadequately trained personnel conducting suicide postvention response may be considerable, with worst case scenarios including improper suicide risk assessments and inappropriate messaging and/or response efforts that could increase the likelihood of future student suicides (Boccio, 2015; CDC, 1994).

Unfortunately, these results suggest that a small number of school psychologists have engaged in postvention without such formal training (n = 5), and perhaps more without the use of a protocol to guide their response. Sixteen participants reported providing postvention a collective total of 30 times, and also indicated that their district did not have a postvention protocol. It is possible that these clinicians obtained a protocol from a published toolkit or resource other than their school district. However, it may also be the case that these providers engaged in postvention response without the support of a document that includes best-practice guidelines and expert recommendations intended to support student psychological needs, restore normalcy to the school climate and community, and prevent future suicides and contagion effects.
The overall results relating to postvention protocols suggests that a considerable portion of school psychologists (41%) are unaware if their district has a protocol. This finding is concerning because it conveys significantly low familiarity with resources and documents intended to prepare and support school psychologists’ crisis response work. Of the 46% that were aware that their district had a protocol, half were unsure if their protocols included suicide contagion effect components, which may suggest that even those who know of their districts protocols may be unfamiliar with the contents of the documents. However, an alternative interpretation of this result may be that clinicians lack the knowledge of what constitutes a suicide contagion effect guideline or recommendation. This explanation is consistent with the low scores observed on items of the Postvention Competency Survey that explicitly asked providers about their knowledge in suicide contagion effects. Yet, when given specific suicide contagion effect recommendations and asked to indicate if they were or were not included in the protocols, school psychologists on average endorsed the presence of 6 out of 10 recommendations. Similar to descriptive results of the Perceived Knowledge scale, clinicians tended to endorse that their protocols included practices for counseling and assessing at-risk students, as well as recommendations for monitoring media coverage and communicating with friends and family of the deceased. Clinicians were less sure about whether their protocols included strategies for building community coalitions, or how to use social media to identify at-risk students and provide psychoeducation and help-seeking recommendations. These findings suggest that schools stand to benefit from protocol improvements to comprehensively address suicide contagion effects, and specifically in the areas of working with communities and social media outlets. While self-report data may not accurately capture the true presence or content of protocols nearly as well as examinations of the protocols themselves, these findings do provide
meaningful insight into school psychologists limited familiarity with resources intended to prepare them for effective postvention response.

Furthermore, and in consideration of the Perceived Knowledge scale findings, these results consistently support the notion that school psychologists may have scarce and insufficient knowledge regarding suicide contagion effects. If clinicians are not knowledgeable about suicide contagion effects, then the expectation that they will effectively prevent and mitigate such phenomenological occurrences if they arise is untenable. Still, the lack of empirically supported postvention response programs (Robinson et al., 2013; Szumilas & Kutcher, 2011) requires that school psychologists exercise their clinical skill sets and professional competencies to carry out this professional and ethical obligation, irrespective of formal training or the availability of a postvention protocol to support their efforts.

**Recommendations and Implications for Practice**

Suicide is a leading cause of death among children and adolescents in middle and high schools across the country (CDC, 2015). Developmentally, teenagers are disposed to learning from their peers, and are prone to imitating both adaptive and maladaptive behavior (Abrutyn & Mueller, 2014b; Daniel & Goldston, 2009; Giordano, 2003). Adolescents are considered to be at the greatest risk of succumbing to suicide contagion effects compared to other age groups, with documented cases of suicide clusters in schools and communities nation-wide (Canady, 2016; Fowler et al., 2013; Gould et al., 2014; Gould et al., 1990a; Gould et al., 1990b; Hacker et al., 2008; Insel & Gould, 2008; Poijula et al., 2001; Swanson & Coleman, 2013). For these reasons, responsible, appropriate, and effective suicide postvention response is a critical duty of schools (Aguirre & Slater, 2010; Brock, 2002; Haw et al., 2013; Insel & Gould, 2008; Katz et al., 2013; Kleinman, 2015; Mauk et al., 1994; Miller, 2011, 2012; Niedzwiedz et al., 2014; SAMHSA,
When a student dies by suicide, the effects of the tragic death send palpable ripples through the school that can have considerable impacts on student functioning and learning (Miller, 2011). Schools are expected to respond to these crises in a responsible and efficacious manner that supports student emotional needs, restores normalcy to school culture and climate, and prevents against future suicides (Hart, 2012). The lack of evidence-based programs to conduct this form of postvention leaves school-based clinicians and crisis team members to rely upon clinical judgement in developing and implementing response efforts (Robinson et al., 2013; Szumilas & Kutcher, 2011). School psychologists are considered leaders in postvention response, yet the extent of their clinical judgement has remained unknown (Boccio, 2015; Glen & Nock, 2014).

The present study builds upon previous work that has sought to identify how school psychologists develop competency and clinical skills specifically within the domain of suicide postvention through training opportunities and the use of postvention protocols (Adamson & Peacock, 2007; Debski et al., 2007; Kellner, 2001; Owens, 2014; Stein-Erichsen, 2010). However, this study extends beyond previous research in a number of ways. To the author’s knowledge, this is the first study to assess school psychologists’ perceptions about their own knowledge, in addition to their preparedness and confidence in providing postvention services. These constructs are of interest because perceived knowledge and self-efficacy likely serve as important components to one’s overall clinical judgement. While little is known about school psychologists’ competency for conducting postvention broadly, the literature is seemingly absent of any work that specially explores these constructs specifically with regard to suicide contagion effects. From a systemic perspective, the literature is also largely void of works that assess how schools prepare to prevent suicide contagion effects through training and providing postvention
protocols to guide presumably knowledgeable and competent clinicians that may be dispatched to respond to such tragedies. Because of these shortcomings, the Postvention Competency Survey was developed for the current study to assess school psychologists’ competencies and school districts’ approaches to preparing for postvention responses. The results of this exploratory study begin to fill these distinct gaps, and begin to provide the basis for making recommendations that will guide school districts and graduate training programs in preparing school psychologists for suicide postvention and contagion effects.

These findings indicate that school psychologists may not perceive themselves as adequately knowledgeable, prepared, or confident to carry out postvention, and are likely even less competent in the area of suicide contagion effect response. The logical question may then be, how can school psychologists’ gain knowledge and confidence in providing postvention? Increased opportunities for training and practice are perhaps obvious methods of developing expertise and competence in a domain. However, these results show that school psychologists may lack opportunities of training and practice through their school districts. While the nature of postvention does not afford predictable or frequent in situ practice and application of skills, formal training and repeated engagement with resources and materials like postvention protocols that support response efforts are two factors that may support improvements in competency.

To this end, it is recommended that graduate training programs and school districts evaluate their curricula and professional development models to ensure that suicide postvention is present, prioritized, and comprehensive. In doing so, school psychologists may enter the workforce with a stronger foundation of postvention competency that can be cultivated and advanced through continued training opportunities offered by employing school districts. The clear finding of lower levels of perceived knowledge and self-efficacy of suicide contagion
effects suggests that trainings should explicitly include contagion effect components. Based on perceived knowledge results, these trainings should be sure to include guidelines on developing community coalitions, using social media effectively, handling funerals and memorials, and how to responsibly report and message about suicide. School district training developers may wish to refer to published toolkits that include these specific foci such as those offered by the American Foundation for Suicide Prevention and the Suicide Prevention Resource Center (2011) to guide their professional development programming. Additionally, school districts and graduate programs may consider embedding comprehensive crisis intervention certification programs that provide rigorous training across the facets of best-practice postvention response into the framework of their training models.

The emphasis and provision of high caliber and inclusive training for school psychologists should prepare them for leadership roles in suicide postvention, which may help address the finding that the overwhelming majority of school psychologists do not report feeling prepared to lead such response efforts. By extending their crisis intervention skill set to include leadership capacity in postvention response, school psychologists may advance the repertoire of their discipline, while also meeting the tacit expectation of postvention competence (Boccio, 2015; Glen & Nock, 2014).

A central tenant of postvention training and preparedness should include the resources, materials, and documents outlining school-specific procedures for postvention response. The finding that the majority of school psychologists are either unfamiliar with their districts’ postvention protocol or believe their district does not have a one, prompts the need for explicit training and familiarization with postvention protocols and the development of protocols for those districts that do not currently have such documents. This training should emphasize the
rationale for guidelines and procedures, as well as methods of implementation and opportunities for mock practice with school-based crisis teams.

These results also support the need for more frequent postvention trainings for school psychologists. This is underscored by the troubling finding that 20% of school psychologists reported student suicides in their district in the past two years, yet their district had not offered any postvention training in the past four years. There may be several reasons that contribute to the limited training offered by school districts such as restricted funding or resources, the competing needs for trainings in more frequently encountered matters, or even ignorance to the necessity of a training specifically devoted to responding to a school community after a student has taken their own life. However, when the call for training is contextualized by the tragic deaths of school-aged youth, it is hard to understand school districts neglecting the answer. Districts that have not provided training despite having suffered student suicides may assume that their school psychologists and other members of the postvention response teams are knowledgeable, prepared, and confident in their ability to carry out the crucial and complex functions of postvention response. The results of the present study suggest that regrettably, this critical assumption may not be satisfied.

In light of these results, it would appear that yearly training offerings would be a reasonable goal in order to support clinicians in responding to such unpredictable events. In addition, school-based and district-level crisis teams may further benefit from practice trials and procedural reviews on a more regular basis to support maintenance of knowledge and competence in providing postvention services. Given that formal training was the strongest predictor of perceived knowledge and self-efficacy on the Postvention Competence Survey, it is
strongly recommended that postvention responders are restricted to those individuals and teams with such training experiences.

Summarily, these findings suggest that districts should consider revising their approach to postvention preparation with increases in postvention training, improved postvention protocols, and training specifically in the use of the protocols for school psychologists. These results and recommendations may intersect with a broader conversation regarding the extent to which school districts should be accountable for ensuring that school psychologists are adequately prepared to conduct a job that is considered to be a professional obligation (Boccio, 2015). It can be argued that it may simply be too much to ask of a public education system to bear the primary responsibility of training school psychologists in roles and functions that they are expected to be proficient in upon assuming their title and licensure/certification. However, the reality is that suicides among school-aged youth are omnipresent in states and regions across the U.S. (CDC, 2015), and all school districts must be properly prepared to dispatch clinical staff to respond to these crisis, and feel confident that their personnel are sufficiently equipped to do so. Subsequently, it is recommended that these results be shared widely with school districts and graduate training programs who are positioned to implement the recommended actions and promote postvention competency in school psychologists. The finding that the majority of school psychologists serve on a crisis team, and that 40% had experience providing postvention services suggests that school districts may simply be unaware that their clinicians may believe they lack knowledge and feel unprepared to conduct postvention response. By uncovering school psychologists’ perceptions of their competence, it is hoped that school districts and graduate training programs may take the initiative of implementing preparatory measures to support
school psychologists in developing their competency in the critical and obligatory domain of managing the aftermath of youth suicides.

**Limitations and Future Directions of Research**

This study provides valuable contributions to the suicide prevention, intervention, and postvention literature, while also exposing areas of strength and weakness in school psychologists and school districts’ competency and preparation for postvention response that can be used to guide future training recommendations. However, there are a number of factors that limit the inferential power of the findings and restrict the scope of recommendations that may be drawn from the results.

A primary limitation of this work concerns the method of recruitment and subsequent response rate, which impacts the generalizability of the findings. Recruitment of participants relied first upon emailing all lead school psychologists, and second upon lead school psychologists distributing the request for participation to practicing psychologists in their district. In addition, identifying information was not collected from participants, which greatly limited the opportunities for continued follow-up requests for participation. As a result, it was unknown which lead psychologists from which district opened the initial email request, whether they distributed it to their psychologists, and whether the psychologists ever opened the email to effectively receive the request for participation. The inability to provide targeted follow-up likely contributed the relatively low response rate (~17%), which limits the degree to which results and interpretations may be generalized. In addition, the possibility of nested data can not be ruled out. While school psychologists were asked to indicate the size of this district, it is unclear what percentage of respondents came from which districts across the state of North Carolina, or even how many different districts were represented in the sample. While identifying information was
not requested in favor of anonymity, future research may consider including identifiers to improve the opportunities for increasing response rate, and to better understand the nature and possible nestedness of the data. Conducting a similar study nation-wide through national organizations such as the National Association of School Psychologists would also improve the generalizability of the results and may further validate these preliminary findings.

From an analytical perspective, the low sample size impeded the analyses that were conducted. In order to have sufficient power to detect moderate effect sizes, a number of variables such as recency of training and school district size were omitted from the regression models, and some multi-categorical variables were collapsed to binary variables. Postvention experience with suicide contagion effects could not be examined analytically as only three participants fell into this category. A larger national study that yields a sufficient sample size to expand modeling procedures and analyze experiences with low base rates (i.e., suicide contagion effect response) would allow researchers to assess suicide postvention and corresponding characteristics in greater breadth and detail.

Another limitation concerns the participant inclusion criteria. While school psychologists may be leaders in suicide postvention, they are not the only school-based personnel with responsibilities in responding to schools after a suicide has occurred. School social workers, counselors, administrators, and a host of other disciplines may have roles in providing postvention, and it would be of great value to ascertain their perceived knowledge and self-efficacy as well. Research that includes parities that participate in postvention may further define school districts strengths, weaknesses, and areas of training or preparation that are in need of improvements. To this end, it would also be of value to study how other school professionals perceive school psychologists’ competency in postvention, as such information may speak to the
extent that school psychologists’ are looked to and relied upon to lead these efforts. This could include school-based administrators, as well as lead school psychologists and district level prevention and intervention leadership personnel who may be responsible for coordinating the system-level preparatory approach to suicide postvention. While it is important to know how practitioners think and feel about their ability to conduct postvention, it is perhaps equally important to understand such characteristics of those in leadership positions who may be responsible for coordinating, supervising, training, and guiding crisis response.

The self-report nature of the study provides pros and cons that may be buttressed by obtaining actual data and documents for review, rather than relying upon school psychologist reports. There is value in learning what school psychologists know about the opportunities for training in their district, if their district has a postvention protocol, and what the contents of the protocol may be. In this regard, the accuracy of their responses is less critical because their answers reflect the extent of their knowledge about these items. After all, if a school psychologist erroneously believes their district does not have a postvention protocol, he or she will most likely not access the document or be familiar with its contents. However, accurate self-reports are crucial for making inferential claims, and the accuracy of the self-report data regarding school district trainings and postvention protocols cannot be assessed without having actual documents and data for comparison. Future research will benefit from Owen’s (2014) approach that included the procurement of postvention protocols directly from the school districts to examine their contents and assess their rigor using a structured rubric. In doing so, claims and recommendations about how school districts can improve their protocols may be made with a greater degree of confidence. Additionally, this approach would allow for researchers to determine whether school psychologists were accurate with their appraisals of
school resources, as well as the degree to which school psychologists were familiar with the protocols. It would be expected that if school psychologists had access to comprehensive postvention protocols, and were familiar with their contents, then they may also possess greater degrees of knowledge and self-efficacy in postvention.

Assessing school psychologists’ perception of knowledge is an important first step in understanding school psychologists’ competency to carry out postvention tasks. However, given the sensitive nature of the survey items, social desirability bias cannot be ruled out, and subsequent studies may benefit from including tests of actual postvention knowledge. There is precedent for such work on topics of suicide prevention and intervention (Debski, 2007; Kellner, 2001), but there are presently no instruments in the literature for measuring knowledge of suicide postvention or suicide contagion effects. The Postvention Competency Survey that was created for the present study may serve as a useful starting point for future research in this area. The instrument may benefit from expansion with scales that measure actual knowledge, and would also benefit from further validation in additional states and across disciplines. Additionally, while “postvention” was operationally defined at the beginning of the survey before presenting items that included the term, participants may have lacked familiarity with the word, which may have impacted their interpretation, judgement, and subsequent responses.

Finally, a substantial limitation of this study is the lack of data on actual suicide rates corresponding to school psychologists’ school districts. Participants were asked to provide this information, but a large amount of missing data precluded predictive analyses using this variable. Obtaining actual suicide rates from county health departments may allow researchers to examine how school districts’ approach to preparing for postvention response relates to observed suicides. This would have been particularly valuable data in the present study as 20% of the sample
reported suicides in their district, but no district training. Data on actual death rates and actual occurrences or opportunities for training would help clarify this troubling finding. Furthermore, a study with this component may allow for predictive analyses of the factors that may prevent suicides among school-aged youth. In doing so, researchers may move one step closer towards the elusive and paramount goal of suicide prevention and intervention research, and contribute to this life-saving global and national imperative.
APPENDIX 1: SAFE REPORTING GUIDELINES
(AFSP et al., 2015; AFSP & SPRC, 2011; CDC, 1994)

1. Provide information without sensationalizing the suicide
2. Do not use dramatic or graphic headlines
3. Avoid repeated or extensive coverage of the suicide
4. Do not include photos/videos of the method or location or death, memorials/funerals, or grieving family/friends.
5. Refrain from language or reporting that may glorify or glamorize the suicidal act or person
6. Do not focus solely on the positive characteristics of the deceased
7. Discuss the relationship between suicide and mental health
8. Emphasize suicide as a public health issue
9. Provide information on warning signs for suicide and mental health conditions
10. Provide links/contact information for suicide prevention/intervention resources
11. Refrain from using strong or incendiary terms such as “epidemic”
12. Do not suggest that the suicide occurred “without warning”
13. Do not reveal the contents of suicide notes
14. Emphasize the complexity of suicide, and avoid simple explanations for the death
15. Avoid attributing suicide to a single event
16. Consider including statement from suicide experts regarding causes and treatments
17. Provide updated facts regarding trends, rates, and treatment options
18. Provide stories of individuals who overcame suicide through treatment or resource acquisition.
APPENDIX 2: POSTVENTION PROTOCOL EXAMPLE

(Hart, 2012)

1. Have a preexisting crisis intervention response plan in the event of a student suicide
2. Verify the death and confirm the cause as suicide
   - Member of school should contact parents of the deceased prior to initiating support services to the school community.
3. Mobilize the crisis management team
   - Who is on the team?
     - Incident commander, public information officer, mental health officer, security officer, medical liaison
   - Notify staff via phone tree
   - Convene meeting before school day with staff
4. Assess the impact and estimate the level of required response
   - Student needs
     - Proximity
       - Physical – sat next to student; found the student
       - Emotional – relationship with deceased
       - Temporal – recently suffered loss or experience life stressor
     - Vulnerability – history of suicidal risk factors
       - Internal
       - External
   - Staff needs
5. Prepare for crisis intervention activities
   - Share same information
   - Give same instructions for all staff
   - Determine how information will be shared
     - Craft message for students
       - Include facts about suicide and resources
       - Follow safe message guidelines (APPENDIX 1 and APPENDIX 5)
     - Notify large school community in the natural classroom setting
     - Those most affected can be pulled individually or in small groups
     - Two staff members should be present in classrooms
     - Give accurate information about the death, without providing graphic details.
       - Validate feelings
       - Verify death
       - Discuss facts of suicide
       - Discuss how the students are feeling
       - Discuss what can be done to facilitate coping
     - Notify parents of students (letter home)
       - Inform parents of the death
       - Describe crisis response by school
       - Discuss facts about suicide
       - Provide information and resources that are available
APPENDIX 2: POSTVENTION PROTOCOL EXAMPLE

- Meet with parents in person (Context specific)
  - Goals
    - Verify death and express sympathy on behalf of school
    - Discuss crisis intervention and resources available for students
    - Educate parents about suicide and mental health
    - Educate ways to help their children and cope with death
  - Two-part meeting
    - General session with informative presentation by school
    - Followed by small groups of no more than 10 parents where questions and comments can be handled (AFSP & SPRC, 2011)

6. Staff Meeting
   - Inform staff members about the death
   - Allow expression of feelings without students present
   - Prepare staff members for crisis response
   - Meeting should last approximately 1 hour
   - Share accurate and thorough information with staff, but remind staff not to share all information with students
     - Statement drafted by crisis team should be read to students
     - Questions about details of suicide should be guided to general facts about suicide and process grief
     - Resources and recommendations of how to cope with loss should be shared
     - Share details about funeral, if known.
   - Team leaders should discuss important aspects of crisis response.
   - Introduce any outside responders
   - Discuss role of each staff member in the response efforts
   - Classroom activities should be shared
   - Referral process and the role staff play in identifying at-risk students should be shared.

7. On-going meetings
   - Schedule evaluative meetings (debriefing), as many as necessary per the situation.

8. Implement crisis intervention activities
   - Psychological triage
     - Evaluate, sort, and direct appropriate treatment for students according to immediacy
     - Consider risk factors (proximity and vulnerability)
     - Consider warning signs
     - Monitor social media
       - Involve students to provide outreach on sites after being trained by staff
   - Groups
     - Small groups for students most affected.
       - Share information about the death and dispel any rumors
APPENDIX 2: POSTVENTION PROTOCOL EXAMPLE

- Provide general facts about suicide
- Provide a venue to express grief related loss
- Education about common reactions to grief and what to possibly expect
- Explore and facilitate positive coping reactions
- Discuss the referral process for further support if needed.

- Clear and consistent responses
  - Iterate that suicidal thoughts and feelings should never be kept a secret
  - Discuss process of referral, and post referral process/resources in prominent place
    - Express confidentiality of referral process

- Monitor need for continued follow-up
  - Mental health provider follow deceased students schedule to identify students in need

9. Memorials & Funerals
- Funeral
  - If held during school hours, students wishing to attend should be allowed to do so.
  - Normal school schedule should be retained
  - Do not use school resources (e.g., school busses to transport students).
  - Consider having mental health provider at funeral to assist as needed
  - Providers should be prepared to support students when the return from the service

- Memorials
  - Should follow same procedures as any other student death
  - Set clear limits on what types of activities will be acceptable, while validating the importance of doing something to honor the deceased for healing students
  - Advocate for creative memorials such as making donations to family or community organizations, volunteering at community mental health organization, and advocating for suicide-prevention school-based activities and programs
  - Do not create permanent memorials on school grounds (e.g., trees, plaques, benches).
  - Do not conduct large assemblies
  - Do not fly flags at half-staff
  - Leave spontaneous memorials up until after the funeral, or for approximately 5 days
  - Leave students desk empty for approximately 5 days until rearranging seating
  - Monitor memorials for inappropriate messages
  - Discuss with families the appropriate types of memorial activities, and the rationale behind such limitations.
APPENDIX 2: POSTVENTION PROTOCOL EXAMPLE

10. Evaluate the response and follow-up with any necessary students or issues
   • Evaluate the response to determine appropriateness (e.g., increase or decrease response)
   • Critique the overall response after the conclusion of the crisis response
     ▪ Evaluate the overall response process
     ▪ Determine what follow-up is needed (students, activities, etc.)
     ▪ Identify strengths and weaknesses to adjust crisis plan in preparation for future responses.
APPENDIX 3: POSTVENTION PROTOCOL COMPONENTS

(Cox et al., 2016)

1. Develop an Emergency Response (ER) Plan
2. Form an ER Team
3. Activate the ER Team
4. Manage a suspected suicide that occurs on school grounds
5. Liaison with the deceased student’s family
6. Inform staff of the suicide
7. Inform students of the suicide
8. Inform parents of the suicide
9. Inform the wider community of the suicide
10. Identify and support high-risk students
11. Provide ongoing support of students
12. Provide ongoing support of staff
13. Deal with the media
14. Internet and social media considerations
15. The deceased student’s belongings
16. Funerals and memorials
17. Continued monitoring of students and staff
18. Documentation
19. Critical Incident Review and annual review of the ER Plan
20. Future prevention
APPENDIX 4: SUICIDE CONTAGION RECOMMENDATIONS

(AFSP & SPRC, 2011; The Campus Suicide Prevention Center of Virginia, n.d.)

1. Follow safe reporting guidelines in all communications associated with the suicide

   (APPENDIX 1 and APPENDIX 5)

2. Identify at-risk students

3. Contact and partner with local mental health providers/facilities to support the referral of students in need

4. Manage emotional responses of students with the provision of school-based individual and group counseling for those in need

5. Monitor media coverage of the suicide and encourage responsible reporting (APPENDIX 1)

6. Work with student liaisons to utilize social networking sites in order to identify at-risk students, and propagate mental health resources, warning signs, and recommendations

7. Communicate with friends and family of the deceased to manage memorials (APPENDIX 2)

8. Build a community coalition committee to address greater needs of the community.
APPENDIX 5: SAFE MESSAGING TO STUDENTS
(AFSP & SPRC, 2011)

1. Give accurate information and debunk myths
   - Address the complexity of suicide, and that it is not caused by a single event
   - Discuss the relationship between suicide and mental health conditions
   - Emphasize the importance of talking about suicide responsibly, encourage help-seeking, and debunk the myth that talking about suicide can put the idea in someone’s head.

2. Address blaming and scapegoating
   - Discuss the natural reaction to want to know “why”
   - Address the reaction for people to blame individuals

3. Do not discuss graphic details or the specifics regarding the method of death
   - Provide basic facts if asked, but do not provide details with respect to the method or scene of death
   - Divert the focus of “how” the individual died and focus on coping with the death

4. Address feels of anger and responsibility
   - Normalize grief responses
   - Provide reassurances that the death is not the fault of student(s), and that people’s behavior cannot always be predicted or controlled.

5. Encourage help-seeking
   - Inform students of the available resources at school to help cope with the crisis
   - Encourage students to notify an adult for help if they or someone they know may be depressed or suicidal.
APPENDIX 6: POSTVENTION COMPETENCY SURVEY

Consent
Thank you for your interest in my research study! You are being asked to voluntarily participate in a research study by completing the attached Postvention Competency Survey. Completion time for the survey is approximately 8 minutes. You may only access this survey once, so please complete it in one sitting. The purpose of this study is to learn about school psychologists’ perceived knowledge and efficacy in providing crisis response to schools following a student suicide, and will seek to identify factors predictive of perceived competency.

Your participation in this study will benefit and advance the field of school psychology, and may help guide crisis response policies, programming, and training to support student safety and wellness across the state of North Carolina.

Your responses are anonymous and are NOT identifiable by name, school/district, email address, or IP address. All data will be kept confidential and reported in group averages. The data will be used for research purposes only. The possible risks of participation in this study may include feelings of discomfort in estimating your knowledge and efficacy about crisis response.

After completion of the survey, you have the option to entering into a drawing based on chance for a $50 amazon gift card. Instructions for entering into the drawing are included at the conclusion of the survey.

You may direct any questions, comments, or concerns about this research to me, J. Conor O’Neill, Ed.S., NCSP, by phone at 518-369-2047 or by email to oneill64@live.unc.edu.

To participate, please complete the Postvention Competency Survey by clicking the button in the bottom right corner.

Q1 What is your job title/role?
☒ I am a lead school psychologist for my school district
☒ I am a school psychologist
☐ I am not a school psychologist

Q67 This survey is intended only for lead school psychologists or school psychologists. If you are a school psychologist or lead school psychologist, you may use the back button located in the bottom left corner to revise your selection and complete the survey. If you are not a school psychologist, please select the option below.
☒ I am not a school psychologist

Q2 Suicide postvention is the provision of crisis intervention, support and assistance for those affected by a suicide (AAS, 1998). What training, if any, have you received in suicide postvention? (Check all that apply)
☒ Formal training through graduate level course work
☒ Formal training through school district sponsored (funded or directly provided) training/professional development/in-service
☒ Formal training through other professional development (e.g., local, state, national conference)
☒ Self-study (e.g., journal articles, books, Internet)
☒ Consultation with colleagues
☒ No training

Q7 About how many months ago did you have your last formal training experience in postvention?

Q3 To the best of your knowledge, since the start of the 2012/2013 school year, how many times has your school district offered training in postvention response, either standalone or as part of a comprehensive suicide prevention/intervention training. If none, enter '0'
APPENDIX 6: POSTVENTION COMPETENCY SURVEY

Q4 Suicide contagion effect is defined as "a process by which exposure to suicide or suicidal behavior of one or more persons influences others to commit or attempt suicide" (CDC, 1994, para. 3). Have you received training specifically in responding to suicide contagion effects, either standalone or as part of a comprehensive suicide prevention/intervention training?

☑ Yes
☑ No

Q5 Have you completed a crisis intervention training program such as PREPaRE?

☑ Yes
☑ No

Q6 What program did you complete?

☑ PREPaRE
☑ Other: Please specify ____________________

Q8 How many times have you provided postvention response to a school, including schools that are not on your caseload, following a student suicide? If none, enter '0'

Q9 Suicide cluster is defined as an observed increase in the number of suicides than would be otherwise expected in proximity to a given time period or geographic area (Cox et al., 2012). Have you ever provided postvention response to a school following a student suicide that was believed to be associated with a suicide cluster or a contagion effect?

☑ Yes
☑ No
☑ Not sure

Q10 Does your school district have a written plan describing how to respond to a student death by suicide (i.e., postvention protocol)? The postvention protocol may be a separate document, or part of a larger crisis plan.

☑ Yes
☑ No
☑ Not sure

Q11 Does your school district's postvention protocol include specific recommendations and/or guidelines to respond to suicide contagion effects?

☑ Yes
☑ No
☑ Not sure
APPENDIX 6: POSTVENTION COMPETENCY SURVEY

Q12 Which of the following guidelines are included in your school district’s postvention protocol?

<table>
<thead>
<tr>
<th>Guideline</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow safe reporting guidelines in all communications associated with the suicide</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Identify at-risk students</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Contact and partner with local mental health providers/facilities to support the referral of students in need</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Manage emotional responses of students with the provision of school-based counseling for those in need</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Monitor media coverage of the suicide</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Encourage responsible reporting by the media of the suicide</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Work with student liaisons to utilize social networking sites to identify at-risk students</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Use social media to provide information about mental health resources, warning signs, and recommendations for help-seeking</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Communicate with friends and family of the deceased to manage memorials</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Build a community coalition committee to address greater needs of the community</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>

Q13 Does your school district have crisis intervention teams? (Check all that apply)
- District-level crisis teams
- School-based crisis teams
- No crisis teams

Q14 What crisis team(s) are you a member of, if any? (Check all that apply)
- District-level crisis team
- School-based crisis team
- Not a crisis team member

Q15 Since the start of the 2014/2015 school year, about how many student suicides occurred in your district? If none, enter ‘0’

Q16 How would you rate your knowledge about suicide postvention?
- Not at all knowledgeable
- Slightly knowledgeable
- Moderately knowledgeable
- Very knowledgeable
**APPENDIX 6: POSTVENTION COMPETENCY SURVEY**

Q17 How would you rate your knowledge about suicide contagion effects?
- [ ] Not at all knowledgeable
- [ ] Slightly knowledgeable
- [ ] Moderately knowledgeable
- [ ] Very knowledgeable

Q18 How would you rate your knowledge of best practice recommendations and/or guidelines in response to a student suicide for the following:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Not at all knowledgeable</th>
<th>Slightly knowledgeable</th>
<th>Moderately knowledgeable</th>
<th>Very knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handling of funerals and memorials</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Informing groups such as school staff, parents, community, and students about the suicide</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Identifying students at risk for suicidal behavior</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Supporting the emotional and psychological needs of students</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Responding to student questions about the suicide</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Responsible reporting of a student suicide by the media or other entity responsible for disseminating information</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Using and monitoring social media</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Q19 How would you rate your knowledge in how to involve the community in responding to a suicide cluster or suspected contagion effect?
- [ ] Not at all knowledgeable
- [ ] Slightly knowledgeable
- [ ] Moderately knowledgeable
- [ ] Not at all knowledgeable

Q20 How prepared do you perceive yourself to be to provide postvention response following a student suicide?
- [ ] Not at all prepared
- [ ] Slightly prepared
- [ ] Moderately prepared
- [ ] Very prepared

Q21 How prepared do you perceive yourself to be to prevent and/or manage suicide contagion effects?
- [ ] Not at all prepared
- [ ] Slightly prepared
- [ ] Moderately prepared
- [ ] Very prepared
APPENDIX 6: POSTVENTION COMPETENCY SURVEY

Q22 How confident are you in your professional skills for providing postvention services?
- Not at all confident
- Slightly confident
- Moderately confident
- Very confident

Q23 How confident are you in your ability to lead your school's response to a student suicide?
- Not at all confident
- Slightly confident
- Moderately confident
- Very confident

Q24 How confident are you in your ability to provide postvention response services where a suicide contagion effect is suspected to have occurred?
- Not at all confident
- Slightly confident
- Moderately confident
- Very confident

Q25 How confident are you in your ability to lead your school's response to a suspected suicide contagion effect?
- Not at all confident
- Slightly confident
- Moderately confident
- Very confident

Q26 How prepared do you perceive yourself to be to implement procedures for mitigating a suicide contagion effect as part of a postvention response?
- Not at all prepared
- Slightly prepared
- Moderately prepared
- Very prepared

Q27 Please answer based on the following hypothetical situation. “Three student suicides have occurred within the first half of the school year in one high school.” How prepared do you feel you are to respond to this type of crisis?
- Not at all prepared
- Slightly prepared
- Moderately prepared
- Very prepared

Q28 How many years have you worked as a school psychologist?

Q29 What year did you receive your highest-level graduate degree?
APPENDIX 6: POSTVENTION COMPETENCY SURVEY

Q68 What is the size of the school district in which you are currently employed?
☐ 500 - 1,999 students
☐ 2,000 - 3,999 students
☐ 4,000 - 7,999 students
☐ 8,000 - 9,999 students
☐ 10,000 - 16,999 students
☐ 17,000 - 29,999 students
☐ 30,000+ students

Q30 Since the start of the 2014/2015 school year, what grades or age groups were included on your caseload?
(Click all that apply)
☐ Infants and toddlers, and/or preschoolers
☐ K-4th grades
☐ 5-8th grades
☐ 9-12th grades
☐ Post-secondary/adult

Thank you for your participation and completion of this survey! To enter into a drawing based on chance for a $50 amazon gift, you may click the link below to be rerouted to a secure webpage that is independent of this survey. There, you may provide an email address to be entered in the drawing. Your contact information can NOT be linked to your responses on this survey. Your contact information will only be used to enter you into the drawing and notify you if you have won the gift card.

Drawing

Thank you for completing the Postvention Competency Survey! To enter into a drawing for a chance to win a $50 amazon gift card, please provide an email address of your choosing. You will be contacted at the email address you provide if you have won the gift card. Your contact information can NOT be linked to your responses on the Postvention Competency Survey.

Email address: ______________________
APPENDIX 7: VARIABLE DEFINITIONS AND DERIVATIONS

**Dependent Variables:**
1. **Provider Knowledge:**
   - **Definition:**
     The degree to which providers rate their knowledge of postvention response and specific recommendations/guidelines for the prevention and mitigation of suicide contagion effects.
   - **Measurement:**
     Provider survey: 10 questions (4 response options)
     - Score range of 10-40
     - Survey questions: Q16-Q19

2. **Provider Self-Efficacy**
   - **Definition:**
     The degree to which providers rate themselves as being confident, prepared, and comfortable in conducting postvention response activities, and postvention response in the context of a suicide cluster/contagion effect
   - **Measurement:**
     Provider survey: 8 questions (4 response options)
     - Score range of 8-32
     - Survey questions: Q20-Q27

**Predictor Variables:**
1. **Postvention Training:**
   - **Definition:**
     Formal training in postvention response, either including or not including suicide contagion effect guidelines/considerations.
   - **Measurement:**
     Three group variable measured with items Q2 and Q4
     - Group 1: Yes, formal training in postvention with contagion effect components
     - Group 2: Yes, formal training postvention without contagion effect components
     - Group 3: No, either informal training only, or not training at all

2. **Postvention Experience:**
   - **Definition:**
     Provided postvention response to a school following a student suicide that may or may not be in the context of a suspected suicide cluster or contagion effect.
   - **Measurement:**
     Binary variable measured by item Q8
     - Group 1: Yes, provided postvention response at least once
     - Group 2: No, have not provided postvention response
3. Postvention Protocol:
   Definition:
   A document with a set of steps, recommendations, guidelines, and considerations for school response following the death of a student by suicide, that may or may not include guidelines for suicide contagion effects.
   Measurement:
   Binary variable measured with item Q10
   - Group 1: Yes, school district has a postvention protocol
   - Group 2: No, or unsure if school district has a postvention protocol

Demographic Variables:
1. Frequency of postvention training administered by school district (Q3)
   a. Continuous
2. Years worked (Q28)
   a. Continuous
3. Membership of crisis intervention team: School district or individual school level (Q14)
   a. Binary
   i. Yes, either school district, school-based, or both
   ii. No crisis team membership
4. Age groups served (Q30)
   a. Three group
   i. High school or younger
   ii. Middle school or younger
   iii. Elementary school or younger
5. *Number of suicides occurred in school district in past two years (Q15)
6. *Certification in suicide postvention response
7. *Title/Position: Lead school psychologist or school psychologist (Q1)
8. *Presence of crisis intervention teams: School district or individual school level (Q13)
9. *Components of postvention protocol: Suicide contagion specific components (Q12)
10. *Recency of formal postvention training (Q7)
11. *Size of school district (Q68)

*Denotes variables that were omitted from regression analyses.
REFERENCES


