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ABSTRACT

SCHOOL-BASED SUICIDE PREVENTION LAWS IN ACTION: A NATION-WIDE INVESTIGATION OF PRINCIPALS' KNOWLEDGE OF AND ADHERENCE TO STATE SCHOOL- BASED SUICIDE PREVENTION LAWS

by

Marissa K. Smith-Millman

Suicide is the second leading cause of death for youth aged 10-24 in the United States. In response to the high rate of youth suicide, the issue has gained national attention and, as a result, state governments have created legislation regarding youth suicide prevention. States hold the power to instruct their schools in how to address suicide prevention, but little research has explored the relationship between state laws about school-based suicide prevention and schools' actual practice of suicide prevention. The current study examined this relationship by surveying a nationally representative sample of high school principals to determine the answers to four primary research questions: (1) Do public high school principals in the United States know what their state's laws are regarding suicide prevention in schools?, (2) How is suicide prevention addressed in high schools across the United States? What do suicide prevention programs look like in practice, and do they align with the five best practices for suicide prevention set forth by Kalafat (2003): having policies and procedures in place for handling a suicidal student, providing student education, school staff training, community gatekeeper training, and parent training?, (3) Are there variables (i.e., principals' demographics, school characteristics, principals' attitudes toward suicide and suicide prevention, principals' history of suicide contacts) associated with principals' knowledge of state laws?, and (4) Are there variables (i.e., principals' demographics, school characteristics, principals' attitudes toward suicide and suicide prevention, principals' history of suicide contacts) associated with suicide prevention programs' comprehensiveness? Results indicated that only about 25% of principals ($N=656$) accurately identified their states' laws about suicide prevention in schools, and 66.1% reported that their schools' suicide prevention programs are in complete compliance with their states' laws. Overall, few differences emerged in principals' knowledge of state laws between states with more and less stringent laws. However, significant differences emerged when comparing the degree of program comprehensiveness depending on the stringency of states' laws such that principals in states with the most stringent laws reported having the most comprehensive suicide prevention programs. Few variables were significantly related to principals' knowledge of state laws. However, having funding, perceived support, student socioeconomic status, and having a student in their current school die by suicide were all significantly related to suicide prevention program comprehensiveness. Ultimately, these results suggest that laws can positively impact suicide prevention programming in school when they are required, funding and support are important for comprehensive programming, and having an incident of suicide in a school is associated with stronger suicide prevention programming. Implications for policy, practice, and research are discussed.

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INVESTIGATION OF PRINCIPALS' KNOWLEDGE OF AND ADHERENCE TO STATE SCHOOL-
BASED SUICIDE PREVENTION LAWS

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School-based Suicide Prevention Laws in Action: A Nation-wide Investigation of Principals' Knowledge of and Adherence to State School-Based Suicide Prevention Laws

Suicide is a major problem for American youth (Center for Disease Control [CDC], 2014), particularly those in high school (Kann et al., 2016). As such, suicide prevention has garnered increasing federal attention over the past thirty years (Cooper, Clements, & Holt, 2011; Metha, Weber, & Webb, 1998). This has resulted in the creation of federal funding streams for youth suicide prevention work (Office of the Surgeon General, 2012) as well as many state laws either encouraging or requiring high schools to provide suicide prevention services to staff and/or students. Despite the increase in national attention, large gaps remain between policy, research, and practice for school-based suicide prevention. Specifically, state laws do not inform schools *how* to implement suicide prevention, often leaving schools with little guidance in choosing appropriate evidence-based programs and implementing them with fidelity (Cooper et al., 2011). Further, little is known about how suicide prevention programming is actually implemented in schools today or about how school administrators' knowledge and attitudes may affect program implementation (Miller, Eckert, DuPaul, & White, 1999; Stein et al., 2010). The current study begins the process of bridging this gap by surveying high school principals nationwide about their knowledge of their states' laws on school-based suicide prevention, how they address suicide prevention in their schools, and how their knowledge, attitudes, demographics, and schools' characteristics (i.e., number of students in the school, student race/ethnicity, student socioeconomic status) may impact their knowledge and suicide prevention program implementation.

This introduction begins with framing the process of bridging gaps between policy, research, and practice in terms of the Prevention Delivery System of the Interactive Systems Framework. It then discusses the problem of youth suicide in the United States and follows with a discussion of the history of suicide prevention in the United States, with a focus on both federal initiatives and state laws. Subsequently, the state of school-based suicide prevention is discussed, and this is followed by a discussion of best practices for suicide prevention in schools. Finally, principals' attitudes toward suicide and suicide prevention and their personal histories of exposure to suicide are discussed in the context of how these factors may affect their willingness to engage in school-based suicide prevention.

Framing: Interactive Systems Framework

The field of community science strives to unite policy, research, and practice by facilitating the creation, dissemination, and implementation of prevention programming (Chinman et al., 2005) and, therefore, provides ample theoretical grounding for this type of work. Specifically, the Interactive Systems

Framework (ISF) provides a model for bridging these gaps (Wandersman et al., 2008). The ISF includes three systems that interact with one another: Prevention Delivery System, Prevention Support System, and Prevention Synthesis and Translation System. The Prevention Delivery System is concerned with implementing interventions in the field, while the function of the Prevention Support System is to support communities while they implement prevention programming. Both of these systems aim to increase the general capacity (i.e., enhancing the skills, infrastructure, and motivation of an organization) and innovation-specific capacity (i.e., the ability to implement specific innovations). The final system, Synthesis and Translation, aims to address a major problem in the field: synthesizing and translating information about prevention programming into a form that is readily accessible to the communities trying to implement innovations. These three systems are directly influenced by four factors: existing research and theory, climate, macro policy, and funding.

The current study addresses how these four factors impact the Prevention Delivery System (PDS) for school-based suicide prevention programming (see Figure 1). First, this study critically examines the unidirectional relationship between macro policy and the PDS. That is, by determining whether high school principals in the United States are knowledgeable about their states' school-based suicide prevention laws, this study provides critical information for policy makers. Specifically, if principals are generally able to identify their states' suicide prevention laws, policy makers can be assured that their policies are being disseminated, at least to high school principals. However, if principals are generally unable to correctly identify their states' laws, this provides evidence for a disconnect between policy and practice wherein the policies are not being adequately disseminated to administrators in charge of approving suicide prevention programming in schools. Further, the current study assesses whether schools' suicide prevention programs are in compliance with their states' laws about suicide prevention. Similar to principals' knowledge of state laws, this information will enable an analysis of a disconnect between policy and practice. If schools are not in compliance, this would indicate that state laws are not being disseminated widely or not being incorporated accurately. This study also compares states with laws that require certain types of suicide prevention with states that either do not require anything or only encourage schools to provide certain suicide prevention services. In examining the differences between these groups, this study will be able to determine the efficacy of state laws (i.e., are required laws associated with greater compliance than encouraged laws?).

Second, this study examines the relationship between the existing research and literature by

assessing the state of evidence-based suicide prevention in schools. It provides novel information about how frequently schools are employing evidence-based suicide prevention programming. This information provides the opportunity to identify gaps between research and practice by examining whether evidence-based prevention strategies are in use nationwide. That is, if principals report that their schools are generally not employing research-tested, evidence-based programs, it would show that researchers are not adequately disseminating their findings on these programs to those who need to use them.

Third, this study scrutinizes the relationship between funding and the PDS for school-based suicide prevention by directly assessing whether having funding available for this work increases the likelihood of having a comprehensive program that is aligned with best practices for suicide prevention.

Finally, this study also taps into the relationship between climate and the PDS by determining whether principals' demographic factors, school characteristics, principals' attitudes toward suicide and suicide prevention, and principals' exposure to suicide are associated with their knowledge of state laws or their suicide prevention programs' comprehensiveness. These factors all impact school climate and thus can highlight the relationship between school climate and the delivery of suicide prevention services. Ultimately, in keeping with the spirit of the ISF model, this study provides a vehicle for identifying disconnects between policy, research, and practice with regard to school-based suicide prevention.

Prevalence and Treatment of Youth Suicide

Suicide is the second leading cause of death among 15 to 24 year olds in the United States (CDC, 2014). According to the 2015 Youth Risk Behavior Survey (Kann et al., 2016), 29.9% of American high school students reported experiencing symptoms of depression. Additionally, 17.7% of respondents reported having seriously considered attempting suicide in the past year. A further 14.6% had made a suicide plan, and 8.6% had attempted suicide at least once in the previous 12 months; 2.8% of students who attempted suicide required treatment by a medical professional due to resulting injury. Though the incidence of suicidal ideation and planning in high school aged youth has decreased markedly since 1991, it has started to steadily increase since 2009 (Kann et al., 2016). These prevalence rates indicate that suicidal ideation and attempts are a serious problem for America's youth.

Despite the high prevalence rate of suicidal ideation and attempts in adolescents, many struggling youth do not receive treatment (Pirkis et al., 2003). In a national study of suicidal adolescents, Pirkis and colleagues (2003) found that only 28% of youth who reported having either thought about suicide or attempted suicide in the past year had received counseling during that time. The lack of access to treatment is also seen in the treatment of mentally ill adolescents more generally. Approximately 46% of youth aged

13 to 18 have met criteria for a mental disorder (Merikangas et al., 2010a), but despite this high rate of mental illness, only about half of youth affected by a mental disorder receive mental health treatment (Merikangas et al., 2010b).

Suicide is associated with major emotional and economic costs to society (Lindqvist, Johansson, & Karlsson, 2008; Palmer, Halpern, & Hatzianandreu, 1995). More specifically, youth suicide is devastating to the victim's family, friends, and community and leads to grief, confusion, and difficulty returning to normal life for those affected (Lindqvist et al., 2008). Economically, it is estimated that, on average completed suicides cost \$397,000 and attempted suicides cost \$33,000 per year in the United States. These costs are due to a combination of loss of productivity and direct costs like hospital bills and other medical care (Palmer et al., 1995). The high prevalence rate, low treatment rate, and high social and economic costs of suicide demonstrate a clear need for improved youth mental health treatment and prevention. Prevention programs are particularly important because they seek to provide all students with skills and/or knowledge about mental health disorders in order prevent the onset of mental illness (Weist, 2003). Further, from a cost perspective, research has demonstrated that every dollar spent on youth suicide prevention can save three dollars in direct health care expenditure (Washington State Department of Health, 1995). Given the serious costs of suicide, investment in suicide prevention can result in significant emotional and economic savings.

Schools allow for unparalleled access to most of the nation's youth, and as such, are a prime venue to provide mental health prevention and intervention services, particularly to underserved and undertreated youth (Flaherty, Weist, & Warmer, 1996; Rones & Hoagwood, 2000). More specifically, schools provide an accessible context to provide suicide prevention (Cooper et al., 2011; Hayden & Lauer, 2000; Stein et al., 2010). Universal school-based suicide prevention programs aim to increase students' and school staff's awareness about suicide in order to help them more accurately identify suicidal youth and refer them to appropriate services (Kalafat, 2003). As such, school-based suicide prevention programs have proliferated in high schools in an attempt to prevent both the onset of suicidality in youth and to train youth in how to obtain help for suicidal friends (Kalafat & Elias, 1995).

Federal Action Promoting Suicide Prevention in Schools

The problem of youth suicide became an issue of national concern in the 1980's when the Youth Suicide Prevention Act of 1985, which aimed to provide federal funding for school-based suicide prevention programming, was introduced to Congress (Metha et al., 1998). Although the bill was not passed, it established the idea of using schools as a vehicle to address suicide prevention and garnered

national attention for the problem of youth suicide. Subsequently, a number of initiatives have been enacted to address youth suicide more broadly. In 1990, the Public Health Service Act was amended to include the provision of funds for National Institute of Mental Health grants for projects targeting prevention of youth suicide (Metha et al., 1998). Further, reducing youth suicide by 2% by the year 2000 was included as an objective in the *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* (U.S. Department of Health and Human Services, 1990). The same objective was echoed in *Health People 2010: National Health Promotion and Disease Prevention Objective* (U.S. Department of Health and Human Services, 2000). Lauded as the most important legislative accomplishment for youth suicide in the past decade, the Garrett Lee Smith Memorial Act (GLSMA) was enacted in 2004. GLSMA established the most significant federal grant program for suicide prevention to date. These grants are administered by the Substance Abuse and Mental Health Services Administration and provide money to states, tribes, and institutions of higher education for youth and college student suicide prevention programming (Office of the Surgeon General, 2012).

After years of grassroots groups of suicide survivors campaigning to bring national attention to suicide, the National Strategy for Suicide Prevention was published in 2001. This set forth an agenda with eleven goals and sixty-eight objectives that served as a reference point and provided resources for both states and local communities to address suicide prevention (Office of the Surgeon General, 2012). The 2001 National Strategy had a major effect on suicide prevention efforts in the United States and led to a burst of action in the field of suicide prevention (Office of the Surgeon General, 2012). This strategy was updated in 2012 and included various recommendations specifically for schools. The recommendations include encouraging schools to implement programs that promote wellness and prevent suicide, train school staff in suicide prevention strategies, and have school staff assess students in crisis for access to lethal means (Office of the Surgeon General, 2012). Further, the National Strategy specifically suggests that schools use evidence-based programs and practices to address suicide prevention (Office of the Surgeon General, 2012). Overall, the push for increased youth suicide prevention efforts at the federal level has not only brought the issue to national attention, but is has also led to a proliferation of school-based suicide prevention programs for youth (Metha et al., 1998). By examining the state of school-based suicide prevention in practice, the current study provides insight into how frequently federal suggestions are enacted.

State laws. To date, there are no federal mandates or laws that require schools to address suicide prevention. Rather, federally commissioned strategies and acts have paved the road for state governments

to create laws regarding school-based suicide prevention. That is, individual states each hold the power to create their own laws regarding how schools need to address suicide prevention. As such, school-based suicide prevention laws vary significantly across states in terms of content and stringency (American Foundation for Suicide Prevention [AFSP], 2014; 2015). In regard to content, state laws vary in terms of which aspects of school-based suicide prevention they address, and some states have more comprehensive laws than others. For example, Alabama encourages schools to use twelve strategies to address suicide prevention ranging from providing training in suicide prevention for school staff to promoting cooperative efforts between school staff and community suicide prevention groups (ASFP, 2014; 2015). Other states, like Hawaii and New Mexico, do not have any laws regarding school-based suicide prevention (ASFP, 2014; 2015). Still other states have idiosyncratic laws; North Carolina requires one member of school staff to be trained in the unique needs of students with immediate family members in the military, including signs of suicide risk in this specific subset of students (ASFP, 2014; 2015). In reviewing state laws, it becomes clear that two strategies for suicide prevention are most prevalent in state laws: student education and school staff training. At least one of these two strategies are present in forty-six states' laws (ASFP, 2014; 2015).

In terms of stringency of laws, states with school-based suicide prevention laws vary in whether or not they require schools to provide student education and/or school staff training. States with the most stringent laws require schools to provide both school staff training and student education about suicide prevention. Other states require schools to provide school staff training and either encourage student education or do not mention it in their laws, whereas some states do the reverse by requiring student education and encouraging or not mentioning school staff training. The least stringent laws encourage, but do not require, schools to provide student education and/or school staff training (AFSP, 2014; 2015). To this author's knowledge, no studies to date have examined schools' compliance with suicide prevention laws nationwide. That is, the effectiveness of these laws, and possible differences in law effectiveness based on stringency, remains unknown in the field of school-based suicide prevention. One study examined the efficacy of laws against bullying (Hatzenbuehler, Schwab-Reese, Ranapurwala, Fertz, & Ramirez, 2015) and found that anti-bullying laws were effective in reducing incidents of bullying and cyber-bullying. This study, however, only focused on comparing rates of bullying in states with and without anti-bullying laws and did not investigate law compliance. These types of research questions have not been asked about school-based suicide prevention.

There is also no federal or state legislation that directs high schools in *how* to implement suicide

prevention programs, meaning that school districts and administrators are tasked with choosing, implementing, and evaluating their own suicide prevention programming (Cooper et al., 2011). Although some states have state suicide prevention plans that provide guidance about how to implement suicide prevention strategies in schools (Hayden & Lauer, 2000), ultimately, district and school administrators are charged with designing and implementing suicide prevention programs. In a survey of school districts in Washington State, Hayden and Lauer (2000) found that only 42% of participating superintendents and school counselors were aware that Washington had a state plan for suicide prevention, indicating that some participants implemented suicide prevention programs in their schools/districts independent of guidance from the state suicide prevention plan. Despite the presence of laws about suicide prevention provision in school in thirty-nine states and the existence of suicide prevention programs in 77% of American schools, little is known about *how* suicide prevention programs are implemented in schools (Stein et al., 2010). The current study addresses this issue by surveying high school principals nationwide about the types of strategies their schools employ to address suicide prevention.

Further, few studies have explored how states address suicide prevention. Metha and colleagues (1998) examined state policies and initiatives about youth suicide prevention. Governors from each state were surveyed to determine whether there was a relationship between state initiatives and states' suicide rates. Overall, they found that although most states had some sort of initiative (i.e., advisory councils, research examining risk factors for suicide and curriculum efficacy, legislation) about youth suicide prevention, most of these initiatives were launched in the mid-1980's and many had since lapsed or expired. Although suicide rates significantly decreased over time, there was no relation between these rates and state initiatives. These results are consistent with those of Lester (1992), who found that state youth suicide rates were largely unaffected by activities undertaken by states to address youth suicide. Although disheartening, these null results may be due to two factors. First, only intervals of fifteen years were examined. Metha and colleagues (1998) examined suicide rates from 1979 to 1994, but noted that most suicide prevention initiatives were put in place in the mid-1980's. It is possible that they did not see any changes because they did not allow sufficient time to observe effects of such large-scale prevention efforts. Second, both Metha and colleagues (1998) and Lester (1992) looked at statewide initiatives and did not drill down to the local level. In examining statewide rates, they may have missed some important gains at the local level that would depend on more proximal suicide prevention action, like that which occurs at the community level or schools.

To the author's knowledge, these are the only studies that have examined state policies/initiatives

about youth suicide prevention. These results are useful in beginning to understand the relationship between state policy, suicide rates, and the various activities that states undertake to address youth suicide prevention. However, past studies examined youth suicide prevention more generally and did not specifically focus on schools. The lack of attention to state laws about school-based suicide prevention has resulted in a dearth of information about whether schools adhere to their states' laws about suicide prevention. Further, no research has examined whether individual school variables (e.g. administrator attitudes, demographics, or school characteristics) affect suicide prevention program implementation. The current study fills this gap in the literature by specifically examining principals' knowledge of state laws about school-based suicide prevention, the relationship between state laws and schools' implementation of suicide prevention programming, and principals' attitudes toward suicide and school characteristics and suicide prevention.

Best Practices for Suicide Prevention Programming in Schools

The most prevalent form of school-based suicide prevention programming is universal prevention (Kalafat, 2003). That is, both school staff training and student education affect all students in a school, not only a targeted selection of at-risk students. Universal school-based suicide prevention programs aim to reach the largest number of adolescents in hopes of identifying the portion of youth who are experiencing suicidal thoughts and referring them to treatment (Berman, 2009). Additionally, they strive to create an accountable school environment in which both school staff and students take responsibility for keeping students safe by knowing how to respond to at-risk students (Kalafat, 2003). Research indicates that suicidal youth disclose suicidal thoughts to their peers more often than to adults and that few peer confidants tell an adult about their friends' suicidal thoughts and behaviors (Kalafat & Elias, 1995). As such, suicide prevention programs often focus on training youth in how to identify when someone needs help and how to obtain help from a trusted adult.

There are three main types of universal suicide prevention in schools: screening programs, suicide awareness and response curricula, and gatekeeper training (Kalafat, 2003; 2006). Screening programs aim to identify students who are at risk for engaging in suicidal behavior and involve administering a brief questionnaire about suicidal thoughts and behaviors to all students in a school. Students who are identified as at-risk for suicide through this screener are subsequently referred to mental health services for further assessment and treatment (Kalafat, 2006). Screening programs appear to be the least commonly used method of suicide prevention (Hayden & Lauer, 2000), likely because they are the most time and resource intensive (Eckert, Miller, DuPaul, & Riley-Tillman, 2003; Miller et al., 1999; Scherff, Eckert, & Miller,

2005). Suicide awareness and response curricula are typically classroom lessons that are provided to all students in a school. Given that adolescents are more likely to confide in one another about suicidal thoughts and plans than tell an adult, these lessons focus on increasing students' knowledge of the signs of suicide and how to handle a friend in a suicidal crisis in hopes of increasing their ability to obtain help for suicidal friends (Kalafat, 2003; 2006). Of high schools that address suicide prevention at all, curriculum-based programs are most commonly used (Hayden & Lauer, 2000; Garland & Ziglar, 1993). Finally, gatekeeper training refers to the training of school staff and other influential adults (i.e., adults in the community who routinely engage with youth) in order to increase both their awareness about suicide and their suicide intervention skills so that they can effectively respond to suicidal youth (Kalafat, 2003; 2006). Gatekeeper training is also commonly used by schools, although less so than student education (Garland & Ziglar, 1993; Hayden & Lauer, 2000).

To date, there are no specific suicide prevention programs designated as “best practice” or highly recommended (Katz et al., 2013). This is because research on the efficacy of school-based suicide prevention programs has yielded mixed results (Cusimano & Sameem, 2011; Katz et al., 2013). Cusimano and Sameem (2011) reviewed eight studies conducted on suicide prevention programs for middle and high school aged youth and found that these programs have significant, positive proximal effects. Specifically, the reviewed programs were associated with increases in students' knowledge about suicide as well as increases in help-seeking behavior, but only two programs showed reductions in the distal outcome of suicide attempts. Similarly, Katz and colleagues (2013) found that only two of sixteen reviewed programs were associated with decreases in suicide attempts. Katz and colleagues (2013) concluded that a combination of programs, like SOS Signs of Suicide and the Good Behavior Game, may be the best way to address suicide prevention in schools at this time.

In the absence of evidence-based programming or specific programs that are viewed as “best practice,” it is useful to look to recommendations made by experts in the field. Kalafat (2003) set forth a list of best practices for school-based suicide prevention. He suggests that in order to be considered comprehensive, universal suicide prevention programs should include the following five practices: (1) having school policies and procedures for handling students who express suicidal thoughts in place; (2) school gatekeeper training for all staff, (3) parent training, (4) community gatekeeper training, and (5) participatory and engaging student classes. Interestingly, these best practices only partially align with common state laws about suicide prevention in schools (ASFP, 2014; 2015). That is, the most common practices required or encouraged by state laws are student education and school staff training; states do not

tend to address the other three best practices, namely, having policies and procedures in place for handling students when they express suicidal thoughts, community gatekeeper training, and parent training. The current study applies these best practices to real-world implementation of suicide prevention programming in schools in order to determine the state of suicide prevention in American schools.

Real-world implementation. Despite the time and effort dedicated by researchers to create and test school-based suicide prevention programs, little is known about real-world implementation of these programs (Stein et al., 2010). That is, although there is a push in the field for the development of evidence-based prevention programs, little research has examined whether these programs are being used in schools. One exception is a study that examined how school districts in Washington state address suicide prevention (Hayden & Lauer, 2000). The authors surveyed all districts in the state, and either the superintendent or a school counselor completed this survey; there was a 62% response rate. In terms of types of suicide prevention strategies employed, they found that 46.1% of schools reported using school staff training, 41.6% of respondents reported using guest speakers (which is not an evidence-based practice in and of itself), 39.6% employed classroom-based student education, and 26.6% used student suicide screening, although the screening was only used with a subset of students already identified as at-risk, not the entire student population. Further, 29.2% of respondents reported that their schools had policies and procedures in place for suicide prevention and intervention. The authors further found that having any suicide prevention strategies in place significantly increased the district's likelihood of using other strategies. In assessing for participants' knowledge of Washington's state plan on suicide prevention, they found that only 42% of participants reported knowing about it, and this lack of knowledge was significantly associated with reports of more barriers to implementing suicide prevention programming. Finally, the authors assessed for barriers to program implementation and found that the most often reported barriers were insufficient staff, funding, and scheduling concerns. Districts with no suicide prevention programming reported that in order to implement programming, they would need more information, a cost assessment, legal input, adequate staffing, access to research reports, and consultation.

More recently, the Center for Disease Control (CDC) released the results of their 2014 School Health Policies and Practices Study, which is based on a nationally representative sample of elementary, middle, and high schools, and surveys schools about their use of suicide prevention strategies. In terms of student education, results indicated that 73.7% of high schools required students to receive instruction on suicide prevention. In terms of school staff training, only 36.7% of high school classes were taught by a

teacher who had received professional development in suicide prevention. However, 38.7% of high school teachers reported that they wanted to receive professional development in suicide prevention. More school counselors reported having received professional development in suicide prevention (53.2%), and 32.9% reported wanting this type of training. Further, almost all schools (99.6%) reported having plans in place for the actions to be taken when a student is identified as at-risk for suicide. This study did not capture whether schools provide parent training or community gatekeeper training, the two other best practices for school-based suicide prevention programming (Kalafat, 2003).

Taken together, these results suggest that while high schools often have procedures in place for helping students who are identified as at risk for suicide, not all high schools directly address suicide prevention with their staff and/or students. They also suggest that schools implement a variety of combinations of strategies to create suicide prevention programming in their schools. That is, individual schools/school districts design their own programs, and they often do not incorporate all five of the best practices suggested by Kalafat (2003) for a comprehensive suicide prevention program. These two studies have begun the process of explicating how suicide prevention is implemented in schools in the United States. Neither study, however, examined whether schools are employing evidence-based practices for suicide prevention nor did they evaluate the degree of comprehensiveness of the programs. That is, these studies examined the use of individual suicide prevention strategies across schools, and did not explore how schools put strategies together to create a suicide prevention program. The current study addresses this gap in the literature by surveying high school principals and inquiring about how many of Kalafat's (2003) five best practices for suicide prevention they employ in their schools' suicide prevention programs.

Stakeholder Attitudes Toward Suicide Prevention

In order for schools to implement suicide prevention programs, school administration needs to find that the programs are acceptable and feasible for use in the school setting (Miller et al., 1999). As such, to understand how suicide prevention programs are implemented in schools, it is critical to consider key stakeholders' opinions on the acceptability of the different types of school-based suicide prevention programming. In a set of studies, one research team has examined principals', superintendents', and school counselors' acceptability ratings of the three most prominent types of school-based suicide prevention programs: student education, school staff training, and universal suicide screening (Eckert et al., 2003; Miller et al., 1999; Scherff et al., 2005). Miller and colleagues (1999) found that while there were no differences in high school principals' ratings of acceptability of student education and school staff

training, both were viewed as significantly more acceptable than universal screening. These results were replicated with both superintendents (Scherff et al., 2005) and school counselors (Eckert et al., 2003), indicating that a variety of school personnel in charge of suicide prevention programming consistently find that relative to universal screening, student education and school staff training are more acceptable options for suicide prevention.

Although researchers have examined school personnel's ratings of acceptability of different types of suicide prevention programs, to this author's knowledge, no studies have examined principals' personal attitudes toward suicide and suicide prevention or whether these attitudes impact suicide prevention program implementation. Principals were chosen to participate because research has shown that principal support is major factor in school personnel feeling like their school values suicide prevention as well as the successful implementation of such programming (Stein et al., 2010). Further, principals are often charged with approving suicide prevention programs for their schools (Marks, 1995; Poland, 1989; 1995). Borrowing knowledge from social psychological research, it seems plausible that principal's attitudes toward suicide prevention may be related to their behaviors around suicide prevention programming (Glasman & Albarracín, 2006; Kraus, 1995; Wallace, Paulson, Lord, & Bond, 2005). One large-scale meta-analysis found a significant correlation of .41 between attitudes and behavior, indicating that, generally speaking, attitudes are predictive of behavior (Wallace et al., 2005). Extending these findings to suicide prevention in schools, it is possible that principals' attitudes toward suicide and suicide prevention impact their behavior when they are tasked with approving suicide prevention programming. It is possible that if principals hold understanding attitudes toward suicide and supportive attitudes toward suicide prevention, they would be more likely to approve more comprehensive suicide prevention programs for their schools. Further, research has demonstrated that when prevention providers believe in the importance of the and perceive benefits from prevention activities, prevention programs are implemented more effectively (Durlak & DePre, 2008). The current study examines this relationship in order to identify factors that are associated with suicide prevention program implementation in schools nationwide.

Exposure to Suicide

In addition to attitudes toward suicide and suicide prevention, it is possible that principals' personal exposure to suicide impacts how they approach suicide prevention in their schools. Exposure to suicide occurs when a person knows someone who died by suicide (Cerel et al., 2016). In a sample of 1,687 adults, 48% reported having been exposed to suicide in their lifetime (Cerel et al., 2016). Being exposed to suicide is associated with a host of negative psychological outcomes, particularly for those

survivors who were emotionally close to the victim (Cerel et al., 2016; Maple, Cerel, Sanford, Pearce, & Jordan, 2017). For example, Cerel and colleagues (2016) found that suicide-exposed participants were more likely than non-exposed participants to report depression and anxiety. Further, they found that closeness to the person who died by suicide significantly increased the odds of depression, anxiety, and posttraumatic stress disorder. These results demonstrate that exposure to suicide impacts mental health. In addition to effects on mental health, exposure to suicide is related to both knowledge about and attitudes toward suicide (Batterham, Calear, & Christensen, 2013). Batterham and colleagues conducted a study with Australian adults and found that participants with less exposure to suicide knew less about suicide and were more likely to hold negative attitudes toward suicide. Participants with more exposure to suicide, however, were more likely to report that people die by suicide because they feel isolated, demonstrating understanding of the pain and suffering this population endures before dying by suicide. To this author's knowledge, no research to date has examined whether principals', or any school staff's, history of suicide exposure impacts their provision of suicide prevention programming in their schools. Given the finding that exposure to suicide is related to more knowledge and understanding attitudes about suicide (Batterham et al., 2013), and that attitudes are predictive of behavior (Glasman & Albarracín, 2006; Kraus, 1995; Wallace et al., 2005), it is possible that principals who have a history of exposure to suicide will be more aware of the problem and more likely to address suicide prevention in their schools. The current study will examine whether exposure to suicide impacts both principals' knowledge of state suicide prevention laws and the number of best practices for suicide prevention their schools' suicide prevention program employs.

School Characteristics

In addition to principals' attitudes toward and exposure to suicide, it is possible that their schools' characteristics may impact their knowledge of state laws and/or the number of best practices their schools' suicide prevention programs employ. School characteristics include student-level demographics (e.g. race and socioeconomic status), the number of students in the school, and whether the school has access to funding and/or support for suicide prevention activities. There is some evidence that these school characteristics relate generally to program implementation, although no studies have directly investigated these characteristics in relation to suicide prevention programs. Regarding student-level demographics, one study examined the relation of the number of students in a district and the percentage of student receiving free or reduced lunch (a commonly used proxy for socioeconomic status [Harwell & Lebeau, 2010; Raffaele Mendez, 2003; Skiba, Michael, Nardo, & Peterson, 2002]) to the implementation of school

wellness policies to reduce child obesity (School Nutrition Association, 2008). Results revealed that larger districts with more students receiving free or reduced lunch reported having stronger district policies about food and better policy implementation strategies than smaller districts with fewer students receiving free or reduced lunch. A similar study found that having higher proportions of students from low socioeconomic status backgrounds was related to having stronger student wellness policies and policy implementation (Metos & Nanney, 2007). Although the content of these prevention programs is different, these results suggest that school characteristics can impact the implementation of prevention programming. Similarly, factors like having access to funding and support have been demonstrated to impact prevention program implementation (Durlak & DuPre, 2008). Reviews on the successful implementation of prevention programming have consistently found that having access to funding and support for prevention activities are critical factors for the successful implementation of prevention program across community and school settings (Durlak & DuPre, 2008; Greenhalgh et al., 2005; Stith et al., 2006).

To date, no studies about suicide prevention programming in practice have explored the relation between schools having access to funding and/or support or for suicide prevention activities, student-level characteristics, and the comprehensiveness of schools' suicide prevention programs. The current study extends these findings to school-based suicide prevention by investigating whether school characteristics impact principals' knowledge of state laws about suicide prevention and/or the comprehensiveness of their schools' suicide prevention programs.

The Current Study

The current study addresses important gaps in the school-based suicide prevention literature. Currently, no studies have examined principals' knowledge of state laws on suicide prevention or how this knowledge may be related to other factors. Further, few studies have examined how suicide prevention programs are implemented in high schools nationwide (CDC, 2014; Hayden & Lauer, 2000) and none have explored whether implementation is related to state laws. In the absence of this research, it is difficult to know whether laws effectively increase the use of suicide prevention in schools or how to design suicide prevention programs that will be disseminated in schools. There also exists gap in knowledge about evidence-based suicide prevention such that it is largely unknown whether schools use evidence-based practices to address suicide prevention.

Principals are often charged with approving prevention programming for their schools (Marks, 1995; Poland, 1989; 1995). As such, it is critical to assess their knowledge of state laws, the types of

programs they approve to run in their schools, and how their personal beliefs may affect their knowledge and implementation of these laws. The current study examines whether high school principals nationwide are able to accurately identify their states' school-based suicide prevention laws, whether their schools' suicide prevention programs are in compliance with state laws, and whether their personal attitudes about suicide and suicide prevention affect both their knowledge of these laws and how they implement suicide prevention programming in their schools.

Research Questions and Hypotheses. The current study will address the following research questions:

- 1.) Are public high school principals in the United States able to accurately identify their state's laws about school-based suicide prevention?
 - a. Do principals in states with more stringent laws about suicide prevention (i.e., states that require both student education and school staff training versus states that only require one or the other) more accurately report their state's laws about school-based suicide prevention?

It is hypothesized that principals working in states with more stringent laws about suicide prevention in school will more accurately report on their state's laws about suicide prevention in schools than those in states with less stringent laws. Specifically, it is hypothesized that principals in states that require both student education and school staff training will most accurately report on school-based suicide prevention laws, followed by those in states that require one strategy, followed by states that encourage either or both types of education, and that principals in states with no laws will be the least accurate reporters.

- 2.) How is suicide prevention addressed in high schools across the United States? What do suicide prevention programs look like in practice, and do they align with best practices for suicide prevention (i.e., include policies and procedures for handling students at risk for suicide, student education, school staff training, parent training, and community gatekeeper training)?
 - a. Is the stringency of state school-based suicide prevention laws related to school suicide prevention programs' alignment with best practices for suicide prevention?
 - b. Do schools' suicide prevention programs align with their states' laws about suicide prevention in school?

It is hypothesized that in states with more stringent laws about school-based suicide prevention, principals will report employing more best practices for suicide prevention programs in their schools than principals in states with less stringent laws. It is further hypothesized that principals in states with more stringent

laws will be more likely to report that their schools comply with state laws than principals in states with less stringent laws.

- 3.) Do principals' demographics, school characteristics, principals' attitudes toward suicide and suicide prevention, and/or principals' history of suicide exposure predict principals' knowledge of state laws?

It is hypothesized that principals' personal attitudes toward suicide and suicide prevention will be related to their knowledge of their states' laws on suicide prevention such that principals with more compassionate attitudes toward suicide and more favorable attitudes toward suicide prevention will more accurately report their states' laws about school-based suicide prevention. It is further hypothesized that a history of exposure to suicide will also be related to knowledge of state laws such that principals with a history of exposure to suicide will be better at accurately identifying their states' laws about suicide prevention. Given that knowledge of state laws has not yet been examined in research and that some of these variables have been significant in past prevention implementation and policy research (e.g., Durlak & DePure, 2008; Metos & Nanney, 2007), principals' demographics (i.e., gender, race, ethnicity, highest degree, years served as a principal, and years served as a principal in their current school) and schools characteristics (i.e., number of students in school, percentage of students receiving free/reduced lunch, race and ethnicity of study body, access to funding and/or support) were included for exploratory purposes.

- 4.) Do principals' demographics, school characteristics, principals' attitudes toward suicide and suicide prevention, and/or principals' history of suicide exposure predict suicide prevention programs' comprehensiveness?

It is hypothesized that principals' personal attitudes toward suicide and suicide prevention will be related to the comprehensiveness of schools' suicide prevention programs such that principals with more accepting attitudes toward suicide and more favorable attitudes toward suicide prevention will report having more comprehensive suicide prevention programs in their schools. It is further hypothesized that a history of exposure to suicide will also be related to program comprehensiveness such that principals with a history of exposure to suicide will report having more comprehensive suicide prevention programs in their schools. It is also hypothesized that having access to support and funding for suicide prevention will be associated with having more comprehensive suicide prevention programming. Given that suicide prevention program comprehensiveness has not yet been examined in research and that some of these variables have been significant in past prevention implementation and policy research (e.g., Durlak &

DePure, 2008; Metos & Nanney, 2007), principals' demographics (i.e., gender, race, ethnicity, highest degree, years served as a principal, and years served as a principal in their current school) and schools characteristics (i.e., number of students in school, percentage of students receiving free/reduced lunch, race and ethnicity of study body) were included for exploratory purposes.

Methods

Participants

Participants in this study included high school principals from all 50 US states and the District of Colombia, with the exception of Hawaii. See Table 1 for a breakdown of how many principals participated from each state.

A total of 8,936 principals were e-mailed and asked to participate in the current study. A total of 1,026 principals in Law Group 1, 3,612 principals in Law Group 2, 3,183 principals in Law Group 3, and 1,115 principals in Law Group 4 were e-mailed and asked to participate. Of the 8,936 principals e-mailed, a total of 656 began the survey. A further 599 (7% response rate) completed at least 80% of the survey questions, and their data were included in analyses.

See Table 2 for full demographic information about participants. Overall, the majority of participants were Caucasian (89.1%), Non-Hispanic (96.9%), male (61.1%), and had a Master's Degree (77.9%). On average, participants had served as principal in their current school for 4.97 years ($SD=4.24$) and had served as a principal in any school for 9.20 years ($SD=6.76$). In terms of school characteristics, principals reported the percentage of students in their school from different racial and ethnic backgrounds as well as the percentage of students who received free or reduced lunch. Overall, on average, students in the schools under study tended to be Caucasian ($M=54.77\%$) and Non-Hispanic ($M=70.41\%$). Additionally, an average of 39% of students in schools under study received free or reduced lunch, a commonly used proxy for student socioeconomic status (Harwell & Lebeau, 2010; Raffaele Mendez, 2003; Skiba et al., 2002). There was an average of 927.08 ($SD=696.75$) students in each school. See Table 3 for information about principals' schools' characteristics.

Procedure

Law coding. States were sorted into the four law groups based on a review of state laws about school-based suicide prevention. The American Foundation for Suicide Prevention (AFSP; 2015; 2016) supplied two policy reviews: one detailed whether states require or encourage student education about suicide prevention (AFSP, 2015) and the other focused specifically on statutes regarding school staff training (AFSP, 2016). First, these documents were reviewed and each state was coded based on whether

it required school staff training, required student education, encouraged school staff training, encouraged student education, or had no laws regarding school-based suicide prevention. These codes were then validated via a search of each state's State Codes and Statutes. States were then grouped into the following four categories based on the stringency of their school-based suicide prevention laws: requires both student education and school staff training (Law Group 1), requires either student education or school staff training (Law Group 2), encourages school staff training and/or student education (Law Group 3), and has no laws about suicide prevention or highly specific laws (Law Group 4). See Table 1 for a list of states in each group. Another graduate student validated the coding results, and both coders agreed at a rate of 100%. To differentiate between these groups, they will be referred to as Law Group 1, Law Group 2, Law Group 3, and Law Group 4 throughout.

Sampling strategy. A list of all regular public high schools (i.e., all high schools not designated as an alternative or special education schools) in each of the 50 states and the District of Colombia in the United States from the National Center for Education Statistics (NCES) was obtained. NCES collects both fiscal and non-fiscal data annually, and the current data are based on the 2013-2014 and 2015-2016 school years (NCES, 2016). Names of high schools were placed in an Excel file and sorted by Law Group.

Assuming a 10% response rate and a goal of recruiting 200 principals from each of the four law groups, where possible, 2,000 high schools were initially chosen from each of the law groups. In Law Group 1 (states that require both student education and school staff training) there were only 1,935 schools. As such, all schools in this category were sampled. Similarly, in Law Group 4 (states that do not have specific laws about suicide prevention) there were only 1,139 high schools; therefore, all schools were sampled. Initially, for Law Groups 2 (requires either student education or school staff training and possibly encourages the non-required strategy) and 3 (encourages student education, school staff training, or both), 2,000 high schools were randomly selected using a random number generator. Participant recruitment prioritized obtaining a nationally representative sample; as such, where possible, an equal number of participants will be selected from each state. Some states, however, have a very low number of high schools (e.g., Alaska has 34 high schools). In cases where there were fewer schools in a state than would be necessary to get an equal number of high schools from each state in the group, the difference between the state and the equal number was calculated. These differences were summed, and the sum was redistributed among the states with more schools in that law group. Once the schools were selected, principals' e-mail addresses were located using publicly available information on websites and, in some cases, statewide databases. In cases where principals' e-mail addresses were not able to be located, another

school was randomly selected from that state.

All potential participants were e-mailed with the same recruitment e-mail and asked to participate in the study. They were informed that they would receive an incentive of a \$5 e-gift card to either Amazon.com or Starbucks as compensation for participation. Three follow up e-mails were subsequently sent out about two to three weeks apart. Twenty-five principals took the survey more than once, as evidenced by providing the same e-mail address for their gift card at the end of the survey. In these cases, only data from the first survey were used and subsequent entries were deleted. After the initial e-mails were sent out, recruitment had not yet reached the goal of 200 participants per law group. Because full samples from Law Groups 1 and 4 were e-mailed initially, principals from these groups were e-mailed an additional two times in order to maximize participation. In order to reach the goal number of participants ($N=200$) in Law Groups 2 and 3, more schools were randomly selected, and principals' e-mails were located until recruitment reached 200 participants per group. A total of 3,612 potential participants were e-mailed from Law Group 2, and 3,183 were e-mailed from Law Group 3.

If principals chose to participate, they followed the link provided in the e-mail to a Qualtrics survey. They were directed to a consent form. If they consented to participate in the research study, they completed a 10-minute survey and were compensated with a \$5 gift card to either Starbucks or Amazon.com. At the end of the survey, principals were provided with links to the American Foundation for Suicide Prevention's website about state laws on school-based suicide prevention as well as SAHMSA's Preventing Suicide: A High School Tool Kit for their edification.

Measures

Principal Demographics. Demographic questions were asked regarding principals' gender, race, ethnicity, state in which they currently work, highest academic degree, number of years served in their current position, and number of years served as a principal.

School Characteristics. These data were collected to gain information about the schools principal-participants currently work in. The data included the state the principal currently works in, the number of students in participants' current school, the percentage of students currently receiving free or reduced lunch (as a proxy for student socioeconomic status [Harwell & Lebeau, 2010; Raffaele Mendez, 2003; Skiba et al., 2002]), and the percentage of students from different racial groups (i.e., White, Black, Asian, Native American, Pacific Islander/Hawaiian Native, and Other) and ethnicities (i.e., Hispanic and Non-Hispanic). The student race variable was dichotomized into White and Non-White for analytic purposes.

Funding and Support. In order to assess whether principals' schools receive funding for suicide

prevention programming and whether principals perceive having support regarding suicide prevention, principals were asked two questions. First, to assess access to funding, they were asked, “Is funding for suicide prevention available to you?” and answered either “Yes” or “No”. These answers were dummy coded, with “Yes” receiving a “1” and “No” receiving a “0”. Second, to assess access to supports, principals were asked “Do you have access to supports for your suicide prevention program implementation strategy?” Participants chose all options that applied from the following list: state, regional, or other. Scores ranged from “0,” no reported support, to “3,” reported all three types of support.

History of Suicide Contacts. One question directly asked whether principals knew someone who had died by suicide. They were asked to check all that apply and were supplied with the following options: student in current school, student in a past school, family member, colleague, friend, or other. Answers were dummy coded individually such that each option received a code of either “0” or “1”. For example, a score of “1” on answer “Friend” indicates that the principal endorsed having a friend who died by suicide.

Knowledge of State School-based Suicide Prevention Laws. Knowledge of state school-based suicide prevention laws was assessed using a multiple choice, choose all that apply question. All possible options for laws were listed: “My state requires high schools to provide student education about suicide”; “My state requires high schools to train their school personnel about suicide prevention”; “My state encourages high schools to provide student education about suicide”; “My state encourages high schools to train their school personnel about suicide prevention”; “My state does not have any laws about suicide prevention in high schools”. Participants were asked to check all that apply to their state and given the option to select “none” or “other”. The “Other” response included a text box where principals could write in their states’ laws about suicide prevention in high schools if they thought the laws were not captured by the options available. Responses to this item were subsequently coded dichotomously with “0” indicating that the participant incorrectly answered the question and “1” indicating that they answered the question correctly. Each response was hand coded based on the participants’ specific state laws. This variable will be referred to as Knowledge of State Laws throughout.

A second variable was created for Law Group 2, where principals could potentially accurately identify the suicide prevention activity that is *required* by their state but inaccurately report on laws that are *encouraged* by their state. For example, Wisconsin requires high schools to provide student education about suicide, but only encourages high schools to provide training about suicide to school staff. It is possible that a principal from Wisconsin reported that their state requires student education, but did not indicate that their state encourages school staff training. This variable captured instances where principals

accurately identified the required suicide prevention activities, regardless of whether they accurately identified the encouraged activities. This variable provides important information about whether principals know what suicide prevention activities they are required to partake in by law. Responses for participants from Law Groups 1, 3, and 4 remained the same, but some changed for participants from Law Group 2. This variable will be referred to as Knowledge of Required State Laws throughout.

Program Comprehensiveness. Participants were asked to provide detailed information about their school's suicide prevention program. This information was assessed two ways. First, it was assessed with an open-ended question that read, "What does your school do to address suicide prevention? Please be as descriptive as possible in explaining how your school addresses suicide prevention and include details such as what you do, how you do it, how long it lasts, who provides the services, how many services there are, etc." Qualitative responses were coded to reflect whether they mentioned each of Kalafat (2003)'s best practices for school-based suicide prevention: policies and procedures for handling suicidal students, student education, school staff training, community gatekeeper training, and parent training. Additional codes were added for unique aspects of schools' suicide prevention program plans. Responses were coded by two graduate students, who achieved adequate interrater reliability on each question ($r > .75$). Because the coding process only included two raters, interrater reliability was established by calculating a series of correlations. Correlations were calculated for every question because each question captured a different best practice. After attaining adequate interrater reliability per item, responses were split evenly among coders such that each coder coded 270 entries. Coders each coded five percent of each other's entries and maintained adequate reliability throughout.

Second, after completing this open-ended question, participants were asked to indicate how many of Kalafat's (2003) five best practices for suicide prevention their school addresses. This question asked participants to check all of the best practices that their school currently employs and provided with the options: policies and procedures for handling students at risk for suicide, student education, school staff training, parent training, and community gatekeeper training. This item was scored on a "0" to "5" scale, with "0" indicating that the school does not implement any of the best practice, and "5" indicating that the school implements all five best practices. The composite of these scores was named "Program Comprehensiveness," with higher scores indicating more comprehensive suicide prevention programs. This variable will be referred to as Program Comprehensiveness throughout.

Compliance with State Laws. Another set of variables was created using principals' answers to the Program Comprehensiveness question in order to capture whether schools' suicide prevention

programs were in compliance with their states' laws. First, a variable was created for Law Groups 1 (requires both student education and school staff training), 2 (requires either student education or school staff training and possibly encouraged the non-required strategy), and 3 (encourages student education, school staff training, or both) that captured whether their programs meet all of their states required *and* encouraged laws. A second variable was created for Law Group 2 to capture programs that met their states' *required* laws, but not the encouraged laws. A third variable was created to capture schools in Law Group 3 that meet *some* of their states' encouraged laws (i.e., in a state that encourages both school staff training and student education, cases where principals reported either having school staff training *or* student education). Finally, a fourth variable was created for Law Group 4 that captured whether the principals reported having either school staff training or student education. This variable captures how schools are addressing suicide prevention in states with no laws about suicide prevention in school.

Attitudes toward Suicide. Personal attitudes toward suicide were assessed using the Attitudes Toward Suicide Measure (Reynders, Kerkhof, Molenberghs, & Van Audenhove, 2015). This measure contains six items that comprise two subscales: Accepting Attitudes (three items) and Disapproving Attitudes (three items) toward suicide. Items are rated on a six-point Likert scale with higher scores indicating more accepting attitudes toward suicide. The Disapproving Attitudes subscale is reverse scored. The reliability of the Accepting Attitudes sub-scale is questionable ($\alpha=.64-.66$) whereas the reliability of the Disapproving Attitudes sub-scale is acceptable ($\alpha=.724-.738$). This scale has only been used in one study (Reynder et al., 2015), and the limited number of number of questions in the measure may have contributed to the low reliability (Nunnally, 1988). This scale was selected for two reasons. First, it was selected because it is a brief measure and will increase the likelihood that participants will complete the survey. Second, none of the other available measures of attitudes toward suicide reviewed demonstrated superior reliability (Knight, Furham, & Lester, 2000; Kodaka, Postuvan, Inagaki, & Yamada, 2010; Renberg & Jacobsson, 2003). In the current study, the scale demonstrated questionable reliability on the Disapproving Attitudes subscale ($\alpha=.676$) and poor reliability on the Approving Attitudes subscale ($\alpha=.528$). These reliability coefficients suggest that results from analyses using this scale should be interpreted with caution.

Attitudes toward Suicide Prevention. Attitudes toward suicide prevention were assessed using the Attitudes to Suicide Prevention Scale (Appleby et al., 2000). This scale contains fourteen items that assess individuals' attitudes toward suicide prevention, with higher scores indicating more disapproving attitudes toward suicide prevention. Items are rated on a four point Likert scale ranging from "1 – Strongly

Disagree” to “5 – Strongly Agree.” This scale was developed to assess attitudes toward suicide prevention among health care staff like doctors, emergency medical professionals, and mental health care workers (Herron, Tichehurst, Appleby, Perry, & Cordingley, 2001). This scale has demonstrated acceptable internal consistency ($\alpha=.77$). The scale was chosen due to the lack of availability of a similar measure for principals or other school personnel. Given that principals often approve suicide prevention programming for their schools, it is appropriate to capture their attitudes toward suicide prevention. Three questions were reworded in order for the question to be relevant to principals (i.e., replacing the word “patients” with “students”). In order to ensure that these modifications were acceptable, this survey was piloted with local principals. Principals from all public high schools in two local counties (30) were e-mailed and thirteen responses were received. Internal reliability of the scale was acceptable and comparable to results from previous studies ($\alpha=.72$), indicating that this is an acceptable measure to use with high school principals. In the current study, the scale demonstrated adequate reliability ($\alpha=.74$).

Results

Preliminary Analyses and Missing Data

A total of 599 participants completed at least 80% of the survey and were included in analyses. In cases where they were missing data necessary for the specific hypotheses (i.e., demographics, knowledge of state laws, Program Comprehensiveness), participants were dropped from those analyses. In cases where participants were missing data for two or less questions on the Attitudes to Suicide Prevention Scale or one question on the Attitudes Toward Suicide Scale, ($N = 30$) the missing data were addressed using mean replacement techniques (Downey & King, 1998). If participants’ data did not meet this cutoff, they were excluded from analyses using these scales. The n for each analysis is included below for clarity. Data were not imputed due to the descriptive nature of many of the questions addressed.

The three scales included in the study (Attitudes to Suicide Prevention and the two subscales from the Attitudes Toward Suicide measure) were evaluated for normality. The Accepting Attitudes subscale demonstrated an unacceptable degree of kurtosis (3.56). This variable was transformed using a square root transformation, which was successful in lowering the kurtosis to an acceptable level (0.684). However, in analyzing the data using both the original and transformed versions of the Accepting Attitudes Toward Suicide subscale, no differences in the nature of the relations or their significance emerged between the transformed and untransformed versions. Given the lack of differences, the original version of the Accepting Attitudes Toward Suicide subscale was used and reported in all analyses. Attitudes to Suicide Prevention and Disapproving Attitudes subscale demonstrated acceptable skewness and kurtosis and were

not transformed.

Research Question 1: Principals' Knowledge of State Laws

Research question 1 asks whether principals were able to identify their states' laws about school-based suicide prevention. Frequencies were run to determine the rate at which principals accurately identified their states' laws about school-based suicide prevention ($N=598$). Overall, principals across the country were poor at identifying their states' laws such that only 25.4% of participants accurately identified their states' laws. At the group level, principals in Law Group 1 (i.e., states that require both student education and school staff training) accurately identified their states' laws at a rate of 34.3%. Principals in Law Group 2 (i.e., states that require *either* student *or* school staff training, and possibly encouraged the other) accurately identified their states' laws 24.6% of the time. Principals in Law Group 3 (i.e., states that encouraged either student education, school staff training, or both) accurately identified their states' laws 22.3% of the time. Finally, principals in Law Group 4 (i.e., states that do not have laws about suicide prevention in schools) accurately identified that their state has no laws about this 24.5% of the time.

Because principals in Law Group 2 could have correctly identified their states' *required* laws but not the encouraged laws, frequencies were also run to determine the rate at which principals in this group accurately identified their states' required laws. Principals in Law Group 2 accurately identified their states' laws 68.1% of the time, a rate much higher than when they had to identify both required and encouraged laws.

Research question 1 further questions whether principals' knowledge of state laws varies based on the stringency of their states' laws. Therefore, a chi-square test of independence was performed to examine whether correct identification of all state laws was independent of Law Group membership. The relation between these variables was not significant, $X^2(3, N=594) = 5.26, p=.154$ indicating that, contrary to the hypothesis, there were no differences across groups in how accurately principals identified their states' laws. That is, principals across all law groups were equally poor at accurately identifying their states' laws about school-based suicide prevention.

Due to the large difference in the frequency at which principals in Law Group 2 (require either student education or school staff training and possibly encourage the non-required strategy) identified their *required* state laws versus *both* the required *and* encouraged laws, another chi-square test of independence was performed to determine whether correct identification of *required* laws about suicide prevention was independent of Law Group membership. The relation between these variables was significant $X^2(3,$

$N=594$) = 101.06, $p < .001$. Standardized residuals indicate that principals in Law Group 2 ($z=6.3$) were significantly better able to accurately identify their states' laws about *required* suicide prevention strategies than principals in Law Groups 1, 3, or 4.

Research Question 2: School-based Suicide Prevention Programs in Practice

Research question 2 explores how suicide prevention strategies are applied in schools and whether stringency of state laws about suicide prevention affect suicide prevention program comprehensiveness. A one-way ANOVA was run to determine whether Program Comprehensiveness (i.e., the total number of best practices principals reported that their school employs) varied based on Law Group membership ($N=592$). Program Comprehensiveness differed statistically significantly across groups, $F(3, 592)=16.88$, $p < .001$, $\eta^2=.08$. Tukey B post hoc analysis revealed that at a p value of .05, Law Groups 3 (states that encourage either student education, school staff training, or both; $M=1.88$, $SD=1.01$) and 4 (states with no laws about suicide prevention; $M=1.93$, $SD=1.04$), were not significantly different from one another, but were significantly different from both Law Groups 1 (states that require both student education and school staff training; $M=2.72$, $SD=1.00$) and 2 (states that require either student education or school staff training and possibly encourage the non-required strategy; $M=2.33$, $SD=1.00$). Further, Law Groups 1 and 2 were significantly different from one another. Overall, these results indicate that, consistent with the hypothesis, principals from Law Group 1 (states with the most stringent suicide prevention laws) reported having more comprehensive suicide prevention programming than those from Law Groups 2, 3, or 4. Further, principals from Law Group 2 (states with the second most stringent laws) also reported having significantly more comprehensive suicide prevention programs than those from Law Groups 3 and 4. Principals from Law Groups 3 and 4 (states with less stringent laws or no laws, respectively) did not differ significantly on their reports of how comprehensive their schools' suicide prevention programs are. These results indicate that principals from states with laws that required some suicide prevention strategies reported having more comprehensive suicide prevention programs than principals from states that do not require programming.

Suicide Prevention Programs and State Laws. To determine whether suicide prevention programs were compliant with state laws on suicide prevention, frequencies were run. Overall, of schools in Law Groups 1 (states that require both student education and school staff training), 2 (states that require *either* student *or* school staff training and possibly encouraged the other), and 3 (states that encourage student education, school staff training, or both) ($N=436$), 66.1% of principals reported that their schools' suicide prevention programs are aligned with *all* of their states required *and* encouraged laws about

suicide prevention. More specifically, 72.1% of principals in Law Group 1 ($N=86$) reported that their schools' suicide prevention programs were in compliance with state laws. In Law Group 2 ($N=177$), 72.9% of principals reported that their schools' suicide prevention programs were in compliance with *both* required *and* encouraged state laws. A further 88.6% of principals reported that their schools' suicide prevention programs were in accordance only with *required* state laws. In Law Group 3 ($N=175$), 40.6% of principals reported that their schools' suicide prevention programs were in compliance with *all* encouraged state laws. However, 62.4% of principals reported that their schools' suicide prevention programs were in compliance with at least one encouraged law about school-based suicide prevention. Finally, in Law Group 4 ($N=95$), despite having no laws about school-based suicide prevention, 79.8% of principals reported that their schools employ school staff training and/or student education.

To determine whether compliance with state laws was independent of Law Group membership, a chi-square test was run ($N=533$). The chi-square test was significant ($X^2(3) = 59.55, p < .001$), indicating that adherence to all state laws (required and encouraged) varied based on law group. More specifically, no significant differences emerged for Law Group 1, but standardized residuals indicated that, in Law Group 2 ($z=2.1$), principals were more likely to report that their school's suicide prevention program was compliant with state laws than expected. In Law Group 3, principals were significantly less likely to have suicide prevention programs that were in compliance with all encouraged state laws ($z=-3.8$). Finally, in Law Group 4, principals were more likely to report having suicide prevention programs than was expected ($z=2.0$).

School-based Suicide Prevention Programs in Practice. To determine the rate of how often best practices for suicide prevention are applied in schools, frequencies were run on both the quantitative ($N=569$) and qualitative ($N=599$) data. For the quantitative data, 80.3% of principals reported having policies in place to handle a student who expresses suicidal ideation. A total of 74.5% of principals reported that their school provides school staff training about suicide. A total of 12.1% of principals reported having community gatekeeper training. A total of 50.5% of principals reported that their school provides student education about suicide, and 11.3% reported providing parent training. Overall, the qualitative data revealed lower numbers. Specifically, 8.9% of principals reported having policies in place to handle a student who expresses suicidal ideation. A total of 41.7% of principals reported that their school provides school staff training about suicide. A total of 0.001% (1) of principals reported having community gatekeeper training. A total of 44.9% of principals reported that their school provides student education about suicide, and 0.02% (11) reported providing parent training. These lower percentages

indicate that principals likely underreported the comprehensiveness of their schools' suicide prevention program in the qualitative portion of the survey.

The qualitative data were also analyzed for other information about suicide prevention programming in schools, such as number of student education sessions, length of school staff training, types of evidence-based programs used, and specific content discussed. Overall, the qualitative data did not reveal in-depth information about suicide prevention programming in schools. That is, few principals reported detailed information about the length of school staff training, student education, or the specific content covered. The qualitative data, however, did reveal some information regarding use of evidence-based practices in suicide prevention ($N=599$). In their qualitative descriptions of their schools' suicide prevention programs, no principals specifically mentioned engaging in evidence-based practice. However, a small number of principals mentioned specific manualized programs they use for student education and school staff training. Of the 599 principals who responded to this question, only 28 (4.7%) principals named a specific program that their school uses for student education. Specifically, nine principals reported using the SOS Signs of Suicide, fifteen reported using Sources of Strength, two reported using Lifelines, one reported using Question, Persuade, Refer (QPR), and one reported using the Youth Suicide Prevention Program for student education. Further, only eleven principals (1.8%) reported having a specific, evidence-based programming for school staff training. The following programs were specifically mentioned for school staff training: QPR training (3), Youth Mental Health First Aid training (3), mandated reporter training (1), American Suicide Prevention Network training (1), Sources of Strength training (1), SOS signs of suicide training (1), and SPAN Idaho (1) training.

Research Question 3: Predictors of Principals' Knowledge of State Laws

Research question 3 questions whether principals' demographics, school characteristics principals' attitudes toward suicide and suicide prevention, and/or principals' exposure to suicide predict their knowledge of state laws about suicide prevention. See Table 4 for means, standard deviations, and ranges for these independent variables. In order to determine which factors were associated with knowledge of state laws, point biserial correlations were run. Point biserial correlations were examined between Knowledge of Correct Laws and Knowledge of Required Laws and accepting attitudes toward suicide, disapproving toward suicide, attitudes toward suicide prevention, principals' demographics, school characteristics, and principals' exposure to suicide (see Table 5). Point biserial correlations were an appropriate analysis because both Knowledge of State Laws and Knowledge of Required State Laws are dichotomous variables and this statistical test accounts for their dichotomous nature. In terms of

Knowledge of State Laws, only having a larger proportion of Non-White students was a significant, negative predictor ($r=-.134$, $p<.01$). Having a larger proportion of Non-White ($r= -.116$, $p<.01$) and Hispanic ($r=-.087$, $p<.05$) students was negatively associated with knowing *required* state laws.

In order to determine whether these variables are uniquely associated with knowledge of state laws, or knowledge of required state laws, two logistic regressions were run. Logistic regression is the appropriate statistical analysis because the two dependent variables are dichotomous and logistic regressions account for this type of distribution. In the first logistic regression, knowledge of state laws was entered as the dependent variable and, in accordance with Hayes' (2013) recommendation about including all potential variables in a regression, all of the principal demographic, school characteristic, and principals' attitudes toward suicide and suicide prevention variables were entered as independent variables. Law Group membership was also included as a covariate. The overall model was not significant, $X^2(26) = 29.976$, $p=.269$. The model only explained 9% of the variance in principals' knowledge of state laws (Nagelkerke R^2), indicating that these variables do not uniquely predict principals' knowledge of state laws. None of the included variables significantly predicted principals' knowledge of state laws.

A second regression was run with knowledge of required state laws as the dependent variable and all of the principal demographic, school characteristic, and principals' attitudes toward suicide and suicide prevention variables were entered as independent variables. Law Group membership was again included as a covariate. Law Group membership was included as a covariate. The overall model was significant $X^2(26) = 118.323$, $p<.001$. The model explained 30.2% (Nagelkerke R^2), indicating that these variables uniquely predict principals' knowledge of required state laws. Only Non-White student race was a significant predictor in this model ($OR=0.985$), indicating that principals in schools with higher Non-White populations were 0.985 times less likely to accurately identify their states' required laws about suicide prevention programming. See Table 6 for these results.

Research Question 4: Predictors of Program Comprehensiveness

Research question 4 questions whether principals' demographics, school characteristics principals' attitudes toward suicide and suicide prevention, and/or principals' exposure to suicide predict their schools' suicide prevention program's comprehensiveness. In order to determine which factors were associated with Program Comprehensiveness, Pearson correlations were run between Program Comprehensiveness and accepting attitudes toward suicide, disapproving toward suicide, attitudes toward suicide prevention, principals' demographics, school characteristics, and principals' exposure to suicide (see Table 5). Program Comprehensiveness was significantly related to many of these constructs.

Specifically, Program Comprehensiveness was positively associated with having support ($r=.33$, $p<.001$), having funding for suicide prevention ($r=.20$, $p<.001$), having more White students in the school ($r=.11$, $p<.05$), having more students in a school ($r=.14$, $p<.001$), years as current principal ($r=.10$, $p<.05$), total years as principal ($r=.09$, $p<.05$), having a student in that school have died by suicide ($r=.19$, $p<.001$), and being Non-White ($r=.11$, $p<.01$). Program Comprehensiveness was negatively associated with having more students on free/reduced lunch ($r=-.15$, $p<.001$) and having disapproving attitudes toward suicide ($r=-.09$, $p<.05$).

In order to determine whether these variables are uniquely associated with Program Comprehensiveness, a multiple linear regression was run. The multiple linear regression included program comprehensiveness as the dependent variable, accepting attitudes toward suicide, disapproving toward suicide, attitudes toward suicide prevention, principals' demographics, school characteristics, and principals' exposure to suicide as independent variables, while controlling for Law Group membership. The overall model was significant ($R^2=.28$, $F[26,443]=6.51$, $p<.001$). Several variables significantly predicted program comprehensiveness. Principals who reported receiving more support for suicide prevention programming ($b=0.22$, $t(443)=6.03$, $p<.05$) and funding ($b=0.37$, $t(443)=3.32$, $p<.001$) reported having more comprehensive programs. Support accounted for 5.9% of the variance in program comprehensiveness, and funding accounted for 1.8% of the variance. Schools in which a student had died by suicide also tended to have more comprehensive programs ($b=0.29$, $t(443)=3.07$, $p<.01$). Having a student die by suicide in the current school accounted for 1.5% of the variance in program comprehensiveness. Finally, having more students who receive free and reduced lunch was associated with having less comprehensive suicide prevention programs ($b=-.004$, $t(443)=-2.52$, $p<.05$). The percentage of students receiving free or reduced lunch accounted for 1% of the variance in program comprehensiveness. Principals' demographic variables and attitudes toward suicide or suicide prevention and student race did not have a significant effect on program comprehensiveness. See Table 7 for these results.

Discussion

The current study explores how macro policy, existing theory and literature, funding, and climate affect the Prevention Delivery System (PDS) of suicide prevention services in American high schools. In terms of macro-policy, this study is the first to provide estimates of principals' knowledge of state school-based suicide prevention laws as well as their schools' compliance with these laws. Further, it provides

preliminary support suggesting that laws are an effective way to increase suicide prevention practice implementation in schools. With regard to existing theory and literature, this study provides updated estimates of how often schools use specific practices to address suicide prevention. It is also the first to examine the use of best practices (Kalafat, 2003) for suicide prevention in schools. In terms of funding, the current study provides evidence that the funding availability is associated with more comprehensive suicide prevention programs in schools. Finally, with regard to climate, the results demonstrate that having a student die by suicide is associated with having more comprehensive suicide prevention programming, indicating that the climate after a suicide can impact suicide prevention practices.

Knowledge of State Laws

Overall, about a quarter of principals who participated in the current study accurately identified their state's laws about school-based suicide prevention. These rates are surprising, given recent national attention paid to youth suicide (Office of the Surgeon General, 2012) and the proliferation of school-based suicide prevention programs over the last 20 years (Metha et al., 1998). Further, contrary to the hypothesis that principals from states with more stringent laws about school-based suicide prevention would be more knowledgeable about their states' laws than principals from states with less stringent laws, results revealed that principals across Law Groups did not significantly differ in their ability to accurately identify these laws. These results indicate that stringency of state laws does not appear to have an effect on principals' knowledge of these laws. This points to possible problems within policy and law dissemination practices because most high school principals are unaware of these laws.

When knowledge of state laws was recoded to capture principals in Law Group 2 (states that require either student education or school staff training and possibly encourage the non-required strategy) who accurately identified the *required* but not necessarily the *encouraged* laws in their state, however, differences between groups emerged. Principals from states that required *either* student education *or* school staff training identified their states' laws correctly more often than principals in Law Groups 1 (states that require both student education and school staff training), 3 (states that encourage student education, school staff training, or both), and 4 (states with no school-based suicide prevention laws). These results suggest that policy and law dissemination in these states may be more efficient than in other states. This could also be the result of Law Group 2 containing the most states out of any of the groups ($n=26$). That is, it is possible that because principal participants were drawn from 26 different states, the variety of dissemination practices employed across states were able to tap into effective methods. Future work should determine what those specific, effective practices are in order to inform future policy. Law

Group 1, for example, only included 5 states. If any one of these states had less efficient dissemination practices, it would impact the data more than for states in Law Group 2. Overall, these results indicate that principals from states that required either student education or school staff training were better able to identify their states' laws about suicide prevention and suggest that law dissemination practices in these states may be more effective than in the other states under study.

Suicide Prevention Program Comprehensiveness

Despite the lack of relation between Law Group and principals' law knowledge, results revealed a significant relation between Law Group and suicide prevention program comprehensiveness, as defined by the number of Kalafat's (2003) five best practices employed by schools. Consistent with the hypothesis, results indicated that the degree of program comprehensiveness varied significantly based on the stringency of state laws. Specifically, principals from states with the most stringent laws that require both student education and school staff training reported having the most comprehensive suicide prevention programs ($M=2.72$), which was followed by principals from states that require either student education or school staff training (and possibly encourage the non-required practice; $M=2.33$). Principals from states that encouraged student education or school staff training or had no laws about suicide prevention reported having the least comprehensive programs ($M=1.88$; 1.93). These results provide the field with a concrete estimation of real-world school-based suicide prevention program implementation. They are consistent with previous findings that having any elements of suicide prevention programming in place increases the likelihood of using other types of programs (Hayden & Lauer, 2000). However, although studies have examined what types of suicide prevention program elements schools employ in their suicide prevention programs (CDC, 2014; Hayden & Lauer, 2000), no studies have explored how many best practices school-based suicide programs employ in practice.

These results have two important implications. First, the finding that principals in states with more stringent suicide prevention laws reported adhering to more of Kalafat's (2003) best practices suggests that required school-based suicide prevention laws effectively increase the comprehensiveness of schools' suicide prevention programming. That is, not only do these laws help ensure that suicide prevention practices are in place in schools, but they also increase the likelihood of schools using other, non-required suicide prevention practices, like having policies and procedures in place for handling suicidal students. This is the first study to investigate how laws about school-based suicide prevention affect programming and provide initial insights into the efficacy of such laws. These results are encouraging because researchers have suggested that a combination of suicide prevention programs is the most effective in

decreasing suicidality in students (Katz et al., 2013), and these results suggest that states laws are one way to increase the amounts of suicide prevention strategies schools use.

Second, these results show a significant and important difference between the types of laws employed by states. Because there were no significant differences between states that encouraged student education, school staff training, or both and states with no laws about suicide prevention in program comprehensiveness, the results suggest that merely encouraging schools to employ either or both of these strategies does not significantly increase the likelihood of schools having comprehensive suicide prevention programs. This finding is consistent with previous research on anti-bullying legislation that has shown that rates of bullying in states with at least one piece of legislation about bullying prevention in schools had significantly lower rates of bullying than states without such legislation (Hatzenbuehler et al., 2015).

Additionally, the current study determined whether suicide prevention programs nationwide are in compliance with state laws. Despite the finding that only about a quarter of principals accurately identified their states' laws about school-based suicide prevention, results indicated that over two-thirds of principals reported that their schools' suicide prevention programs are in compliance with both their required and encouraged state laws. This suggests a couple of important implications. First, it suggests that principals' knowledge of state laws is not necessary in order for schools to have suicide prevention programs that are in compliance with state laws. Although this may initially appear surprising, there are other school staff members who may be in charge of suicide prevention programming. School counselors and school psychologists have been urged to take a larger role in suicide prevention due to being mental health professionals (Mazza, 1997; Sheridan & Gutkin, 2000; Stein et al., 2010), and it is possible, if not likely, that they are responsible for suicide prevention programming implementation. While principals often have to approve prevention programming measures (Marks, 1995; Poland, 1989; 1995), they are likely not charged with creating the programs or ensuring that they align with state laws.

Second, to this author's knowledge, no studies have examined schools' compliance with suicide prevention laws. These results are the first estimate of how often school-based suicide prevention state laws are enacted in practice. Echoing the results about program comprehensiveness as a function of state law stringency, these results also suggest that having more stringent laws about suicide prevention in school is related to compliance with said laws. That is, principals in states with required laws were more likely to abide by those laws than principals in states with laws that only encouraged suicide prevention practices. In fact, principals from states that only encouraged suicide prevention practices were less likely

than expected to report that their schools' suicide prevention programs were in compliance with the encouraged state laws. This again suggests that required laws are more effective than encouraged laws in getting schools to implement suicide prevention practices. Accountability may drive this effect. Although there do not appear to be any published documents outlining how states hold schools accountable for following suicide prevention laws, research has examined the relation between school accountability and academic outcomes (Hanushek & Raymond, 2004; West & Peterson, 2006). These studies have found that when schools are held accountable, they tend to adhere to state and federal policies (Hanushek & Raymond, 2004; West & Peterson, 2006). It is possible that schools in states with more stringent laws are similarly being held accountable for following these required laws and, thus, are more compliant than schools in states with encouraged laws. Future research should explicitly examine the drivers of compliance with state laws.

Interestingly, results also indicated that principals from states with *no laws* about suicide prevention were more likely to report having any suicide prevention program practices in place than expected. About 80% of principals in this group reported having some kind of suicide prevention program in their school. This finding could be the result of sampling bias such that principals who are more interested in suicide prevention participated in this study and thus have more suicide prevention programs in their schools. Conversely, it may also indicate that having laws about suicide prevention is not necessary to ensure schools implement suicide prevention programming. However, it is important to note that the suicide prevention programs in states with no laws about suicide prevention were significantly less comprehensive than those in states with required laws. Therefore, while it is important to note that principals in these states reported that their schools still address suicide prevention in the absence of state laws, the results still demonstrate that having required state laws in place is related to having stronger suicide prevention programming in schools. Thus, these results, overall, suggest that required laws are more effective than encouraged laws in ensuring that high schools are implementing suicide prevention programming.

Suicide Prevention Programming in Schools

The current study is also the first to examine suicide program comprehensiveness. Hayden and Lauer (2000) and the CDC (2014) both investigated use of suicide prevention practices in schools, but these studies focused on frequencies of each practice individually (i.e., student education, school staff training, suicide screening, etc.) and did not aggregate the total elements for each of the schools under study. While these studies provided useful information about the frequency of specific prevention

strategies, the current study expands these findings by explicitly addressing how these program elements are used together in schools to create comprehensive suicide prevention programming. Thus, the current results provide an initial estimate of how comprehensively schools nationwide implement suicide prevention.

Similar to Hayden and Lauer (2000) and the CDC (2014) the current study examined aggregate totals of use of best practices. Contrary to previous results, the current study revealed that only 50.5% of schools under study required students to receive education about suicide. This is significantly lower than the 73.7% found by the CDC (2014). Conversely, the current results revealed a higher rate of school staff training in suicide prevention (74.5%) than that found by the CDC (28.4%). This particular disparity may be due to methodological differences rather than true variation. The CDC (2014) study explored the number of teachers who received training, however, the current study examined whether school staff training was available in schools at all. This could have included schools in which a subset of staff was trained rather than all school staff and led to higher rates. Finally, the data from the current study reveal that 80.3% of principals reported having policies and procedures in place for handling a suicidal student, a number markedly lower than that found by the CDC (2014). The CDC (2014) reported that nearly all high schools (99.6%) had policies and procedures in place. Data from the current study therefore suggest that policies and procedures may be less common than previous data would suggest.

Further, the current study extends the findings of the CDC (2014), and earlier findings by Hayden and Lauer (2000), by gathering data on of Kalafat's (2003) five best practices for suicide prevention, including two practices not captured by either of those studies (i.e., community gatekeeper training and parent training). Specifically, the current study elucidated that 12.1% reported having community gatekeeper training, and 11.3% reported having parent training about suicide. To this author's knowledge, these are the first estimates of how frequently these two practices are employed in schools. The data suggest that while it is common practice to have policies and procedures in place for caring for suicidal students, school staff training, and student education to some extent, it is rather uncommon to include community members or parents in training about suicide prevention. Kalafat (2003) suggests that a combination of five program elements constitutes best practices for suicide prevention because they address suicide prevention at all possible levels: student, administration, parents, staff, and the community. The current results suggest that, in practice, all five best practices are rarely employed and that most schools use student education, school staff training, and/or policies and procedures for care for suicidal students. The three most often used best practices are, arguably, the easiest program elements for schools

to employ. Parent training may be a less common component because parents of high school-aged students tend to be less involved in their children's school lives (Hill & Taylor, 2004). Community gatekeeper training may also present difficulties to schools, given limited resources and lack of training expertise. However, both of the underused practices are important for effective suicide prevention and the low practice rates indicate a large gap between research and practice (Kalafat, 2003; Wandersman et al., 2008).

In order to bridge this gap, it will be important for researchers to work in conjunction with schools to problem solve how to best implement parent training and community gatekeeper training (Wandersman et al., 2008). The ISF postulates that in order to bridge gaps between research and practice, researchers should help schools by building their general and specific capacity to implement prevention programming (Wandersman et al., 2008). General capacity refers to increasing schools' general ability to implement prevention programming and can include activities like helping schools locate and use resources, increase motivation to implement prevention programming, and putting necessary infrastructure in place. Specific capacity refers to the skills schools need to implement specific types of prevention programs, like suicide prevention programming. Specific capacity may be the most important piece to target in order to help schools implement parent and community gatekeeper training. Schools may lack the knowledge about how to connect with community mental health providers to ensure that they have received proper training. Similarly, they may be ill equipped to provide parent training or find ways of getting parents to attend a training, if they were to offer it. Here, community science-driven researchers could join together with high schools and work on increasing both their general and specific capacities to engage in effective suicide prevention programming.

Finally, the current study also assessed the use of evidence-based practices for suicide prevention in schools nationwide. This is a critical research question because Kalafat's (2003) best practices are not grounded in empirical research that validates the effectiveness of employing all five best practices over and above any other combination. While it is important to compare real-world suicide prevention practices to the best available guidelines (in this case, Kalafat's best practices), it is also important to examine whether schools are using programs that have been shown to be effective through clinical research. In short answer responses, no principals specifically indicated using evidence-based practices. Further, qualitative data revealed extremely low rates of using specific programs for suicide prevention that have been tested in research. Only 4.7% of principals reported using a specific program for student education and even fewer (1.8%) reported using a specific program for school staff training. There are different possible reasons for why these results were so low. It is possible that principals did not provide complete

details about their programs in the survey. The survey question was intentionally broad in order to capture all possible suicide prevention program elements, but may have been too broad and to fully capture aspects of evidence-based practice, and answers to this question tended to be short and lack detail. However, it is also possible that these results accurately depict the state of evidence-based practice in practice. If so, they suggest that high schools rarely employ suicide prevention programming that has been research-tested. One of the benefits of using evidence-based practices for suicide prevention is that they have been shown to be effective in increasing knowledge about suicide, improving attitudes toward suicide, and, in some cases, decreasing suicidal ideation and attempts (Cusimano & Sameem, 2011; Katz et al., 2013). The notion that most schools are not employing such tactics is disconcerting because it suggests that schools may not be using effective practices, meaning that although they are addressing suicide prevention, they may not actually be decreasing suicides, suicide attempts, or increasing positive outcomes.

Associations with Knowledge of State Laws

In addition to establishing patterns of law knowledge and suicide prevention program comprehensiveness in schools, the current study also investigated possible associations with these phenomena. In terms of law knowledge, no principal demographics, school characteristics, attitudes toward suicide or suicide prevention, or personal history of suicide exposure significantly differentiated principals who accurately identified their states' laws from those who did not. This suggests that principals' knowledge of state laws is likely not impacted by personal or school characteristics or their attitudes toward suicide or suicide prevention, which is in contrast to the hypothesis that, at the least, principals' attitudes would be predictive of their knowledge of state laws. Although research has demonstrated that attitudes are correlated with behavior (Glasman & Albarracín, 2006; Kraus, 1995; Wallace et al., 2005), there are factors that attenuate this relationship. Specifically, the correlation is attenuated when people do not have direct experience with the behavior, and the attitudes are not very strong (Glasman & Albarracín, 2006; Kraus, 1995; Wallace et al., 2005). In this case, it is possible that principals do not hold strong attitudes about suicide and suicide prevention, as they are not likely to be topics they think about daily. Further, they likely do not have to interact with suicide prevention programming regularly, and therefore may not have significant experience with the topic. Thus, principals may not be propelled to seek out information about suicide prevention laws. Based on the results that only a quarter of principals accurately identified their states' laws, but over two-thirds of principals reported that their schools' suicide prevention programs are compliant with state laws, it is likely that other school

staff members are responsible for addressing suicide prevention. Therefore, learning about state laws about suicide prevention may not be a readily accessible behavior for principals.

In examining whether these results were different based on whether principals were able to at least identify their states' *required* laws, having a larger population of Non-White students emerged as a significant, negative predictor, such that principals in schools with more Non-White students were about one time less likely to know their required state laws about school-based suicide prevention. However, this was the only significant predictor. Ultimately, these results suggest that individual- and school-level factors impacting whether principals are aware of their states' suicide prevention laws were not captured in this study. It is possible that non-personal or school characteristics, such as state law dissemination practices and principals' knowledge of other school-related laws, are more predictive of principals' knowledge. Future research should further investigate these possibilities in order to better capture factors that are associated with greater knowledge of state laws about suicide prevention.

Associations with Program Comprehensiveness

Contrary to hypotheses, principals' attitudes toward suicide and suicide prevention were similarly not associated with suicide prevention program comprehensiveness. In addition to the notion that attitudes are not perfectly predictive of behavior (Glasman & Albarracín, 2006; Kraus, 1995; Wallace et al., 2005), it is also possible that these null results are due to the fact that this study collected data from principals. Prior research has demonstrated that when prevention program providers perceive a need for prevention and believe that the program will produce desired outcomes, prevention programs are implemented more effectively (Durlak & DuPre, 2008). However, principals are rarely, if ever, the personnel charged with providing the intervention itself (Kalafat, 2003). It is therefore possible that because they are not the service providers, their attitudes do not affect the comprehensiveness of the program.

Conversely, several variables were associated with suicide prevention program comprehensiveness. Specifically, having funding, perceiving the presence of state, local, and/or other support, and having had a student die by suicide in the current school were related to having more comprehensive suicide prevention programs. The notion that having access to funding and more support for suicide prevention program implementation is predictive of more comprehensive programs is unsurprising, but important. Consistent with previous research that has demonstrated the importance of funding and support for prevention program implementation (Durlak & DuPre, 2008; Greenhalgh et al., 2005; Stith et al., 2006). The current results indicate that perceived support and accessible funding are related to more comprehensive suicide prevention programs and support the notion that these programs

should be supported at both the local and state levels. Given the push at the state level for more school-based suicide prevention programming (ASFP, 2014; 2015; Office of the Surgeon General, 2012), these results indicate that states should create more funding streams for schools in order to ensure more comprehensive programming.

The finding that having a student die by suicide in the principal's current school was related to having more comprehensive suicide prevention programming is of particular interest. It is likely that having close, personal experience with teen suicide propels schools into action. After a student dies by suicide, many schools enact suicide postvention programs in order to assist and support grieving and affected students and staff alike (Brock, 2002). Researchers have argued that suicide postvention often acts as suicide prevention because one of the main goals is to reduce the risk of further suicide deaths (Brock, 2002; Aguirre & Slater, 2010). Extending this argument, it is likely that schools that experience a student loss to suicide engage in suicide postvention immediately after the death, and that this transforms into more concrete suicide prevention programming over time. Although this variable only accounted for a small portion of the variance in program comprehensiveness, it is intriguing because it suggests that schools may wait for the worst-case scenario before taking comprehensive action against suicide. It is critical for schools to not employ a "wait to fail" method by waiting to enact suicide prevention until a student is lost to this tragedy. In order to successfully and proactively prevent, rather than react to, suicide, schools may benefit from consultation with suicide prevention researchers to better understand the importance of suicide prevention, and its potential impact on saving lives.

Having a higher proportion of students who received free or reduced lunch, however, was predictive of having less comprehensive suicide prevention programming. Free and reduced lunch status is a commonly used proxy for student socioeconomic status, and having more students receive this service indicates that students in the school are often from low socioeconomic status backgrounds (Harwell & Lebeau, 2010; Raffaele Mendez, 2003; Skiba, et al., 2002). Schools with higher proportions of students from low socioeconomic status backgrounds have less access to resources for recreational activities (Estabrooks, Lee, & Gyurcsik, 2003; Moore, Diesz Roux, Evenson, McGinn, & Brines, 2008) and have lower academic performance rates (Sirin, 2005), likely due, in part, to receiving less funding. In fact, family socioeconomic status is inextricably linked with public school funding rates because public schools are funded by property taxes within school districts (National Research Council, 1999). Therefore, the finding that having more students on free/reduced lunch is predictive of less comprehensive suicide prevention programs is unsurprising. Given that these schools likely lack funding for physical activity and

academics, it is unlikely that they would allocate precious resources to suicide prevention. This finding is concerning because low socioeconomic status is associated with higher suicide risk (Kubrin, Wadsworth, & DiPietro, 2006; Lorant, Kunst, Huisman, Costa, & Mackenbach, 2005), indicating that this population may be in even greater need of suicide prevention programming. Ultimately, however, these findings are encouraging because they suggest that school-level factors, not personal factors, impact the degree of program comprehensiveness. They suggest that principals' personal biases or other characteristics are not impacting their propensity to support suicide prevention activities in their schools.

Limitations

The current study is subject to several limitations. First, as stated above, it is possible that principals who are naturally interested in suicide prevention, and thus have suicide prevention programs in their school were more, likely to participate. If this is the case, the data may inaccurately reflect higher rates of compliant programs and use of best practices than truly exists in practice. However, steps were taken to minimize response bias, such as offering a gift card incentive. Further, voluntary surveys are always subject to possible response biases, and given the large number of participants and the fact that participants were recruited from 50 of the 51 surveyed states and districts, bias should be minimized.

The small number of principals recruited from each state prevented a deeper examination of state-level differences between suicide prevention programming and schools' adherence to laws. Larger numbers would have enabled inferences about differences in law dissemination practices across states. Future research should complete deeper investigations of law dissemination practices across states in order to identify the most effective practices.

The qualitative data collected yielded far less information than originally anticipated. Principal participants tended to answer the question in broad generalities rather than being specific and providing details about the types of programs they use, the duration of these programs, and their frequency. This lack of specific information made it difficult to determine whether schools are not employing evidence-based practices or if principals simply did not accurately report the use of these practices. Future research should use interview methods to gain more information about these programs, as this method allows for follow up questions when participants do not provide enough information initially.

The low reliability of the Accepting Attitudes subscale on the Attitudes Toward Suicide Scale represents another limitation. Low scale reliability can result in inaccurate results (Tavakol & Dennick, 2011). Given the low reliability of this measure, it is unclear whether principals' accepting attitudes toward suicide are truly not related to their knowledge of state laws or their schools' suicide prevention

program comprehensiveness. Because neither of the other attitudes measured significantly predicted either variable, however, it is unlikely that accepting attitudes would have had a major impact. Either way, it may be important for future researchers to verify that principals' accepting attitudes toward suicide do not have a significant impact on either variable.

Additionally, the current study only collected data from principals. The results show that although principals were largely unaware of their state's laws about school-based suicide prevention, their schools' suicide prevention programs were largely in compliance with these laws, suggesting that another member of school staff is charged with knowing and enacting these laws. Future research should replicate the current findings with school psychologists and guidance counselors, as they are likely the people in charge of suicide prevention programming (Mazza, 1997; Sheridan & Gutkin, 2000; Stein et al., 2010). Their personal demographics and attitudes toward suicide and suicide prevention may have more of an impact on these outcomes than principals'.

Finally, although the present law-coding scheme enabled straightforward analyses, there are certainly other ways to have coded the Law Groups used in this study. For example, Law Groups 2 (states that require either student education or school staff training and possibly encourage the non-required practice) and 3 (states that encourage student education, school staff training, or both) could have been broken down further based on which laws they either required or encouraged for a more detailed analysis. Future research could investigate this possibility to determine differences based on the content of laws rather than their stringency.

Conclusions and Future Directions

Ultimately, the current study provides novel information to the field of school-based suicide prevention and highlights important gaps in the relations between macro-policy, existing literature and theory, funding, and climate and the Prevention Delivery System (Wandersman et al., 2008). Although the current study did not provide results to principal participants or, as of yet, communicate the gaps between policy, research, and practice to the practice community, it provides initial evidence of the large gaps between these three important areas. The finding that the vast majority of principal participants did not accurately identify their states' laws about suicide prevention suggests a gap between policy and practice. Identification is the preliminary step in bridging gaps, and this study provides such evidence. Future research should focus on collaborating with state lawmakers and schools to help disseminate state laws about suicide prevention in schools more effectively to building administrators.

Another identified gap lies between state laws and school practice. Although the majority of

schools in this study were in compliance with required laws, compliance rates severely dropped when considering encouraged laws. This suggests that encouraged laws are not particularly effective in this domain, representing a problem at the state law level. To address this, researchers could collaborate with state lawmakers in states with encouraged laws in order to build capacity and motivation to bring legal attention to school-based suicide prevention programming. The current study also identified glaring gaps between research and practice. While Kalafat (2003) suggests that schools should employ all five of his best practices, almost no principals (2.2%) reported that their schools employ all five of these practices. These results indicate that these best practices are not being employed and thus highlight the gap between research and practice.

Further, the very infrequent mentions of evidenced-based practices or programs suggest that evidenced-based suicide prevention programs may not be currently used in schools. Wandersman and colleagues (2008) suggests that in order to effectively change practices in schools, researchers need to collaborate with schools to increase their capacity to implement prevention programs. The current findings indicate that schools in the United States would benefit from capacity building for evidence-based suicide prevention programming. Future research should focus on bringing the most highly researched suicide prevention programs, like the Good Behavior Game and SOS Signs of Suicide (Katz et al., 2013), into schools nationwide.

Bolstered by a large-scale design and having recruited participants from almost every state in the country, the current study is only the first of many steps in the process of improving school-based suicide prevention in practice. It has provided important and novel information about compliance with state laws for suicide prevention and the state of suicide prevention in schools across the country. Future research should both continue to conduct mixed methods research about the nature of school-based suicide prevention programs and the factors that are associated with having more comprehensive programming and strive to collaborate with state lawmakers and schools to bridge gaps between research, policy, and practice.

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Table 1

Breakdown of Participants by State and Law Group

Law Group 1	N	%	Law Group 2	N	%	Law Group 3	N	%	Law Group 4	N	%
Connecticut	16	2.7%	Alaska	1	0.2%	Alabama	8	1.3%	Hawaii	0	0%
Kentucky	19	3.2%	Arkansas	14	2.3%	Arizona	22	3.7%	Idaho	7	1.2%
Maine	12	2.0%	Delaware	1	0.2%	California	19	3.2%	Iowa	26	4.4%
New Jersey	17	2.9%	DC	2	0.3%	Colorado	10	1.7%	New Mexico	17	2.9%
Washington	31	5.2%	Georgia	11	1.8%	Florida	21	3.5%	North Carolina	40	6.7%
			Illinois	18	3.0%	Michigan	22	3.7%	Oregon	11	1.8%
			Indiana	14	2.3%	Minnesota	12	2.0%			
			Kansas	12	2.0%	Missouri	13	2.2%			
			Louisiana	2	0.3%	Montana	11	1.8%			
			Maryland	7	1.2%	Nevada	6	1.0%			
			Massachusetts	3	0.5%	New Hampshire	8	1.3%			
			Mississippi	4	0.7%	New York	11	1.8%			
			Nebraska	7	1.2%	North Dakota	3	0.5%			
			North Dakota	3	0.5%	Oklahoma	24	4.0%			
			Ohio	12	2.0%	Virginia	17	2.9%			
			Pennsylvania	13	2.2%						
			Rhode Island	7	1.2%						
			South Carolina	7	1.2%						
			South Dakota	11	1.8%						
			Tennessee	15	2.5%						
			Texas	10	1.7%						
			Utah	10	1.7%						
			Vermont	2	0.3%						
			West Virginia	3	0.5%						
			Wisconsin	2	0.3%						
			Wyoming	5	0.8%						

Notes. Law Group 1 includes states that require both student education and school staff training. Law Group 2 includes states that require either student education or school staff training and possibly encourage the non-required strategy. Law Group 3 includes states that encourage student education, school staff training, or both. Law Group 4 includes states that have no specific laws about suicide prevention in schools.

Table 2

Participant Demographics

	Percentage (%)	Minimum	Maximum	M	SD
Race (<i>N</i> =596)					
African American	7.2%				
Native American	1.2%				
Asian	0.7%				
Caucasian	89.1%				
Native Hawaiian	0.2%				
Other	1.2%				
Multiracial	0.5%				
Ethnicity (<i>N</i> =575)					
Hispanic	3.1%				
Non-Hispanic	96.9%				
Gender (<i>N</i> =598)					
Male	61.1%				
Female	38.9%				
Highest Academic Degree (<i>N</i> =596)					
High School Diploma	0.3%				
Bachelor's Degree	0.8%				
Master's Degree	78.3%				
Doctorate	20.5%				
Years as Principal in Current Position (<i>N</i> =596)		0	24	4.97	4.24
Year as a Principal (<i>N</i> =596)		1	40	9.20	6.76

Table 3

Participants' Schools' Demographics

Variables	M	SD	Min	Max
Student Race				
African American	12.64%	21.39	0%	99%
Native American	3.39%	12.41	0%	100%
Asian	2.42%	5.72	0%	70%
Caucasian	54.77%	36.18	0%	100%
Native Hawaiian	.58%	4.20	0%	95%
Other	5.70%	12.65	0%	92%
Student Ethnicity				
Hispanic	15%	21.41	0%	99%
Non-Hispanic	70.41%	46.34	0%	100%
Free/Reduced Lunch	39.04%	31.75	0%	100%
Number of Students in School	927.08	696.75	8	3,950

Notes. Student Race, Student Ethnicity, and Free/Reduced Lunch are average percentages of the percent of students that principals reported

Table 4

Means, Standard Deviations, and Ranges of Principals' Attitudes, Principals' Suicide Contacts, Funding, Support, and Program Comprehensiveness

Variables	N	M	SD	Min	Max
<i>Suicide Contacts</i>					
Student in Current School	597	0.38	0.49	0	1
Student in Past School	597	0.46	0.50	0	1
Family	597	0.19	0.39	0	1
Friend	597	0.18	0.39	0	1
Colleague	597	0.12	0.33	0	1
Other	597	0.20	0.40	0	1
<i>Principal Attitudes</i>					
Attitudes to Suicide Prevention	568	29.27	6.02	16	58
Disapproving Attitudes	594	6.82	3.55	3	18
Approving Attitudes	594	5.17	2.63	0	18
Funding	595	0.22	0.41	0	1
Support	588	1.11	0.65	0	3
Program Comprehensiveness	597	2.18	1.08	0	5

Table 5

Suicide Prevention Program Adherence to Evidence-based Practices, Knowledge of State Laws, and Demographics: Correlations

Variables	Program Comprehensiveness	Correct about State Laws	Correct about Required State Laws
Program Comprehensiveness	--		
Correct about State Laws	-.02	--	
Correct about Required State Laws	.09*	.72***	
<i>Law Groups</i>			
Law Group 1	.22***	-.05	.09*
Law Group 2	.10*	.40***	-.01
Law Group 3	-.17***	-.05	-.25***
<i>School Characteristics</i>			
Support	.33***	-.02	.05
Funding	.20***	-.04	-.02
Free/Reduced Lunch	-.15***	-.01	-.024
Number of Students in School	.14***	-.06	-.04
<i>Student Race/Ethnicity</i>			
White	.11**	.02	.06
Non-White	-.05	-.13**	-.12**
Hispanic	-.02	-.05	-.09*
Non-Hispanic	.01	.07	.05
<i>Principal Demographics</i>			
Gender	-.04	.01	-.05
Race	.11**	-.01	.00
Ethnicity	-.08	-.01	-.04
Highest Degree	.00	.02	.05

Variables	Program Comprehensiveness	Correct about State Laws	Correct about Required State Laws
Years as Principal in Current School	.10*	.02	.07
Total Years as Principal	.09*	.04	.04
<i>Principal Attitudes</i>			
Accepting Attitudes toward Suicide	.01	.00	-.06
Disapproving Attitudes toward Suicide	-.09*	-.03	.01
Attitudes to Suicide Prevention	-.07	-.01	.00
<i>History of Suicide Contacts</i>			
Student in Current School	.19***	-.02	-.02
Student in Past School	.08	-.02*	-.07
Family	.05	-.08*	-.02
Friend	.02	.04	.04
Colleague	.03	.03	.02
Other	-.07	.05	.04

Notes. [†]Law Group 4 was used a reference category. For gender, female was the reference category.

*p<.05

**p<.01

***p<.001

Table 6

Knowledge of Required State Laws Predicted by Principal Demographics, School Characteristics, and Principals' Attitudes toward Suicide and Suicide Prevention

Predictor	<i>B</i>	<i>SE B</i>	Wald χ^2	<i>OR</i>	95% <i>CI OR</i>
Law Group 1 [†]	0.58	0.36	2.53	1.78	0.88-3.64
Law Group 2 [†]	2.05**	0.33	39.94	7.80	4.12-14.74
Law Group 3 [†]	-0.32	0.34	0.91	0.73	0.38-1.40
<i>School Characteristics</i>					
Funding	-0.07	0.29	0.06	0.93	0.53-1.63
Support	0.12	0.18	0.47	1.13	0.80-1.60
Free/Reduced Lunch	0.00	0.00	0.34	1.00	0.99-1.01
Number of Students					
<i>Student Race/Ethnicity</i>					
White	0.00	0.00	.026	1.001	0.99-1.00
Non-White	-0.02**	0.01	7.008	0.99	0.97-1.00
Hispanic	0.01	0.01	0.86	1.00	0.99-1.02
Non-Hispanic	0.01	0.00	2.97	1.00	0.99-1.01
<i>Principal Demographics</i>					
Gender	-0.20	0.24	0.66	0.82	0.51-1.32
Ethnicity	-0.07	0.83	0.01	0.93	0.18-4.67
Race	0.29	0.40	0.52	1.33	0.61-2.89
Years as Current Principal	0.00	0.03	0.01	1.00	0.95-1.07
Total Years as Principal	0.02	0.02	1.072	1.02	0.98-1.06
Highest Degree	0.20	0.25	0.63	1.22	0.75-1.98
<i>Principal Attitudes</i>					
Disapproving Attitudes to Suicide	0.01	0.04	0.04	1.01	0.94-1.08
Accepting Attitudes to Suicide	-0.03	0.05	0.40	0.97	0.89-1.06

Predictor	<i>B</i>	<i>SE B</i>	Wald χ^2	<i>OR</i>	95% <i>CI OR</i>
Attitudes to Suicide Prevention	-0.01	0.02	0.06	0.82	0.95-1.04
<i>History of Suicide Contacts</i>					
Student in Current School	-0.03	0.24	0.01	0.70	0.45-1.09
Student in Past School	-0.36	0.23	2.53	0.70	0.45-1.09
Family	-0.21	0.30	0.50	0.81	0.45-1.45
Friend	0.45	0.29	2.34	1.57	0.88-2.78
Colleague	0.13	0.36	0.13	1.14	0.56-2.33
Other	0.42	0.29	2.08	1.52	0.86-2.67

Notes. † Law Group 4 was used a reference category. For gender, female was the reference category. For Ethnicity, Non-Hispanic was the reference category. For Race, White was the reference group.

*p<.05

**p<.01

Table 7

Program Comprehensiveness Predicted by Principal Demographics, School Characteristics, and Principals' Attitudes toward Suicide and Suicide Prevention

Predictor	<i>B</i>	β	<i>t</i>	<i>sr</i> ²
Law Group 1 [†]	0.62**	0.22	4.17	.03
Law Group 2 [†]	0.47**	0.17	2.92	.01
Law Group 3 [†]	0.03	0.01	0.20	.00
<i>School Characteristics</i>				
Funding	0.37**	0.14	3.32	.02
Support	0.22**	0.26	6.03	.06
Free/Reduced Lunch	0.00*	-0.13	-2.52	.01
Number of Students	0.00	.02	0.56	.00
<i>Student Race</i>				
White	0.00	0.08	1.45	.00
Non-White	0.00	-0.02	-0.44	.00
Hispanic	0.00	0.07	1.34	.00
Non-Hispanic	0.00	0.01	0.19	.00
<i>Principal Demographics</i>				
Gender	-0.09	-0.04	-0.97	.00
Ethnicity	-0.08	-0.01	-0.29	.00
Race	-0.20	-0.06	-1.32	.00
Years as Current Principal	0.01	0.02	0.46	.00
Total Years as Principal	0.00	0.09	0.35	.00
Highest Degree	0.05	0.02	0.48	.00
<i>Principal Attitudes</i>				
Disapproving Attitudes to Suicide	-0.01	-0.03	-0.58	.00
Accepting Attitudes to Suicide	0.02	0.04	0.05	.00

Predictor	<i>B</i>	β	<i>t</i>	<i>sr</i> ²
Attitudes to Suicide Prevention	0.00	0.02	0.34	.00
<i>History of Suicide Contacts</i>				
Student in Current School	0.29**	0.13	3.07	.02
Student in Past School	0.05	0.02	0.54	.00
Family	0.21	0.08	1.86	.01
Friend	-0.13	-0.05	-1.12	.00
Colleague	0.08	0.03	0.59	.00
Other	-0.12	-0.05	-1.09	.00

Notes. † Law Group 4 was used a reference category. For gender, female was the reference category. For Ethnicity, Non-Hispanic was the reference category. For Race, White was the reference group.

*p<.05

**p<.01

Figure 1. Interactive Systems Framework: Prevention Delivery System