SCHOOL SUCIDE PREVENTION: A BREADTH AND DEPTH PERSPECTIVE

by

JONATHAN L ROCHELLE

A DISSERTATION

Presented to the Department of Special Education and Clinical Sciences
and the Division of Graduate Studies of the University of Oregon
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

June 2023

DISSERTATION APPROVAL PAGE

Student: Jonathan L Rochelle

Title: School Suicide Prevention: A Breadth and Depth Perspective

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Special Education and Clinical Sciences by:

Dr. John Seeley	Chairperson
Dr. Chris Murray	Core Member
Dr. Chris Knowles	Core Member
Dr. Keith Zvoch	Institutional Representative

and

Krista Chronister	Vice Provost for Graduate Studies

Original approval signatures are on file with the University of Oregon Graduate School.

Degree awarded June 2023.

DISSERTATION ABSTRACT

Jonathan L. Rochelle

Doctor of Philosophy

Special Education and Clinical Sciences

June 2023

Title: School Suicide Prevention: A Breadth and Depth Perspective

The present study provides a *breadth* and *depth* perspective of the current landscape for school suicide prevention (SSP). Despite an increase in SSP programming, practices, and policy, there remains a gap in understanding of how widely these activities are disseminated and implemented. Additionally, there is a lack of knowledge around the adoption of recommended programs and practices once disseminated to school practitioners, along with what SSP-related barriers, successes, and goals that were identified and prioritized by schools. To address these gaps, a sequential mixed-methodology design comprised of two studies was conducted with a *breadth*-focused statewide needs assessment survey (i.e., Study 1), and a *depth*-focused multi-method pilot (i.e., Study 2). Findings from Study 1 indicate that SSP activity (i.e., evidence-based programs [EBPs] and recommended practices implementation) increases slightly from elementary, to middle, and up through high school; with statistically significant differences in implementation occurring for three EBPs (i.e., Mental Health First Aid [MHFA], RESPONSE, and Connect Postvention) and two recommended practices (i.e., SSP Curriculum and Guest Speakers) at the school level (i.e., elementary, middle, and high school). Additional Study 1 findings are discussed in regard to SSP activity differences across region classification and the association between SSP activity and school staff comfort level on the topic of suicide

prevention. Findings from Study 2 identified clear categories and themes for SSP challenges and barriers, current successes, and prioritized goals. Study 2 also explored what key features of SSP were already being implemented within an MTSS structure. Interpretation of Study 1 and 2 findings, along with limitations, implications for practice and policy, and future research directions are discussed.

CURRICULUM VITAE

NAME OF AUTHOR: Jonathan L Rochelle

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, Oregon
Rio Salado College, Tempe Arizona
University of Washington, Seattle, Washington

DEGREES AWARDED:

Doctor of Philosophy, Special Education, 2023, University of Oregon
Master of Science, Educational, Policy, Methodology, and Leadership, 2017, University of Oregon
Bachelor of Science, History, 2008, University of Washington

AREAS OF SPECIAL INTEREST:

School Suicide Prevention
Research-Practice Partnerships
Implementation and Dissemination Science

PROFESSIONAL EXPERIENCE:

Program Evaluation Lead, Suicide Prevention Lab, 2017-present
Curriculum specialist, Center on Human Development, 2019-present
Technology and Online Instructional Specialist, Special Education Program, 2015-2017
High School English Language Arts Teacher, Yuma High School, 2011-2015
Varsity Swim, Varsity Tennis, and JV Basketball Coach, Yuma High School 2011-2014

GRANTS, AWARDS, AND HONORS:

Louis and Sarah G. Kaplan Scholarship Fund Award, 2018
Pat Killgallon Memorial Scholarship Award, 2018
Florence Wolfard Scholarship Award, 2017
Sylwester Family Memorial Scholarship Award, 2017
Division II Section Coach of the Year for Varsity Tennis, 2014
Yuma High School New Teacher of the Year, 2012

PUBLICATIONS:

Knowles, C., Gau, J., Logan, S., Sloane, B., & **Rochelle, J.** (2022) Service-oriented

robotics to promote mobility for young children with disabilities. *International Journal for Service Learning in Engineering, Humanitarian Engineering and Social Entrepreneurship, 17*(2), 14-32.

Bromley, K. W., Murray, C., **Rochelle, J.,** & Lombardi, A. (2020). Social support among college students with disabilities: Structural patterns and satisfaction. *Journal of Student Affairs Research and Practice, 58*(5), 477-490. https://doi.org/10.1080/19496591.2020.1778485

Smolkowski, K., Crawford, L., Seeley, J. R., & **Rochelle, J.** (2019). Introduction to Implementation Science for Research on Learning Disabilities. *Learning Disability Quarterly*, *42*(4), 192-203. https://doi.org/10.1177/0731948719851512

Thier, M., Martinez, C. R., Jr., Al-Resheed, F., Storie, S., Sasaki. A., Meline, M., **Rochelle, J.,** Witherspoon, L. & Yim-Dockery, H. (2020) Cultural adaptation of promising, evidence-based, and best practices: A scoping literature review. *Prevention Science*, *21*, 53-64. https://doi.org/10.1007/s11121-019-01042-0

Rochelle, J., & Lybarger, P. (2017) First to the Finnish line. In B. Gearin & Y. Zhao (Eds.), *Imagining the future of education: Dreams and nightmares*. London, England: Routledge.

TABLE OF CONTENTS

Chapter Page

I. INTRODUCTION 1
Statement of the Problem 1
Terminology 3
Epidemiology 5
Study Rationale 8

II. LITERATURE REVIEW 10
Theory and Potential Etiology 10
Theory 10
Potential Etiology 11
Prevention Models and Frameworks 15
Multi-Tiered Systems of Support 15
Needs Assessment 21
School Suicide Prevention 23
School Suicide Prevention Programming 24
School Suicide Prevention Needs Assessment 31
National 32
Statewide 35
School-Building 38
Current Study 41
Research Questions 44

III. METHODS 46
Study 1 46
Research-Practice Partnership 46
Survey Measures 46
Survey Dissemination and Data Collection 49
Dataset Linkages 50
Survey Participants 51
Data Analysis 52
Study 2 53
Research-Practice Partnership 53
Participants and Setting 54
Measures 57
Data Collection 61
Data Analysis 63

IV. RESULTS 65
Study 1 65
Research Question 1 65
Research Question 2 67
Research Question 3 77

Study 2 79
Qualitative Interviews 79
Challenges and Barriers 80
Current Successes 89
Prioritized Goals 95
Quantitative Survey 99

V. DISCUSSION 104
School Suicide Prevention Landscape 104
Evidence-Based Programs 105
Recommended Practices 109
Stigma 110
Barriers, Successes, and Goals 110
Limitations 115
Implications for Practice 118
Implications for Policy 123
Future Directions in Research 124
Conclusion 126

APPENDICES 128

REFERENCES CITED 142

LIST OF TABLES

Table Page

1. Survey Respondent Demographic Information 51
2. School Selection Criteria and Team Composition....56
3. Evidence-Based Programming Implementation Inventory....65
4. Recommended Practices Implementation Inventory 67
5. Means and Standard Deviations on Number of Evidence-Based Programs, Recommended Practices, and Total SSP Activity Implemented....68
6. Means and Standard Deviations of Evidence-Based Programs (EBPs), Recommended Practices, Combined School Suicide Prevention (SSP) Activity, by Region Classification...69
7. Inventory of Evidence Based Programs by School Factors....71
8. Inventory of Recommended Practices by School Factors 75
9. Bivariate Correlation Matrix....76
10. Results of the Sequential Linear Regression for Predicting School Suicide Prevention Activity 79
11. Domains, Categories, and Themes for Qualitative Interview Data 80
12. Descriptive Statistics for School Suicide Prevention Implementation and Systems Inventory Sub-Scale and Total Scores 100
13. Individual School Sub-Scale and Total School Suicide Prevention Implementation and Systems Inventory Raw and Proportional Scores....103

LIST OF FIGURES

Figure Page

1. Individual School Proportional Scores on Individual School Sub-Scale and Total School Suicide Prevention Implementation and Systems Inventory Raw and Proportional Scores Subscale Domains. 101

CHAPTER I

INTRODUCTION

Statement of the Problem

Youth suicide in the United States is a serious public health crisis with rates having increased steadily over the past two decades for both males and females (Curtin & Heron, 2019). Specifically, the suicide rate for youth aged 15-19 increased 76% from 2007 to 2017 (Curtin & Heron, 2019). The rise in youth suicide rates has occurred despite an expansion in research around the etiology and epidemiology of the phenomenon (Calear et al., 2016; Cha et al., 2018; Glenn et al., 2020; Robinson et al., 2018; Zhu et al., 2019). The alarming pattern of rising youth suicide rates despite an advancing scientific understanding of the phenomenon underscores the pressing need for the successful translation of research findings into effective practice by identifying *what* works and *how* to implement it (Cha et al., 2018; Curtin, 2020; Ringeisen et al., 2003).

Schools present one of the most advantageous environments and institutional systems for implementing comprehensive youth suicide prevention. Children and youth spend a significant portion of their wake-time in schools, providing direct and ongoing access for school personnel to those most at-risk (Mo et al., 2018). Additionally, schools have key systems in place (e.g., screening, data-monitoring, professional development, targeted curriculum) that have the potential to coordinate and support suicide prevention and intervention activities. However, the K-12 education system is not currently being fully utilized for planned and strategic suicide prevention. Across school settings, activities included in suicide prevention initiatives are highly variable and evaluations of program effectiveness often produce mixed results (Kutcher et al., 2017; Mazza, 1997; Surgenor et al., 2016). Furthermore, no updated or centralized surveillance data is kept on the dissemination, implementation, and scale-up of recommended suicide

prevention programs and practices in schools, leaving a glaring gap as to what degree these innovations are being utilized at the ground level (i.e., school settings).

Adding to the variability of the school suicide prevention (SSP) field is the variability in guidance, policy, and legislation enacted by individual states. According to the State Policy Database (National Association of State Boards of Education, 2022), roughly half (N = 26) of state governments have passed legislation specifically requiring suicide prevention training or policy in schools. While 10 of these states require that the suicide prevention training be conducted annually, the other 16 do not specify a frequency of recommended implementation. Of the 24 remaining states that do not have legislation requiring school policy, eight states have legislation encouraging SSP policy and training, nine have a non-codified policy towards SSP training, and the remaining eight have neither legislation, guidance, nor non-codified policy.

Despite the majority of states having passed SSP legislation, little is known regarding the impact of these laws. In an analysis by Kreuze et al. (2017), researchers attempted to address this gap by comparing state-level youth suicide rates grouped by SSP policy status (i.e., mandated annual training, mandated non-annual training, encouraged training, non-codified policy, and no policy). No correlation was found between youth suicide rates and any of the state SSP policy statuses (Kreuze et al., 2017). However, previous research in other domains (i.e., physical activity and nutrition) has found that unfunded state mandates can significantly increase the related activities and practices occurring in schools (Boles et al., 2011).

The potential beneficial step of organizing state SSP through legislative mandates or policy requirements has created several pressing challenges for schools attempting to comply with either legislation, guidance, or non-codified policy. The most salient concern for schools responding to state enacted top-down directives is determining how to fund the required

initiatives. Available funding for conducting suicide prevention in schools varies across states, with schools that report having access to SSP funds and resources also reporting more comprehensive overall SSP activities (Smith-Millman & Flaspolher, 2019). However, state legislative policy is often passed as an unfunded mandate with minimal guidance as to what specific programs must be implemented and how adherence to requirements will be fiscally supported. The result of these initiative-based mandates is a vacuum where schools and local districts are left to determine not only what programs can be feasibly implemented, but also how the activities can be sustained by technical expertise and local resources. Additionally, SSP legislation that has been passed functions as "laws without teeth," meaning states lack the necessary systems and infrastructure to surveille and enforce the implementation of the mandate.

The lack of information and clarity surrounding the SSP landscape at the state and local level is cause for concern and will be the primary focus of this current paper. However, prior to understanding why the field of SSP is in its current state, we will first explore the extent to which the root-cause phenomenon (i.e., youth suicide) is harming youth populations and their surrounding communities. Additionally, because youth suicide prevention in schools occurs at the intersection of education, public health, and mental health (Miller et al., 2009), establishing a baseline of shared knowledge that educators can access around the defining characteristics of youth suicide is pivotal. To address this need, the following two sections will thoroughly define the problem of youth suicide through detailing the terminology and epidemiology of youth suicide.

Terminology

For both adult and youth populations, suicide research is typically oriented around four central factors: (a) suicidal ideation, (b) suicide communications, (c) suicide attempts, and (d)

suicide completions (Klonsky et al., 2016). Unfortunately, these and other suicide-related constructs are often vaguely defined or inaccurately used in academic articles, which has led to confusion in the field (Klonsky et al., 2016). In the interest of consistency, this paper relies on terminology from the revised nomenclature for the study of suicide by Silverman et al. (2007) and definitions provided by the Centers for Disease Control and Prevention (CDC; Crosby et al., 2011).

A key area of confusion in the taxonomy of suicide-related terms has been the inconsistent grouping of ideation, communications, attempts, and completions within subdomains such as suicidality and suicide-related behaviors. To clarify, *suicidality* refers to an individual's risk of suicide defined by a history of either suicidal ideation, communications, or suicide attempts (Welton, 2007), while *suicide-related behavior* excludes ideation and refers strictly to suicide attempts and completions (Silverman et al., 2007). A further clarification within the subdomain of suicide-related behaviors differentiates between behaviors that are conducted without suicidal intent (e.g., nonsuicidal self-injury) and those that are carried out with intent to die by suicide (Silverman et al., 2007). Suicide-related behavior, as discussed in this dissertation, will focus on acts carried out with the intent to die by suicide.

Unlike suicide-related behaviors, *ideation* is absent of injurious behavior and can be defined as either having passive or active thoughts around wanting to be dead or killing oneself (O'Conner et al., 2013). Suicide-related *communications* are defined as any interpersonal act imparting or conveying thoughts, desires or intent to die by suicide (Silverman et al., 2007). A suicide *attempt* is the nonfatal, self-directed, and potentially injurious act of intending to die by one's own volition (Crosby et al., 2011). In youth, the majority of suicide attempts include the development of a plan prior to acting (Nock et al., 2008). A suicide *completion* is a death caused

by self-directed injurious behavior with the intent to die as a result of those actions (O'Conner et al., 2013). The most frequent methods for a youth suicide completion are suffocation, firearm use, and poisoning (Cha et al., 2018).

Epidemiology

An understanding of the current epidemiological research on youth suicidal behavior is essential for informing on how to strategically and directly prevent and intervene with at-risk youth. This is especially relevant for school-system prevention and intervention, where identifying differences based on factors such as age, race, and gender can assist school personnel in implementing systems of intervention targeted at preventing those most at-risk from "falling through the cracks" (Carman et al., 2012).

Suicidal Ideation

Suicidal ideation rates have steadily increased year by year over the past decade from 13.8% to 18.8% in high school students (CDC, 2019). Typically, ideation takes the form of passive thoughts without clear intent or planning, while a much smaller percentage of youth (i.e., 2-6% annual incidence rates) have specific or active suicidal ideation (Bridge et al., 2006).

Suicide Attempts

The most recent adolescent suicide attempt data for the 2017 academic year showed that just under 10% of high school students attempted suicide at least once during the year, with a total of 3% having to receive medical treatment due to the attempt (CDC, 2019). Importantly, suicide attempts are often harbingers of future attempts and completions, with the risk of repeated attempt-related hospitalizations ranging up to 25% within a five-year window after hospitalization for a youth suicide-related attempt (Bridge et al., 2006; Goldston et al., 1999).

Suicide Completions

Over the past decade, youth (i.e., aged 10-24) suicide rates have increased by over 57% to an annual rate of 10.7 deaths per 100,000 youths nationwide (Curtin, 2020). Suicide is estimated as the second leading cause of death for youth and young adults worldwide and is the third leading cause of death for this demographic in the United States (Glenn et al., 2020). Suicide deaths for elementary aged students (i.e., 5-11 years old) are rare and occur at a rate of 0.17 deaths per 100,000 children, while rates for middle and high school aged students (i.e., 12-17 years old) are significantly higher, occurring at a rate of 5.18 deaths per 100,000 adolescents (Sheftall et al., 2016).

Age of Onset and Course

Approximately 7% of children transition into adolescence with an increased risk trajectory of suicidal ideation (Zhu et al., 2019). The typical onset of ideation occurs after age nine, with a rapid increase manifesting for middle and high school aged students between ages 12 and 17 (Bolger et al., 1989; Chat et al., 2018; Nock et al., 2012). Adolescents who experience early ideation are at risk for a host of down-stream deleterious effects including (a) lower coping ability, self-esteem, and interpersonal relationships; (b) 12 fold increase for future suicide attempt risk; and (c) heightened occurrences of psychopathology, suicidal ideation and behavior, and problem behaviors (Reinherz et al., 2006).

A 3 to 4 year lag occurs between the onset of ideation and suicidal behavior, where onset of suicide attempt prevalence begins increasing during mid-adolescence and reaches its zenith in the late teens and early twenties (Cha et al., 2018; Glenn et al., 2017, Pelkonen et al., 2011). Suicide completion prevalence is heavily influenced by the accumulation of risk, which is

catalyzed by early onset of both ideation and suicidal behavior. This results in suicide completion rates increasing steadily throughout the lifespan (Steel et al., 2018).

Gender

Youth suicide is defined by a well-established gender paradox where boys are two to three times more likely to die by suicide than girls, yet girls have higher rates of ideation and attempts (Cash & Bridge; 2009; Curtin, 2020; Hawton et al., 2012; Wasserman et al., 2005). However, a recent shift in suicide rates for girls has begun to erode this historical incongruence. From 2007 to 2016, the rate of increase for suicides was nearly twice as large for girls than for boys (i.e., 12.7% vs 7.1% for ages 10-14 and 7.9% vs 3.5% for ages 15-19; Ruch et al., 2019). Notably, the elevated incidence rate of suicide attempts by adolescent girls does not seem to transition into young adulthood (Lewinsohn et al., 2001). Sexual and gender minority youth (i.e., LGBQTIA+) are at an especially elevated risk for both ideation and suicide attempts (Mustanksi & Liu, 2013: O'Brien et al., 2016).

Race and Ethnicity

Native American and Alaska Native populations are the most at-risk race group for suicide across all age and gender classes (Curtin & Hedegaard, 2019). In 2017, Native American adolescents and young men (i.e., ages 15-24) died by suicide at a rate of 53.7 deaths per 100,000 individuals, followed by White (27.2), Asian or Pacific Islander (16.9), Black (16.6), and Hispanic (15.6; Curtin & Hedegaard, 2019). High rates of suicide amongst indigenous populations is a pattern found worldwide (Pollock et al., 2018) and has been attributed to issues of assimilation and the degradation of cultural traditions where individuals are left feeling alienated and severed from both traditional and mainstream culture (Bridge, 2006). Comparatively, White youth account for the most overall youth suicides each year and the

second most suicide deaths proportionally (Curtin & Hedegaard, 2019). The juxtaposition between one of the smallest minority populations (i.e., Native Americans) and the overall racial majority population (i.e., White or Caucasian) being the most at risk for youth suicide completions points to the nonuniformity of the contextual factors surrounding the phenomenon. Historically, suicide has been viewed as a "white people problem" (Dennis, 2018) due to the cumulative number of deaths for this demographic being abnormally high; however, the prevalence gap has continued to shrink between White populations and minority populations – especially black youth-- over the past decade (Curtin & Heron, 2019; Gordon, 2020), calling for the need to ensure that prevention strategies are inclusive, appropriate, and sensitive to all racial and ethnic populations.

Means of Suicide

The two most frequent means for adolescent suicide is suffocation and firearms, which accounted for 86% of suicide completions in 2016 for youths aged 10-19 years old (Curtin et al., 2018). Suffocation-related suicides for adolescents have increased by over 85% since 1999, causing this means of suicide to be as frequent as firearms, while firearm-related deaths have not surpassed the rate from 1999 onward (Curtin et al., 2018). Gender differences found in methods of suicide may account for some of the longitudinal shifts in prevalence rates. For instance, suffocation is the leading method for female adolescents, and overall suicide rates for girls and young women have increased at twice the rate of boys and young men (Ruch et al., 2019), while firearms are the leading method for male adolescents whose suicide rates have increased at a more incremental rate (Curtin et al., 2018).

Study Rationale

As will be presented in the following chapter, there has been a substantial effort to elucidate the mechanisms, co-factors, and causes of youth suicide through the pursuit of rigorous theoretical and etiological research. These findings have provided the underpinnings for the development of evidence-based programs (EBPs) that promote protective-factors and ameliorate risk-factors. However, as state governments move to enact and enforce legislation or policy requiring programming and training for SSP, school staff are left with the challenge of finding ways to both fund the implementation of these activities and fit the interventions within the already existing unique context of their school. Additionally, states often have a paucity of data regarding the dissemination and implementation of these programs both prior to and after the enactment of legislation and policies, leading to confusion over what the actual landscape of SSP looks like statewide, and whether these legislative actions have any impact at the building-level.

To address this gap, the present study aims to provide clarity around the landscape of SSP by assessing the degree to which SSP recommended practices and EBPs are being implemented statewide and at the local level. Contextual data will be gathered to ascertain the prevalence and type of (a) current programming and practices, (b) challenges and barriers, and (c) SSP related goals. The researchers will leverage the use of two research-practice partnerships (RPPs) between state governmental agencies and university researchers to span historically entrenched institutional barriers and access school data that is typically unavailable to researchers (Muñoz, 2016).

This study relies on a sequential mixed-methods (Cameron, 2009) two-study design, where findings from an initial statewide study are expanded upon by a subsequent building-level pilot study. The rationale for this form of sequencing was based on the premise that to fully

capture the *breadth* and *depth* of the SSP landscape, there needs to be both mega-level (i.e. state) and macro-level (i.e. building) measurement of SSP. Thus, the state- and building-level aims of this study seek to enhance the understanding of SSP and the how improvement of this complex endeavor can best be supported and measured at multiple levels of intervention and support (i.e., state and local).

CHAPTER II

LITERATURE REVIEW

The following chapter provides an overview of the empirical research connecting youth suicide to the prevention efforts occurring in schools, while also proposing additional methods for systematically fitting SSP activities within unique school settings. To address these aims, the chapter begins by presenting the prevailing theoretical models of suicidality and the associated potential etiology of youth suicide. Then, two central prevention frameworks will be discussed as they relate to youth suicide (i.e., multi-tiered systems of support [MTSS] and needs assessments [NAs]). Next, schools are reviewed as a promising setting for youth suicide prevention efforts, and the literature on current EBPs will be presented. Additionally, studies on NAs for SSP and related fields are reviewed at the national, state, and building level to clarify current practices on defining youth suicide within the school system. Finally, the study rationale and corresponding research questions are proposed.

Theory and Potential Etiology

Theory

The extant theoretical models of suicidality typically agree on the premise that the development of suicidal ideation, and separately, the progression of ideation to action are different processes with different explanations (Klonsky et al., 2017). The interpersonal theory of suicide (IPTS; Joiner et al., 2009; Van Orden et al., 2010) –the most widely studied theory of suicide- suggests that the most lethal form of suicidal desire stems from the co-occurrence of two factors: *thwarted belongingness* and *perceived burdensomeness*. Additionally, IPTS stipulates that *capability* to carry out suicidal behavior is separate from the desire to engage in suicidal behavior.

A more recent theoretical model –the integrated motivational-volitional model (IMV) of suicidal behavior (O'Connor & Kirtley, 2018)- presents an alternative mechanism, which suggests that ideation stems from feelings of defeat and humiliation, compounded by the state of entrapment (i.e., Motivational Phase; O'Connor, 2011). Subsequently, the transition from ideation to behavior is governed by a group of volitional moderators (e.g., means of suicide, exposure to suicidal behavior, capability for suicide, planning impulsivity) that moderate the transition to enacting suicidal intentions (i.e., Volitional Phase). For both the IPTS and IMV, there is a paucity of evidence examining the application of the theories in youth populations. A systematic review and meta-analysis by Chu et al. (2017) found that out of 143 samples (selected from 130 articles) examining IPTS, only four studies centered on youth under the age of 18. Thus, there is a pressing need for validation of suicidal theory in younger populations.

Recently, Miller and Prinstein (2019) made a notable contribution to explaining the biological and environmental processes of suicidal behavior in adolescent populations. Specifically, adolescent suicide is proposed as a failure in the biological *acute-stress response* systems in the proximal moments of a suicidal crisis (Miller & Eisenlohr-Moul, 2019). Miller and Prinstein (2019) identify adolescence as a critical time of vulnerability to suicide due to the potentially risky person-environment transaction that occurs. However, future research into the biological and environmental systems involved in the model is needed.

Potential Etiology

Extensive research has been conducted around the potential etiology of youth suicide. A review by Cha et al. (2018) identified a broad array of risk factors and correlates for adolescents ranging from environmental to psychological and biological factors. For the purpose of this dissertation, the discussion around the etiological factors will focus on the environmental and

psychological constructs that are most relevant to school-based intervention. These factors include (a) personal history of suicidality, (b) family history of suicide, (c) psychopathology, (d) bullying participation, (e) peer and media influences, (f) impulsivity, and (g) loneliness.

Personal History of Suicidality. A history of prior suicidal behavior is a leading risk factor for subsequent suicide attempts and completions in youth (Bridge et al., 2006). In adolescents, this risk is independent of race and gender. In a nationally representative sample (N = 13,110) of middle and high school students, Borowski et al. (2001) found that prior suicide attempts were significantly predictive of subsequent attempts for both boys and girls across three major racial groups (i.e., White, Black, and Hispanic). Recent longitudinal research by Fontella et al. (2020) helped elucidate possible avenues for mitigating the effect of prior attempts by predicting subsequent attempts through the administration of timely follow-up mental health services. Specifically, in a large sample of adolescents (n = 139,694) hospitalized for a psychiatric emergency, there was a significant reduction in repeated suicide attempts for individuals who received outpatient mental health services within seven days of discharge (Fontella et al., 2020).

Family History of Suicide. The risk of suicide-related behaviors is greatly increased in young adults when there is a parental history of suicide completions (Gould et al., 2003). However, due to the persistent co-occurrence of suicide and psychiatric illness, there has been the need to distinguish which factor is driving this familial liability. To this aim, Agerbo et al. (2002) conducted a Danish Registry study that found youth suicide was five times as likely when a mother had died by suicide and twice as likely when a father died by suicide, even when controlling for parental psychiatric history.

Psychopathology. Presence of psychopathology is the most salient and robust risk factor for adolescent suicide (Miller & Eckert, 2009). Use of systematic *psychological autopsies* (i.e., the collection of contextual information involving a death) has uncovered that roughly 90% of youth who die by suicide have at least one mental health disorder present at the time of death, with the most common being mood disorders (Fleischmann et al., 2005; Marttuenen et al., 1993; Shaffii et al., 1988). A more recent study utilizing psychological autopsies with 35 cases (17 boys and 18 girls) of adolescent suicide deaths found that girls who developed psychopathology and dropped out of school were most at risk for suicide, while boys with developmental disorders receiving special education services were most at risk (Mérelle et al., 2017).

Bullying. Participation in bullying–whether as a victim or perpetrator–is a strong predictor of future ideation and suicidal behavior for youth (Kim & Leventhal, 2008). Bullying occurs when an individual repeatedly harms or oppresses another through psychological or physical behaviors that result in a power imbalance (Farrington, 1993; Smith & Brain, 2000). In 2019, approximately 20% of high school students reported having experienced bullying on school grounds within the past year (CDC, 2019). The high percentage of students exposed to bullying did not account for the more recent phenomenon of cyberbullying, where the behavioral acts of bullying are carried out through the use of digital devices and online platforms (Slonje & Smith, 2008). Both traditional bullying and cyberbullying increase ideation and suicide attempts in adolescents; however, victims are at a greater risk for both outcomes than perpetrators (Hiduja & Patchin, 2010). Evidence indicates that the more participation in bullying an adolescent is exposed to, the greater their risk for suicidal behavior becomes. Klomek et al. (2009) found an accumulation of risk in boys who were both victims and perpetrators of bullying, causing their

risk for suicidal behaviors to be greater than boys who did not participate in bullying or were only victims.

Peer and Media Influence. Exposure to suicidal behavior–either from peers or the media–increases adolescent risk for future suicidal behavior (Cha et al., 2018). The mechanism through which risk spreads is defined as *suicide contagion* and entails the spread of suicidal thoughts, behaviors, or deaths within a social network following exposure to a suicide death (Ortiz and Khin, 2018). Youth, in particular, are especially at risk to the spread of suicide contagion both through peer networks (Swanson & Colman, 2013) and the media (Sugg et al., 2019). *Suicide clustering* can occur when exposure to suicide contagion results in multiple deaths within a given timeframe. Roberston et al. (2012) found that in a youth suicide cluster involving eight individuals, the proliferation of social media and digital communication led to the rapid spread of suicide awareness, inaccurate information about the deaths, and heightened anxiety. Additionally, research by Yildiz et al. (2018) found that higher suicide attempt rates amongst adolescent girls (ages 13-17) can be partially explained by this demographic being more sensitive than adolescent boys to the effects of suicide contagion.

Impulsivity. Impulsivity is one of the most studied cognitive constructs related to youth suicide and is predictive of suicidal behavior in youth independent of age or gender (Cha et al., 2018; McHugh et al., 2019). A meta-analysis by McHugh et al. (2019) found risky decision-making in particular, a subset of impulsivity, consistently differentiated adolescents prone to suicidal behavior from healthy controls. Additionally, there appears to be a compounding effect when impulsivity occurs in the presence of aggression, resulting in a higher rate of suicide completions amongst youth (McGirr et al., 2008).

Loneliness. The strength of the relationship between loneliness and suicidal behavior is age-dependent and takes the form of a U-shaped curve where youth (i.e., ages 16-20) and the elderly (i.e., older than 55) exhibit the greatest effects (McClelland et al., 2020). A review by Cha et al. (2018) found conflicting evidence over the veracity of loneliness as a predictor of suicidal behavior. Specifically, previous bivariate prospective models demonstrating a longitudinal relationship between loneliness and suicidal behavior were at odds with multivariate prospective models suggesting the relationship was mediated by psychopathology (Jones et al., 2011; Lasgaard et al., 2011). A meta-analysis by McClelland et al. (2020) found that loneliness was a stronger predictor than suicidal ideation for suicidal behavior; however, findings also indicated that depression mediated the relationship between loneliness and suicide attempts.

Prevention Models and Frameworks

Multi-Tiered Systems of Support

The MTSS framework was derived from the U.S. Public Health Service's conceptual model of prevention that utilizes a three-tiered approach (i.e., primary, secondary, tertiary) for organizing interventions (Walker et al., 1996). In education, the MTSS model has been used as a foundation for two of the most widely disseminated educational systems –Response to Intervention (RtI) and Positive Behavior Intervention and Supports (PBIS; McIntosh & Goodman, 2016). Similar to the focus of RtI on reading performance and PBIS on behavioral improvement (Averill & Rinaldi, 2013), the application of MTSS has increasingly expanded to include additional school-centered domains such as mental health and suicide prevention; however, research into these applications are still exploratory and mainly conceptual (August et al., 2018; Marsh & Marthur, 2020; Singer et al., 2019).

The recommendation to organize SSP within a tiered structure began over two decades ago (King, 2001); however, the early configuration of the model did not include the systems and database-decision making aspects of MTSS (Miller et al., 2009; Singer et al., 2019). Despite wide agreement among experts on utilizing a form of MTSS to organize and promote SSP activities, there remains dissonance in the field regarding how this approach is best operationalized (Erbacher et al., 2015; Kalafat, 2003; Kelly & Lueck, 2011; King, 2001; Singer et al., 2019), resulting in a divergence over two distinct methods for classifying the types and purposes of each tier. The first model–and one of the most widely adopted by practitioners–organizes school activities into the domains of prevention, intervention, and postvention (King, 2001). However, more recent versions of the tiered approach have opted to better align with the public health model of universal, selective, and indicated tiers (Erbacher et al., 2018; Miller et al., 2009; Singer et al., 2019). By updating the SSP framework with universal, selective, and indicated tiers, the activities regarding prevention, intervention, and postvention are no longer limited to a single tier, but, instead, have the flexibility to span across multiple levels of tiers.

Primary, Secondary (Intervention), and Tertiary Prevention (Postvention). Guidance in the literature regarding the use of a tiered approach to SSP dates back to King's (2001) *Developing a Comprehensive SSP Program*. This model adopted the already established framework of suicide prevention, intervention, and postvention (Oaks-Davidson, 1996; Tierney et al., 1990) and synthesized the domains within a tiered approach. King (2001) organized activities around the tiers of primary prevention, secondary prevention (intervention), and tertiary prevention (postvention). The key components that King (2001) embedded within each tier aligned and built upon previous recommendations by Oaks-Davidson (1996) and Malley et al. (1994) that identified 16 key components to comprehensive suicide prevention, intervention,

and postvention. These include (a) written suicide policy statement, (b) written procedures to identify at-risk students, (c) staff in-service training, (d) onsite mental health professional, (e) mental health team, (f) prevention materials for parents, (g) prevention materials for students, (h) psychology screening to identify at-risk students, (i) prevention classroom discussion, (j) counseling for at-risk students, (k) suicide reference materials for counselors, (l) training for counselors, (m) faculty gatekeeper training, (n) postvention component, (o) documented criteria for counselors to assess lethality of potential suicide, and (p) evaluation of prevention and intervention programs.

According to King (2001) and Faberow et al. (1985), primary prevention offers the most direct route for saving students' lives from suicide and should therefore receive the most attention. Primary prevention is comprised of nine key components: (a) districtwide student suicide policy, (b) staff training on suicide warning signs, (c) collaboration amongst staff, (d) suicide prevention curriculum, (e) peer assistance program, (f) programs increasing school connectedness, (g) school-family partnerships, (h) school-community partnerships, and (i) school crisis team. Collectively, these primary prevention components aim to decrease student suicidal behavior while increasing staff and student awareness on warning signs, risk factors, and referral steps (King, 2001).

In the secondary prevention tier –also referred to as intervention—King (2001) narrows the scope of interventions to processes responding to students in crisis (e.g., threatening or attempting suicide). At this tier, a five-step protocol was described on how to safely intervene with at-risk students:

1. Ensure student safety
2. Assess student suicidal risk
3. Determine mental health services needed
4. Ensure appropriate care

5. Debrief school staff.

Unlike subsequent tiered frameworks, King (2001) concentrated secondary intervention to focus on student suicidal ideation or attempts taking place on school-site, thus providing a much more narrow scope on what secondary intervention activities look like. Additionally, King recommended that all school staff be trained on secondary crisis intervention steps, which diverges from other guidance approaches that place all-staff training in the universal (i.e., primary) tier.

King (2001) limits the final tertiary tier to the domain of postvention (i.e., responding to a suicide), which again diverges from subsequent frameworks due to its restriction to such a narrow focus. However, King relied on an earlier definition of *postvention*: activities conducted in response to a student threatening, attempting, or completing suicide. More recently, postvention has come to be defined as activities conducted in response to a suicide completion (Cox et al., 2016), thus explaining King's distinct-tier three alignments as more a matter of semantics than operationalized activities.

Universal, Selective, and Indicated Tiers. Almost two decades after King's (2001) original contribution to the SSP literature, Singer et al. (2019) provided an updated tiered approach that incorporated nearly 20 years of additional research on effective suicide prevention activities and also better aligned with the public health model of universal, selected, and indicated tiers (Miller et al., 2009; Erbacher et al., 2015; Singer et al., 2019). In the Singer et al. (2019) model, suicide prevention activities are organized into three subdomains that span across all three tiers: (a) staff education and training, (b) student education and intervention, and (c) student screening. The universal tier concentrates prevention activities around serving all students, independent of their current suicide risk, while the selective tier emphasizes the

identification and support of students who may be at risk, and the indicated tier targets students with a history of past or current suicidal behavior (Singer et al., 2019).

Unlike previous models, Singer et al. (2019) also provides a summary of all available EBPs for each tier. The universal tier includes three staff training programs and seven student-targeted programs. The evidence-based staff programs are Question, Persuade, Refer (QPR), Applied Suicide Intervention Skills Training (ASIST), and Kognito, with modalities being offered in-person for ASIST, online for Kognito, and either in-person or online for QPR. The evidence-based student programming includes: (a) Good Behavior Game, (b) Signs of Suicide (SOS), (c) Sources of Strength, (d) YAM, (e) The American Indian Life Skills Development Curriculum (AILSD), (f) Linking Education and Awareness of Depression and Suicide (LEADS), and (g) Lifelines Curriculum. Of the student programs, only Sources of Strength is delivered school-wide, while the rest are implemented in the classroom and range from 3 to 6 hours of total instruction time (Singer et al., 2019).

Evidence-based programming available for selected and indicated tiers is far less than the universal tier. The three programs available at the selected tier are the Care, Assess, Respond, Empower (CARE) program, the Coping and Support Training (CAST), and the Reconnecting Youth (RY) program. The CARE program is a brief assessment and crisis intervention for youth at risk of suicide that uses a student's social network to reduce suicide-risk behaviors (Katz et al., 2013). The CAST program is a life skills training and social support program delivered to small groups of students at elevated risk for suicide and has been found to decrease suicidal ideation, positive attitudes towards suicide, and depressive symptoms (Thompson et al., 2001). Finally, RY targets underachieving students at risk of dropping out of school by providing life skills training and small group social support (Eggert et al., 2001).

The indicated tier includes a package of three evidence-based therapy modalities (i.e., attachment-based family therapy, cognitive-behavioral therapy for suicide prevention, and dialectal behavior therapy for adolescents) and the PREPaRE program. The delivery of the three therapy modalities for student treatment have only been studied for effectiveness through outpatient therapists in community mental health clinics (i.e., not in school) and typically have a dosage of 1-2 sessions per week (Singer et al., 2019). The second evidence-based practice in tier three is PREPaRE, which is a school crisis training that emphasizes crisis intervention and recovery, and includes protocols for conducting psychological triage for students in crisis (Nickerson et al., 2019).

By reconfiguring the MTSS approach to SSP from the domain model of prevention, intervention, and postvention to the more public health aligned model of universal, selective, and indicated, Singer et al. (2019) addressed a key challenge the previous approach failed to account for. Namely, activities involving the domains of prevention, intervention, and postvention are not necessarily tier specific and activities within these domains often span multiple tiers. However, although the Singer et al. (2019) framework is in better alignment with a public health MTSS model than the previous King model, the alignment of tiers differ from the universal, targeted, and tertiary framework traditionally used in the field of suicide prevention (US Department of Health and Human Services, 2012). The discrepancy in tier structures between what is used in the field of suicide prevention and what Singer et al. (2019) suggests for the field of education could lead to further confusion between the two fields. Despite this difference in alignment, the updated and revised MTSS framework by Singer et al. (2019) is a useful contribution to both the field of SSP research along with providing practical guidance for practitioner selection of EBPs organized by tiers.

Outside of proposed models, there are currently no studies that have examined the application and usability of MTSS for the specific purpose of implementing SSP. Due to this gap, there exists an opportunity to build upon the success of similar models –such as RtI and PBIS- and leverage school personnel's already existing experience with the systems and principles of these approaches. Notably, there are vast amounts of guidance documents and resources for both RtI and PBIS schools, as well as national centers that provide technical assistance (TA) for implementation, which do not currently exist for MTSS applied to SSP. Thus, there exists an opportunity to expand the empirical research for this approach to SSP along with developing accompanying resource kits and technical supports.

Needs Assessment

The modern randomized controlled trial (RCT) was formalized in 1948 with the British Medical Research Council's trial of streptomycin on the treatment of tuberculosis (Bothwell & Podlsky, 2016). The experimental process of an RCT came to be known as the *gold standard* in testing whether an intervention is deemed evidence-based or not. And, while the adoption of EBPs and practices has revolutionized the fields of medicine, industry, technology, and agriculture, the fit of this research-to-practice pipeline paradigm in education has been fraught with challenges (Slavin, 2002). Although the reasons behind the challenging nature of implementing EBPs at scale in education are multi-faceted, the inconsistent performance of EBPs in educational systems can be partially attributed to the contextual variability of school ecosystems and environments (Ringeisen et al., 2003). Thus, school personnel implementing EBPs cannot solely rely on the external validity of these interventions, but instead need to first define the environmental uniqueness of the school system that the EBP will be implemented within. The NA approach presents a viable, replicable, and systematic process to defining a

school's context and identifying and addressing barriers that may derail typical EBP implementation efforts for SSP.

The formal process of NAs can be traced to foundational work by Malher and Monroe (1952) who systematically surveyed industrial companies to determine what approaches, if any, were used to determine personnel training needs (Moore & Dutton, 1978). Needs assessments utilize a discrepancy model designed to determine the gap between two primary conditions: the current status of performance (i.e., primary condition) compared to the desired status of performance (i.e., secondary condition; Altschuld, 2004). An NA is defined as a formalized process to obtain information regarding the current and desired states of performance by identifying gaps and providing need-based priorities for action steps (Altschuld & Lepicki, 2009). The *need* can be viewed as a measured discrepancy between the current and desired states.

The leading model for organizing NAs is Kaufman's *Organizational Elements Model* (OEM), which stipulates three levels of processes–mega-level, macro-level, and micro-level NAs (Altschuld & Lepicki, 2009; Kaufman, 1977). Mega-level NAs are conducted on a societal scale and are often implemented first as a mechanism for identifying the leading problems societies face. Next, macro-level NAs are conducted at the organizational or institutional level to determine the performance of the entity as a whole. Finally, the micro-level NA is conducted at the individual actor level and is concerned with the challenges and barriers that personnel within an organization face. At each NA level, the primary driver is determining the discrepancy between the current "what is" state and the "what should be" state. Macro- and micro-level NAs can be further broken down into three additional levels of measurement that include the receivers

of services (i.e, students), the providers of services (i.e., teachers and staff), and the managers of services (i.e., administration; Altschuld & Lepicki, 2009).

A second organizational model that is often used in conjunction with Kaufman's model is the Altschuld and Witkin (1999) *Three Phase Model*. This model breaks the implementation of NAs into three primary phases: (a) pre-assessment, (b) needs assessment, and (c) post-assessment. The pre-assessment phase includes organizing the methodological approach and determining what is already known about the area of central focus (Altschuld, 2004). Next, the active needs assessment phase is where the process of data collection and analysis is carried out around the primary goal of determining the discrepancy between "what is" and "what should be." The final post-assessment phase involves developing a plan to address high-priority needs and what solutions should be selected to address these needs.

School Suicide Prevention

School settings provide a unique and promising environment for comprehensive youth suicide prevention. Schools are central to positive youth development and particularly in impacting mental health-related constructs such as peer and social interactions, cognitive development, and emotional and behavioral processes (Fazel et al. 2014). Additionally, schools serve as a top mental health service provider as well as the most common entry point into the mental health system for students (Farmer et al., 2003). For some youth, school environments can positively impact their mental health and mitigate negative impacts from other social factors (O'Reilly et al., 2018); however, for others, factors associated with schools (e.g., bullying, peer pressure) can cause depressive-like symptoms, anxiety, and mental distress (Tannous, 2011). Given the amount of time that children and adolescents spend in school along with the impact that this experience has on a student's mental health trajectory, leveraging school systems as a

mechanism to attenuate youth suicide risk is a pivotal step toward addressing increased rates of suicidal behavior.

Although the potential for school systems to intervene and address the growing trend of suicidal behavior is great, the current status of suicide prevention in schools highlights a glaring disconnect between suicide prevention research and practice. Research into school suicide prevention can be divided into two distinct domains: (a) efficacy and effectiveness of programmatic research (Katz et al., 2013; Surgenor et al., 2016); and (b) practical guidance surrounding comprehensive suicide prevention (King, 2001; Singer et al., 2019). Currently, programmatic research has identified *what* works best to lower suicide risk, while academic experts have provided guidance on *how* to implement a comprehensive and coordinated effort of multiple suicide prevention initiatives. The consensus from the academic field has been clear and consistent: comprehensive school suicide prevention should be centered upon a tiered public health approach (Kalafat, 2003; Kelly & Lueck, 2011; Singer et al., 2019). Specifically, this guidance now emphasizes the structuring and coordination of evidence-based interventions, protocols, programming, and screening through the use of a MTSS framework (Singer et al., 2019). However, as covered previously, research regarding the MTSS approach for suicide prevention in schools remains theoretical and limited strictly to guidance, leaving the field to rely on the individual testing of interventions when attempting to determine *what* works to prevent suicide in schools.

School Suicide Prevention Programming

Several literature reviews have summarized the effectiveness of SSP programs with mixed findings on how impactful these programs are in decreasing suicide-related outcomes (Cooper et al., 2011; Katz et al., 2013; Mo et al., 2018; O'Reilly et al., 2018). The variance in

findings can largely be attributed to measurement discrepancies between what outcomes are evaluated. Studies that use self-reported knowledge, attitudes, and self-efficacy outcomes (i.e. skill acquisition) typically report positive changes in program outcomes, while more rigorous studies using behavioral and ideation outcomes do not demonstrate a similar effect (Mo et al., 2018).

Two "best practice" registries currently exist to help aid schools in selecting EBPs for SSP: (a) *SAMHSA's* National Registry of Evidence-based Programs and Practices (https:/www.samhsa.gov/nrepp) and (b) *Suicide Prevention Resource Center's* (SPRC) Evidence-Based Prevention Registry (http://www.sprc.org/keys-success/evidence-based-prevention). However, neither registry distinguishes between EBPs that have been evaluated using skill acquisition outcomes compared to EBPs that have been evaluated using skill application and behavioral outcomes. Singer et al. (2019) synthesized findings from recent literature reviews and meta-analyses with the national registry databases to create a list of EBPs for SSP including (a) QPR, (b) ASIST, (c) Kognito, (d) Good Behavior Game, (e) Signs of Suicide, (f) Sources of Strength, and (g) Youth Aware of Mental Health Programme (YAM). Notably, Singer et al. (2019) included ASIST and Kognito, but noted that "high quality" research (i.e., RCTs) did not currently exist for the programs in schools.

A meta-analysis by Bran and colleagues (2021) found that out of 27 studies analyzed, most SSP programs had a greater impact on increasing suicide awareness ($k = 18$, $g = 0.72$) and helping skill ($k = 15$, $g = 0.43$) compared to suicide behavior ($k = 8$, $g = 0.17$), psychological wellness ($k = 7$, $g = 0.16$), and psychological distress ($k = 9$, $g = 0.16$). These findings build upon a previous systematic review by Katz et al. (2013) that found out of 16 programs, the majority of studies limited outcomes to knowledge and attitudes toward suicide, and few programs were

evaluated for the impact on suicidal behavior. Despite these limitations, a systematic review by Robinson et al. (2018), that expanded the sampled studies to include international studies and university samples, concluded that overall school-based studies had a positive impact on suicide-related thoughts and/or behaviors and did not cause iatrogenic effects.

As the number of SSP programs has continued to grow since the 1980s (Surgenor et al., 2016), there has become an increasing need to organize programs into distinct categories. A scoping review by Surgenor et al. (2016) and a systematic review by Katz et al. (2013) identified five thematic domains for suicide prevention programs: (a) education or awareness programs, (b) peer leadership, (c) skills training, (d) gatekeeper training, and (e) screening and assessment. Notably, the five domains can be further broken down into two primary groups: student targeted (i.e., education or awareness programs, peer leadership, and skills training) and staff targeted (i.e., gatekeeper training and screening and assessment). As schools move toward adopting an evidence-based approach to comprehensive suicide prevention, the selection of programming within each of the five domains is encouraged as a beneficial first step (Granello et al., 2018). Yet, given the current state of empirical findings, there remains a pressing need for further research into how each domain impacts suicidal behavior and ideation, not just participant skill acquisition (Platt & Niederkrotenthaler, 2020).

Educational Curricula and Awareness Programs. Educational and awareness programming are upstream and universal approaches used to familiarize student populations with the signs and symptoms of suicide in order to facilitate recognition of these signs in oneself or others. Additional program components often include a focus on healthy coping mechanisms, increasing student protective factors (e.g., positive peer relationships, self-esteem) in students, and promoting school connectedness (Singer et al., 2019; Stone et al., 2017). Grosselli et al.

(2021) solicited expert guidance on which key components were most essential for a suicide prevention education and awareness programs. The researchers used a three-stage Delphi study to determine consensus for three core content components: (a) reduction of suicide attempts, (b) increasing help-seeking behavior, and (c) the promotion of mental health life skills (Grosselli et al., 2021). In addition to the upstream and universal nature of these programs, an added benefit is that they can often be incorporated into the greater school curriculum and course offerings as a supplemental module (Katz et al., 2013).

Research into the effectiveness of educational and awareness programming in reducing suicidal ideation and behavior is lacking. YAM is currently the only program that has been shown to lower suicidal ideation and attempts (Surgenor et al., 2016; Wasserman et al., 2015). A review by Sugernor et al. (2016) found that most programs did not include protocols on how to specifically respond to sensitive issues and crises, and did not provide information on how implementing awareness skills may impact in-school relationships between students and staff. Although empirical evidence is lacking on the efficacy of education and awareness programs on proximal outcomes, expert consensus remains that these activities are a worthwhile upstream approach for reducing suicide in schools (Grosselli et al., 2021).

Peer Leadership. The introduction of peer-led suicide prevention programs was based on research findings that students are more likely to confide in peers than adults if they experience suicidal ideation (Kalafat, 1994). Thus, peer-based programs approach suicide prevention through the selection and training of students on how to properly respond to students at risk of suicide. Compared to the other four suicide prevention programming domains, the design and implementation of peer-led programs are relatively nascent. Peer-led programs that

have undergone some level of empirical research include Sources of Strength and Surviving Teens (Brann et al., 2021; Surgernor et al., 2016).

The most rigorously evaluated peer-leadership program is Sources of Strength, which combines a student gatekeeper-training model with supplemental school-wide suicide prevention activities to diffuse program elements into student social networks (Williford et al., 2021). Sources of Strength recruits "youth opinion leaders" from diverse social cliques and trains these students to change the norms and behaviors of their peers through strategic school-wide messaging (Wyman et al., 2010). In a high school RCT (n = 18), Sources of Strength was found to increase peer-leader likelihood of referring a suicidal friend to an adult (Wyman et al., 2010). Additionally, Petrova et al. (2015) found that Sources of Strength impacted the general student population by improving positive coping attitudes and perceptions of adult support. However, a study by Pickering et al. (2018) found exposure to Sources of Strength activities school-wide was highly variable from school to school and dependent on individual student characteristics and social network position. Thus, future implementation research needs to be conducted into the fidelity of implementation by peer-leaders among the general school population along with discerning what implementation drivers are associated with sustainment of the program.

Skills Training. Unlike the other four programming domains, skills training programs do not directly target the reduction of suicide, but instead aim at increasing protective factors through teaching skills like coping, decision making, and problem-solving (Katz et al., 2013). Skills training programs can be utilized as a universal upstream approach for teaching general life skills to the student population or as a selected intervention for historically marginalized and at-risk groups. Given the emphasis on schools to adopt universal prevention programs (King,

2001), the ability of skills training programs to serve populations at elevated risk addresses a pressing gap in SSP.

Gatekeeper Training. Staff gatekeeper training is estimated to be one of the most widely disseminated types of suicide prevention programs in schools, due to the majority of SSP research involving this form of programming (Brann et al., 2021). Gatekeeper trainings are designed to educate school staff (and in some cases students) to detect the signs of individuals at risk for suicide and refer them to the appropriate help (Brann et al., 2021; Lamis et al., 2016; Platt & Niederkrotenthaler, 2020). Curriculum content includes information on common suicide myths, suicide prevalence, and specific risk factors for suicide (Singer et al., 2019). Training duration typically ranges from brief (e.g., 1hr) to in-depth (e.g., 2-days) with modality options including online (i.e., synchronous, asynchronous, hybrid) and in-person (Singer et al., 2019).

As with other programmatic domains, the evaluation of gatekeeper trainings historically relies on outcomes relating to suicide knowledge, attitudes, and self-efficacy (Lamis et al., 2016). The reliance on these more distal factors to demonstrate a program's impact highlights a major measurement challenge facing the field of SSP research. A review by Katz et al. (2013) found that gatekeeper trainings did increase these three suicide-related outcomes (i.e., knowledge, attitudes, and self-efficacy), but had no impact on the more proximal outcome of suicidal behavior. Comparatively, Godoy-Garraza et al. (2020) determined that the use of active learning strategies (e.g., role-play, scenarios), when combined with gatekeeper training, had a significant impact on increasing participants' referral behavior upon 6-month follow-up; indicating a promising solution to a major obstacle facing the efficacy of gatekeeper trainings in schools.

Screening and Assessment. Student screening for suicide risk and associated cofactors is an essential approach for identifying at-risk students and referring them to appropriate services.

Screening usually involves the employment of a valid screening instrument to identify set characteristics or symptoms that indicate elevated risk (Miller et al., 2009; Pena et al., 2006). The screening process can be parsed into three separate phases: (a) brief universal screening for risk, (b) in-depth screening of students identified as at risk, and (c) crisis screening (Pena et al., 2006; Singer et al., 2019). Depending on capacity and infrastructure, schools may elect to universally screen all students, selectively screen student populations known to be at risk, or a combination of both (Singer et al., 2019).

Through the utilization of a validated screening tool and a systematic replicable process, universal screening has a distinct advantage over the more subjective method of training gatekeepers to detect risk, because it eliminates the influence of personal bias when identifying students. Despite this advantage, use of universal suicide prevention screening in schools is low and depression screenings are typically used instead (Miller et al., 2009). The foremost barrier to universal screening is the fears around iatrogenic effects regarding asking students' questions about suicide and ideation. Although Gould et al. (2003) found that screening students for suicide risk did not cause distress or an increase in ideation, fear and resistance persist amongst parents and administrators that screening students can cause harm (Torcasso et al., 2017). A second roadblock to the use of universal screening is the lack of staff capacity to screen all students and immediately respond if a student is identified as at risk. Thus, there are clearly roadblocks facing the adoption and implementation of universal screening tools on a scale of meaningful proportions and school staff must make the individual decision on whether the benefits of a more systematic and replicable assessment approach outweigh the costs of possible family opposition and lack of capacity.

The second and third phases of suicide screening are applied when students are identified as being at elevated risk through either gatekeeper identification or universal screening. For students not in an acute potential suicidal crisis, an in-depth psychological screening is administered by a trained counselor or mental health practitioner that attempts to determine whether the student requires a treatment referral, specific services, or further assessment (Pena et al., 2006). The last phase of screening is applied when a student appears to be in crisis and school staff must determine whether the individual is in immediate danger of harming themselves. In these instances, a research-validated tool such as the Columbia-Suicide Severity Rating Scale (C-SSRS) can be used to determine risk level (Erbacher & Singer, 2018).

School Suicide Prevention Needs Assessment

As reviewed in the previous sections, youth suicide prevention research has primarily focused on what *causes* youth suicide and what EBPs are potentially *effective* for SSP. Additionally, recommendations and guidance on *how* SSP can be organized and implemented were discussed. Although informative, the current SSP recommendations do not fully address how to take empirical research findings and translate them into effective practice. Specifically, current guidance relies on predetermined and prescribed processes that ignore the variability of public school contexts (Ringeisen et al., 2003). NAs present a promising modality for meeting this gap by allowing a school's context to first be thoroughly defined through the gathering of data around (a) student and staff population characteristics, (b) school culture and climate, and (c) current SSP activities and challenges.

Complex social problems–like youth suicide–are deeply ingrained within the local, historical, and cultural fabric of society (White, 2012), making the need for effective solutions to be both flexible and adaptive to highly variable contexts. One of the most relied upon solutions

to modern challenges, EBPs, often fail to successfully transition from highly controlled research settings into naturalistic contexts because of an emphasis on replicability over adaptability (Kitson et al., 1998). The inability of solutions developed in the existing research-to-practice paradigm to adequately adapt to an individual school's unique environmental context can be potentially addressed through the use of an NA for SSP. By systematically defining a school's individual and unique context through a comprehensive NA, school teams can shift from strictly predetermined and prescribed approaches that are divorced from the environmental uniqueness of schools and instead utilize a strategic approach that accounts for potential roadblocks and obstacles to effective implementation. The benefits of coordinating SSP activities by first conducting an NA can be distilled into three main advantages: (a) identification of blank spots and blind spots in current programming, protocols, and policies (Wagner, 1993); (b) recognition of unique student, staff, and school culture traits; and (c) development of a strategic actions for effective implementation of activities based on NA findings.

National

As specified in Kaufman's OEM, the stages of NAs begin with the mega-level, where the needs of a population are first assessed at a societal scale. For school NA research, this type of societal measurement is typically conducted at the national level (Altschuld & Lepicki, 2009). However, in the literature, research around SSP needs at the mega-level tend to mainly address (in a limited degree) *what* is currently occurring, and does not complete the full discrepancy analysis process of mapping out *what should be*. Additionally, the identified literature pertaining to NAs conducted at the national level are primarily concerned with a superficial accounting of either what programs are available or school staffs' knowledge and perceptions of SSP. At this time, there are no identified studies that aim to assess –either at the national, state, or local level-

the degree to which SSP programming penetrates within school contexts or whether there are individualized plans developed on how to incorporate these programs into a school system.

Program Inventory. Garland et al. (1989) contributed one of the earliest NAs for SSP by conducting a multi-modality NA through the use of mail-in paper surveys and telephone interviews. Unlike later SSP survey research, Garland et al. did not contact school staff directly, but instead surveyed program vendors and creators. Out of the 482 agencies identified through a National Directory (Shaffer et al, 1988), 90% (n = 435) responded in either written form or by telephone. The survey identified 115 programs that directly delivered SSP curriculum, which was more than double the number of programs from a similar survey two years prior (Shaffer et al., 1988). Researchers applied qualitative thematic analysis to each identified program and found that nearly all programs (95%) stipulated that suicide was "a response to extreme stress and could happen to anyone," while other frequent themes centered on suicide warning signs and suicide facts.

Knowledge and Adherence to Legislation. The national landscape of SSP is impacted by the varying degrees to which each state has passed SSP legislation. To better understand how SSP state laws impact the administrators tasked with carrying them out, Smith-Millman and Flaspohler (2019) surveyed a nationally representative sample of high school principals on knowledge and adherence to state SSP laws. The study examined survey responses from 599 principals (7% response rate) and found that while 66.1% of principals stated their school was in complete compliance with state SSP laws, only 25% could actually accurately identify their states' SSP laws. Researchers also noted that principals in states with the most severe SSP laws reported having the most comprehensive school SSP programs.

Program Acceptability. A series of studies conducted from 1999 to 2005 provide insight into school staff perceptions of SSP program acceptability. Across multiple studies, researchers selected a nationally representative sample of either school superintendents, principals, or school psychologists by using national professional association member directories (i.e., American Association of School Administrators (AASA), National Association of Secondary School Principals (NASSP), and National Association of School Psychologists NASP)). The studies all relied on the same measure –the Suicide Prevention Program Rating Profile (SPPRP)- designed to rate the acceptability of programming types based on brief descriptions detailing key SSP components (Miller et al., 1999).

To assess the acceptability of suicide prevention school-based programs amongst high school principals, Miller et al. (1999) randomly selected 501 participants from the 1994-95 NASSP directory. A total of 185 (40%) principals responded to the survey, and findings indicated that across the three types of programming assessed –curriculum-based programs for students (SPPRP M = 44.87, SD = 9.03), in-service training for staff (SPPRP M = 46.69, SD = 7.83), and student self-report screening (SPPRP M = 46.69, SD = 7.83)—principals viewed screening as significantly less acceptable. Overall, the findings have practical implications for the landscape of SSP by demonstrating that administrators are more likely to select curriculum and in-service programs over screening programs, which directly impacts the prevalence of programming types in the field.

A similar national survey conducted by Sherff et al. (2005) assessed superintendents' perceptions of SPP program acceptability for the same three types of interventions: (a) curriculum, (b) in-service training, and (c) screening. As with the Miller et al. (1999) findings, the researchers found that the 210 responding superintendents–a 42% response rate–rated the

student screener as significantly less acceptable than both the in-service training and curriculum as measured by the SPPRP. These confirmatory findings have similar practical implications as the Miller et al. (1999) study; namely, that key decision makers who often determine which programs are implemented prefer non-screening modalities of intervention such as curriculum and in-service training.

Eckert et al. (2003) found similar findings as Miller et al. (1999) and Sherff et al. (2005) in a sample of school psychologists. The profession of school psychologists provides a pertinent perspective to SSP due to required specialized training in the domains of mental health and suicide prevention for this profession (Debski et al., 2007). A total of 501 school psychologists were contacted through the NASP directory and 211 (42%) completed the acceptability survey. As with the other two studies aimed at administrator perspectives, Eckert et al. (2003) found that school psychologists rated both the curriculum and in-service training significantly higher in acceptability than the screening program.

Statewide

The variability in state SSP requirements (Kreuze et al., 2018) has created a need for ensuring that each state has an informed approach to how schools can plan comprehensive suicide prevention activities that address both state contextual uniqueness and the stipulations outlined in state policy, law or guidance. Needs assessments conducted within statewide institutional systems typically span the mega- and macro-level of NAs due to the focus on both societal and organizational needs (Altschuld & Lepicki, 2010). Currently, the lack of studies examining the implementation of statewide NAs for SSP indicate a concerning gap around the lack of available systematic processes for measuring needs within a statewide education system.

Thus, there is a pressing need for studies to address how to organize state-level NAs that inform on SSP and how this approach can translate into effective practice within individual schools.

There are currently no known studies that employ NAs to measure statewide SSP. Thus, two relevant non-SSP NA studies were selected to inform on how to conduct this type of assessment based on the inclusion criteria of (a) statewide representation; (b) methodology fully described; (c) current practices measured; and (d) opinions of preferences, barriers, or needs measured. Although the studies are not SSP or mental health-related, each provides valuable insights into effectively conducting statewide surveillance type measurement.

Lenski et al. (2016) measured what materials and practices Oregon state English Language Arts (ELA) teachers utilized and what materials they preferred. Researchers employed a sequential mixed-methods design that included a survey and follow-up interview. The survey had four measurement components: (a) demographics, (b) current materials utilized, (c) current practices implemented, and (d) material preferences. Survey dissemination occurred through two state professional associations and an online Facebook page for the project. A total of 1,206 surveys were collected from K-12 ELA teachers with over a third (n = 448) of responses coming from K-2 teachers and a relatively small portion of responses (n = 270) coming from 7-12 teachers. The survey sample was geographically representative with responses from 162 of the 196 school districts statewide.

Survey findings indicated that a basal/core reading program was the most frequently used material for K-6 grade teachers, while teacher or student-selected *trade books* were the most frequently used materials for grades 7-12. The most frequently used instructional practice across all grade levels was independent reading with 57.1% of teachers reporting using this technique. In the follow-up interviews, the majority of teachers indicated they preferred teaching from trade

books, despite elementary teachers relying mainly on basal reading programs. Overall, Lenski et al. (2016) provide a replicable methodology and process that describes statewide ELA use of materials and practices.

To assess capacity for statewide implementation of Positive Behavioral Supports (PBS) in Virginia public schools, Shannon et al. (2001) conducted a seven-part NA process. The seven steps included:

1. Defining project purpose
2. Literature review
3. Key stakeholder interviews
4. Statewide training needs survey
5. PBS provider survey
6. Develop PBS resource database
7. Summary report.

The research team's descriptive analysis of the study provides one of the few published records detailing a comprehensive process for documenting a school-based and state-level NA.

The initial three steps of the NA concentrated on honing in a specific focus with attached measurable goals; these included (a) identifying PBS resources available and needed, (b) determining level of interest in PBS training, and (c) assessing how PBS-trained providers are implementing PBS. The training NA statewide survey (i.e., Step 4) was sent by mail to a diversity of stakeholders (e.g., special education directors, Medicaid waiver providers, state agency providers) with a response rate of 48% (n = 229). Responses indicated that the leading barriers to lack of training were lack of awareness (50%) and inconvenient training location and timing (28%). A second survey (i.e., Step 5) was disseminated to assess type of PBS support being provided and provider comfort level with PBS. The survey sample (n = 51) included special education TA center staff, family members, university staff, educators, and consultants. Findings indicated that 76% of respondents felt comfortable facilitating the PBS process and

providing training to teams on how to implement PBS was the most frequent form of support being provided (38%).

A unique aspect of the Shannon et al. (2001) study was the inclusion of steps six and seven detailing the researchers' response to the NA measurement findings. The creation of a resource database (i.e., Step 6) and the dissemination of a summary report (i.e., Step 7) to stakeholders created an aspect of reciprocity that many of the previously discussed NAs lack. Namely, the research team did not limit the study to data collection, analysis, and findings dissemination, but instead included specific tailored supports to the participating organizations.

School-Building

As with state-level NAs for SSP, there are no known studies measuring the impact of SSP building-level NAs. However, a wide-range of resources exist for guiding school personnel through the steps of conducting an NA for SSP. The following four NAs for SSP represent tools marketed towards both national and local audiences. Importantly, the four examples are not stand-alone NAs but comprehensive guides, and as a result the specific NA process can get buried within the sheer amount of accompanying information and resources (i.e. the guides range from 46 pages up to 230 pages). Additionally, only one guide (i.e., JED Foundation) references structuring SSP through an MTSS approach.

Substance Abuse and Mental Health Services Administration (SAMHSA). The *Preventing Suicide: A Toolkit for High Schools* developed by SAMHSA is a multifaceted suicide prevention guide that includes a multitude of tools and resources along with an embedded NA. The guide is broken into seven domains:

1. Getting started NA
2. Protocols for helping students at risk of suicide
3. Responding to a suicide
4. Staff education and training

5. Parent education and outreach
6. Student programs
7. Screening.

Each domain includes a research-based description of the targeted topic, tool templates, and strategies for implementation. The NA domain includes a checklist of SSP activities along with a community partner organizational chart template. Additionally, matrix templates are provided for documenting the implementation progress of protocols, staff education and training, student programs, and student screening.

JED Foundation. As with the SAMHSA guide, the JED Foundation's *Comprehensive Approach to Mental Health Promotion and Suicide Prevention for High Schools* provides an expansive compilation of guidance tools, resources, and strategies in addition to a formal NA process. However, unlike the SAMHSA toolkit, Jed Foundation references an MTSS framework to organize seven key domains that span outside of suicide prevention-specific foci:

1. Develop life skills
2. Promote social connectedness and positive school climate
3. Encourage help seeking behaviors
4. Improve recognition and response to suicide risk
5. Ensure access to mental health treatment
6. Establish crisis management procedures
7. Promote means safety.

The guide also stipulates that by implementing the seven domains within a school, five key outcomes (i.e., improved school culture, increased graduation rates, decreased absences, decreased substance misuse, and mental health improvement) can be achieved.

Unlike the other guides included in this review, the NA aspect of the JED foundation approach is not publicly available and partnering with the foundation to conduct the 3-year process costs $25k per school. The NA process is described in the comprehensive guide as including an organizational assessment, a student survey, and analysis of any relevant evaluative

findings the school already conducts. The organization assessment is completed with a school-based team and compares current school policy and programming with JED's own best practices as outlined within the seven key domains. The student survey includes variables on demographics, social and emotional health, and help-seeking behaviors. Overall, the comprehensive nature of the JED Foundation's approach makes it one of the leading NAs in terms of utilization of research-informed strategies and frameworks; however, the cost structure of the assessment process greatly limits the scale-up potential and prevents schools from accessing the tools at no-cost.

Cairn. The *Developing Comprehensive Suicide Prevention, Intervention and Postvention Protocols: A toolkit for Oregon Schools* was developed by Cairn as part of the Oregon Youth Suicide Prevention Intervention and Prevention Plan (YSIPP; 2016). The purpose of the guide is to provide processes and templates for Oregon schools on how to conduct effective suicide prevention, intervention, and postvention. The guide includes a school activity inventory that is recommended as a starting point for NA steps. The inventory is comprised of the three primary sections of prevention, intervention, and postvention, with subdomains including training, roles and responsibilities, referral networks and resources, assessment and safety, and follow-up. A rating-scale (i.e., Yes, No, Partial, N/A) is used in combination with a "Notes" section to assess each inventory item and provide any qualitative context. Although the Cairn toolkit provides tailored content for Oregon schools, the NA component and overall guidance is outdated and lacks technical detail.

Lines for Life. The non-profit organization tasked with operating Oregon's suicide prevention crisis line –Lines for Life- partnered with the Willamette Education Service District (ESD) to develop the *Suicide Prevention, Intervention, Postvention Step-by-Step Guide*. As a co-

designed guide created in partnership with a local ESD, the Lines for Life NA provides a distinct advantage over other alternatives due to the direct input from local school practitioners. The Step-by-Step guide is organized into seven primary domains including:

1. Prevention tools
2. Intervention tools
3. Postvention tools
4. Staff training and education
5. Student training and education
6. Family involvement
7. Resources.

Each domain is comprised of a series of descriptive questions (e.g. "Are behavioral health services available for youth?") that are measured on a priority scale of 1 (i.e., do now), 2 (i.e., do this year), or 3 (i.e., do next year).

The Lines for Life NA has been widely disseminated across Oregon by both the Oregon Health Authority (OHA) and the Oregon Department of Education (ODE). In 2020, a contract was granted to Lines for Life by ODE to provide four district-level personnel called School Suicide Prevention and Wellness (SSPW) coordinators whose primary responsibility is to conduct the Step-by-Step guide NA with district level staff. With the application of this NA process primarily occurring at the district level, it has yet to be seen how the district-level results transfer into school buildings.

Current Study

The field of SSP is guided by a *what* and *how* approach: *what* - recommended EBPs and practices are effective, and *how* - conceptual models should organize the implementation of these activities. Importantly, little is known surrounding the extent to which either the *what* or *how* of SSP is actually carried out in schools. Additionally, the emphasis of the EBPs paradigm on external validity ignores the contextual variability presented across school settings, which has

resulted in the missing out on a key opportunity to define school contexts and identify possible unique barriers and obstacles prior to the implementation process. Finally, there are currently no known measures that assess the implementation of SSP within an MTSS framework, which presents a concerning gap given the shift of the field towards the utilization of MTSS for SSP.

To assess the implementation of the *what* and *how* of SSP for this dissertation, the historically entrenched barriers that prevent researchers access to school data had to first be overcome. Thus, two separate research-practice partnerships (RPPs) were established, each aimed at conducting either the breadth or depth component of this study. Research-practice partnerships represent a formal methodological approach to organizing cross-sector collaborative efforts between organizations, practitioners, and researchers. In the field of SSP, these partnerships occur at the intersection of mental health treatment, education, and public health; creating the need for a cross-sector team of stakeholders to address the identified problems of practice.

A key advantage of RPPs is the ability to overcome the organizational, cultural, relational, and historical boundaries that often define the siloed fields of research and practice (Cannata et al., 2017; Wegemer & Renick, 2021). Members of RPPs often adopt the intentional role of a boundary spanner by ensuring that three principles are addressed: (a) regular convening for collaboration, (b) facilitation of meetings, and (c) supporting both research and practice activities (Bansal et al., 2012). Additionally, five distinct spectrums of boundary-spanning roles have been identified including (a) institutional focus, (b) task orientation, (c) expertise, (d) partnership disposition, and (e) agency (Wegemer & Renick, 2021). The description of the principles and spectrums of boundary-spanning roles allow for a more thorough understanding of

the mechanism for overcoming silos and also points towards future directions in supporting this key RPP characteristic.

Boundary spanning becomes increasingly relevant depending on the number of organizations and research domains involved in an RPP. For an endeavor such as statewide SSP needs assessment, RPPs allow for entry into systems and organizations (e.g., state education agencies, professional associations) that are typically closed off to outsiders. Similarly, the boundary spanning mechanism of an RPP allows for easier access to direct school-level partners and can greatly aid in streamlining communication and establishing trust.

In addition to using an RPP approach, the present study employed a sequential mixed-method design (Cameron, 2009) to qualitatively and quantitatively assess SSP at the state and local level; thereby presenting both a breadth and depth perspective (Palinkas et al., 2015). The study is guided by two primary aims that branch across two studies. The first aim is to describe what public schools are doing for SSP. To achieve this aim, a statewide mega-level NA was disseminated to all Oregon public schools (N = 1,251). The primary purpose of the NA was to inventory the implementation prevalence of EBPs and other recommended practices, while also gathering additional contextual data around stigma.

The second aim was to narrow the aperture of focus by defining the context and systems of SSP through conducing in-depth macro-level NAs with a select sample of 10 schools from different geographical locations across the state. These NAs had three main components. The first was to qualitatively define each schools' context by gathering information on (a) the schools stakeholders (i.e., students, staff, families and community members); (b) current SSP successes; (c) most pressing SSP challenges and barriers; and (d) identification of top priority SSP goals. Settings-based NAs benefit from utilizing multi-methods designs, where qualitative interviews

are complimented by additional quantitative methods (Wiener et al., 1994). Thus, the second component of Study 2 was to provide a quantitative implementation gap analysis of the systems, infrastructures, and activities conducted within the schools Tier I SSP activities. Finally, the third component, which falls outside of the scope of this dissertation, will be to use the qualitative and quantitative findings to provide a strategic action plan for next SSP steps. Together, Study 1 will present a comprehensive detailing of the current landscape of SSP across Oregon, which then allows for Study 2 to present a more focused examination and measurement of the specific contextual SSP challenges, successes, goals, and MTSS features at the school building level.

Research Questions

Study 1

RQ1: What are the most frequently implemented SSP recommended practices and EBPs in public schools?

RQ2: Do SSP recommended practices and EBPs differ by school factors (i.e., region classification and school level)?

H1: Rural and frontier schools will have less frequently implemented SSP recommended practices and EBPs than urban and suburban schools.

H2: The highest level of recommended practices and EBPs implementation will occur in high schools, followed by middle schools, and then followed by elementary schools.

RQ3: Is school staff perception of comfort around the topic of suicide prevention associated with the degree of SSP activity at schools (i.e., number of programs and practices implemented), and is this association moderated by school factors (i.e., region classification and school level)?

H3: Perceived school staff comfort level with the topic of suicide prevention will be positively associated to degree of SSP activity at the school, and this association will be moderated by school factors.

H4: Rural schools will be less comfortable with the topic of suicide prevention and conduct less SSP activity, and high school will be most comfortable with the topic of suicide prevention and conduct the most SSP activities.

Study 2

RQ1: What are the most pressing contextual barriers and challenges that school staff face when conducting comprehensive SSP?

RQ2: What SSP activities do school staff identify as being successful?

RQ3: What types of SSP goals do school staff identify as top priority?

RQ4: To what degree are school staff implementing key MTSS features for Tier I SSP?

CHAPTER III

METHODS

The following chapter provides the methodological approach used for addressing the proposed research questions. The study was guided by a sequential mixed-methods design (Cameron, 2009) across Study 1 and Study 2, and a subsequent parallel multi-method design within Study 2. Descriptions are provided of the study settings and participants, measures, data collection procedures, and data analyses.

Study 1

Research-Practice Partnership

Research-practice partnership *alliances* are a form of RPP that are site-based and built around co-solving targeted problems of practice (Coburn, 2010). As part of a larger partnership with the Oregon Alliance to Prevent Suicide (OAPS), a member of the University of Oregon Suicide Prevention Lab (UOSPL) participated on a sub-committee designated as the OAPS Schools Committee. The Schools Committee took the structure of an RPP alliance with the practitioner branch of the partnership including representatives from the Oregon Department of Education (ODE), the Oregon Health Authority (OHA), along with representatives from local schools, school districts, and other stakeholder agencies (e.g., Lines-for-Life). Upon formation, the RPP identified the lack of statewide contextual SSP data regarding EBPs and recommended practices implementation as a leading problem of practice to address. The team collaborated to develop an assessment tool that would inventory the current implementation of EBPs along with other SSP activities.

Survey Measures

RPP stakeholders worked to collaboratively design a mega-level NA (Altschuld & Lepicki, 2009) that included three domains of measurement: (a) school information, (b)

inventory of suicide-related programming and practices, and (c) perceived staff comfort around the topic of suicide prevention (see Appendix A). The UOSPL used an iterative co-design process (Fishman et al., 2013) that included three rounds of drafting, feedback, consensus, and revision.

School Information

The school information section included six questions. The first four questions focused on school identifiers and included text entry responses: (a) ODE institution identification number, (b) school level, (c) district name, and (d) school name. The fifth question asked for the job title of the individual completing the survey and provided 12 options (e.g., school principal, counselor, school psychologist) along with a text entry choice for "Other."

Program Inventory

The second section concentrated on inventorying the specific SSP activities that the school currently implemented. Question 1 provided a list of eight suicide prevention or mental health promotion EBPs (i.e., ASIST, Question Persuade Refer (QPR), Mental Health First Aid, Sources of Strength, Kognito, Connect Postvention, RESPONSE, and safeTalk) and had respondents select the programs that they were currently implementing or had implemented within the past three years. Notably, MHFA, although not technically a gatekeeper training, was included in the inventory due to being a known widely disseminated program in Oregon, and having suicide prevention-specific components included in the materials. Additionally, Connect Postvention, RESPONSE, and safeTalk were included in the inventory due to being categorized as "best practices" by the SPRC Resource Center, although no "high quality" research (i.e., RCTs) exists on any of the programs in schools. The option of "Other" was given with corresponding text entry capabilities, and the option of "N/A" was also provided to indicate not

implementing. A count variable (i.e., Number of EBPs) was computed for the total number of EBPs a school implemented.

Recommended Practices Inventory

A second inventory for section two of the survey was provided for additional suicide prevention recommended practices that included seven options: (a) school-based curriculum, (b) documented school suicide prevention plan, (c) social media outreach, (d) guest speakers, (e) other, and (f) N/A. Three additional implementation questions were asked in this section using a "Yes/No" scale including (a) identification and refer protocol for suicidal students, (b) suicide postvention plan, and (c) memorandum of understanding (MOU) with any local agencies (e.g., emergency department, primary care). Additionally, a count variable (i.e., Number of Recommended Practices) was computed for the total number of recommended practices a school implemented.

SSP Activity Composite Score

To assess the total level of programs and practices implemented (in addition to individual implementation of specific programs and practices) at each school, count variables were created for total number of EBPs (i.e., Number of EBPs) and total number of recommended practices (i.e., Number of Recommended Practices). Then, the creation of the SSP Activity composite score was computed by summing the count variables of Number of EBPs and Number of Recommended Practices to better represent the total amount of SSP activity occurring at schools. The bivariate correlation was calculated between Number of EBPs and Number of Recommended practices and the association was found to be moderate in magnitude and significant, $r = .327$, $p < .01$.

Staff Comfort Level

The final section of the survey gathered additional contextual data relevant to assessing the general landscape of statewide SSP, including perceived staff comfort level with the topic of suicide prevention. Assessing the perceived SSP comfort level of staff was included as a key metric due to suicide and mental health stigma acting as a significant barrier to students gaining access to mental health supports and services (Wright-Berrman et al., 2022). The comfort level item stated "Rate your school staff's comfort level with comprehensive and effective suicide prevention" and a 4-point rating scale was used (i.e., uncomfortable, somewhat uncomfortable, somewhat comfortable, comfortable) to measure responses.

Survey Dissemination and Data Collection

Pre-notification has been found to significantly increase survey response rates (Dykema et al., 2011). To maximize survey engagement, the UOSPL contacted four Oregon school professional associations (i.e., Confederation of Oregon School Administrators [COSA], Oregon School Counselors Association [OSCA], and Oregon School Nurses Association [OSNA], Oregon School Psychologists Association [OSPA]) with the opportunity of participating in the project. Three of the four associations provided feedback on the survey, and prior to dissemination, sent an endorsement email to all association members encouraging them to take part in the survey. Of the four associations, researchers were unable to make contact with OSPA.

Following the professional association endorsement email, ODE distributed the survey link to all Oregon public schools (N = 1,251) using four *listerv* directories: (a) school administrators, (b) school counselors, (c) school psychologists, and (d) school nurses. Survey recipients were provided a 30-day window to complete the NA, after which, a second email was sent out through the administrator *listerv* to all schools who had not yet completed the survey.

Dataset Linkages

The CDC recommends linking national, state, and local datasets as a key strategy for better assessing long-term suicide-related outcomes and evaluating the effectiveness of interventions (Wulz et al., 2022). In the field of youth suicide prevention, there is potential for enhancing research through linking suicide data with existing data systems; however, inconsistency in data elements and lack of centralized data dictionaries present a leading obstacle (Wilcox et al., 2016). The present study used data linking as a key strategy for providing additional contextual data.

Excessive survey questionnaire length has been identified as a significant barrier to respondent participation (Burchell & Marsh, 1992). Upon initial conception of the survey, the RPP decided that limiting the NA to under 20 questions would help increase the overall response rate. School demographic questions (e.g., student enrollment size, geographical area, free-and-reduced lunch status) were excluded from the survey to decrease a significant number of survey questions. Instead, the ODE institutional identification number for each responding school was used to link the survey dataset with the external datasets including the ODE School Report Card and the Oregon Office of Rural Health (ORH) Rural Classification dataset. Linking the NA with the ODE report card dataset allowed access to key contextual variables including confirmation of school level (i.e., elementary, middle, high school) and obtaining a geographical location (i.e., zip code) for each school. The school zip code provided by the ODE dataset was then used to link the NA dataset with the ORH Rural Classification dataset that provided three levels of geographical classification (i.e., urban, rural, or frontier). The urban region classification designation included areas typically designated as suburban, thus the region class of suburban was combined with urban. Additionally, due to the small number of frontier schools responding

to the survey, the region classification of rural and frontier were combined, resulting in the final dataset having two distinct classes (i.e., urban/suburban and rural/frontier).

Survey Participants

The targeted population for the survey was school staff actively participating in leading and coordinating suicide prevention activities at their school. Instructions within the survey email asked each school to submit a single response from one school representative, and that the school representative be the individual with the most knowledge around what suicide prevention activities were currently occurring. The survey received 492 electronic submissions, with 83 of those being blank. An additional 20 responses were identified as being different staff from the same school and were consolidated into a single response. The final sample included 399 schools. The breakdown of survey respondent demographic information is displayed in Table 1.

Table 1

Survey Respondent Demographic Information

	n	*%*
Position		
Principal	181	45.9
Vice Principal	15	3.8
Counselor	152	38.6
School Nurse	14	3.6
Other	32	8.1
School Level		
Elementary	190	47.7
Middle	68	17.1
High	140	35.2
Rurality		
Urban/Suburban	210	52.6
Rural/Frontier	189	47.4

Data Analysis

Prior to investigating research questions for Study 1, all variables were screened for out-of-range values and distributions were examined for unusual features. All open-ended response options for categorical variables were coded to determine whether the labeled response options could be augmented with additional categories. Frequency distributions were used to summarize the most frequently implemented SSP recommend practices and EBPs in public schools (i.e., RQ1).

To determine if the SSP total Number of Recommended Practices, Number of EBPs, and total SSP Activity differed by school level (i.e., elementary, middle, and high school), univariate analysis of variances (ANOVAs) were conducted on the three dependent variables with school level as the grouping variable (i.e., RQ2). Bonferroni adjustments were used for all post-hoc pairwise comparisons. To determine if SSP Number of Recommended Practices, Number of EBPs, and total SSP Activity differed by region classification, univariate ANOVAs were conducted on the three dependent variables with region classification (i.e., urban/suburban and rural/frontier) as the grouping variable (i.e., RQ2).

For specific EBPs and recommended practices, contingency table analysis was used to evaluate whether each recommended practice and EBP significantly differed by school factors including region classification (i.e., urban/suburban or rural/frontier) and school level (i.e., elementary, middle, or high school; RQ2). For significant differences at the school level, post-hoc pairwise comparisons were conducted to determine at which level (i.e., elementary, middle, and high) significant differences occurred. Bonferroni adjustments were used for all post-hoc pairwise comparisons. Based on rural schools often being under-resourced and having less access to mental health supports, we predicted that rural schools would implement less SSP

recommended practices and EBPs (i.e., H1). Additionally, because suicide risk increases with age, we predicted that high schools would have the most SSP activity, followed by middle schools, and then elementary schools (i.e., H2). Cramer's *V*, and extension of Cohen's phi for 2 × 2 cross-tabulations (Cohen, 1988) was used as a measure of effect size. Standard effect size conventions depend on the minimum degrees of freedom. For the 2 × 3 contingency tables values of .07, .21, and .35 represent small, medium, and large effects, respectively.

Sequential multiple linear regression was used to predict whether SSP activity was associated with the perceived staff comfort level rating (RQ3). The sequential multiple linear regression was comprised of three blocks. The first block included the hypothesized moderators of school-level and region classification on SSP activity. Block 2 tested the effect of the comfort level predictor on SSP activity, while controlling for the hypothesized moderators. Block 3 tested the moderating effects of the two interaction terms (i.e., Interaction Term 1 = school level by comfort level; Interaction Term 2 = region classification by comfort level) on SSP activity. For the regression model, we predicted that higher levels of school staff comfort with the topic of suicide prevention would correspond to higher levels of SSP activity (i.e., H3). Additionally, we predicted that the association between perceived comfort level and SSP activity would be moderated by school factors (i.e., H3); whereby rural schools would be less comfortable with the topic of suicide and therefore have less SSP activity and high schools would have higher levels of comfort and higher levels of SSP activity than both elementary and middle schools (i.e., H4).

Study 2

Research-Practice Partnership

In September of 2021, an RPP was formed between the UOSPL, OHA, and Lines-for-Life with the purpose of conducting a pilot study assessing comprehensive SSP at the building

level. The team adopted a hybrid organizational structure, blending components from the RPP alliance approach used in the first study with a second form of RPP called *a networked-improvement community* (NIC). NICs rely on network science strategies (Senge, 1994) for the facilitation of collaborative information sharing within and between networked school sites and provides the organizational structure for communicating common aims, goals, problem-solving strategies, and resources into actionable improvements across participating schools (Cannata et al., 2017). The addition of the NIC structure to the NA process was for the purpose of testing whether networked collaboration between schools following the initial individual NA process presented a viable mechanism for addressing identified gaps through information sharing; however, the implementation of the NIC component of Study 2 falls outside of the scope and timeline of this dissertation.

Participants and Setting

Recruitment

Purposive or judgmental sampling (Taherdoost, 2016) was used to guide the recruitment process. The aim of recruitment was to select a sample of schools that are representative of the state based on four selection criteria. The first criteria was that schools came from geographically diverse regions and were not nested within the same district or education service district (ESD). Secondly, the sample of schools needed to represent a variety of school enrollment sizes. Third, schools needed to represent having different levels of past SSP support at the district level (i.e., None, Minimal, Medium, High). Finally, to streamline communication, a member of the RPP team needed to already have a contact at the identified school or corresponding district.

Based on the selection criteria, an initial recruitment list of 40 targeted schools was created by the RPP team. The list was then narrowed to 15 regionally diverse schools that had

different levels of SSP experience. Schools were contacted with a recruitment email stating the scope and aim of the project, and a final sample of 10 schools agreed to participate in the project. A complete list of participating school selection criteria be seen below in Table 2.

School Teams

As part of the project requirements, schools were asked to assemble a leadership team from their school that included the personnel most involved with coordinating suicide prevention activities. Because schools represented a diverse sample of regions, school resources, and school staffing, the teams that participated were comprised of many unique profiles of participants. Two of the participating schools were classified as alternative high schools and in both cases, the school team was only one member. In the other eight schools, teams ranged from 2 to 3 members, and in four cases included a participant from either the district or ESD level. A complete list of participating school team personnel descriptions can be viewed in Table 2.

Measures

Interview Protocol

The RPP team developed an interview questionnaire based on a semi-structured qualitative interview approach (Alsaawi, 2014). The semi-structured approach allows for interviewers to follow a pre-planned structure that provides the interviewees opportunities to explained and elaborate on particular areas of focus. The flooding of interviews with educational science agendas, jargon, and extraneous categories has been identified as an impediment to conducting effective qualitative interviews (Potter & Hepburn, 2005). To address this challenge, the research team designed an interview questionnaire protocol that was limited to four straightforward domains (Appendix B).

Table 2

School Selection Criteria and Team Composition

	Enrollment	Region Classification	Past TA Support	Team Size	Team Member Positions
School 1	250-999	Rural/Frontier	None/Minimal	2	Counselor, Counselor
School 2	>1,000	Urban/Suburban	Medium/High	2	Counselor, District Specialist
School 3	250-999	Rural/Frontier	Medium/High	3	Principal, Counselor, ESD Staff
School 4	100-249	Rural/Frontier	Medium/High	3	Principal, Counselor, District Specialist
School 5	100-249	Rural/Frontier	None/Minimal	3	Principal, Assistant Principal, Counselor
School 6	100-249	Rural/Frontier	Medium/High	1	Principal
School 7	>1,000	Urban/Suburban	None/Minimal	2	Assistant Principal, District Specialist
School 8	<99	Rural/Frontier	None/Minimal	1	Counselor
School 9	>1,000	Rural/Frontier	None/Minimal	2	Counselor, Counselor
School 10	<99	Rural/Frontier	None/Minimal	1	Counselor

Note. TA refers to technical assistance

The first area of focus targeted the general definition of a schools context. Question 1 stated: “Describe your school. What is it that makes your school and students unique?” The follow-up questions within this domain include describing the relationship and communication practices with families (i.e., Question 2), along with describing the surrounding community and how mental health and suicide prevention are generally perceived by community members (i.e., Question 3). The second domain was describing what is already going well at the school. Question 4 states “In general, and outside of suicide prevention, what efforts, activities, or initiatives are going well at your school?” This question is then followed by Question 5: “For suicide prevention and mental health promotion, what is currently going well?”

The third domain focused on identifying the most pressing needs and barriers the school team faced. Question 6 stated: “In general, and outside of suicide prevention, what are the most challenging barriers and greatest needs of your school?” Then, Question 7 expanded on Question 6 by asking “For suicide prevention and mental health promotion, what are the most challenging barriers and greatest needs of your school?” Finally, the fourth domain concentrated on what specific goals the school identified as top priority. Question 8 asked “What are your current top priority SSP goals?”

School Suicide Prevention Implementation and Systems Inventory

The development and piloting of the School Suicide Prevention Implementation and Systems Inventory (SSPISI) was included as a quantitative measure of SSP Tier I implementation (Appendix C). The measurement tool applied an MTSS organizational structure to key features of SSP implementation for Tier I activities to determine the degree to which schools are already implementing core features of MTSS Tier I for SSP. The SSPISI was primarily adapted from the School-wide Positive Behavior Interventions and Supports (SWPBIS)

implementation fidelity tool titled the *Tiered Fidelity Inventory* (TFI; Algozzine et al., 2019). The purpose of the TFI is to measure the extent to which school staff are applying the key features of SWPBIS at their school. Although there are several fidelity measures for SWPBIS, the TFI is the only validated measure that combines the ability to (a) initially assess the degree to which SWPIS is implemented at a school across all three tiers, (b) use the results to action plan with the school, and (c) monitor the schools implementation progress overtime (McIntosh et al., 2017). Thus, the SSPISI applied the overall organizational structure, measurement scale, and subscales of the TFI to the area of SSP implementation within an MTSS framework. Additionally, because this project is the first to pilot the use of the SSPISI, the research team chose to limit the measurement to the universal tier (i.e., Tier I), thus, providing a scaffolded assessment process with schools that was not over burdensome.

The SSPISI contains 20 items embedded across five subscales. The SSPISI subscales were expanded from the three TFI subscales of Teams, Implementation, and Evaluation to five subscales including (a) Teams; (b) Training, Programming, and Practices; (c) Screening, Protocols, and Procedures; (d) Community, Family, and Student Partnerships; and (e) Evaluation and Data-based Decision Making. The first subscale measures the domain of *Teams* across three items (e.g., Item 1 *Team Composition* – School care team is composed of relevant personnel [administrator, counselor, school psychology, school nurse, social worker, special education teacher] and has mental health and suicide prevention expertise). The second subscale measures the domains of *Training, Programming and Practices* across eight items (e.g., Item 4 *Programming Selection* – A systematic process is used by care team to select appropriate universal programs based on six selection criteria: need, fit, resources, evidence, readiness, and

capacity. Input and buy-in from students, staff, and parents will be incorporated into selection process.)

The third subscale measures the domains of *Screening, Protocols and Procedures* across three items (e.g., Item 12 *Suicide Prevention Plan* - School has a suicide prevention plan in place aligned with the district policy. Plan maps out key components that will be implemented [protocols, trainings, screening] and organizes these components within a tiered framework [universal, selective, indicated]). The fourth subscale measures the domains of *Community, Family, and Student Partnerships* across three items (e.g., Item 15 *Community Networking* – The school care team is networked in with local community stakeholders [local suicide prevention coalition, suicide prevention coordinator] to assist with comprehensive suicide prevention planning, training and programming selection, awareness campaigns). The fifth subscale measures the domains of *Evaluation and Data-Based Decision Making* across three items (e.g., Item 18 *Activity Progress Monitoring and Improvement* - Care team will track and monitor the progress of all universal activities and initiatives. Specifically the trainings, student programming, and screening implementation. Cycles of improvement are continuously applied to the suicide prevention plan based on progress data).

Several adaptations were applied to the SSPISI measurement scale to better fit the tool's exploratory stage of development. The TFI uses a 3-point scoring criteria (i.e., 0 = Not implemented, 1 = Partially implemented, and 2 = Fully implemented). For each item, the implementation scoring criteria for the TFI is accompanied with a descriptive rubric (e.g., 0 = Not Implemented – Tier 1 team does not exist or does not include coordinator, school administrator, or individuals with applied behavioral expertise). Comparatively, the SSPISI does not include individual item descriptive rubrics but instead relies on universal descriptions of the

3-point scoring criteria and includes an additional option of "Not Applicable." The *Not Applicable* option is defined as "Item is not applicable to school or does not fit school context or does not make sense." The *Not Implemented* option is defined as "Item currently not being implemented or is in the planning phase." The *Partially Implemented* option is defined as "Item is being implemented to some degree but does not fully meet description or is in early phase." The *Fully Implemented* option is defined as "School activities match item description and is being implemented in a sustainable way."

The decision behind using universal descriptors for the SSPISI compared to individual rubric item descriptors contained within the TFI was based on lack of data regarding what operationalized definitions of each implementation level should look like. To address this gap, an embedded "Notes" section was included for each item score that the research team used to describe the qualitative explanation by the interviewees on why each scoring selection was made. These qualitative descriptions will be used in designing the next version of the SSPISI to provide individual descriptive rubrics for each item.

Data Collection

Interviews

Interviews were conducted on Zoom using a two-stage model that included an initial 1-hour rapport building and project overview meeting, followed by a separate 2-hour working session where the interview and survey were conducted. The RPP representatives attending each meeting included the UOSPL project lead, a UOSPL note-taker, the OHA suicide prevention coordinator, the Lines-for-Life School Suicide Prevention and Wellness (SSPW) coordinator, and the SSPW region lead**.** The school representatives' roles (e.g., administrator, counselor, district personnel) varied across settings and typically included one to three members. At the

beginning of each meeting, the UOSPL lead explained that the team would like to record the meeting in order to capture a meeting transcript that would be reviewed as qualitative data. After consent was obtained from each participant, the recording was initiated and the meeting began.

The initial 1-hour meeting centered on establishing the RPP tenants of mutualism and trust building (Coburn & Penuel, 2016). The meeting structure included four main components (a) introductions and icebreaker; (b) project methodology, scope, and history presentation; (c) discussion; and (d) project timeline and funding presentation. Any information shared about the school teams about the current suicide prevention work or unique setting contextual details were gathered by the UOSPL note taker and added to the interview recording template that was used for the second meeting.

The 2-hour working session meeting began by the UOSPL project lead reviewing the school teams' responses from the previous meeting and confirming that the descriptive notes were accurate around any current work being conducted along with descriptions around the schools' context. The UOSPL lead then shared a note taking template that had been organized into four sections: (a) context, (b) successes, (c) barriers, and (d) goals. The context section had three sub-levels that included school, families, and community, while the successes, barriers, and goals sections had sub-levels of general and suicide prevention specific. The UOSPL lead then began the interview process by going through the question protocol while the note taker summarized the interviewee responses on the note taking template via screen share.

School Suicide Prevention Implementation and Systems Inventory

The SSPISI data collection occurred after the conclusion of the qualitative interviews during the working session. A brief presentation was given on the SSPISI's stage of development and overall purpose. Next, the UOSPL lead shared the survey via screen share and reviewed the

general structure of the measure, the measurement scale, and the protocol for completing the survey. The UOSPL lead then facilitated the completion of the survey by reading each item descriptor and providing school teams the time to discuss and build consensus around each answer. As teams discussed what level of implementation their school was at for each item, the UOSPL note taker recorded a summary of the discussion in the "Notes" section for that item and then highlighted the level of implementation that the team decided for that item. Following the meeting, the UOSPL note taker would enter the survey quantitative rating response and qualitative note descriptions into Qualtrics for subsequent analyses.

Data Analysis

Interviews

The research team utilized a phenomenological approach to guide the qualitative methods portion of Study 2 (Creswell & Poth, 2016). Phenomenological research focuses on describing what participants have in common as they experience a shared experience or phenomenon. Additionally, thematic inductive analysis (TIA; Braun & Clarke, 2006) was used to identify the contextual challenges and barriers (RQ1), the key current successes (RQ2), and the top priority goals for SSP at the school building level (RQ3).

For the coding protocol, each interview transcript was exported from Zoom into separate Word document files. Two members of the research team acted as the primary coders. The TIA procedure (Xu & Zammit, 2020) was comprised of six steps:

1. Familiarize with data
2. Generate initial codes
3. Search for themes
4. Review themes
5. Define and name themes
6. Produce report.

Once the research team imported the transcripts into Word document files and familiarized themselves the data, initial category codes were generated for the three domains (i.e., barriers, successes, and goals). After meeting and reaching consensus on the domain categories, the two coders searched for themes within each category and then met to review the themes and reach consensus. Themes were then named and defined and supporting quotes were selected to be included in the final report.

School Suicide Prevention Implementation and Systems Inventory

Analysis of the SSPISI results was aimed at providing each school with an individualized reporting of the degree to which Tier I features for SSP were being implemented (RQ4). Descriptive statistics were computed for the five subscale scores (i.e., Teams; Training, Programming, Plans; Screening, Procedures, and Protocols; Partnerships; and Evaluation and Data-Based Decision Making) along with the overall SSPISI composite score for each school. To determine performance on the SSPISI across participating schools, a visual profile analysis was conducted using proportional scores for each SSPISI sub-scale domain.

CHAPTER IV

RESULTS

Study 1

The results of Study 1 present the quantitative findings from the *breadth* portion of this paper. The findings represent survey responses from 399 schools (elementary = 48%, middle = 17%, high = 35%) across Oregon state. The three central areas that the results explore are (a) frequently implemented programs and practices (i.e., RQ1); (b) differences in implementation based on school factors (i.e., RQ2); and (c) associations between SSP activity, school staff comfort level, and school factors (i.e., RQ3).

Research Question 1: What are the Most Frequently Implemented EBPs and Recommended Practices for School Suicide Prevention?

EBP Implementation Inventory

Responding schools implemented an average of 1.04 (*SD* = 1.14) EBPs for SSP. Approximately 43% (*n* = 170) of responding schools did not implement an EBP for SSP (see Table 3). The top three most frequently implemented EBPs were ASIST (32%), MHFA (20%), and QPR (15%). Nine percent of responding schools reported implementing an EBP not listed in the inventory (i.e., Other), and these programs included Signs of Suicide; SafeOregon.com; Acknowledge-Care-Tell (ACT); We Care; Say Something; and Look-Listen-Link. The remaining five EBPs listed in the program inventory (i.e., SafeTALK, RESPONSE, Connect Postvention, Sources of Strength, and Kognito) were implemented in less than 7% of schools.

Table 3

EBP Implementation Inventory

Program	*n*	*%*
Not Implementing Evidence Based Program (EBP)	170	42.7
Applied Suicide Intervention Skills Training (ASIST)	129	32.4
Mental Health First Aid (MHFA)	79	19.6
Question, Persuade, and Refer (QPR)	61	15.3
Other	35	8.8
SafeTalk	26	6.5
RESPONSE	22	5.5
Connect Postvention	19	4.8
Sources of Strength	11	2.8
Kognito	6	1.5

Note. Total responding schools was $n = 399$ with an average of 1.04 ($SD = 1.14$) programs per school.

Recommended Practices Implementation Inventory

Overall, recommended practices were implemented at a higher frequency than EBPs, with an average of 3.18 ($SD = 1.62$) practices being implemented across schools. A majority of schools reported having the following three practices in place (see Table 4): (a) identify and refer protocol (74%), (b) postvention plan (61%), and (c) intra-agency MOU (58%). Forty-one percent of schools included suicide prevention in the school curriculum and 32% of schools had a documented SSP plan. The least implemented recommended practice was conducting social media outreach (8%) and 23% of schools did not implement a recommended practice.

Table 4

Recommended Practices Implementation Inventory

Recommended Practices	*n*	*%*
Identify and Refer Documented Protocol	295	74.1
Postvention Plan	243	61.1
Intra-Agency Memorandum of Understanding (MOU)	230	57.8
School Curriculum	164	41.2
Documented SSP Plan	126	31.7
Guest Speakers	101	25.4
Not Implementing Supplementary Practices	94	23.4
Other	77	19.3
Social Media Outreach	32	8.0

Note. Total responding schools was $n = 399$ with an average of 3.18 ($SD = 1.62$) practices per school.

Research Question 2: Do School Suicide Prevention Recommended Practices and EBPs Differ by School Factors (i.e., Region Classification and School Level)?

Number of EBPs, Number of Recommended Practices, and Total School Activity

Means and standard deviations from the univariate ANOVAs using number of EBPs (i.e., ANOVA 1), recommended practices (i.e., ANOVA 2), and the SSP Activity (i.e., ANOVA 3) as the dependent variables, and school level as the grouping level are reported in Table 5. Post-hoc simple effects tests were adjusted by the number of tests performed (i.e., $\alpha = .05/3 = .017$) for each dependent variable (i.e., number of EBPs, number of recommended practice, and SSP Activity) by school level (i.e., elementary, middle, and high school). For the first ANOVA, a statistically significant mean difference for number of EBPs implemented was revealed at the school level, $F(2, 395) = 11.423$, $p < .001$, $\eta^2 = .055$. Specifically, elementary schools ($M = 0.77$) implemented significantly less EBPs than both middle schools ($M = 1.21$, $p < .05$) and high schools ($M = 1.34$, $p < .001$); and no significant differences were detected between middle and high schools.

For the second ANOVA, a statistically significant mean difference for number of recommended practices implemented was revealed at the school level, $F(2, 395) = 12.918$, $p < .001$, $\eta^2 = .061$. Specifically, elementary schools ($M = 2.77$) implemented significantly less recommended practices than both middle schools ($M = 3.44$, $p < .05$) and high schools ($M = 3.63$, $p < .001$); and no significant differences were detected between middle and high schools. For the third ANOVA, a statistically significant mean difference for total SSP Activity was revealed at the school level, $F(2, 395) = 18.588$, $p < .001$, $\eta^2 = .086$. Specifically, elementary schools ($M = 3.54$) implemented significantly less total SSP activity than both middle schools ($M = 4.65$, $p < .05$) and high schools ($M = 4.97$, $p < .001$); and no significant differences were detected between middle and high schools.

Table 5

Means and Standard Deviations on Number of EBPs, Recommended Practices, and Total SSP Activity Implemented

Variable	School Level					
	Elementary		Middle		High	
	M	*SD*	*M*	*SD*	*M*	*SD*
EBPs	0.77	0.94	1.21	1.13	1.34	1.33
Recommended Practice	2.77	1.56	3.44	1.55	3.63	1.62
SSP Activity	3.54	2.02	4.65	1.93	4.97	2.51

Note. Rural = rural/frontier. *M* = mean. *SD* = standard deviation.

Table 6 presents means and standard deviations from the univariate ANOVAs using number of EBPs (i.e., ANOVA 1), recommended practices (i.e., ANOVA 2), and the SSP Activity (i.e., ANOVA 3) as the dependent variables, and region classification as the grouping variable. For the first ANOVA, no statistically significant mean difference for number of EBPs implemented was detected at the region classification level, $F(1, 397) = 0.095$, $p = .759$, $\eta^2 < .001$. For the second ANOVA, no statistically significant mean difference for number of

recommended practices implemented was detected at the region classification level, $F(1, 397) = 1.048$, $p = .307$, $\eta^2 = .003$. For the third ANOVA, no statistically significant mean difference for total SSP Activity was detected at the region classification level, $F(1, 397) = 0.776$, $p = .379$, $\eta^2 = .002$.

Table 6

Means and Standard Deviations of EBPs, Recommended Practices, and SSP Activity by Region Classification

Variable	Region Classification			
	Urban		Rural	
	M	*SD*	*M*	*SD*
EBPs	1.06	1.13	1.03	1.17
Recommended Practice	3.26	1.58	3.10	1.67
SSP Activity	4.32	2.23	4.12	2.35

Note. Urban = urban/suburban. Rural = rural/frontier. M = mean. SD = standard deviation.

EBP Inventory

Table 7 presents the results from the contingency table analysis for each specific EBP by school factors (i.e., school level and region classification). The school level results for each EBP are discussed first. Then, the region classification results are presented for each EBP.

School Level. Of the eight listed EBPs for SSP in the program inventory, statistically significant differences (at $p < .05$) were found in the implementation of three programs (i.e., MHFA, RESPONSE, and Connect Postvention) at the school level (i.e., elementary, middle, and high). For MHFA, high schools (29%) were significantly more likely to implement the program than middle schools (12%, $p = .005$, $\phi = .194$) and elementary schools (15%, $p = .002$, $\phi = .170$); and elementary and middle schools did not significantly differ. Similarly, for RESPONSE, high schools (12%) were significantly more likely to implement the program than middle schools (3%, $p = .031$, $\phi = .150$) and elementary schools (2%, $p < .001$, $\phi = .219$); and elementary and

middle schools did not significantly differ. Comparatively, high schools (8%, $p = .005$, $\phi = .154$) and middle schools (7%, $p = .018$, $\phi = .147$) were significantly more likely to implement the Connect program than elementary schools (2%); and middle and high schools did not significantly differ.

For schools that did not implement an EBP, elementary schools (52%) were significantly more likely to not implement a program than both middle (34%, $p = .01$, $\phi = .161$) and high schools (35%, $p = .001$, $\phi = .177$); and middle and high schools did not significantly differ. Finally, middle schools (16%) reported implementing an EBP not specified in the inventory choices (i.e., Other) at a significant higher frequency than elementary schools (6%, $p = .008$, $\phi = .164$), but not significantly higher than high schools (9%); and elementary and high schools did not significantly differ.

Region Classification. Of the eight specified EBPs in the program inventory, statistically significant differences ($p < .05$) were found in the implementation of four programs (i.e., ASIST, MHFA, QPR, and Kognito) across the two region classes (i.e., urban/suburban and rural/frontier). The programs ASIST and Kognito were implemented more frequently in urban/suburban schools (ASIST = 42%, $p < .001$, $\phi = .216$; Kognito = 3%, $p = .019$, $\phi = .117$) relative to rural/frontier schools (ASIST = 22%, Kognito = 0%). Whereas, the converse was true for MHFA and QPR, with each program being implemented more frequently in rural/frontier regions (MHFA = 25%, QPR = 22%) than urban/suburban regions (MHFA = 15%, $p = .008$, $\phi = .133$; QPR = 10%, $p = .001$, $\phi = .169$).

Table 7

Inventory of EBPs by School Factors

	Yes %	*df*	X^2	*p*-value	Effect Size
Not Implementing EBP					
Overall	42.7				
School Level		2	13.109	**<.001**	**.181**
Elementary	52.1$_a$				
Middle	33.8$_b$				
High	34.7$_b$				
Region Classification		1	0.252	.616	.025
Urban/suburban	41.4				
Rural/frontier	43.9				
ASIST					
Overall	32.4				
School Level		2	3.519	.172	.094
Elementary	27.9				
Middle	38.2				
High	35.7				
Region Classification		1	18.574	**<.001**	**.216**
Urban/suburban	41.9				
Rural/frontier	21.7				
MHFA					
Overall	19.6				
School Level		2	13.252	**<.001**	**.182**
Elementary	15.3$_a$				
Middle	11.8$_a$				
High	29.3$_b$				
Region Classification		1	7.085	**.008**	**.133**
Urban/suburban	14.8				
Rural/frontier	25.4				
QPR					
Overall	15.3				
School Level		2	2.963	.227	.086
Elementary	12.1				
Middle	19.1				
High	17.9				
Region Classification		1	11.375	**.001**	**.169**
Urban/suburban	9.5				
Rural/frontier	21.7				

Table 7, continued

	Yes %	*df*	X^2	*p*-value	Effect Size
Other EBP					
Overall	8.8				
School Level		2	6.801	**.033**	**.131**
Elementary	5.8_a				
Middle	16.2_b				
High	9.3_a				
Region Classification		1	2.634	.105	.081
Urban/suburban	11.0				
Rural/frontier	6.3				
SafeTALK					
Overall	6.5				
School Level		2	3.491	.175	.094
Elementary	4.2				
Middle	7.4				
High	9.3				
Region Classification		1	3.621	.057	.095
Urban/suburban	4.3				
Rural/frontier	9.0				
RESPONSE					
Overall	5.5				
School Level		2	18.276	**.001**	**.214**
Elementary	1.6_a				
Middle	2.9_a				
High	12.1_b				
Region Classification		1	0.481	.488	.035
Urban/suburban	4.8				
Rural/frontier	6.3				
Connect Postvention					
Overall	4.8				
School Level		2	8.189	**.017**	**.143**
Elementary	1.6_a				
Middle	7.4_b				
High	7.9_b				
Region Classification		1	0.222	.638	.024
Urban/suburban	5.2				
Rural/frontier	4.2				

Table 7, continued

	Yes %	*df*	X^2	*p*-value	Effect Size
Sources of Strength					
Overall	2.8				
School Level		2	2.019	.364	.071
Elementary	1.6				
Middle	4.4				
High	3.6				
Region Classification		1	0.017	.897	.006
Urban/suburban	2.9				
Rural/frontier	2.6				
Kognito					
Overall	1.5				
School Level		2	2.950	.229	.086
Elementary	0.5				
Middle	1.5				
High	2.9				
Region Classification		1	5.482	**.019**	**.117**
Urban/suburban	2.9				
Rural/frontier	0.0				

Note. Bolded *p*-values and effect sizes are statistically significant at $p < .05$. Effect size conventions for Phi statistic for $df = 1$ are .10 small, .30 medium, .50 large. Effect size conventions for Cramer's *V* statistic for $df = 2$ are .07 small, .21 medium, .35 large. For school level comparisons, school levels that share the same subscript did not significantly differ at $p < .05$ based on post-hoc comparisons.

Recommended Practice Inventory

Table 8 presents the results from the contingency table analysis for each specific recommended practice by school factors (i.e., school level and region classification). The school level results for each recommended practice are discussed first. Then, the region classification results are presented for each recommended practice.

School Level. Of the seven recommended practices for SSP listed in the inventory, statistically significant differences ($p < .05$) were found for two practices (i.e., school curriculum and guest speakers) across the three school levels. Elementary schools (27%) were significantly

less likely to include SSP curriculum than middle (47%, $p = .003$, $\phi = .185$*)* and high schools (57%, $p < .001$, $\phi = .300$); and middle and high schools did not significantly differ. Similarly, elementary schools (13%) were significantly less like to have guest speakers than middle (31%, $p = .001$, $\phi = .204$*)* and high schools (39%, $p < .001$, $\phi = .301$); and middle and high schools did not significantly differ. High schools (29%) were significantly more likely to conduct a recommended practice not included in the inventory choices (i.e., Other) than elementary (14%, $p = .001$, $\phi = .176$) and middle schools (15%, p = .028, $\phi = .152$); and elementary and middle schools did not significantly differ. Additionally, high schools (11%) were significantly less likely to not implement a recommended practice than elementary (33%, p < .001, $\phi = .261$) and middle schools (22%, p = .029, $\phi = .151$); and elementary and middle schools did not significantly differ.

Region Classification. Of the seven specified recommended practices included in the inventory, statistically significant differences ($p < .05$) were found for three practices (i.e., identify-refer protocol, intra-agency MOU, and documented SSP plan) across the two region classes. Schools located in urban/suburban regions were significantly more likely to have an identify-refer protocol (39%, $p = .001$, $\phi = .180$) and/or a documented SSP plan (81%, $p = .002$, $\phi = .181$) than rural/frontier schools (identify-refer = 67%, documented SSP plan = 22%). Comparatively, rural/frontier schools (64%) were significantly more likely to have an intra-agency MOU with community partners than urban/suburban schools (53%, $p = .032$, $\phi = .108$).

Table 8

Inventory of Recommended Practices by School Factor

	Yes %	*df*	X^2	*p*-value	Effect Size
Identify-Refer Protocol					
Overall	74.1				
School Level		2	5.475	.065	.117
Elementary	71.1				
Middle	85.3				
High	74.1				
Region Classification		1	9.844	**.002**	**.157**
Urban/suburban	80.5				
Rural/frontier	66.7				
Postvention Plan					
Overall	61.1				
School Level		2	2.209	.331	.074
Elementary	57.4				
Middle	66.2				
High	63.6				
Region Classification		1	1.574	.210	.063
Urban/suburban	63.8				
Rural/frontier	57.5				
Intra-Agency Memorandum of Understanding					
Overall	57.8				
School Level		2	4.637	.098	.108
Elementary	54.2				
Middle	52.9				
High	65.0				
Region Classification		1	4.651	**.032**	**.108**
Urban/suburban	52.8				
Rural/frontier	63.5				
School Curriculum					
Overall	41.2				
School Level		2	30.655	**.001**	**.278**
Elementary	27.4_a				
Middle	47.1_b				
High	57.1_b				
Region Classification		1	1.656	.198	.064
Urban/suburban	38.1				
Rural/frontier	44.4				

Table 8, continued

	Yes %	*df*	X^2	*p*-value	Effect Size
Documented SSP Plan					
Overall	31.7				
School Level		2	4.520	.104	.107
Elementary	34.7				
Middle	36.8				
High	25.0				
Region Classification		1	12.951	**.001**	**.180**
Urban/suburban	39.5				
Rural/frontier	22.8				
Guest Speakers					
Overall	25.4				
School Level		2	30.370	**.001**	**.276**
Elementary	13.2_a				
Middle	30.9_b				
High	39.3_b				
Region Classification		1	2.016	.156	.071
Urban/suburban	22.4				
Rural/frontier	28.6				
Not Implementing					
Overall	23.4				
School Level		2	22.753	**.001**	**.239**
Elementary	33.2_a				
Middle	22.1_a				
High	10.7_b				
Region Classification		1	0.342	.559	.029
Urban/suburban	22.4				
Rural/frontier	24.9				
Other					
Overall	19.3				
School Level		2	11.786	**.003**	**.172**
Elementary	14.2_a				
Middle	14.7_a				
High	28.6_b				
Region Classification		1	0.140	.708	.019
Urban/suburban	20.0				
Rural/frontier	18.5				

Table 8, continued

	Yes %	*df*	X^2	*p*-value	Effect Size
Social Media					
Overall	8.0				
School Level		2	3.803	.149	.098
Elementary	5.3				
Middle	10.3				
High	10.7				
Region Classification		1	0.183	.669	.021
Urban/suburban	8.6				
Rural/frontier	7.4				

Note. Bolded *p*-values and effect sizes are statistically significant at $p < .05$. Effect size conventions for Phi statistic for $df = 1$ are .10 small, .30 medium, .50 large. Effect size conventions for Cramer's V statistic for $df = 2$ are .07 small, .21 medium, .35 large. School levels that share the same subscript do not significantly differ at $p < .05$ based on post hoc comparisons.

Research Question 3: Is School Staff Perception of Comfort Around the Topic of Suicide Prevention Associated with the Degree of School Suicide Prevention Activity at School, and is this Association Moderated by School Factors (i.e., School Level and Region Classification)?

Bivariate correlations were conducted to examine the univariate associations of the sequential linear regression variables (see Table 9). Prior to analysis, the school level predictor was recoded to represent the statistically significant pairwise comparison found in the univariate ANOVA of SSP Activity implementation for elementary schools compared to middle and high schools. Correlations describing the associations of perceived staff comfort with the topic of suicide prevention (i.e., Comfort Level) and SSP Activity are provided in row 4 and column 1. This correlation revealed a medium sized significant association between comfort level and SSP Activity, $r = .38$, $p < .01$. Correlations describing the associations of school level with region classification, comfort level, and SSP Activity are presented in column 1 and rows 2, 3, and 4.

School level had a medium sized significant association with SSP Activity (r = .29, p < .01), and a small sized significant association with region classification (r = -.15, p < .01) and comfort level (r = .11, p < .05). No significant association was found between region classification and comfort level, r = .04, p = .478.

Table 9

Bivariate Correlation Matrix

Variable	1	2	3	4	5
School Factors					
1. School Level	-				
2. Region Classification	-.15**	-			
Comfort					
3. Comfort Level	.11*	.04	-		
School Activity					
4. SSP Activity	.29**	.04	.38**	-	

Note. *p < .05. **p < .01. N = 399

Table 10 shows results of the sequential multiple linear regression predicting SSP Activity in schools. After controlling for region classification and school level (Block 1), perceived staff comfort level accounted for approximately 12% of the variance in SSP Activity, $F_{change}(1, 375) = 57.730$, $p < .001$, $\Delta R^2 = .122$ (Block 2). The addition of Block 3 did not add significantly to the model, $F_{change}(2, 373) = 1.077$, $p = .342$, $\Delta R^2 = .005$; and the test of the moderating effects of the Interaction 1 Term (i.e., comfort level by school level) and Interaction 2 Term (i.e., comfort level by region classification) on SSP Activity were non-significant (Interaction 1, $p = .785$; Interaction 2, $p = .165$).

Table 10

Results of the Sequential Linear Regression for Predicting SSP Activity

Predictor	*b*	*SE*	95% CI	*Beta*	*t*	*p*
Block 1						
Intercept	3.075	.406	[2.276, 3.874]			
School Level	1.357	.230	[.905, 1.809]	.295	5.902	<.001
Region Classification	.285	.229	[-.166, 0.736]	.062	1.241	.215
Block 2						
Intercept	.111	.544	[-.958, 1.180]			
School Level	1.173	.216	[.749, 1.597]	.255	5.439	<.001
Region Classification	.206	.214	[-.215, 0.627]	.045	.961	.337
Comfort Level	1.222	.161	[.906, 1.539]	.352	7.598	<.001
Block 3						
Intercept	-1.520	1.506	[-4.481, 1.440]			
School Level	.952	.874	[-.767, 2.670]	.207	1.089	.277
Region Classification	1.374	.869	[-.335, 3.084]	.300	1.581	.115
Comfort Level	1.848	.563	[.740, 2.955]	.532	3.280	.001
Interaction 1	.089	.326	[-.553, 0.730]	.055	.272	.786
Interaction 2	-.449	.323	[-1.084, 0.186]	-.331	-1.390	.165

Note. School Level represents the comparison of elementary school to middle and high school. Interaction 1 represents the interaction of comfort level by school level. Interaction 2 represents the interaction of comfort level by region classification.

Study 2

The results of Study 2 are comprised of mixed-methodology findings drawn from qualitative interviews and quantitative surveys with 10 participating schools. The Study 2 results provide a *depth* perspective of SSP to complement the *breadth* perspective from Study 1. The qualitative interview findings are presented first, followed by the quantitative results from the SSPISI survey.

Qualitative Interviews

The qualitative interview results were coded using transcripts from 10 semi-structured interviews with SSP leadership staff from each participating school. The focus of the interviews

centered on answering three research questions by exploring three central domain areas: challenges and barriers (i.e., RQ1), current successes (i.e., RQ2), and prioritized goals (i.e., RQ3). Each central focus area was coded into overarching categories, which were then organized into themes. See Table 11 for a full breakdown of domains, categories, and themes.

Table 11

Domains, Categories, and Themes for Qualitative Interview Data

Domains and Categories	Themes
Domain 1: Challenges and Barriers	
Information and Resources Accessibility	*Student programs and staff training, student screening, safe student reentry*
Complex and Systemic Challenges	*Student trust, staff burnout and capacity, family engagement, community stigma, post-pandemic challenges*
Domain 2: Current Successes	
Evidence-Based Programming	*Gatekeeper training, student programming*
School-Developed Supplementary Practices	*Community outreach, student data gathering, school-based health center partnership, student self-regulation strategies*
Domain 3: Prioritized Goals	
Goal types	*Student, staff, school culture, partnership, systems and infrastructure*

Challenges and Barriers

The challenges and barriers portion of school interviews comprised a majority of the raw data coded, with over 60% of interview transcript data pertaining to this topic area. The content reflected both setting specific barriers, along with common themes found across the majority of schools. The identified challenges and barriers domain was coded into two overarching categories, including Accessibility of Information and Resources, and Complex and Systemic

Challenges. The Access to Information and Resources category was typically associated with challenges that had specific solutions tied to the issue. These challenges were further broken into three themes, which included accessing information and resources around (a) Student Programs and Staff Trainings, (b) Student Screening, and (c) Safe Student Reentry Following an Attempt.

The Complex and Systemic Challenges category involved barriers where either the challenge was multifaceted and required several combined solutions to address the barrier or there were no known solutions that could be assigned to the issue. Five themes were identified within the complex category and included (a) Lack of Student Trust, (b) Staff Burnout and Capacity, (c) Family Engagement, (d) Community Stigma, and (e) Post-pandemic Related Challenges.

Information and Resources Accessibility. The Access to Information and Resources category was conceived as a "bucket" of challenges where the identified gap was associated with a straightforward solution. The three types of information and resources accessibility challenges included (a) Student Programs and Staff Training, (b) Student Screening, and (c) Safe Student Reentry. Interestingly, although the three identified types of information and resources barriers were gaps that had specific solutions connected to them (i.e., connecting the school with the associated information, training, or program), school staff often reported additional contextual issues (e.g., staff capacity, stigma) that stood as the underlying cause for the challenge.

***Student Programs and Staff Training*.** The lack of information available for school staff regarding what trainings, curriculum, and programs were available was identified as a leading barrier. A counselor noted:

> *I think I really want to know what else is out there, as far as prevention goes for kids and what can we do differently*. (School 1)

This sentiment was echoed by other school staff that requested the need for clarity around which programs were evidence-based and which were not. Additionally, a school administrator noted that resources were limited in their school's region, making it difficult to coordinate with local agencies around trainings:

> *Our resources are limited with agencies in town, and so we have to reach out to figure out how to do trainings and if they're trying to put that together by themselves, our capacity is just too limited*. (School 3)

Student Screening. Challenges related to student screening revolved around having the methodology in place to systematically screen students for suicidality and mental health concerns, and then to be able to act upon the screening results promptly. A counselor noted:

> I'm just looking for student screening data. To be honest, it just seems like I'm running rampant and teaching classes, meeting with students, doing all the things that I don't have a free minute just to pull reports or just to look at data. (School 8)

Although many school staff noted the need for student-level data, there was also recognition that the systems for processing and responding to the data were absent. Additionally, one school counselor noted that even when students were screened and identified for additional support, there were not adequate community resources to refer the students to:

> *And I think one of the things that is hard about the community is that we don't have a lot of resources to offer the kids after [screening], like if we do an assessment and we feel like they need something else, like basically we have the emergency room and that's pretty much it*. (School 1)

The predicament of identifying students with elevated risk, but not being able to respond with adequate treatment options highlighted the need by school staff to install systems of referral-services prior to or in conjunction with enacting screening protocols.

Safe Student Reentry. Multiple school teams noted the need for guidance around providing protocols for safe student reentry to school following a suicide attempt. One school counselor explained:

> *The mandated reentry plans can be really tricky, if you don't even know that a parent took a student to the emergency room, you don't know that a parent took the student for a risk assessment. So those things, we don't even know that they need a safety plan, because we had no idea that they accessed assistance elsewhere*. (School 9)

Safe student re-entry was identified as "tricky" due to the multiple stakeholders involved in the process (e.g., students, families, school staff, hospitals, mental health providers) and communication often was complicated by intra-agency information sharing regulations (e.g., Family Educational Rights and Privacy Act (FERPA)). The lack of communication often resulted in situations where school staff "heard through the grapevine" of an attempt after the student had already reentered the school without any added support or monitoring by school personnel.

Complex and Systemic Challenges. In contrast to the Access to Information and Resources category, the category of Complex and Systemic Challenges consisted of issues where either no specific solution could be pointed to or a system of solutions was required to address the challenge. These challenges tended to branch out from SSP-specific topics to include the systems and contexts associated with school-wide problems. Five themes were identified related to the complex category and included (a) Lack of Student Trust, (b) Staff Burnout and Capacity, (c) Family Engagement, (d) Community Stigma, and (e) Post-pandemic Related Challenges.

Lack of Student Trust. A common concern found across multiple schools was that students' lack of trust in adults, both at home and at school, led to an impediment for accessing the treatment and support needed while experiencing suicidality and mental health-related challenges. The lack of trust also led to situations where students would hide the truth about their own or a peer's mental health due to fear of repercussions if they spoke out. This type of pervasive trust issue that spanned across multiple levels of stakeholders was explained by a school administrator:

> *There's trust issues between students and teachers, and parents and teachers lack of faith between each other, which gets reinforced at home and [is] kind of cyclical.* (School 5)

This mistrust cycle, which involved students, staff, and families, led to circumstances where students did not feel comfortable having their parents know about the services they receive at school. A school counselor stated:

> *Some of them (i.e., students) are like my family would not want me to be engaged in mental health and I don't want them to know about it.* (School 1)

Notably, this type of situation put school staff in a predicament where on one hand they were tasked with maintaining a student's trust, while providing the services the student needed, and on the other hand they were attempting to keep transparent and truthful communication with a student's family.

Lack of student voice or the acknowledgment of student input in their own mental health needs was identified as one of the root-causes for lack of high quality student-teacher relationships. A school administrator noted the perspective of students by explaining:

> *It feels sometimes like kids as a youth, you feel like you're speaking to the abyss, and that's not great for trust building [and] relationship building*. (School 7)

Across multiple schools, participating staff reported that the ability to gain student trust was dependent upon developing strong student-teacher relationships. Additionally, the cycle of high staff turnover in many of the participating rural schools was seen as a barrier to developing these relationships, and thus a barrier to installing trust within the school culture, which was noted by a school counselor:

> *And frankly, when we're talking again about some students who are slow to trust, the high staff turnover has been a real barrier to them being comfortable sharing anything*. (School 10)

***Staff Burnout and Capacity*.** Several of the identified complex challenges and barriers themes were inextricably intertwined with other themes throughout the interviews. The theme of

Staff Burnout and Lack of Capacity was one of these, with tendrils reaching into the theme of Lack of Student Trust, while also making up a major area of concern when discussing the impact of Post-pandemic Challenges. Across the majority of schools, the general sense that teachers and staff were "exhausted" and overburdened became quite evident. An administrator stated:

> *I think teachers to be real honest, I think the overall sense is our staff is exhausted*. (School 2)

One administrator noted that one of the less noticeable, but more impactful effects of general staff fatigue was that the common day-to-day tasks carried out by teachers began to seem unmanageable and "daunting," which resulted in teachers seeking out new employment in hopes that the situation would be different somewhere else:

> *And then I think on a related note, the staff side of that is the exhaustion. That task in front of them is kind of daunting. So [it] kind of comes in waves and we lose teachers, after two or three years and we've come into new ones, and they fight the good fight for two or three years without a lot of wins, it's kind of exhausting*. (School 5)

The cause of staff exhaustion and lack of staff capacity seemed to stem from historical patterns of high staff turnover, especially in rural schools, that resulted in a cycle of teachers and staff coming into new schools for 2-3 years before leaving for "bigger and better things." The historical pattern of staff turnover in these schools was then exacerbated by the effects of COVID, with one administrator noting that in their 20-year career:

> *I haven't seen this much turnover in one year. But if you looked around the state and country, there was a lot of turnover for counselors and admin teams, because maybe the grass is greener*. (School 7)

Family Engagement. The challenge of communicating with and engaging families to collaborate in SSP work was a common theme across the majority of schools. The challenge of engaging with families was parsed out into two subtypes: General Family Engagement Challenges and SSP-specific Family Engagement Challenges. For the first subtype, General

Family Engagement Challenges, school staff noted that family engagement has "always been a challenge" and that staff found it was typically "the same students, from the same families" that they could not reach. A school counselor noted that the historical and generational barriers that many families faced often contributed to the school's inability to effectively communicate with them:

> *I think that also goes back to our families….. But I do think that we have a population that has barriers, whether it's housing, whether it's access as more stuff becomes electronic, and that's how we communicate things. How do we remove those barriers, and how do we still help them access everything that's available to them?* (School 4)

The second subtype, SSP-specific Family Engagement Challenges, was noted as an especially difficult form of family engagement due to the stigma embedded within the issue of SSP. A school counselor commented that the disparity of health information available at home versus at school may lead to a further divide in the ability for families to engage with schools:

> *We acknowledge that our families, and I'll say our parents or guardians, don't always get the health information that you're getting at school.* (School 2)

The lack of clear or straightforward information for families attempting to support a student struggling with suicidality or a mental health crisis was a leading concern for school counselors. A school counselor mentioned that parents often voiced frustration on feeling helpless about what exact steps should be taken when their child was experiencing suicidality or a mental health crisis, and this frustration was compounded when the counselor was unable to provide the exact answers the family was searching for:

> *You can kind of feel the fatigue of parents. When you're in it. It's hard to figure out baby steps to get out of it, and you know everyone's saying Help! Help! But it's hard to figure out what exactly [to do]. I mean, there are no quick answers to any of these issues. And so that can be disheartening to parents, who just want their child to have a normal experience, a high school experience, and who are really struggling right now*. (School 9)

***Community Stigma*.** To some degree, the challenge of community-level stigma around SSP and mental health was touched upon by all participating schools. When discussing how stigma around SSP manifested within their local community, many schools, especially in rural regions, referred to the political pushback against social-emotional learning (SEL) curriculum as a leading example. A school administrator and school counselor explained:

> *In some communities, anything that has that social-emotional tag on it is red meat for some groups*. (School 6)

> *They (i.e., community members) are largely afraid of SEL, I think the media has not done us any favors with that, there's a lot of misinformation about what it means*. (School 3)

Community pushback in the form of politically motivated disagreement was not relegated to just SEL, but was reported to encompass a wider movement against "government and science" in general. A counselor expanded on the challenge of community pushback by stating:

> *Some of this is when you look at the community or the country, just people in general think of government as being this scary place with scary people and that carries over into the school. There has been weird tension because of that between schools and between communities*. (School 5)

Community-wide lack of trust in schools and government was seen as a possible obstacle for students to receive treatment services due to the fear of what would be done with their personal information and how that could impact their future. A counselor noted:

> *[There] is a fear of government or a fear of being honest about what services you can provide for yourself or what help you may need*. (School 4)

Another school counselor stated that stigma often resulted in a palpable frustration amongst students seeking services and help, but were afraid of the impact that receiving these supports may have:

> *[There is] negative stigma about mental health [and] receiving mental health services, even receiving special-ed services, which you know if you're not receiving your educational and behavioral services, then you're going to be frustrated.* (School 3)

***Post-Pandemic-Related Challenges*.** The final theme of Complex and Systemic Challenges (i.e., post-pandemic related challenges) had a noticeable influence on all four of the other identified themes. The Post-pandemic-Related Challenges theme was viewed as a magnifier of the other identified barriers due to the impact of heightened isolation, anxiety, and general unease among students, staff, and families. However, a school counselor noted that the impact of COVID could especially be seen in students:

> *I still think kids are still struggling with the barrier of a kind of leftover pandemic isolation.* (School 7)

An administrator expanded upon the idea of COVID-related student angst being directly tied to increased behavioral issues:

> *I'm noticing that coming out of COVID, there's still a lot of our students who can't find their place yet, and we're seeing it in behavior issues.* (School 6)

Along with increased behavioral concerns, leftover "COVID-era" challenges were associated with prolonged academic setbacks. A counselor stated:

> *Trying to get students back on track emotionally ready to learn….. That took a big hit during the COVID era, [and the] last couple years and we've taken numerous steps backwards as far as our academic readiness to learn*. (School 5)

Staff from multiple schools also indicated that the impact of COVID had forever shifted the landscape and culture of public schools. Notably, when discussing the increase in staff turnover and the mass exodus of school personnel from the education field due to COVID, a similar max exodus occurred with students, who left traditional school settings in favor of online and non-traditional educational tracts. A counselor from a rural school stated:

> *I don't know how it is with other districts, but it just seems like we've had an abundance of students deciding that they can go online or homeschool, right? They saw that it was successful during COVID.* (School 8)

Additionally, the continued decrease in student enrollment, especially in small rural communities, left many administrators concerned over future budgetary constraints and the implications that had on providing mental health services if the trend continued.

Notably, not all feedback around the impact of COVID was negative. One district specialist provided an alternative view on post-pandemic challenges by noting that their school was rejecting the prevalent "negative narrative" associated with how bad things were due to COVID, and instead, the staff was attempting to instill a sense of optimism for the future:

> *I think you know a big barrier with anything right now is just this negative narrative about how everybody is so stressed out, and we're kind of like trying to break that up and be like, yeah, things are different, but we can do it. And so this is your first year of opening up school with any semblance of normality*. (School 7)

Current Successes

The portion of interviews related to the identification of current successes allowed school staff to share about SSP activities or implementation efforts that were going especially well at their school. Interview responses on the successful efforts demonstrated that participating school staff were implementing a multitude of both shared and unique SSP activities. Two categories of successful activities were identified: Frequently Implemented EBPs and School-derived Supplementary Practices. The Frequently Implemented EBPs category contained two themes: Gatekeeper Trainings and Student Programming. The School-derived Supplementary Practices category was made up of four themes including (a) Community Outreach, (b) Student Data Gathering, (c) Student-health Center Partnerships, and (d) Student Self-regulation Strategies.

Frequently Implemented EBPs. The majority of schools relied upon some form of EBPs as a central component to their overall SSP approach. The two most frequently implemented types of EBPs were gatekeeper trainings and student programming. Roughly one-third of schools concurrently implemented both gatekeeper trainings and student programming,

while one-third of schools implemented either gatekeeper trainings or student programming, and the remaining third implemented neither.

Gatekeeper Trainings. The most frequently implemented EBP across participating schools was QPR. This gatekeeper training was often characterized as one of the first steps for initiating SSP by having all staff receive a baseline introduction to identifying students at risk. A school counselor noted:

> *Obviously, using QPR is one of them [i.e, a success], that was not present initially and that's come in and been helpful.* (School 3)

Another school counselor expanded on the usefulness of QPR by noting that school staff often responded to the training positively:

> *I was blown away by the staff participation. The authenticity within the QPR training this year was just super. Super thankful for that process.* (School 4)

In two schools, QPR had been expanded to include training a select sample of students who were interested in helping lead SSP activities. Two school counselors noted:

> *We started a suicide prevention group of students and then some of those students participated in QPR.* (School 3)

> *It's actually going into the classroom and doing a QPR training. The teacher does send a form for them to opt out of taking that training. We're not making that a required training for students.* (School 9)

Additionally, the ASIST program was cited as the primary gatekeeper training for participating urban/suburban schools, with some rural/frontier schools implementing the program in conjunction with QPR. The ASIST training was targeted towards specialized staff and not implemented universally, making the program a better fit for schools that already had specialized staff in place and were unable to easily conduct universal trainings (i.e., QPR) because of scheduling constraints. A district specialist from an urban/suburban school noted:

> *We have staff that have been trained in ASIST, who can then facilitate doing the screening. That is kind of the requirement that we have for them to be able to go through the screening, or just having that comfort in that extra training.* (School 7)

The use of the ASIST training was highlighted as a mechanism for developing staff capacity for targeted student screening that went beyond the universal identify and refer protocol covered by QPR. A school counselor mentioned the importance of having a localized team of ASIST-trained personnel at their school to allow for adequate staffing capacity when initiating screenings:

> *We have gatekeepers, like our ASIST trainers. We have other staff trained that way. It's not just me out here trying to do all the things.* (School 8)

Student Programming. The peer-led Sources of Strength program was referenced as a key success by several school staff across multiple schools. Sources of Strength was differentiated from gatekeeper trainings by the focus being centered directly on providing support, training, and instruction to student peer leaders, who then led SSP-related campaigns at school. One school counselor stated:

> *One of the things that comes to mind for me is Sources of Strength. [It] is one of our key pieces that really is for us, just you know, something that is going well.* (School 5)

A key benefit of the Sources of Strength program was the ability to foster conversations and awareness around the issues of suicide and mental health. A counselor stated:

> *So that's been really good, [which] is we got Sources of Strength going, and there's just been more conversations around suicide prevention.* (School 8)

Additionally, Sources of Strength provided a mechanism for students to conduct school-wide outreach in the form of mental health promotion campaigns that engaged the entire student body, not just the selected peer leaders directly participating in the program. A counselor noted:

> *Last year, after we did mental health weeks through Sources of Strength….. Other kids and other groups are taking the leadership skills and adding to it.* (School 4)

School-Developed Supplementary Practices. Participants identified a multitude of school-developed practices and strategies that were used to supplement the EBPs described above. School staff mentioned that these types of supplementary practices, in addition to gatekeeper trainings and student programming, were needed to provide a more cohesive and comprehensive approach to SSP by targeting mechanisms and pathways that traditional EBPs may not fully cover. These supplementary activities and strategies were divided into four themes: (a) Community Outreach, (b) Student Data Gathering, (c) School-based Health Center Partnership, and (d) Student Self-regulation Strategies.

Community Outreach. The practice of engaging, educating, and collaborating with families and community members around SSP was a central strategy for multiple participating schools. A school counselor from a rural region noted that their school operated as a hub for the entire community and the school was being used as a setting for community-wide mental health promotion:

> *I think our school is a hub of our community. I think that, if anything, there's a lot, like changing something within our school sometimes has a ripple effect in our community because it's such a hub.* (School 4)

The school counselor expanded on this concept by sharing about a school-based event for the community around promoting suicide prevention:

> *They're (i.e., the students) doing swag, they're having a bunch of games, and raffles, and vendors. And so it really is this community event to overcome the [suicide-related] stigma, right? And to really give strength, and hope, and power to suicide awareness within our community.* (School 4)

In addition to using the school as a community hub, other schools noted the practice of individually reaching out to families who may traditionally not engage with school staff:

> *[We do] connect outreach visits, or we call them porch visits, where we would go to the home and try to connect with kiddos and families on their grounds.* (School 7)

Student Data Gathering. The collection and analysis of SSP and mental health-related student data was seen as a key activity for schools when attempting to make more informed decisions on what SSP activities made the most sense for supporting their student body. Student data collection took various forms across multiple schools including (a) post-lesson exit tickets aimed at gathering student input around SSP, (b) anonymous mental health surveys, and (c) focus groups around SSP input from students. The data-gathering measures that schools employed were typically developed "in-house" by specialized staff (e.g., counselors); however, some schools pulled from supplemental tools provided by SSP materials already publicly available:

> *We conduct an anonymous survey with 9th and 10th graders taken straight from the Signs of Suicide curriculum and then provide a student screening form at the end for students who would like additional services.* (School 1)

School-Based Health Center Partnership. One of the activities identified at three of the participating schools was the collaboration by school staff with onsite student health center professional staff. School-based health centers are located in roughly 10% of schools across Oregon State (Oregon Health Authority, 2022) and provide physical and behavioral health services to students by licensed medical and behavioral health professionals. Participating schools with a school-based health center indicated that students were utilizing the mental health services provided by these centers, with a counselor stating:

> *We also have a school-based health center. And so we do have a therapist fulltime in our school from behavioral health. She (i.e., the therapist] is booked as well, and you will see that steady flow of traffic that goes to her*. (School 7)

Because communication between school staff and community healthcare professionals was identified in the barrier section of interviews as a challenge to accessing student data and

providing collaborative student support, participating school staff noted enhanced effective communication when healthcare professionals were located onsite. An administrator stated:

> *There's a lot of communication between them (i.e., school-based health center and counselors). It's pretty impressive to see, actually, because I feel like when you're working with therapist outside of the school, you don't have that communication.* (School 7)

The ability of school-based health centers to provide onsite access to student mental health services, while also actively communicating with school staff, indicated that these centers hold promise for overcoming some of the key institutional barriers to school and mental healthcare collaboration.

Student Self-Regulation Strategies. The final school-derived supplemental activity theme was the ability to provide students with the environment and skills to self-regulate. The need for this type of support was especially emphasized due to the increased levels of observable isolation, angst, and generalized anxiety caused by COVID and its aftereffects. Several schools noted an emphasis on creating "safe spaces" for students to decompress and find calm throughout the school day. A counselor stated:

> *We built a wellness room….. Now I call it the art room, so it's a quiet space where kids can just go and read a book or work on some artwork to kind of regulate their brain when they're feeling anxious*. (School 10)

In addition to the emphasis on creating a safe and nurturing environment, several school staff noted the success of directly intervening with students to teach self-regulation skills. A school counselor described the recent addition of "Meditation Mondays" for students to participate in as part of their student support initiative:

> *We just started doing support seminars, which is 40-minute blocks on Mondays and Tuesdays, so kids can choose which teacher to go work with and do some intervention time. I've opened up meditation Mondays in the upper gym during that time.* (School 1)

Several participants also noted the use of therapy animals as providing "out of the box" support for students through the use of non-traditional types of support animals. A school counselor described that "therapy rats" were especially effective with students that typically did not respond to other self-regulation modalities:

> *These little rats bring so much joy to people's lives. Like I feel like my job gets so much easier because when they're crying and they're not regulated and [experiencing] trauma, these little guys just curl up in their arms or entertain them and make them laugh, and immediately their brain can come out of that downstairs brain.* (School 10)

Prioritized Goals

The final portion of the qualitative interviews identified prioritized SSP goals for each school. As with the barriers and successes domains, the identified goals section covered both setting-specific goals along with commonly shared goals across the participating schools. Upon analysis, five types or levels of goals were identified: (a) Student, (b) Staff, (c) School, (d) Partnership, and (e) Systems.

Student. The most frequently identified type of goal was associated with expanding SSP activities to include interventions and supports delivered directly to students. Schools often noted that traditionally their SSP focus had been on training staff on how to best support students, which was based on an assumption that these staff-targeted trainings would translate into impacting student outcomes. A school administrator noted that their primary goal revolved around teaching students how to access resources and information about SSP and mental health:

> *I think that goes back to one of the main goals, maybe students knowing where resources [are]. Their knowledge or willingness to engage in those resources for students, and this one is kind of a specific situation for dealing with, but to have consistent access to those resources.* (School 5)

Staff from another school emphasized that their goal revolved around harnessing the power of peer-support networks by teaching students how to support friends when they felt overwhelmed, with an administrator noting:

> *[Our goal is to] ensure that we're supporting our students to have the resources [so] that when they are confronted, because they are, with a friend who is in desperate need of support, that they're not overwhelmed and that they can, you know, successfully refer them back to the resources that we have available*. (School 2)

Additionally, the importance of incorporating student voice and input into the general SSP approach was noted as a goal by an administrator:

> *The goal [is] to increase student voice and have safe spaces. And now I realize there needs to be multiple ways for it to happen*. (School 7)

Staff. The second type of identified goal was increasing staff knowledge and self-efficacy around SSP. As described in the barrier section, staff turnover and burnout was a salient challenge, especially due to COVID, and the need to better support staff was a highly prioritized goal. The specific staff-targeted goals tended to focus on providing more training to both general and specialized school personnel. A district specialist stated:

> *The goal of the district around suicide prevention is to get all staff trained in QPR and at least two staff ASIST trained at each school*. (School 9)

School. In addition to student and staff targeted goals, a third type of goal was improving school climate and culture. A key aspect of improving school culture was the concept of establishing a shared vernacular or language around suicidality that overcomes the stigma associated with suicide. Two school counselors from separate schools emphasized the importance of embedding a "common language" into the fabric of school culture:

> *I think that to break the silence, you have to give common language and overcoming that stigma about talking [about] just the word suicide, right? The goal is to create a structure, a culture that [allows] everyone to come together*. (School 4)

> *[Our goal is for] Our staff, our parents, and our student community, to again talk about suicide prevention and start making that just a comfortable language to have around.* (School 2)

Along with creating a culture of shared language, schools emphasized the need to disseminate and share information in languages and dialects that represent their student body and community as a whole. One school counselor stated:

> *How do we, you know, ensure [the use of] multiple languages, I think that's going to be a key for us in terms of messaging and ensuring that work for reaching those voices in the languages that is comfortable in their hometown.* (School 2)

Partnership. Participating schools prioritized developing SSP partnerships amongst students, families, and community members as a fourth type of goal. Participating school staff emphasized the need to establish both buy-in and input from key stakeholders around what SSP initiatives were prioritized and implemented in schools. In particular, participants highlighted goals around developing relationships with community organizations that provide supports for at-risk students:

> *We really hope to get more community members [involved], like we're really trying to do some stuff with offering child care.* (School 9)

A school counselor noted that bringing in community members to present on SSP and mental health often engaged students due to the information being presented from a source outside of school staff:

> *[Prioritizing] student development lessons, I think it would be great to bring someone from the outside [of school]. I mean of course I can push into classrooms, but [it] almost would be better if we had someone else come in, just because I think it would be a highlight [for students].* (School 3)

Systems. The final type of goal, which was the second most frequently mentioned goal type after student-target goals, was around developing, installing, and implementing systems and infrastructure to support SSP implementation. The emphasis on systems goals was typically tied

to addressing issues resulting from staff turnover, where new counselors and administrators expressed the feeling of having to "start from scratch" on SSP work because there was no system in place to pick up where previous school personnel left off. Two participating schools that had recently experienced turnover in the counseling department emphasized the goal of developing SSP systems and infrastructure:

> *The last time we met, the thing that I wrote in bold was wanting to have more [of] like system structure, so that when key people leave who are holding a lot that [information], the system doesn't fall apart, so just more infrastructure around this work.* (School 4)

> *We are working on building systems within the school, so that when somebody leaves, it is not rebuilding everything every year.* (School 10)

A specialized district support staff member identified the main goal for their new position was the process of system-mapping all of the resources that already existed within the school and district:

> *This district has got it going on. They've got a lot of pieces, and it's going to be my job to help build that systems map that connects all the pieces together that we're doing*. (School 4)

Multiple school teams highlighted identifying at-risk students and referring them to services as the most critical component for effective SSP. The specific system-level goal of establishing an identify-and-refer protocol was seen as a challenging yet essential goal due to the high stakes involved in successfully implementing the protocol, and the potential for students to get lost in the cracks during "handoffs." A school counselor mentioned the goal of training all staff to conduct "warm handoffs" as an essential component to preventing breakdowns in communication:

> *As a district and as counselors, we've all decided that we will really try to push our teachers to do what we call warm handoffs, and that's where they actually help connect you. Um, or they will walk the student to you*. (School 7)

Another district specialist identified the goal of embedding a systematic referral process into a multi-tiered approach to SSP:

> *We hopefully will work on some kind of referral system with our tiered system so that we can have mental health supports available.* (School 3)

The specialist explained that the goal of using MTSS to guide student referrals would allow for a more replicable and reliable system when attempting to identify at-risk students and ensure they are referred to the necessary supports.

Quantitative Survey

The quantitative portion of Study 2 served the purpose of providing schools with an implementation gap-analysis of key Tier I SSP features organized within an MTSS framework (i.e, RQ4). These quantitative results complemented the contextual qualitative findings provided by the interviews. The small sample size (n = 10) limited the analyses to descriptive statistics and visual profile analyses. Each school was provided an individual report of the SSPISI results with an action planning template (Appendix D) that mapped onto the sub-scales and individual survey items.

Descriptive Statistics

The SSPISI measure had 20 2-point items (0 points = Not Implementing, 1 point = Partially Implementing, 2 points = Fulling Implementing) embedded across five subscales (i.e., Teaming, Programs and Practices, Screening and Protocols, Partnerships, and Evaluation) with a total possible score of 40 points. The average total SSPISI score was .44 (SD = .11) with raw scores ranging from 12 to 25 points (see Table 12). The two highest scoring subscales were Programs and Practices (M = .57, SD = .16) and Teaming (M = .53, SD = .25). The lowest scoring subscale was Evaluation (M = .10, SD = .18).

Table 12

Descriptive Statistics for SSPISI Sub-Scale and Total Scores

Scale	Score Possible	Raw Score		Raw Score		Proportional	
		Min	Max	*M*	*SD*	*M*	*SD*
Teaming	6	1	6	3.20	1.48	0.53	0.25
Programs and Practices	16	5	13	9.00	2.54	0.57	0.16
Screening and Protocols	6	1	4	2.50	0.85	0.41	0.14
Partnerships	6	1	4	2.10	0.88	0.35	0.15
Evaluation	6	0	3	0.60	1.07	0.10	0.18
Total	40	12	25	17.4	4.50	0.44	0.11

Note. M = Mean, SD = Standard Deviation, Proportional = Proportional Score.

The Teaming subscale was comprised of three 2-point items for a total possible score of 6 points. The average Teaming subscale proportional score was .53 (*SD* = .25) with raw scores ranging from 1 to 6. The Program and Practices subscale was the largest subscale with eight 2-point items for a total possible score of 16 points. The Programs and Practices proportional subscale average was the highest out of all the subscales at .57 (*SD* = .16) with raw scores ranging from 5 to 13 points.

The Screening and Protocols subscale was comprised of three 2-point items for a total possible score of 6 points. The Screening and Protocols proportional subscale average was .41 (*SD* = .14) with raw scores ranging from 1 to 4 points. The Partnerships subscale was comprised of three 2-point items for a total possible score of 6 points. The Partnership proportional subscale average was .35 (*SD* = .15) with raw scores ranging from 1 to 4 points. The Evaluation subscale was comprised of three 2-point items for a total possible score of 6 points. The Evaluation proportional subscale average was the lowest of all subscales at .10 (*SD* = .18) with raw scores ranging from 0 to 3 points.

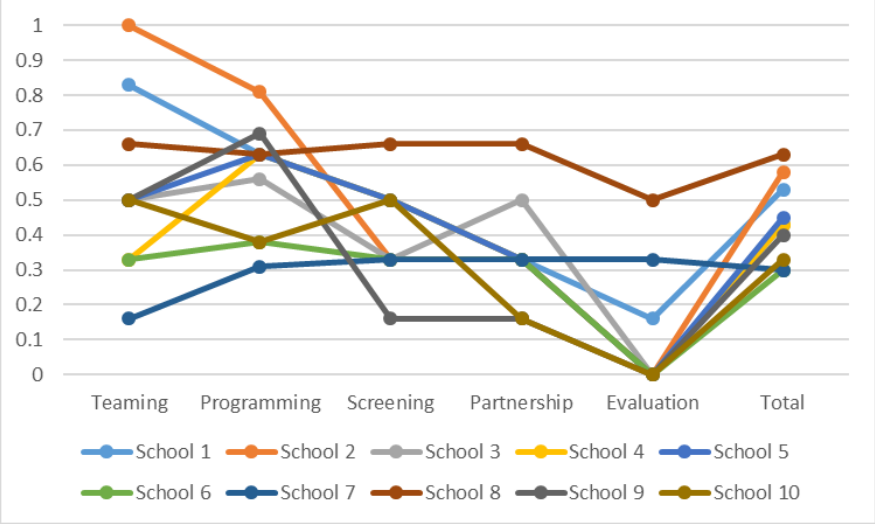
Visual Profile Analysis

As presented in Figure 1, several patterns emerged within the school scoring profiles. The first subscale, Teaming, was defined by the largest variability in scores amongst the five subscales with six distinct proportional scores. The distribution of proportional score profiles then contracted to five distinct scores on the Programs and Practices subscale, with less overall variability. A further contraction of scores occurred on the following three subscales (i.e., Screening and Protocols, Partnership, and Evaluation) where four distinct scores were identified for each subscale. Finally, for the overall Total score scale, proportional scores expanded out to eight distinct scores.

Figure 1

Individual School Proportional Scores on Individual School Sub-Scale and Total School Suicide Prevention Implementation and Systems Inventory Raw and Proportional Scores

Subscale Domains.



As presented in Table 13, heightened clustering of multiple schools sharing the same subscale score was observed on the Screening and Protocols, Partnerships, and Evaluation subscales. Two sets of four schools shared the same score of 2-points and 3-points on the

Screening and Protocols subscale. Six schools shared a score of 2-points on the Partnership subscale and seven schools shared a score of 0-points on the Evaluation subscale. A lesser degree of clustering was observed on the Teaming, Programs and Practices, and Total Score scales. Four schools shared a raw score of 3-points on the Teaming subscale, while four schools shared a raw score of 10-points on the Programs and Practices subscale. For the Total SSPISI Score, two schools shared a score of 17-points and two schools shared a score of 12-points.

Table 13

Individual School Sub-Scale and Total SSPISI Raw and Proportional Scores

	Teaming (6)		Programs (16)		Screening (6)		Partnerships (6)		Evaluation (6)		Total (40)	
	Raw	Prop	Raw	Prop	Raw	Prop	Raw	Prop	Raw	Prop	Raw	Prop
School 1	5	0.83	10	0.63	3	0.50	2	0.33	1	0.16	21	0.53
School 2	6	1.00	13	0.81	2	0.33	2	0.33	0	0.00	23	0.58
School 3	3	0.50	9	0.56	2	0.33	3	0.50	0	0.00	17	0.43
School 4	2	0.33	10	0.63	3	0.50	2	0.33	0	0.00	17	0.43
School 5	3	0.50	10	0.63	3	0.50	2	0.33	0	0.00	18	0.45
School 6	2	0.33	6	0.38	2	0.33	2	0.33	0	0.00	12	0.30
School 7	1	0.16	5	0.31	2	0.33	2	0.33	2	0.33	12	0.30
School 8	4	0.66	10	0.63	4	0.66	4	0.66	3	0.50	25	0.63
School 9	3	0.50	11	0.69	1	0.16	1	0.16	0	0.00	16	0.40
School 10	3	0.50	6	0.38	3	0.50	1	0.16	0	0.00	13	0.33

Note. Total possible raw points are noted parenthetically next to each sub-scale title.

CHAPTER V

DISCUSSION

The present study sought to assess the landscape of SSP by presenting a *breadth* and *depth* perspective of the programs and practices being implemented in schools, along with determining the SSP barriers schools faced, the current successes already underway, the goals school staff prioritized, and what key Tier I MTSS features for SSP were being implemented. This chapter will start with a summary, synthesis, and interpretation of key findings across Study 1 and 2. Then, limitations for both studies will be presented. Finally, implications for practice and policy, along with future directions in research will be discussed.

School Suicide Prevention Landscape

Meta-analytic and systematic reviews over the past decade have begun to establish what programs are effective at attenuating suicide risk when implemented in schools (Brann et al., 2021; Katz et al., 2013; Posamentier et al., 2022; Surgenor et al., 2016; Walsh et al., 2022). However, a lack of data exists on the degree to which these programs are disseminated to schools and implemented by school staff. Although no recent studies exist examining the dissemination of EBPs for SSP, and previous SSP research on the topic is outdated (Garland et al., 1989; Malley et al., 1994), there is recent school-based research informing on the dissemination and implementation of programs and practices in other school domains. Specifically, Lenski et al. (2016) determined the degree to which ELA programs and practices were implemented by school personnel at a statewide scale, and the methodologies and analyses from their study were used as a model for Study 1.

The use of a statewide survey in Study 1, aimed at inventorying the current adoption of SSP programs and practices, informed on which programs and practices were being most utilized

by schools. Additionally, key differences in the adoption of SSP program and practices across school factors (i.e., school level and region classification) were identified. The pilot presented in Study 2 built upon the findings in Study 1 by contributing explanatory contextual information outlining the root-causes behind the identified differences in the implementation of EBPs and recommended practices across school factors. Furthermore, Study 2 contributed rich qualitative data describing the perspectives of school staff who were working at the ground-level to conduct effective SSP.

Evidence-Based Programs

The findings from the statewide survey conducted in Study 1 identified several differences in the implementation of EBPs by school factors. Additionally, the findings from the Study 2 pilot provided contextual information regarding possible explanations for the differences in EBPs implementation identified in Study 1. The following section will first discuss the Study 1 findings, followed by the Study 2 findings.

A central finding from the Study 1 EBP program inventory demonstrated that a large portion of schools (43%) were not implementing an EBP for SSP. Given that EBPs are recommended as a core component for comprehensive SSP (Brann et al., 2021), the percentage of schools not implementing an EBP was substantial. The lack of EBP implementation across schools can partially be explained by the majority of elementary schools (52%) not having an EBP for SSP in place, which is somewhat expected due to suicide-related risk being lower for this age group (Bridge et al., 2015), and elementary programming tending to focus on upstream developmental constructs rather than downstream programming (Walsh et al., 2022).

Notably and in alignment with our hypothesis, the number of EBPs being implemented in high schools (M = 1.34), followed by middle (M = 1.21), and then elementary (M = 0.77),

differed significantly at the school level. However, post-hoc comparisons found these differences were only statistically significant when comparing elementary schools to middle and high schools; and the difference in implementation between middle schools and high schools was not statistically significant. Notably, the finding on total number of implemented programs being significantly different across school levels (i.e., elementary compared to middle and high schools) was not reflected for all of the individual EBPs. Specifically, only MHFA, RESPONSE, and Connect Postvention were found to differ significantly by school level, and RESPONSE and Connect were implemented in less than 6% of participating schools. The differences identified in number of EBPs implemented compared to the lack of differences in implementation of individual EBPs at the school level suggests a trend where high schools and middle schools were implementing more programs than elementary schools, but the actual content (i.e., specific EBP) was relatively the same.

In contrast to the significant differences found for the number of EBPs implemented across school levels, no significant differences were found for number of EBPs implemented across region classification (i.e., urban/suburban vs rural/frontier). However, for individual programs, two of the most implemented EBPs from the inventory (i.e., ASIST and QPR) differed significantly across region classification. A meta-analysis by Brann et al. (2022) found that the majority of SSP programs being researched in schools were gatekeeper training programs. Notably, the most widely implemented program from the statewide survey inventory was the ASIST gatekeeper training (32%), which was not included in any of the studies analyzed by Brann et al. (2021). The ASIST program was nearly twice as likely to be implemented in urban/suburban schools (42%) than rural/frontier schools (22%). Additionally, QPR, a second type of gatekeeper training and the third most implemented program in the inventory, presented

the opposite trend, with rural/frontier schools (22%) being twice as likely to implement the program than urban/suburban schools (10%). Out of the 17 studies included in the Brann et al. (2022) meta-analysis, QPR was the most frequently represented (n = 4), pointing to a discrepancy between the field of research (i.e., QPR being the most studied in schools) and what actual transpires in practice (i.e., ASIST being the most frequently implemented in schools).

The differences across regional classification for the implementation of ASIST and QPR found in the Study 1 statewide survey were further reflected in the pilot findings from Study 2, where additional qualitative context provided by school staff helped elucidate a possible explanation for the regional differences. The ASIST program is an intensive multi-day training for specialized staff and provides detailed guidance on student screening and safety planning (Shannonhouse et al., 2017), while QPR is a brief 2-hour training designed to be used universally with all staff and provides high-level guidance on identifying and referring at-risk students (Tompkins et al., 2010). In Study 2, rural schools (n = 8) tended to implement QPR at a higher rate due to lack of specialized staff capacity to participate in ASIST, along with rural schools having smaller sizes of total school staff, which allowed for easier universal training scheduling. Whereas, with participating urban/suburban schools (n = 2), which tended to have larger student and staff sizes, the availability of specialized school staff and the difficulty in scheduling all-staff trainings made ASIST a more suitable programming option. These findings indicate key differences in program implementation feasibility based on regional classification.

An implication of the wider adoption of QPR in rural schools was further qualified in the barriers section of the Study 2 interviews. Several participating school counselors from rural/frontier regions noted that despite having a program in place that trained staff to recognize the signs suicidality (i.e., QPR), the lack of community resources greatly limited the ability for

school staff to refer students to adequate services once identified. Previous research has highlighted that access to community-wide mental health resources has been a historical barrier for rural communities (Varia et al., 2014), which was confirmed in our pilot interviews, where a school counselor shared “We don't have a lot of resources to offer the kids after [screening], like if we do an assessment and we feel like they need something else, like basically we have the emergency room and that's pretty much it” (School 1).

In the case of participating urban/suburban pilot schools, the opposite barrier was identified, where schools had the specialized staffing and community resources available, but were unable to conduct universal QPR trainings due to scheduling and staff capacity challenges. Both participating urban/suburban schools had specialized staff trained in ASIST, while only one of the schools had conducted an initial QPR training with a portion of the school staff. Because the majority of the participating pilot schools were located in rural/frontier regions, the quantitative findings from the SSPISI reflected the trend of rural schools having adequate programs and practices in place (Programs and Practices Subscale M = .57), but not the community partnerships (Partnerships Subscale M = .35) to support student referrals.

In addition to the relatively high number of schools not implementing an EBP in the Study 1 statewide survey, five of the EBPs included in the program inventory (i.e., SafeTalk, RESPONSE, Connect Postvention, Sources of Strength, and Kognito) were implemented in less than 7% of schools. The low percent of schools implementing Sources of Strength (3%) in the statewide survey contrasted with the relatively high number of schools implementing the program in the Study 2 pilot (40%; n = 4). The difference in implementation frequency of Sources of Strength between Study 1 and 2 may be due to bias from the small sample of Study 2, however, an additional explanation of the discrepancy may be due to the recent scale-up of

Sources of Strength funded by OHA, which occurred after the statewide survey but before the pilot.

Recommended Practices

In the literature reviewed, EBPs for SSP are often cited more than recommended practices due to the nature of EBPs undergoing empirical research trials in order to be deemed evidence-based (Breet et al., 2021). Thus, the findings from the recommended practices inventory were surprising, with schools on average implementing three times as many recommended practices (M = 3.18) than EBPs (M = 1.04); demonstrating a further divide between the fields of research and practice. The differences in recommended practices being implemented more than EBPs was found despite the availability of fewer recommended practices options (n = 7) included in the inventories compared to the EBPs choices (n = 8). Because many of the recommended SSP practices are no- or low-cost to implement (e.g., documented SSP plan, intra-agency MOU, postvention plan), school SSP leadership teams may see these practices as more feasible and cost-effective than EBPs, especially when taking into consideration state mandates or laws that require SSP but often do not include fiscal support to purchase and implement EBPs.

The findings from the recommended practices inventory mirrored the EBPs inventory, where significant differences in total implementation activity occurred at the school level (i.e., elementary vs middle and high school), but not across region classification. For individual recommended practices, the practices of having SSP school curriculum and guest speakers were significantly higher in high schools (i.e. school curriculum = 57% and guest speakers = 39%) and middle schools (i.e. school curriculum = 47% and guest speakers = 31%) compared to

elementary schools (i.e. school curriculum = 27% and guest speakers = 13%); and no significant differences were present between middle and high schools.

The most common SSP recommended practice identified in Study 1 was having a documented identify-refer protocol in place (74%). Notably, urban/suburban schools (81%) implemented this practice significantly more frequently than rural/frontier schools (67%). Similarly, urban/suburban schools (40%) were found to have a documented SSP plan significantly more frequently than rural/frontier schools (23%). However, in the case of intra-agency MOUs, which was the third most frequent recommended practice, rural/frontier schools (64%) were found to implement this practice more than urban/suburban schools (53%).

In Study 2, two of the supplementary practices themes (i.e., Student Data and Self-Regulation Strategies) fell outside of the scope of recommended practices included in the Study 1 practices inventory. However, the recommended practices of intra-agency MOUs and guest speakers included in the statewide inventory were reflected in the Study 2 themes of Student-Health Center Partnerships and Community Outreach. Additionally, the Study 2 SSPISI findings tended to mirror several of the statewide survey findings regarding supplemental practices, with 30% (n = 3) of Study 2 schools fully implementing a documented SSP plan, and 32% of schools from the Study 1 statewide survey indicating they had a documented SSP plan in place. Furthermore, 80% (n = 8) of pilot project schools either fully or partially implemented a documented identify-refer protocol, and 74% of schools from the Study 1 statewide survey indicated they had a documented protocol in place.

Stigma

Stigma around mental health and suicidality is a pressing barrier to effective suicide prevention, especially in rural communities (Michael & Ramtekkar, 2022). Suicide-related

stigma has been identified as an impediment to youth seeking out mental health services (Betterham et al., 2013), and for rural community agencies having the readiness to engage in suicide prevention work (Monteith et al., 2020). Study 2 interview findings reflected both of these concerning trends. Participating school staff from rural/frontier regions indicated that students were often resistant to seek out mental health services because of concerns about how families would react, along with concerns over how the student's personal health records may impact their future. Additionally, school staff noted that establishing relationships with community-partner agencies was often challenging due to lack of resources and community-wide stigma around suicide.

To better elucidate the role that suicide-related stigma may have on staff conducting SSP activities, Study 1 sought to determine if an association existed between staff comfort on the topic of suicide prevention and total SSP activity, and whether this association was moderated by school factors. Notably, the analyses conducted in Study 1 found a medium sized positive association between the level of staff comfort with the topic of suicide prevention and the amount of SSP activity occurring at the school (i.e., total number of EBPs and recommended practices being implemented), $r = .38$. The significant association demonstrated that as staff comfort with suicide prevention increased, a corresponding increase of SSP activity was found. This key finding is supported by previous research by Schomerus et al. (2015) that identified participants' ($n = 26{,}800$) level of comfort on the topic of suicide was associated with the willingness to engage in conversations with individuals exhibiting mental health related issues. These findings suggest the possibility that stigma around suicide impedes the amount of SSP recommended practices and EBPs that school staff are willing to implement due to possible discomfort or fear of engaging in the work. Additionally, the findings may suggest that as school

staff implement more SSP activities, they become more comfortable with the topic of suicide, thereby lowering stigma. Notably, the association between staff comfort and SSP activity found in Study 1 was not relegated to rural/frontier areas as originally hypothesized. The association between school activity and comfort level was not significantly moderated by regional classification, indicating the need for lowering stigma and increasing comfort in both rural/frontier and urban/suburban regions.

Barriers, Successes, and Goals

Findings from the qualitative interviews conducted in Study 2 identified clear themes for SSP-related challenges and barriers, current successes, and prioritized goals. Notably, Study 2 contributed contextual information around two central areas (i.e., SSP barriers and challenges, and prioritized SSP goals) that were not included in the scope of Study 1. Interestingly, several of the SSP barriers and challenges themes identified in Study 2 interviews were also identified as themes in the successful activities category, demonstrating that some participating schools were finding success in areas identified as barriers by other schools. Specifically, four sets of related barriers and successes were identified: (a) Accessibility to Staff Training and Student Programming Challenges, and Staff Training and Student Programming Successes; (b) Accessibility of Information on Student Screening Challenges, and Student Data-gathering Successes; (c) Lack of Family Engagement Challenges, and Community Engagement Successes; and (d) Post-Pandemic Challenges, and Student Self-Regulation Successes.

The barrier themes of Accessing Information and Resources around Student Programs and Staff Training was connected to the successes themes of schools already conducting Gatekeeper Trainings (i.e., ASIST and QPR) and Student Programming (i.e., Sources of Strength). Additionally, the barrier theme of Accessibility to Information and Resources on

Student Screening was linked to the current successes theme of Gathering Student Data, where schools presented three mechanisms for gathering student-level data: (a) student mental health surveys, (b) post-lesson exit tickets, and (c) student focus groups. Notably, none of the student data-gathering methodologies included universal student screening for suicidality. In cases where schools employed universal mental health surveys, the surveys were anonymous, making direct identification of at-risk students not possible. In a recent study by Sehk et al. (2022), researchers found that universal screening of high school students for suicidality using the Patient Health Questionnaire (PHQ-9) significantly increased the number of students identified and referred to mental health supports and services, making this form of screening a promising yet underutilized form of intervention when sufficient level of supports are available.

The two remaining sets of interrelated barriers and successes themes were the barrier themes of Family Engagement and Post-pandemic Challenges, and the successes themes of Community Outreach and Student Self-regulation Strategies. The continuous leftover impact of the COVID pandemic has been associated with heightened feelings of isolation and general angst amongst students (Elharake et al., 2022). Additionally, the challenges presented by the pandemic further impeded parent and family engagement with schools (O'Connor Bones et al., 2022). These COVID-related aftereffects were captured in the Study 2 interviews, where Post-pandemic Challenges around student behavioral issues and Lack of Family Engagement were identified as pressing and related challenges. However, both challenges were also tied to related successes already occurring in participating schools. Several schools identified successful activities engaging with families and community members through (a) suicide prevention awareness campaigns, (b) SSP and mental health promotion activity nights, and (c) direct visits to family homes. Furthermore, schools identified self-regulation activities including (a) meditation

practices, (b) therapy animals, and (c) designated wellness rooms as being effective strategies to address the increased isolation and general angst left over from COVID. Notably, the use of self-regulation strategies for students is supported by previous research findings demonstrating that student self-regulation buffers against COVID-related psychological stress in students (Sinring et al., 2022).

The goals portion of the qualitative interviews from Study 2 provided insight into key areas that school staff prioritized for SSP improvement. Previous research by Katz et al. (2013) identified five modality domains for types of SSP activities, which included (a) Educational Curricula and Awareness Programs, (b) Peer Leadership, (c) Skills Training, (d) Gatekeeper Training, and (e) Screening and Assessment. Although the Katz et al. (2013) organizational taxonomy for SSP activities is useful, the current structuring of domains presents a limited scope when attempting to build a comprehensive SSP approach. The goal themes identified in Study 2 provide an alternative and expanded structure to organizing SSP efforts by specifying five key goal levels that are in alignment with the social-ecological model (Bronfenbrenner, 1994): (a) Student, (b) Staff, (c) School Culture, (d) Partnerships, and (e) Systems. The alternative organizational framework provided by Study 2 includes two goal domains (i.e., School Culture and Partnerships) absent in the Katz et al. (2013) taxonomy. Additionally, the remaining three goal themes from Study 2 enfold each of the five domains from the Katz et al. (2013) framework. Specially, the Student-level goal includes the domains of (a) Educational Curricula and Awareness Programs, (b) Peer Leadership, and (c) Skills Training, while the Staff-level goal includes the Gatekeeper Training domain, and the Systems-level goal addresses the Student Screening domain. Thus, the goal-level findings from Study 2 may present a more comprehensive approach for organizing SSP activities.

Limitations

The two studies presented in this paper have several limitations that should be considered along with the interpretation of the findings, including (a) selection bias, (b) social desirability bias, (c) construct validity, and (d) history bias. Each of the four limitations and the possible implications on the studies' findings are presented below.

Selection Bias

The statewide survey from Study 1 used a convenience sample collected from roughly one-third (32%) of Oregon public schools. Additionally, almost half of responding schools were elementary schools (48%), where SSP activity typically concentrates on upstream programs and practices (Bridge et al., 2015), compared to the more comprehensive approach required in middle and high schools (Cooper et al., 2011). The lack of survey responses in Study 1 from 68% of Oregon public schools may be impacted by selection bias (Tripepi et al., 2010), where systematic differences could exist between the schools electing to participate and those that did not. Schools not implementing EBPs or recommended practices may have elected to not participate in the survey for fear of repercussions, which may impact the findings regarding number of schools not implementing an EBP (43%) to possibly be underestimated.

For Study 2, a convenience sample was also used and only high schools were selected to participate in the study. The small sample size (n = 10) of Study 2 restricted quantitative data analyses to frequency and descriptive statistics. Rural/frontier schools (80%, n = 8) were also overrepresented in the sample compared to urban/suburban schools (20%, n = 2), causing the perspectives represented in both the qualitative and quantitative findings to heavily reflect school teams from rural/frontier regions. The purposive sampling methodology utilized in Study 2 relied on recruiting schools that already had some form of previous contact with the RPP, leading to the

sample possibly over-representing the implementation of EBPs and recommended practices compared to other schools across Oregon that had no prior contact with the RPP.

Selection bias may have also impacted the specific participant perspectives captured across both studies. Study 1 survey responses were limited to perspectives from only one individual at each school, while Study 2 limited participation to self-selected staff who identified as being part of the SSP leadership team. The responses to the statewide survey from Study 1 were collected primarily from either principals (46%) or school counselors (39%), with both roles representing distinct SSP perspectives. Analysis of differences between the perspectives of principals and school counselors were not addressed in any statistical comparisons.

Social Desirability Bias

Another key limitation of the Study 1 statewide survey is in regard to the inventories for EBPs and recommended practices being self-reported by school staff. By relying on self-reported data, the findings from the statewide inventory may reflect a social desirability bias (Grimm et al., 2010) due to respondents' desire to report favorable findings. The reported number of schools having a postvention plan (61%) in place seemed significantly higher than what the UOSPL research team had encountered working with schools from across the state on other research projects, bringing into question whether this data and other EBPs and practices data may be overestimated. The impact of social desirability bias may have also been present in the qualitative and quantitative findings from Study 2, where the research team relied upon the self-reported perspectives of the participating school staff for both the interview and survey portion of the study.

Construct Validity

The use of comfort around the topic of suicide prevention was used as a proxy to represent level of stigma around the topic of suicide, due to the association between comfort around the topic of suicide and willingness to engage in conversations around mental health (Schomerus et al., 2015). Comfort level was assessed using a single survey item and not a validated scale, which suggests the potential for measurement error and lack of construct validity. Additionally, survey responses to the comfort level rating question may be capturing the staffs' comfort with the technical ability to implement SSP activities and not the comfort level associated with the topic of suicide. Furthermore, comfort around the topic of suicide, without a corresponding level of informed knowledge, could indicate a separate association outside of decreasing stigma, such as an individual's comfort with the topic of suicide being due to lived experience with suicidality. Importantly, the survey question on suicide-related comfort was regarding overall staff-level comfort and not the individual respondent's comfort level. Thus, we find this separate association unlikely.

No student-level data was collected for either Study 1 or 2. Specifically, the inclusion of student-level data regarding identification of at-risk students, referrals to services, and use of mental health services by students were not included. Thus, implications regarding the impact of the programs and practices discussed is limited to staff perception and not student outcomes.

History Bias

Finally, the time between data collection for Study 1 (i.e., 2018) and Study 2 (i.e., 2022) was approximately four years. During this time lapse, key legislation was passed in Oregon (i.e., Adi's Act) requiring all districts to have a suicide prevention plan in place. Thus, the impact of the newly passed legislative requirement for districts may indicate history bias (Naci &

Soumerai, 2016), where the Study 2 findings reflect a growth in the overall status of SSP implementation compared to the findings captured in the statewide survey presented in Study 1 due to the passing of state legislation.

Implications for Practice

The findings from Study 1 and Study 2 have several implications regarding the translation of SSP research into effective practice. Specifically, five key areas were identified from the findings related to improving the field of SSP practice, which included (a) information and resources accessibility, (b) addressing suicide-related stigma, (c) MTSS, (d) RPPs, and (e) NICs. Each area and the corresponding implications will be discussed.

Information and Resources Accessibility

A multitude of comprehensive guides and technical toolkits exist for guiding SSP implementation (e.g., SAMHSA's Preventing Suicide: A Toolkit for High Schools, JED Foundation's Comprehensive Approach to Mental Health Promotion and Suicide Prevention for High Schools, Line's for Life's Step-By-Step Guide). Despite the availability of SSP guidance, Study 2 found that accessing information and resources about SSP programming and practices was a barrier for school staff. These findings highlight the issue of *scale*, indicating that although the *what* and *how* of SSP is publically available to schools, the systems designed for disseminating this information is absent or ineffective.

To address the concern around the accessibility of information and resources for SSP, the UOSPL developed the *Oregon Schools' Suicide Prevention Resource Kit: State and National Resources* (SSP Resource Kit) that catalogued the available national and state resources for SSP with brief descriptions and embedded links for each of the included resources. The SSP Resource Kit was limited to seven pages and included the overarching categories of General Suicide

Prevention Guides (i.e., state and national), SSP Key Components (i.e., connected and safe school culture; evidence-based trainings and programs; protocols for identify and refer, student monitoring, and safe-reentry; family and community involvement; postvention; and elementary school modifications), and Implementation and Systems Support (i.e., installation, implementation, and sustainment strategies; and evaluation support). After development, the SSP Resource Kit was disseminated to all Oregon public schools through ODE listservs and posted on the ODE website for ongoing access by schools.

Addressing Suicide-Related Stigma

Findings from Study 1 indicate a possible bi-directional association between school staff comfort level and SSP activity, with two possible explanations. First**,** increasing staff comfort on the topic of suicide prevention may correspond to an increase in SSP activity. Second, by increasing SSP activity at a school, staff may become more comfortable with the topic of suicide. A common misconception, especially in rural communities, is that asking about suicide increases suicide risk (Monteith et al., 2020). Previous research has shown this is not the case (Dazzi et al., 2014); in fact, a meta-analysis by Blades and colleagues (2018) found that across 18 studies, there was a significant reduction in suicidal ideation in participants who were asked about suicide history or current ideation. Thus, broaching the topic of suicide with school staff and students in a safe and informed manner, whether through EBPs such as gatekeeper trainings (e.g., QPR and ASIST) or through general conversations, seems to present a viable opportunity to decrease stigma and increase comfort without the risk of increasing suicidality.

Two themes identified in Study 2 related to the practice of addressing suicide-related stigma were increasing Student Trust through teacher-student relationships and establishing Partnerships by engaging with families and communities around SSP. Teacher support has been

found to protect against suicide attempts for students who did not report experiencing suicidal ideation (Whitlock et al., 2014). Additionally, higher levels of family involvement in SSP activities conducted at school has been associated with increased conversations around the topic of suicide with students (Dai, 2022). Thus, the findings from Study 2 along with previous research findings, highlight the need to prioritize strong teacher-student relationships and family engagement when conducting comprehensive SSP.

Multi-Tiered Systems of Support

Recent work by Singer et al. (2019) and Goodman-Scott et al. (2022) point to a shift in the organizational approach of SSP from the historical domain-based framework of prevention, intervention, and postvention to the public health-based approach of MTSS (e.g., universal, selective, indicated or Tier I, Tier II, Tier III). The proposed transition to an MTSS framework emphasizes the addition of key areas of focus (e.g., Teaming, Systems, Evaluation) that were absent in the previous domain model. However, studies examining the coordinated implementation of an MTSS framework for SSP do not currently exist, and questions remain regarding the feasibility of implementing this type of system due to lack of staffing capacity and resources.

The quantitative portion of Study 2 attempted to address the feasibility of implementing an MTSS approach for SSP by measuring what key Tier I MTSS components schools were already implementing. Findings from the SSPISI survey showed that although schools were implementing many of the Tier I MTSS features for SSP, key domains such as Teaming and Evaluation were not being fully utilized. Future practice-based research should concentrate on whether the higher levels of Teaming and Evaluation implementation are present in samples with more representation from urban/suburban schools, where resources and specialized staff are

often more abundant. Additionally, direct feedback on the feasibility and usability of MTSS for SSP should be gathered from a larger sample of schools.

Research-Practice Partnerships

In the present studies, the use of two separate RPPs demonstrated the benefits of a partnership-focused methodology by allowing access to information and data that is historically difficult to access by researchers (Hoover, 2018). Additionally, the focus of RPPs on defining a problem of practice within the system it operates (Cannata et al., 2017) was a key area of emphasis for Study 2, allowing for an in-depth mapping of SSP at the building level across the 10 schools. Due to the multiple systems, levels of intervention, and multi-disciplinary nature of SSP, RPPs are especially relevant for guidance on supporting and coordinating delivery of EBPs and recommended practices, while addressing the unique barriers and goals of each school. In a review of four RPPs for school mental health, Short et al. (2011) found that RPPs were able to positively impact targeted outcomes through the utilization of four strategies: (a) conducting practice-relevant research, (b) increasing organizational capacity, (c) creating platforms for knowledge exchange, and (d) supporting evaluation. These school mental health findings lend further credence to the potential of RPPs in the field of SSP, especially when taking into consideration the low levels of evaluation (Evaluation Subscale M = 10%) found in the Study 2 SSPISI scores.

Although RPPs have demonstrated promise in educational settings and in the field of school mental health, the mechanism still needs to be thoroughly explored in the field of SSP. Given the unique challenges facing SSP, RPPs seem strategically positioned to effect change through spanning boundaries, accessing data, and developing strategic partnerships. As the discipline of RPPs mature, advances in measuring effectiveness and process outcomes can be

applied to RPPs for SSP, as well as initial research into the key themes of how to develop and sustain such a partnership.

Networked-Improvement Communities

As presented in this study, schools are already conducting a variety of evidence-based and school-developed programs and practices for SSP. However, these successful activities are often constrained to localized settings due to a lack of systems and networks designed to share information across schools. The inability to scale successful programs and practices across settings at a state and national scale highlights a pressing challenge for all SSP practitioners (i.e., the challenge of *scale*). A component of Study 2 that fell outside of the scope of this paper, but was aimed at addressing the issue of scale, was the initiation of a NIC for the 10 participating schools. NICs are partnerships between educational practitioners and researchers structured around systems aimed at solving shared problems of practice (Henrick et al., 2017). These communities rely on network science strategies (Senge, 1994) for the facilitation of collaborative information sharing within and between networked school sites, providing the organizational structure for establishing common aims, goals, measures, and languages that translate into actionable improvements (Cannata et al., 2017).

NICs are structured around a three-tiered organizational model of social learning and improvement (LeMahieu et al., 2017). Within the three-tiered structure, the first level of learning (i.e., Level A) represents the practice of a teacher or practitioner seeking to improve their work-related activities individually. The second level (i.e., Level B) of learning involves the process of sharing lessons learned at the individual level with the entire organization for the purpose of improving the organizational system as a whole. Finally, and unique to the field of network science, the third level of learning (i.e., Level C) delineates the intra-institutional sharing of

knowledge to address shared problems of practice. Utilization of the NIC approach has been studied extensively within the context of increasing completion rates for community college students in developmental math courses (Clyburn, 2013; Dolle et al., 2015; LeMahieu et al., 2017). However, although NICs hold promise for addressing challenges associated with scaling up SSP, outside of the exploratory school pilot presented in Study 2, the application of NICs for SSP have yet to be fully explored in the literature.

Implications for Policy

Mandated legislation, non-codified policy, and/or guidance has become a leading strategy used by states for directing SSP implementation. Notably, as of 2023, over half (n = 26) of state governments have passed legislation requiring suicide prevention training or policy in schools (National Association of State Boards of Education, 2023). However, little is known regarding the impact of these laws (Kreuze et al., 2018) due to the lack of systems and infrastructure to measure whether passed legislation is adhered to by schools. The methodology presented in Study 1 demonstrates the possibility of measuring EBP and recommended practice implementation when researchers, state agencies, and practitioners partner together to achieve a shared aim (i.e., measurement of uptake). Notably, the statewide survey presented in Study 1 was conducted prior to the enactment of Adi's Act in Oregon, which requires all school districts to have a suicide prevention plan in place. Because the statewide survey was disseminated before the enactment of Adi's Act, a tangible opportunity exists to use Study 1 findings as baseline data for the re-administration of the statewide survey, which would allow researchers to measure the overall change in SSP activity since the passing of the legislation.

In addition to the lack of systems and infrastructure needed to measure the impact of state SSP policies, two other policy-related concerns exist around the current structure of state SSP

laws. First, most state legislation mandates are passed as unfunded mandates, leaving schools and districts responsible for shouldering the fiscal responsibility of implementing the required trainings, programs, and practices. Second, most state laws, as is the case with Adi's Act, are aimed at enacting requirements at the district level, not the school level. By enacting legislation that transpires at the district level, a glaring loophole exists where effective district policy may not reach the school building. Furthermore, district-aimed policy does not adequately address the unique setting-specific context of each school within the district, which as Study 2 found, can comprise its own set of unique barriers, successes, and goals.

Future Directions in Research

Although EBPs are recommended as a key component for SSP (Brann et al., 2021; Cooper et al., 2011; Katz et al., 2013; Mo et al., 2018; O'Reilly et al., 2018), the adoption of these programs were not found in all schools participating in Study 1. Additionally, the evidence supporting EBPs is often limited to skill acquisition outcomes, and current data on the impact of EBPs on student and staff behavior are mixed (Brann et al., 2021; Robinson et al., 2018). Thus, in addition to future research examining the impact of EBPs on behavior in larger school sample populations, there is also the need for determining how the implementation of multiple EBPs should best be coordinated and prioritized. Specifically, comparison studies between types of programs (e.g., gatekeeper training vs peer-leadership; brief gatekeeper vs intensive gatekeeper) should be conducted to ascertain which programming modalities have the greatest impact on lowering suicide-related outcomes, especially when considering the limited fiscal resources that many districts and schools have when purchasing, installing, and sustaining EBPs.

Recommended SSP practices present a viable no- to low-cost addition (or alternative) to EBPs. The findings from Study 1 indicated a wider use of recommended practices over EBPs,

pointing to the need for further research examining the impact of these supplementary efforts. Specifically, the design and testing of exemplar practices and protocols (e.g., SSP plans, MOUs, identify-refer protocols) would help scale these activities outside of their current localized settings and provide generalizable knowledge for all school practitioners.

A variety of complex and systemic SSP barriers were identified in Study 2, which need further exploration around the level to which these challenges impede specific SSP activities. Post-pandemic related challenges were identified as exacerbating already existing barriers including (a) staff capacity and burnout, (b) lack of student trust, and (c) lack of family engagement. Previous research has explored strategies for addressing staff capacity and burnout (Presley, 2021), increasing student trust with teachers (Ibrahim & El Zaatari 2020), and family engagement around SSP (Dai, 2022). However, the findings from Study 2 indicate that these challenge areas remain as salient barriers to effective SSP, and further practice-based research is needed on a comprehensive approach to addressing the barriers as an interrelated system and not disparate phenomenon.

Finally, the scope of the present study did not include programs designed for specific at-risk populations or the cultural-adaption of existing EBPs for specific populations. Notably, epidemiological research has identified two population groups (i.e., LGBTQIA+ youth and Native American youth) that are at the highest risk for youth suicidality, and are in need of targeted intervention efforts. For the first group, previous research has found that interventions aimed at reducing stressors and increasing coping skills in the area of minority stress has been effective in reducing suicidal ideation and lowering self-harm for LGBTQIA+ youth; however, future research incorporating large RCTs with diverse LGBTQIA+ populations is needed (Rubin et al., 2022). For the second group, research on holistic curriculum aimed at increasing sense of

self, tribal identity, and connection to community for Native American youth has shown promise for overcoming historical suicide prevention barriers faced by this population (Cwik et al., 2022). Notably, in their "Call to Action," Cwik and colleagues cite a need to diversify the field of suicide prevention by not only expanding the populations studied to include underserved communities, but also diversify who is conducting the studies. Additionally, the recent increase in suicide rates for other historically marginalized groups, namely Black male youth and LatinX female youth (Curtin & Hedegaard, 2019), suggest the need to both expand the cultural adaption of current EBPs along with the development of new culturally informed EBPs for these specific groups.

Conclusion

Youth suicide is a serious public health crisis that deeply impacts the families and communities it transpires within. Schools present a key yet underutilized setting for youth suicide prevention. Contributions to the field of SSP research over the past decade have brought more clarity regarding *what* programs and practices are effective for addressing youth suicidality and *how* these activities should be implemented (Brann et al., 2021; Posamentier et al., 2022; Surgenor et al., 2016; Singer et al., 2019; Walsh et al., 2022). However, prior to this study, little was known around the level to which these research findings were being translated into practice. The findings from the two studies presented in this dissertation help address this knowledge gap by providing a *breadth* and *depth* perspective of SSP as it relates to actual practice in schools. Looking forward, the mixed-methods approach presented across Study 1 and Study 2, provide a replicable process for monitoring the level of dissemination and implementation of EBPs and recommended practices at a statewide scale, along with providing contextual in-depth data

regarding building-level barriers, successes, goals, and Tier I implementation of key MTSS features for SSP.

APPENDIX A

Oregon Suicide Prevention School Survey Draft

Directions: The following survey asks *brief questions* about the current suicide prevention efforts taking place at your school. The survey is meant to be completed by only one representative from each school site. To ensure accuracy, please have your school representative be an individual familiar with what suicide prevention efforts and protocols are taking place at your local site.

Section I. School Information

Answer the questions below by entering the appropriate demographic information for each prompt.

A. ODE assigned Institution ID#
B. School level (*Dropdown*: High School / Middle School/ Elementary)
C. District Name (text entry)
D. School Name (text entry)
E. Job title of individual completing survey | *select from the following*:

- School principal
- Vice principal
- Department Chair (text entry)
- Counselor
- School psychologist
- Program specialist/ TOSA
- Athletic Staff
- Health Teacher
- Administrative assistant
- Teacher (text entry)
- School Nurse
- Other (text entry)

F. Contact email for follow up (text entry/optional)

Section II. Suicide Prevention

Please answer the following 5 questions based on the suicide prevention efforts taking place at your school.

1. Select any of the following mental health/suicide prevention programs that your school is currently implementing or has implemented in the past three years. *Select all that apply*:

- ASIST
- Question Persuade Refer (QPR)
- Mental Health First Aid
- Sources of Strength
- Kognito
- Connect Post Suicide Intervention (Postvention)
- RESPONSE
- safeTalk
- Signs of Suicide (SOS)
- Other (text entry)
- N/A

2. Select any additional suicide prevention efforts that are currently taking place at your school. *Select all that apply:*

- School based curriculum
- Documented school suicide prevention plan
- Social media outreach
- Guest speakers
- Other (text entry)
- N/A

3. Does your school have a procedure that all administrators, teachers, and staff are familiar with for identifying students at-risk for suicide and referring them for help? (Yes/No)

4. Does your school have a post suicide intervention (postvention) plan for responding to the occurrence of a suicide with strategies and protocols to reduce the spread of contagion and help process grief. (Yes/No)

5. Does your school have a Memorandum of Understanding (MOU) or another form of written communication for information sharing purposes regarding student mental health or suicide attempts with any of the following agencies? *Please select all that apply*:

- Emergency Department
- County Mental Health
- Primary Care
- Justice System
- Other school
- Other
- N/A
-
-

Section III. Suicide Prevention Support

Please answer the following 8 questions on how suicide prevention efforts are supported at your school.

6. Who is primarily responsible for organizing and conducting suicide prevention efforts at your school? *Select all that apply*:

- School principal
- Vice principal
- Department Chair
- Counselor
- School psychologist
- Program specialist/ TOSA
- Athletic Staff
- Health Teacher
- Administrative assistant

- Teacher (text entry)
- School Nurse
- Other (text entry)

7. Rate your school staff's comfort level with comprehensive and effective suicide prevention. *Select the corresponding level of comfort below*: (*Rating 4-point:* Uncomfortable/ Somewhat uncomfortable/ Somewhat comfortable/ Comfortable)

8. Rate your school administration's interest in receiving assistance with the implementation of evidence-based programs aimed at suicide prevention. *Select the corresponding level of interest below:* (*Rating 4-point*: Not interested/ Not very interested/ Somewhat interested/ Interested)

9. Rate your school administration's interest in receiving more information on available evidence-based programs aimed at suicide prevention. *Select the corresponding level of interest below:* (*Rating 4-point*: Not interested/ Not very interested/ Somewhat interested/ Interested)

10. Would you like to be contacted by the Oregon Alliance to Prevent Suicide and the University of Oregon regarding supplemental information on evidence-based suicide prevention programs and effective strategies for the implementation of these programs? (Yes/No)

11. Please use the space below to share any additional contextual information that you would like to share regarding the suicide prevention and mental health efforts taking place at your school? *(Text entry)*

Email Script

Subject Line: Suicide Prevention in Schools

Hello,

As part of a statewide effort to increase the use of effective youth suicide prevention strategies, the Alliance to Prevent Suicide has partnered with the University of Oregon to survey the suicide prevention activities taking place in schools across Oregon. We are asking for your assistance in this important project by completing the following brief survey that should take no longer than 5-10 minutes. The survey is meant to be completed by only one representative from each school site. To ensure accuracy, please have your school representative be an individual familiar with what the suicide prevention efforts and protocols are at your local site. Data gathered from this survey will be used to establish a baseline inventory on what evidence-based programs are currently being implemented for suicide prevention in schools. We know that your time is valuable and we appreciate your willingness to participate in this statewide endeavor.

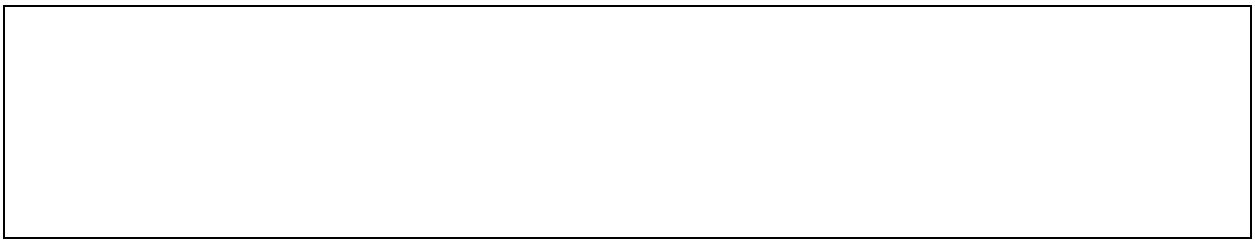
Thank you,

Oregon Alliance to Prevent Suicide

University of Oregon Evaluation Team

APPENDIX B

School Context Definition
Section 1: School and Community Context
a) School ○ b) Family ○ c) Community ○
Section 2: School Strengths and Successes
a) General • b) SP and mental health specific •
Section 3: Immediate Challenges and Needs
a) General • b) SP and mental health •
Section 4: Current suicide prevention goals
a) Goals • b) SP and mental health •
Implementation Inventory Universal Tier (Insert 'School Suicide Prevention SSP Implementation Systems Inventory' [SSPISI] results)



APPENDIX C

School Suicide Prevention (SSP) Implementation Systems Inventory

Tier I: Universal SSP Features

Scoring:

Not Applicable (NA): Item is not applicable to school or does not fit school context or does not make sense.

Not Implemented (NI): Item currently not being implemented or is in the planning phase

Partially Implemented (PI): Item is being implemented to some degree but does not fully meet description or is in early phase

Fully Implemented (FI): School activities match item description and is being implemented in a sustainable way

ID	Feature	Scoring Criteria
	Teaming	
1.1	**Team Composition**. School mental health care team is composed of relevant school personnel that may include an administrator, school counselor, school psychologist, school nurse, support staff, teacher representative, and any staff with mental health or suicide prevention expertise or responsibility related to implementation of suicide prevention plan.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.2	**Team Responsibilities**. School care team meets regularly and is responsible for the systematic planning, coordination, and tracking of universal suicide prevention activities. All relevant team members attend. The team actively seeks out student, staff, and family input into these activities and meets on a regular basis (e.g., monthly or quarterly).	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		

1.3	**Team Network.** School care team representatives participate in a learning collaborative with other schools within the district or region. Teams meet to participate in shared-problem solving and solution sharing across sites. The school team collaborative communicates progress and identified challenges to the district level team	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
Training, Programming, and Practices		
1.4	**Programming Selection.** A systematic process is used by care team to select appropriate universal programs based on six selection criteria: need, fit, resources, evidence, readiness, and capacity. Input and buy-in from students, staff, and parents will be incorporated into selection process.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.5	**Staff Gatekeeper Training**. All staff are trained in how to properly identify and refer students showing signs of being at-risk for suicide. Trainings for new staff are conducted annually and all staff are retrained every 2-3 years.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.6	**Staff Training on School/District Suicide Prevention Plan.** Key staff are provided district plan and collaborate with district on the suicide prevention plan key components and how they will be implemented	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		

1.7	**Student Programming.** A universal student-centered suicide prevention program is used to teach the knowledge and skills around positive mental health and suicide prevention. Approaches may include student training, curriculum, or peer-to-peer leadership.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.8	**Social Emotional Learning (SEL) or Alternative Practices.** An SEL curriculum or program is used for students to build effective knowledge, attitudes, and skills around positive emotional health. Or additional practices and skills are taught such as mindfulness, yoga, or other self-regulation techniques.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.9	**Trauma Informed Practices.** School staff have been trained on how to recognize and respond to students impacted by traumatic stress. Students are provided clear expectations and strategies to guide them through stressful situations	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.10	**School Connectedness Promotion.** School is a positive learning environment and trusting/caring relationships are promoted between students, staff, and families. Four strategies are used to increase school connectedness: adult support, positive peer groups, commitment to individual self-worth, and safe school environment	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		

1.11	**Equity and Inclusion Practices.** Suicide prevention activities include culturally-relevant themes. Students, staff, and families have an appreciation for diversity and emphasis is put on including input from marginalized and at-risk groups (e.g., LGBQTIA, Native American)	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
Screening, Protocols, and Procedures		
1.12	**Suicide Prevention Plan.** School has a suicide prevention plan in place aligned with the district policy. Plan maps out key components that will be implemented (e.g., protocols, trainings, screening) and organizes these components within a tiered framework (e.g., universal, selective, indicated).	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.13	**Identify and Refer Protocol.** All staff are knowledgeable of the steps involved in identifying at-risk students and referring them to help. Each referral is appropriately documented.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.14	**Universal Mental Health Screening.** Universal mental health or social-emotional screening is used for identifying both internalizing and externalizing risk factors.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
Community, Family, and Student Partnerships		

1.15	**Community Networking.** The school care team is networked in with local community stakeholders (e.g., local suicide prevention coalition, suicide prevention coordinator) to assist with comprehensive suicide prevention planning, training and programming selection, awareness campaigns.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.16	**Student Partnership.** Student input is incorporated into suicide prevention universal activities including training and programming selection, student screening, and designing protocols and procedures.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.17	**Family Communication and Partnership.** Family input on the design of the school suicide prevention plan is solicited along with consistent communication regarding suicide prevention activities and initiatives taking place at the school.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
Evaluation and Data-Based Decision Making		
1.18	**Activity Progress Monitoring and Improvement.** Care team will track and monitor the progress of all universal activities and initiatives. Specifically the trainings, student programming, and screening implementation. Cycles of improvement are continuously applied to the suicide prevention plan based on progress data.	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		

1.19	**Staff Training Evaluation.** Staff trainings are evaluated with a posttest measuring skill acquisition, acceptability, and behavioral intensions. Some form of training follow up is conducted to assess skill application	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		
1.20	**Student Programming Evaluation.** Implementation of student programs is evaluated using fidelity of implementation, acceptability of program, and any effectiveness outcomes identified by program designers	*NA* = Not applicable/ Not relevant/ Does not make sense *NI* = Not Implementing *PI* = Partially Implementing *FI* = Fully Implementing
Notes:		

APPENDIX D

School Suicide Prevention (SSP) Implementation Systems Inventory (SSPISI)

Action Plan

Current Prioritized Goals:

Tier 1					
	Item	**Status**	**Action(s)**	**Start and End Dates**	**Data**
Teaming	1.1 Team Composition				
	1.2 Team Responsibilities				
	1.3 Team Network				
	Item	**Score**	**Action(s)**	**Start and End Dates**	**Measurable Outcome**
Training, Programming,	1.4 Programming Selection				
	1.5 Staff Gatekeeper Training				
	1.6 Staff Training on				

	School/District Suicide Prevention Plan				
	1.7 Student Programming				
	1.8 Social emotional Learning (SEL) or Alternative Practices				
	1.9 Trauma Informed Practices				
	1.10 School Connectedness Promotion				
	1.11 Equity and Inclusion Practices				
Screening, Protocols, and Procedures	1.12 Suicide Prevention Plan Documentation				
	1.13 Identify and Refer Protocol Documentation				
	1.14 Universal Mental Health Screening				
Co m	1.15 Community Networking				

	1.16 Student Partnership				
	1.17 Family Communication and Partnership				
Evaluation and Data-Based Decision Making	1.18 Activity Progress Monitoring and Improvement				
	1.19 Staff Training Evaluation				
	1.20 Student Programming Evaluation				

This tool was inform and adapted from the PBIS Apps tool: Tiered Fidelity Inventory (TFI) Action Plan

REFERENCES CITED

Agerbo, E., Nordentoft, M., & Mortensen, P. B. (2002). Familial, psychiatric, and socioeconomic risk factors for suicide in young people: nested case-control study. *Bmj*, *325*(7355), 74.

Algozzine, B., Barrett, S., Eber, L., George, H., Horner, R., Lewis, T., Putnam, B., Swain-Bradway, J., McIntosh, K., & Sugai, G (2019). School-wide PBIS Tiered Fidelity Inventory. *OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports*

Alsaawi, A. (2014). A critical review of qualitative interviews. *European Journal of Business and Social Sciences*, *3*(4).

Altschuld, J. W. (2004). Emerging dimensions of needs assessment. *Performance Improvement*, *43*(1), 10-15.

Altschuld, J. W., & Lepicki, T. L. (2009). Needs assessment. *HaFndbook of Improving Performance in the Workplace: Volumes 1-3*, 771-791.

Altschuld, J. W., & Witkin, B. R. (1999). *From needs assessment to action: Transforming needs into solution strategies*. Sage.

August, G. J., Piehler, T. F., & Miller, F. G. (2018). Getting "SMART" about implementing multi-tiered systems of support to promote school mental health. *Journal of School Psychology*, *66*, 85-96.

Averill, O. H. & Rinaldi, C. (2013). Research brief: Multi-tier system of supports (MTSS). *The Collaborative*. *48*(8), 91-95.

Bansal, P., Bertels, S., Ewart, T., MacConnachie, P., & O'Brien, J. (2012). Bridging the research–practice gap. *Academy of Management Perspectives*. *26*(1), 73-92.

Batterham, P. J., Calear, A. L., & Christensen, H. (2013). The stigma of suicide scale. *Crisis*.

Blades, C. A., Stritzke, W. G., Page, A. C., & Brown, J. D. (2018). The benefits and risks of asking research participants about suicide: A meta-analysis of the impact of exposure to suicide-related content. *Clinical psychology review*, *64*, 1-12.

Boles, M., Dilley, J. A., Dent, C., Elman, M. R., Duncan, S. C., & Johnson, D. B. (2011). Peer reviewed: Changes in local school policies and practices in Washington State an unfunded physical activity and nutrition mandate. *Preventing Chronic Disease*, *8*(6).

Bolger, N., Downey, G., Walker, E., & Steininger, P. (1989). The onset of suicidal ideation in childhood and adolescence. *Journal of Youth and Adolescence*, 18(2), 175-190.

Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: risks and protectors. *Pediatrics*, *107*(3), 485-493.

Bothwell, L. E., & Podolsky, S. H. (2016). The emergence of the randomized, controlled trial. *New England Journal of Medicine*, *375*(6), 501-504.

Brann, K. L., Baker, D., Smith-Millman, M. K., Watt, S. J., & DiOrio, C. (2021). A meta-analysis of suicide prevention programs for school-aged youth. *Children and Youth Services Review*, *121*, 105-126.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Breet, E., Matooane, M., Tomlinson, M., & Bantjes, J. (2021). Systematic review and narrative synthesis of suicide prevention in high-schools and universities: a research agenda for evidence-based practice. *BMC public health*, *21*(1), 1-21.

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

Bronfenbrenner, U. (1994). Ecological models of human development. *International encyclopedia of education*, *3*(2), 37-43.

Burchell, B., & Marsh, C. (1992). The effect of questionnaire length on survey response. *Quality and quantity*, *26*(3), 233-244.

Calear, A. L., Christensen, H., Freeman, A., Fenton, K., Busby Grant, J., Van Spijker, B., & Donker, T. (2016). A systematic review of psychosocial suicide prevention interventions for youth. *European child & adolescent psychiatry*, *25*(5), 467-482.

Cameron, R. (2009). A sequential mixed model research design: Design, analytical and display issues. *International journal of multiple research approaches*, *3*(2), 140-152.

Cannata, M., Cohen-Vogel, L., & Sorum, M. (2017). Partnering for improvement: Improvement communities and their role in scale up. *Peabody Journal of Education*, *92*(5), 569-588.

Carman, M., Corboz, J., & Dowsett, G. W. (2012). Falling through the cracks: the gap between evidence and policy in responding to depression in gay, lesbian and other homosexually active people in Australia. *Australian and New Zealand Journal of Public Health*, *36*(1), 76-83.

Cash, S. J., & Bridge, J. A. (2009). Epidemiology of youth suicide and suicidal behavior. *Current Opinion in Pediatrics*, *21*(5), 613.

Centers for Disease Control and Prevention (2019). *Youth risk behavior survey: Data summary and trends report 2009-2019*. https://www.cdc.gov/healthyyouth/data/yrbs/pdf/trendsreport.pdf

Cha, C. B., Franz, P. J., M. Guzmán, E., Glenn, C. R., Kleiman, E. M., & Nock, M. K. (2018). Annual Research Review: Suicide among youth–epidemiology, (potential) etiology, and

Chu, C., Buchman-Schmitt, J. M., Stanley, I. H., Hom, M. A., Tucker, R. P., Hagan, C. R., ... & Joiner Jr, T. E. (2017). The interpersonal theory of suicide: A systematic review and meta-analysis of a decade of cross-national research. *Psychological Bulletin*, *143*(12), 1313.

Clyburn, G. M. (2013). Improving on the American dream: Mathematics pathways to student success. *Change: The Magazine of Higher Learning*, *45*(5), 15-23.

Coburn, C. E. (2010). Partnership for district change: Challenges of evidence use in a major urban district. In C. E. Coburn & M. K. Stein (Eds.), *Research and practice in education: Building alliances, bridging the divide* (pp. 167–182). Rowman & Littlefield.

Coburn, C. E., & Penuel, W. R. (2016). Research–practice partnerships in education: Outcomes, dynamics, and open questions. *Educational researcher*, *45*(1), 48-54.Cook, C. R., Frye,

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: *Lawrence Earlbaum Associates*

Cooper, G. D., Clements, P. T., & Holt, K. (2011). A review and application of suicide prevention programs in high school settings. *Issues in Mental Health Nursing*, *32*(11), 696-702.

Cox, G. R., Bailey, E., Jorm, A. F., Reavley, N. J., Templer, K., Parker, A., ... & Robinson, J. (2016). Development of suicide postvention guidelines for secondary schools: A Delphi study. *BMC Public Health*, *16*(1), 1-11.

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.

Crosby, A., Ortega, L., & Melanson, C. (2011). Self-directed violence surveillance; uniform definitions and recommended data elements. *Center for Disease Control and Prevention*

Curtin SC. (2020). State suicide rates among adolescents and young adults aged 10–24: United States, 2000–2018. *National Vital Statistics Reports*, *69*(11).

Curtin, S. C., & Hedegaard, H. (2019). Suicide rates for females and males by race and ethnicity: *NCHS Health E-Stat Report*.

Curtin S.C., Heron M. (2019) Death rates due to suicide and homicide among persons aged 10–24: United States, 2000–2017. *NCHS Data Brief*, no 352.

Curtin, S. C., Heron, M., Miniño, A. M., & Warner, M. (2018). Recent increases in injury mortality among children and adolescents aged 10-19 years in the United States: 1999-2016. *National Vital Statistics Reports*, *67*(4), 1-16.

Cutler, D. M., Glaeser, E. L., & Norberg, K. E. (2001). Explaining the rise in youth suicide. In Risky behavior among youths: An economic analysis (pp. 219-270). *University of Chicago Press*.

Cwik, M. F., Brockie, T., Edwards, S. M., Wilcox, H. C., & Campo, J. V. (2022). Suicide Prevention for American Indian and Alaska Native Youth: Lessons Learned and Implications for Underserved Communities. In *Youth Suicide Prevention and Intervention: Best Practices and Policy Implications* (pp. 145-151). Cham: Springer International Publishing.

Dai, E. (2022). *Family Involvement in School-Based Suicide Prevention Program* (Doctoral dissertation, New York University).

Dazzi, T., Gribble, R., Wessely, S., & Fear, N. T. (2014). Does asking about suicide and related behaviours induce suicidal ideation? What is the evidence?. *Psychological medicine*, *44*(16), 3361-3363.

Debski, J., Spadafore, C. D., Jacob, S., Poole, D. A., & Hixson, M. D. (2007). Suicide intervention: Training, roles, and knowledge of school psychologists. *Psychology in the Schools*, *44*(2), 157-170.

Dennis, K. N., (2018) Suicide isn't just a 'white people thing.' *The Conversation* https://theconversation.com/suicide-isnt-just-a-white-people-thing-77367

Dolle, J. R., Gomez, L. M., Russell, J. L., & Bryk, A. S. (2013). More than a network: Building professional communities for educational improvement. *National Society for the Study of Education Yearbook*, *112*(2), 443-463.

Donovan, M. S. (2013). Generating improvement through research and development in education systems. *Science*, *340*(6130), 317-319.

Dykema, J., Stevenson, J., Day, B., Sellers, S. L., & Bonham, V. L. (2011). Effects of incentives and prenotification on response rates and costs in a national web survey of physicians. *Evaluation & the health professions*, *34*(4), 434-447.

Eckert, T. L., Miller, D. N., DuPaul, G. J., & Riley-Tillman, T. C. (2003). Adolescent suicide prevention: School psychologists' acceptability of school-based programs. *School Psychology Review*, *32*(1), 57-76.

Eggert, L. L., Thompson, E. A., Herting, J. R., & Randall, B. P. (2001). Reconnecting youth to prevent drug abuse, school dropout, and suicidal behaviors among high-risk youth. In E. F. Wagner & H. B. Waldron (Eds.), *Innovations in adolescent substance abuse intervention* (pp. 51-84). Oxford: Elsevier Science.

Ehlman, D. C. (2022). Changes in suicide rates—United States, 2019 and 2020. *MMWR. Morbidity and Mortality Weekly Report*, *71*.

Elharake, J. A., Akbar, F., Malik, A. A., Gilliam, W., & Omer, S. B. (2022). Mental health impact of COVID-19 among children and college students: A systematic review. *Child Psychiatry & Human Development*, 1-13.

Erbacher, T. A., Singer, J. B., & Poland, S. (2015). *Suicide in schools: A practitioner's guide to multi-level prevention, assessment, intervention, and postvention*. Routledge.

Erbacher, T. A., & Singer, J. B. (2018). Suicide risk monitoring: The missing piece in suicide risk assessment. *Contemporary School Psychology*, *22*(2), 186-194.

Farmer, E. M., Burns, B. J., Phillips, S. D., Angold, A., & Costello, E. J. (2003). Pathways into and through mental health services for children and adolescents. *Psychiatric Services*, *54*(1), 60-66.

Farberow, N., Atman, S., & Thorne, A. (1985). *Report of the National Conference on Youth Suicide*. Washington, DC: Administration for Children, Youth, and Families.

Farrington, D. P. (1993). Understanding and preventing bullying. *Crime and Justice*, *17*, 381-458.

Fazel, M., Hoagwood, K., Stephan, S., & Ford, T. (2014). Mental health interventions in schools in high-income countries. *The Lancet Psychiatry*, *1*(5), 377-387.

Fishman, B., Penuel, W., Allen, A. R., Cheng, B., & Sabelli, N. O. (2013). Design-based implementation research: An emerging model for transforming the relationship of research and practice. *Teachers College Record*, *115*(14), 136-156.

Fleischmann, A., Bertolote, J. M., Belfer, M., & Beautrais, A. (2005). Completed suicide and psychiatric diagnoses in young people: a critical examination of the evidence. *American Journal of Orthopsychiatry*, *75*(4), 676-683.

Fontanella, C. A., Warner, L. A., Steelesmith, D. L., Brock, G., Bridge, J. A., & Campo, J. V. (2020). Association of timely outpatient mental health services for youths after psychiatric hospitalization with risk of death by suicide. *JAMA Network Open*, *3*(8), e2012887-e2012887.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological Science*, *18*(3), 233-239.

Garland, A., Shaffer, D., & Whittle, B. (1989). A national survey of school-based, adolescent suicide prevention programs. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*(6), 931-934.

Glass, G. V. (1966). Note on rank biserial correlation. *Educational and Psychological Measurement*, 26, 623-631.

Glenn, C. R., Lanzillo, E. C., Esposito, E. C., Santee, A. C., Nock, M. K., & Auerbach, R. P. (2017). Examining the course of suicidal and nonsuicidal self-injurious thoughts and behaviors in outpatient and inpatient adolescents. *Journal of Abnormal Child Psychology, 45*(5), 971-983.

Glenn, C. R., Kleiman, E. M., Kellerman, J., Pollak, O., Cha, C. B., Esposito, E. C., ... & Boatman, A. E. (2020). Annual research review: a meta-analytic review of worldwide suicide rates in adolescents. *Journal of Child Psychology and Psychiatry*, *61*(3), 294-308.

Godoy Garraza, L., Kuiper, N., Cross, W. F., Hicks, B., & Walrath, C. (2020). The effectiveness of active learning strategies in gatekeeper training on behavioral outcomes. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*. Advanced online publication.

Goldston, D. B., Daniel, S. S., Reboussin, D. M., Reboussin, B. A., Frazier, P. H., & Kelley, A. E. (1999). Suicide attempts among formerly hospitalized adolescents: A prospective naturalistic study of risk during the first 5 years after discharge. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*(6), 660-671.

Goldston, D. B., Walrath, C. M., McKeon, R., Puddy, R. W., Lubell, K. M., Potter, L. B., & Rodi, M. S. (2010). The Garrett Lee Smith memorial suicide prevention program. *Suicide and Life-Threatening Behavior, 40*(3), 245-256.

Goodman-Scott, E., Betters-Bubon, J., & Pianta, R. (2022). MTSS for Suicide Prevention and Intervention: Considerations for School Counseling Preparation. *Teaching and Supervision in Counseling*, *4*(2), 10.

Gordon, J. (2020). Addressing the Crisis of Black Youth Suicide. *Bethesda, Md.: NIMH*.

Gould, M. S., Greenberg, T. E. D., Velting, D. M., & Shaffer, D. (2003). Youth suicide risk and preventive interventions: a review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry, 42*(4), 386-405.

Granello, P. F., & Zyromski, B. (2018). Developing a comprehensive school suicide prevention program. *Professional School Counseling*, *22*(1).

Graves, J. M., Mackelprang, J. L., Van Natta, S. E., & Holliday, C. (2018). Suicide prevention training: Policies for health care professionals across the United States as of October 2017. *American Journal of Public Health*, *108*(6), 760-768.

Grimm, P. (2010). Social desirability bias. *Wiley international encyclopedia of marketing*.

Grosselli, L., Herzog, K., Aseltine, R. H., Balazs, J., Carli, V., Ciffone, J., ... & Knappe, S. (2021). Dos and don'ts in designing school-based awareness programs for suicide prevention: Results of a three-stage Delphi survey. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*.

Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D'Augelli, A. R., ... & Clayton, P. J. (2010). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: Review and recommendations. *Journal of homosexuality*, *58*(1), 10-51.

Hawton, K., Saunders, K. E., & O'Connor, R. C. (2012). Self-harm and suicide in adolescents. *The Lancet*, *379*(9834), 2373-2382.

Henrick, E. C., Cobb, P., Jackson, K., Penuel, W. R., & Clark, T. (2017). *Assessing research-practice partnerships: Five dimensions of effectiveness.* William T. Grant Foundation.

Hinduja, S., & Patchin, J. W. (2010). Bullying, cyberbullying, and suicide. *Archives of Suicide Research*, *14*(3), 206-221.

Hoover, S. A. (2018). When we know better, we don't always do better: Facilitating the research to practice and policy gap in school mental health. *School Mental Health*, *10*(2), 190-198.

Ibrahim, A., & El Zaatari, W. (2020). The teacher–student relationship and adolescents' sense of school belonging. *International Journal of Adolescence and Youth*, *25*(1), 382-395.

JED Foundation (2018). The comprehensive approach to mental health promotion and suicide prevention for high schools.

Joiner Jr, T. E., Van Orden, K. A., Witte, T. K., & Rudd, M. D. (2009). *The interpersonal theory of suicide: Guidance for working with suicidal clients*. American Psychological Association.

Joiner, T. E., Van Orden, K. A., Witte, T. K., Selby, E. A., Ribeiro, J. D., Lewis, R., & Rudd, M. D. (2009). Main predictions of the interpersonal–psychological theory of suicidal behavior: Empirical tests in two samples of young adults. *Journal of Abnormal Psychology*, *118*(3), 634.

Jones, A. C., Schinka, K. C., van Dulmen, M. H., Bossarte, R. M., & Swahn, M. H. (2011). Changes in loneliness during middle childhood predict risk for adolescent suicidality indirectly through mental health problems. *Journal of Clinical Child & Adolescent Psychology*, *40*(6), 818-824.

Kalafat, J. (2003). School approaches to youth suicide prevention. *American Behavioral Scientist*, *46*(9), 1211-1223.

Kalafat, J., & Elias, M. (1994). An evaluation of a school-based suicide awareness intervention. *Suicide and Life-Threatening Behavior*, *24*(3), 224-233.

Katz, C., Bolton, S. L., Katz, L. Y., Isaak, C., Tilston-Jones, T., Sareen, J., & Swampy Cree Suicide Prevention Team. (2013). A systematic review of school-based suicide p revention programs. *Depression and Anxiety*, *30*(10), 1030-1045.

Kaufman, R. (1977). A possible taxonomy of needs assessments. *Educational Technology*, *17*(11), 60-64.

Kelly, M. S., & Lueck, C. (2011). Adopting a data-driven public health framework in schools: Results from a multi-disciplinary survey on school-based mental health practice. *Advances in School Mental Health Promotion*, *4*(4), 5-12.

Kim, Y. S., & Leventhal, B. (2008). Bullying and suicide: A review. *International Journal of Adolescent Medicine and Health*, 20(2), 133.

King, K. A. (2001). Developing a comprehensive school suicide prevention program. *Journal of School Health*, *71*(4), 132-137.

Kitson, A., Harvey, G., & McCormack, B. (1998). Enabling the implementation of evidence based practice: a conceptual framework. *BMJ Quality & Safety*, *7*(3), 149-158.

Klomek, A. B., Sourander, A., Niemelä, S., Kumpulainen, K., Piha, J., Tamminen, T., ... & Gould, M. S. (2009). Childhood bullying behaviors as a risk for suicide attempts and completed suicides: a population-based birth cohort study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(3), 254-261.

Klonsky, E. D., May, A. M., & Saffer, B. Y. (2016). Suicide, suicide attempts, and suicidal ideation. *Annual review of clinical psychology*, *12*, 307-330.

Klonsky, E. D., Saffer, B. Y., & Bryan, C. J. (2018). Ideation-to-action theories of suicide: a conceptual and empirical update. *Current opinion in psychology*, *22*, 38-43.

Kreuze, E., Stecker, T., & Ruggiero, K. J. (2018). State requirements for school personnel suicide prevention training: Where do we go from here?. *Adolescent Research Review*, *3*(2), 235-253.

Kutcher, S., Wei, Y., & Behzadi, P. (2017). School-and community-based youth suicide prevention interventions: hot idea, hot air, or sham?. *The Canadian Journal of Psychiatry*, *62*(6), 381-387.

Lamis, D. A., Underwood, M., & D'Amore, N. (2016). Outcomes of a suicide prevention gatekeeper training program among school personnel. *Crisis*.

Lasgaard, M., Goossens, L., & Elklit, A. (2011). Loneliness, depressive symptomatology, and suicide ideation in adolescence: Cross-sectional and longitudinal analyses. *Journal of Abnormal Child Psychology, 39,* 137–150.

LeMahieu, P. G., Grunow, A., Baker, L., Nordstrum, L. E., & Gomez, L. M. (2017). Networked improvement communities: The discipline of improvement science meets the power of networks. *Quality Assurance in Education, 25*(1), 5-25.

Lenski, S., Larson, M., McElhone, D., Davis, D. S., Lauritzen, C., Villagómez, A., ... & Scales, W. D. (2016). What teachers want: A statewide survey of reading and English language arts teachers' instructional materials, preferences, and practices. *Literacy Research and Instruction, 55*(3), 237-261.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., & Baldwin, C. L. (2001). Gender differences in suicide attempts from adolescence to young adulthood. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(4), 427-434.

MacKinnon, D. P. (2012). *Introduction to statistical mediation analysis*. Routledge.

Mahler, W., & W. Monroe (1952). Technical Report: How industry determines the need for and effectiveness of training. *Personnel Research Branch Department of the Army*.

Malley, P. B., Kush, F., & Bogo, R. J. (1994). School-based adolescent suicide prevention and intervention programs: A survey. *The School Counse*lor, *42*(52), 130-136.

Manafò, E., Petermann, L., Lobb, R., Keen, D., & Kerner, J. (2011). Research, practice, and policy partnerships in pan-Canadian coalitions for cancer and chronic disease prevention. *Journal of Public Health Management and Practice, 17*(6).

Marsh, R. J., & Mathur, S. R. (2020). Mental health in schools: An overview of multitiered systems of support. *Intervention in School and Clinic*, *56*(2), 67-73.

Marttunen, M. J., Aro, H. M., & Lönnqvist, J. K. (1993). Adolescence and suicide: a review of psychological autopsy studies. *European Child & Adolescent Psychiatry*, *2*(1), 10-18.

Mazza, J. J. (1997). School-based suicide prevention programs: Are they effective? *School Psychology Review*, *26*(3), 382-396.

McClelland, H., Evans, J. J., Nowland, R., Ferguson, E., & O'Connor, R. C. (2020). Loneliness as a predictor of suicidal ideation and behaviour: a systematic review and meta-analysis of prospective studies. *Journal of Affective Disorders, 274*, 880-896.

McGirr, A., Renaud, J., Bureau, A., Seguin, M., Lesage, A., & Turecki, G. (2008). Impulsive-aggressive behaviors and completed suicide across the life cycle: a predisposition for younger age of suicide. *Psychological Medicine*, *38*(3), 407.

McHugh, C. M., Lee, R. S. C., Hermens, D. F., Corderoy, A., Large, M., & Hickie, I. B. (2019). Impulsivity in the self-harm and suicidal behavior of young people: a systematic review and meta-analysis. *Journal of Psychiatric Research, 116*, 51-60.

McIntosh, K., & Goodman, S. (2016). *Integrated multi-tiered systems of support: Blending RTI and PBIS*. Guilford Publications.

Mérelle, Saskia, et al. A multi-method psychological autopsy study on youth suicides in the Netherlands in 2017: Feasibility, main outcomes, and recommendations. *PLoS One*, *15*(8).

Michael, K. D., & Ramtekkar, U. (2022). Overcoming barriers to effective suicide prevention in rural communities. In *Youth suicide prevention and intervention: best practices and policy implications* (pp. 153-159). Cham: Springer International Publishing.

Miller, D. N., Eckert, T. L., DuPaul, G. J., & White, G. P. (1999). Adolescent suicide prevention: Acceptability of school-based programs among secondary school principals. Suicide and Life-Threatening Behavior, 29(1), 72-85.

Miller, A. B., & Eisenlohr-Moul, T. A. (2019). Biological responses to acute stress and suicide: A review and opportunities for methodological innovation. *Current Behavioral Neuroscience Reports*, *6*(4), 141-150.

Miller, A. B., & Prinstein, M. J. (2019). Adolescent suicide as a failure of acute stress-response systems. *Annual Review of Clinical Psychology*.

Miller, D. N., & Eckert, T. L. (2009). Youth suicidal behavior: An introduction and overview. *School Psychology Review*, *38*(2), 153-167.

Miller, D. N., Eckert, T. L., & Mazza, J. J. (2009). Suicide prevention programs in the schools: A review and public health perspective. *School Psychology Review*, *38*(2), 168-188.

Mo, P. K., Ko, T. T., & Xin, M. Q. (2018). School-based gatekeeper training programmes in enhancing gatekeepers' cognitions and behaviours for adolescent suicide prevention: A systematic review. *Child and Adolescent Psychiatry and Mental Health*, *12*(1), 1-24.

Monteith, L. L., Smith, N. B., Holliday, R., Holliman, B. A. D., LoFaro, C. T., & Mohatt, N. V. (2020). "We're afraid to say suicide": Stigma as a barrier to implementing a community-based suicide prevention program for rural veterans. *The Journal of nervous and mental disease*, *208*(5), 371-376.

Moore, M. L., & Dutton, P. (1978). Training needs analysis: Review and critique. *Academy of Management Review*, *3*(3), 532-545.

Muñoz, M. A. (2016). Building research-practice partnerships as a district-led initiative: A high-leverage strategy for system improvement. *Planning and Changing*, *47*(3/4), 182.

Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of Sexual Behavior*, *42*(3), 437-448.

Naci, H., & Soumerai, S. B. (2016). History bias, study design, and the unfulfilled promise of pay-for-performance policies in health care. *Preventing chronic disease*, *13*.

Nickerson, A. B., Cook, E. E., Cruz, M. A., & Parks, T. W. (2019). Transfer of school crisis prevention and intervention training, knowledge, and skills: Training, trainee, and work environment predictors. *School Psychology Review*, *48*(3), 237-250.

National Association of State Boards of Education (2021). Suicide prevention policy. *State Policy Database*: https://statepolicies.nasbe.org/health/categories/counseling-psychological-and-social-services/suicide-prevention-policy

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008). Suicide and suicidal behavior. *Epidemiologic Reviews*, *30*(1), 133-154.

Nock, M., Borges, G., & Ono, Y. (Eds.). (2012). Suicide: Global perspectives from the WHO world mental health surveys. *Cambridge University Press*.

Oaks-Davidson, J. (1996). Suicide prevention, intervention, & postvention: A comprehensive approach. *Updating School Board Policies*, *27*(1), 8-11.

O'Brien, K. H. M., Putney, J. M., Hebert, N. W., Falk, A. M., & Aguinaldo, L. D. (2016). Sexual and gender minority youth suicide: understanding subgroup differences to inform interventions. *LGBT Health*, *3*(4), 248-251.

O'Connor Bones, U., Bates, J., Finlay, J., & Campbell, A. (2022). Parental involvement during COVID-19: Experiences from the special school. *European Journal of Special Needs Education*, *37*(6), 936-949.

O'Connor, R. C. (2011). Towards an integrated motivational–volitional model of suicidal behaviour. *International handbook of suicide prevention: Research, Policy and Practice*, *1*, 181-98.

O'Connor, E., Gaynes, B., Burda, B., Williams, C., & Whitlock, E. (2013). Screening for suicide risk in primary care: A systematic evidence review for the US Preventive Service Task Force Agency for Healthcare Research and Quality. *Report*, *158*, 741-754.

O'Connor, R. C., & Kirtley, O. J. (2018). The integrated motivational–volitional model of suicidal behaviour. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *373*(1754), 20170268.

Oregon Health Authority (2015). *Youth suicide intervention and prevention plan*. https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/SAFELIVING/SUICIDEPREVENTION/Documents/5-year-youth-suicide-prevention-plan.pdf

O'Reilly, M., Svirydzenka, N., Adams, S., & Dogra, N. (2018). Review of mental health promotion interventions in schools. *Social Psychiatry and Psychiatric Epidemiology*, *53*(7), 647-662.

Ortiz, P., & Khin Khin, E. (2018). Traditional and new media's influence on suicidal behavior and contagion. *Behavioral Sciences & the Law*, *36*(2), 245-256.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533-544.

Pelkonen, M., Karlsson, L., & Marttunen, M. (2011). Adolescent suicide: Epidemiology, psychological theories, risk factors, and prevention. *Current Pediatric Reviews*, *7*(1), 52-67.

Pena, J. B., & Caine, E. D. (2006). Screening as an approach for adolescent suicide prevention. *Suicide and Life-Threatening Behavior*, *36*(6), 614-637.

Petrova, M., Wyman, P. A., Schmeelk-Cone, K., & Pisani, A. R. (2015). Positive-themed suicide prevention messages delivered by adolescent peer leaders: Proximal impact on classmates' coping attitudes and perceptions of adult support. *Suicide and Life-Threatening Behavior*, *45*(6), 651-663.

Pickering, T. A., Wyman, P. A., Schmeelk-Cone, K., Hartley, C., Valente, T. W., Pisani, A. R., ... & LoMurray, M. (2018). Diffusion of a peer-led suicide preventive intervention through school-based student peer and adult networks. *Frontiers in Psychiatry*, *9*, 598.

Platt, S., & Niederkrotenthaler, T. (2020). Suicide prevention programs: Evidence base and best practice. *Crisis*, 41 (Suppl 1), 99–124.

Pollock, N. J., Naicker, K., Loro, A., Mulay, S., & Colman, I. (2018). Global incidence of suicide among Indigenous peoples: a systematic review. *BMC Medicine*, *16*(1), 1-17.

Posamentier, J., Seibel, K., & DyTang, N. (2022). Preventing youth suicide: A review of school-based practices and how social–emotional learning fits into comprehensive efforts. *Trauma, Violence, & Abuse*, 15248380211039475.

Potter, J., & Hepburn, A. (2005). Qualitative interviews in psychology: Problems and possibilities. *Qualitative Research in Psychology*, *2*(4), 281-307.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879-891.

Pressley, T. (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher*, *50*(5), 325-327.

Reinherz, H. Z., Tanner, J. L., Berger, S. R., Beardslee, W. R., & Fitzmaurice, G. M. (2006). Adolescent suicidal ideation as predictive of psychopathology, suicidal behavior, and compromised functioning at age 30. *American Journal of Psychiatry*, *163*(7), 1226-1232.

Ringeisen, H., Henderson, K., & Hoagwood, K. (2003). Context matters: Schools and the "research to practice gap" in children's mental health. *School Psychology Review*, *32*(2), 153-168.

Robertson, L., Skegg, K., Poore, M., Williams, S., & Taylor, B. (2012). An adolescent suicide cluster and the possible role of electronic communication technology. *Crisis*, *33*(4), 239-245.

Robinson, J., Calear, A. L., & Bailey, E. (2018). Suicide prevention in educational settings: A review. *Australasian Psychiatry*, *26*(2), 132-140.

Rubin, A., Smith, D. M., Lawson, W. C., & Fox, K. R. (2022). Suicide and self-harm prevention and intervention in LGBTQIA+ youth: current research and future directions. *Youth suicide prevention and intervention: best practices and policy implications*, 115-123.

Ruch, D. A., Sheftall, A. H., Schlagbaum, P., Rausch, J., Campo, J. V., & Bridge, J. A. (2019). Trends in suicide among youth aged 10 to 19 years in the United States, 1975 to 2016. *JAMA Network Open*, *2*(5), 193886-193886.

Scherff, A. R., Eckert, T. L., & Miller, D. N. (2005). Youth suicide prevention: A survey of public school superintendents' acceptability of school-based programs. *Suicide and Life-Threatening Behavior*, *35*(2), 154-169.

Schomerus, G., Evans-Lacko, S., Rüsch, N., Mojtabai, R., Angermeyer, M. C., & Thornicroft, G. (2015). Collective levels of stigma and national suicide rates in 25 European countries. *Epidemiology and psychiatric sciences*, *24*(2), 166-171.

Seeley, D. S. (1985). *Education through partnership*. American Enterprise Institute for Public Policy Research.

Senge, P. (1994). *Building a learning organization*. Corporate Research Forum.

Shafii, M., Steltz-Lenarsky, J., Derrick, A. M., Beckner, C., & Whittinghill, J. R. (1988). Comorbidity of mental disorders in the post-mortem diagnosis of completed suicide in children and adolescents. *Journal of Affective Disorders*, *15*(3), 227-233.

Shaffer, D., Garland, A., Gould, M., Fisher, P., & Trautman, P. (1988). Preventing teenage suicide: A critical review. *Journal of the American Academy of Child & Adolescent Psychiatry, 27*(6), 675-687.

Shannon, P., Daly, D. C., Malatchi, A., Kvarfordt, C., & Yoder, T. (2001). Capacity for statewide implementation of positive behavior supports: A needs assessment strategy. *Journal of Positive Behavior Interventions*, *3*(2), 95-100.

Shannonhouse, L., Lin, Y. W. D., Shaw, K., & Porter, M. (2017). Suicide intervention training for K–12 schools: A quasi-experimental study on ASIST. *Journal of Counseling & Development*, *95*(1), 3-13.

Sheftall, A. H., Asti, L., Horowitz, L. M., Felts, A., Fontanella, C. A., Campo, J. V., & Bridge, J. A. (2016). Suicide in elementary school-aged children and early adolescents. *Pediatrics*, *138*(4).

Short, K. H., Weist, M. D., Manion, I. G., & Evans, S. W. (2012). Tying together research and practice: Using ROPE for successful partnerships in school mental health. *Administration and Policy in Mental Health and Mental Health Services Research, 39,* 238-247.

Silverman, M. M., Berman, A. L., Sanddal, N. D., O'carroll, P. W., & Joiner Jr, T. E. (2007). Rebuilding the tower of Babel: a revised nomenclature for the study of suicide and suicidal behaviors. Part 2: Suicide-related ideations, communications, and behaviors. *Suicide and Life-Threatening Behavior*, *37*(3), 264-277.

Singer, J. B., Erbacher, T. A., & Rosen, P. (2019). School-based suicide prevention: A framework for evidence-based practice. *School mental health*, *11*(1), 54-71.

Sinring, A., Aryani, F., & Umar, N. (2022). Examining the effect of self-regulation and psychological capital on the students' academic coping strategies during the Covid-19 pandemic. *International Journal of Instruction*, *15*(2), 487-500.

Slavin, R. E. (2002). Evidence-based education policies: Transforming educational practice and research. *Educational researcher*, *31*(7), 15-21.

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*, *49*(2), 147-154.

Smith, P. K., & Brain, P. (2000). Bullying in schools: Lessons from two decades of research. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *26*(1), 1-9.

Smith-Millman, M. K., & Flaspohler, P. D. (2019). School-based suicide prevention laws in action: A nationwide investigation of principals' knowledge of and adherence to state school-based suicide prevention laws. *School Mental Health*, *11*(2), 321-334.

Swanson, S. A., & Colman, I. (2013). Association between exposure to suicide and suicidality outcomes in youth. *CMAJ*, *185*(10), 870-877.

Steele, I. H., Thrower, N., Noroian, P., & Saleh, F. M. (2018). Understanding suicide across the lifespan: a United States perspective of suicide risk factors, assessment & management. *Journal of Forensic Sciences*, *63*(1), 162-171.

Stone, D. M., Holland, K. M., Bartholow, B. N., Crosby, A. E., Davis, S. P., & Wilkins, N. (2017). *Preventing suicide: A technical package of policies, programs, and practice*. National Center for Injury Prevention and Control

Substance Abuse and Mental Health Services Administration (2012). Preventing suicide: A toolkit for high schools. *HHS Publication.*

Sugg, M. M., Michael, K. D., Stevens, S. E., Filbin, R., Weiser, J., & Runkle, J. D. (2019). Crisis text patterns in youth following the release of 13 Reasons Why Season 2 and celebrity suicides: A case study of summer 2018. *Preventive Medicine Reports*, *16*, 100999.

Surgenor, P. W., Quinn, P., & Hughes, C. (2016). Ten recommendations for effective school-based, adolescent, suicide prevention programs. *School Mental Health*, *8*(4), 413-424.

Tadros, G., & Jolley, D. (2001). The stigma of suicide. *The British Journal of Psychiatry*, *179*(2), 178-178.

Taherdoost, H. (2016). Sampling methods in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management* (*IJARM*), *5*.

Tannous, A. (2011). Factors causing depression among children in Jordan: what teachers see. *Procedia-Social and Behavioral Sciences*, *30*, 341-346.

Tashakkori, A., & Creswell, J. W. (2007). The new era of mixed methods. *Journal of mixed methods research*, *1*(1), 3-7.

Tierney, R., Ramsay, R., Tanney, B., & Lang, W. (1990). Comprehensive school suicide prevention programs. *Death Studies*, *14*(4), 347-370.

Thompson, E. A., Eggert, L. L., Randell, B. P., & Pike, K. C. (2001). Evaluation of indicated suicide risk prevention approaches for potential high school dropouts. *American Journal of Public Health*, *91*(5), 742-752.

Tompkins, T. L., Witt, J., & Abraibesh, N. (2010). Does a gatekeeper suicide prevention program work in a school setting? Evaluating training outcome and moderators of effectiveness. *Suicide and life-threatening behavior*, *40*(5), 506-515.

Tripepi, G., Jager, K. J., Dekker, F. W., & Zoccali, C. (2010). Selection bias and information bias in clinical research. *Nephron Clinical Practice*, *115*(2), c94-c99.

Tseng, V., Easton, J. Q., & Supplee, L. H. (2017). Research-practice partnerships: Building two-way streets of engagement. *Social Policy Report*, *30*(4), 1-17. https://srcd.onlinelibrary.wiley.com/doi/pdf/10.1002/j.2379-3988.2017.tb00089.x

US Department of Health and Human Services (HHS), Office of the Surgeon General and National Action Alliance for Suicide Prevention (2012). *National strategy for suicide prevention: goals and objectives for action*.

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner Jr, T. E. (2010). The interpersonal theory of suicide. *Psychological Review*, *117*(2), 575.

Wagner, J. (1993). Ignorance in educational research or, how can you not know that?. *Educational Researcher*, *22*(5), 15-23.

Walker, H. M., Horner, R. H., Sugai, G., Bullis, M., Sprague, J. R., Bricker, D., & Kaufman, M. J. (1996). Integrated approaches to preventing antisocial behavior patterns among school-age children and youth. *Journal of Emotional and Behavioral Disorders*, *4*(4), 194-209.

Walsh, E. H., McMahon, J., & Herring, M. P. (2022). Research Review: The effect of school-based suicide prevention on suicidal ideation and suicide attempts and the role of intervention and contextual factors among adolescents: a meta-analysis and meta-regression. *Journal of child psychology and psychiatry*, *63*(8), 836-845.

Wasserman, D., Cheng, Q. I., & Jiang, G. X. (2005). Global suicide rates among young people aged 15-19. *World Psychiatry*, *4*(2), 114.

Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., ... & Carli, V. (2015). School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *The Lancet*, *385*(9977), 1536-1544.

Wegemer, C. M., & Renick, J. (2021). Boundary spanning roles and power in educational partnerships. *AERA Open*, *7*.

Wiener, R. L., Wiley, D., Huelsman, T., & Hilgemann, A. (1994). Needs assessment: Combining qualitative interviews and concept mapping methodology. *Evaluation Review*, *18*(2), 227-240.

Welton, R. S. (2007). The management of suicidality: assessment and intervention. *Psychiatry (Edgmont)*, *4*(5), 24.

White, J. (2012). Youth suicide as a "wild" problem: Implications for prevention practice. *Suicidology Online*, *3*(1), 42-50.

Whitlock, J., Wyman, P. A., & Moore, S. R. (2014). Connectedness and suicide prevention in adolescents: Pathways and implications. *Suicide and Life-Threatening Behavior*, *44*(3), 246-272.

Wilcox, H. C., Kharrazi, H., Wilson, R. F., Musci, R. J., Susukida, R., Gharghabi, F., ... & Robinson, K. A. (2016). Data linkage strategies to advance youth suicide prevention: A systematic review for a National Institutes of Health Pathways to Prevention Workshop. *Annals of internal medicine*, *165*(11), 779-785.

Williford, A., Yoder, J., Fulginiti, A., Ortega, L., LoMurray, S., Duncan, D., & Kennedy, N. (2021, July). Peer Leaders as Gatekeepers and Agents of Change: Understanding How Sources of Strength Reduces Suicide Risk and Promotes Wellness. In *Child & Youth Care Forum* (pp. 1-22). Springer US.

Wright-Berryman, J. L., Thompson, D., & Cramer, R. J. (2022). Reducing suicide-related stigma through peer-to-peer school-based suicide prevention programming. *Children and Schools*, *44*(4), 216-223.

Wulz, A. R., Law, R., Wang, J., & Wolkin, A. F. (2022). Leveraging data science to enhance suicide prevention research: a literature review. *Injury prevention*, *28*(1), 74-80.

Wyman, P. A., Brown, C. H., LoMurray, M., Schmeelk-Cone, K., Petrova, M., Yu, Q., ... & Wang, W. (2010). An outcome evaluation of the Sources of Strength suicide prevention program delivered by adolescent peer leaders in high schools. *American Journal of Public Health*, *100*(9), 1653-1661.

Xu, W., & Zammit, K. (2020). Applying thematic analysis to education: A hybrid approach to interpreting data in practitioner research. *International Journal of Qualitative Methods*, *19*, 1609406920918810.

Yıldız, M., Orak, U., Walker, M. H., & Solakoglu, O. (2018). Suicide contagion, gender, and s uicide attempts among adolescents. *Death Studies*, *48*(6), 365-371.

Zhu, X., Tian, L., & Huebner, E. S. (2019). Trajectories of suicidal ideation from middle childhood to early adolescence: risk and protective factors. *Journal of Youth and Adolescence*, *48*(9), 1818-1834.