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EXAMINATION OF SCHOOL PSYCHOLOGISTS' IMPLEMENTATION OF TRAUMA-

INFORMED INTERVENTIONS

by

Abigail Lopez-Cesar

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ABSTRACT
EVIDENCE-BASED PRACTICE OR PRACTICE-BASED EVIDENCE? A QUALITATIVE
EXAMINATION OF SCHOOL PSYCHOLOGISTS' IMPLEMENTATION OF TRAUMA-
INFORMED INTERVENTIONS

by

Abigail L. Lopez-Cesar

The University of Wisconsin-Milwaukee, 2021
Under the Supervision of Professor Karen C. Stoiber, PhD

Children who experience traumatizing life events are reported to be at greater risk for
behavioral and emotional impairments that can diminish school performance. To address this,
school psychologists can implement trauma-informed evidence-based interventions (TI EBIs), or
treatments with an empirical basis that support the unique psychosocial needs of traumatized
children in schools. However, a research-to-practice gap is described as negatively impacting
school psychologists' implementation of empirically-based direct intervention services. The
present study aimed to examine the TI EBI implementation experiences of 16 novice school
psychologists with regard to the distinct barriers and facilitators experienced within the in vivo
school context, the specific TI interventions and practices used by implementors, and the
graduate and post-graduate training implementors received in TI topics. A qualitative interview
methodology and thematic analysis coding approach was used for this study. Results of the study
indicate little use of published, evidence-based manualized intervention curriculums with
fidelity; instead, implementors used modular sequences of activities and strategies (i.e., some of
the components or strategies associated with EBIs) to address student concerns. Salient barriers
to implementation identified include school psychologist beliefs, the reluctance of teachers, and
difficulty engaging with students' families; facilitators included consultative practices with

teachers and other student support personnel. The practicing school psychologists in this study reported minimal graduate training in TI EBIs. In contrast, promising rates of graduate education in evidence-based practices were observed. Results of this research reaffirm the role of the scientist-practitioner training model in promoting evidence-based approaches to conducting interventions in the school setting. Results also include a commentary on the role of school psychologists in trauma treatment. Implications include the importance of school psychologists' competency in consultation and knowledge of TI practices. Additional implications discussed are the need for novel options for research dissemination for the advancement of school psychologists as school-based mental health providers.

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Evidence-Based Practice or Practice-Based Evidence? A Qualitative Examination of School Psychologists' Implementation of Trauma-Informed Interventions

Recent estimates suggest approximately 61% of school-aged children (17-years-old and younger) in the United States have reported experiencing or witnessing a traumatic life event, such as violence or abuse, in the previous year (Finkelhor et al., 2009). Consequently, some of these children may develop a post-traumatic stress disorder (PTSD); estimated rates of PTSD range from around 33% (Fletcher, 2003) to 66% (American Psychological Association [APA], 2008) of children who have been exposed to trauma. Symptoms of PTSD include reexperiencing the traumatic event; avoidance of and reactivity to people, places, or situations related to the trauma; hypervigilance; challenges with concentration and attention; recurrent and invasive thoughts about the traumatization; and a negatively affected cognition/mood (American Psychiatric Association, 2013). Development of PTSD and other stress-related disorders can damage young peoples' adaptive relational skills, self-esteem, and emotional management abilities—resulting in diminished behavioral and academic performance in school (Jaycox et al., 2012).

School psychologists—uniquely qualified professionals holding expertise in mental health, learning, and behavior (National Association of School Psychologists [NASP], 2017b)— are capable providers of mental and behavioral health services that support the educational success of students with a history of traumatization. School-based mental health services consist of "any program, intervention, or strategy applied in a school setting designed to influence students' emotional, behavioral, or social functioning" (Rones & Hoagwood, 2000, p. 224). As a best practice, quality school-based mental and behavioral health services should utilize evidence-based interventions (EBIs), or treatments with an empirical basis that have produced positive

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results documented in multiple scientifically sound studies (Forman et al., 2013; NASP, 2020, 2017b). However, due to a variety of barriers present within school settings, school psychologists may not always use EBIs in their daily practice (Forman et al., 2012; Forman, Fagley et al., 2009); including EBIs that specifically target trauma-related concerns (Hicks et al., 2014).

Strong graduate training that incorporates EBI implementation experiences into coursework and applied pre-service fieldwork is frequently advanced as a means to improve implementation rates (Forman et al., 2013; Kratochwill, 2007; Kratochwill & Stoiber, 2000, 2002; Shernoff et al., 2017; Stoiber & Gettinger, 2016). Many school psychologists work with students who have been exposed to trauma, but it remains unclear what training practitioners are receiving to address the unique needs of these students.

Trauma-Informed Evidence-Based Interventions in Schools

Research supported therapeutic treatments that improve the school functioning of children with a trauma history are referred to as *trauma-informed evidence-based interventions* (TI EBIs). TI EBIs enable school psychologists to decrease symptoms specific to traumatic-stress, while actively building pro-social problem-solving competencies and emotional self-regulation ability (Santiago et al., 2018). TI EBIs are available across multitiered systems of support (MTSS) (Chafouleas et al., 2016; Stoiber & Gettinger, 2016), ranging from universal social-emotional programs that build pro-social adaptive skills (e.g., Positive Behavioral Interventions and Supports [PBIS]; Sugai & Horner, 2009) to targeted cognitive-behavioral therapies (CBT), like Cognitive Behavioral Intervention for Trauma in Schools (CBITS) (Stein et al., 2002; Stein et al., 2003) and Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) (Cohen et al., 2017).

The use of empirically proven psychosocial programs specific to the trauma-related issues of young people is increasingly important given the wide reach of trauma exposure and the debilitating impacts of traumatization (The Substance Abuse and Mental Health Services Association [SAMHSA], 2014). However, many students face obstacles to accessing mental health services, and research has reported that traumatized children and adolescents are among those least likely to receive mental health services (Santiago et al., 2018). Disparities in treatment are particularly evident in socioeconomically disadvantaged communities where primary care visits are often among the only healthcare services available, and mental health has been found to be inconsistently addressed at these visits (Davis et al., 2008). Barriers to students receiving mental-health services include shortages of qualified clinicians, insufficient insurance or inaccessibility of clinicians who accept Medicaid, and lack of transportation or childcare (Committee on School Health, 2004). In addition, cultural factors—such as a lack of understanding of the therapeutic process or fear of the stigma associated with mental health services—discourage families from seeking treatment (Becker et al., 2011).

School-based mental health intervention services minimize barriers to accessing care and build service delivery capacity for underserved populations by providing convenient treatment in a setting more familiar to parents (NASP, 2017). Furthermore, educators are generally trusted by children and families, which increases the likelihood of participation in services offered in schools (Fitzgerald & Cohen, 2012; Rolfsnes & Idsoe, 2011). Currently, schools are the most common entry point for children who receive mental health services (Farmer et al., 2003), including those related to traumatic stress. Around 75% of young people receiving mental health services do so through their schools (Rones & Hoagwood, 2003).

School Psychologists as Mental Health Intervention Providers

School psychologists are "uniquely qualified specialized instructional support personnel" embedded within schools to support both students and teachers in the educational process (NASP, 2020, p. xxii). They perform a variety of diverse job roles including identification of evidence-based appropriate educational and mental health services; provision and support of a continuum of prevention, intervention, and evaluation services; and advocacy for the importance of school-based psychological services (NASP, 2020). School psychologists are in a position to advance the use of TI EBIs given their expertise in identifying, supporting, and evaluating students requiring psychosocial and academic supports (Shernoff et al., 2017). However, extant studies that have investigated school psychologists' use of TI EBIs indicate these programs are not being applied consistently by practitioners. Hick et al. (2014) found that around half of school psychologists sampled endorsed familiarity with CBITS, but only 16% of respondents stated they had ever used the intervention (Hicks et al., 2014). In another study, Langely et al. (2010), reported that most school-based mental health professionals trained in CBITS found that challenges in their delivery context diminished the integrity of the intervention, or prevented them from implementing all together (Langely et al., 2010).

The observed underutilization of TI EBIs indicates a larger research-to-practice gap (Lilienfeld et al., 2012) characterized by inconsistent application of therapeutic treatment programs, practices, and approaches for which convincing research of treatment effectiveness exists (APA, 2006). In response, the APA (2006) affirmed that mental health professionals should develop an *evidence-based practice* (EBP), described as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences." (p. 273) However, concerns about the translation of treatments with empirical

support to real-world implementation contexts remains a continued challenge to service delivery within an EBP framework (Forman et al., 2013; Kazdin, 2008).

Implementation Science

EBI usage in real-world context is central to implementation science research, which "focuses on understanding the processes and factors related to the successful integration of EBIs in a specific setting, such as a school" (Forman et al., 2013, p. 80). Implementation science developed as a discipline to address impediments to the uptake of evidence-based practices (EBPs) in non-controlled, applied settings (Bauer et al., 2015). Understanding the practical obstacles preventing quality implementation of psychosocial TI EBIs is possible through an implementation science lens.

School psychology implementation science literature has documented that school psychologists frequently report environmental and behavioral obstacles diminish the quality of implementation of psychosocial EBIs in school settings (Forman et al., 2012; Forman, Fagley et al., 2009; Hicks et al., 2014). Some barriers to psychosocial EBIs identified by previous research include insufficient time, limited resources, and financial constraints (Hicks et al., 2014); negative beliefs about the effectiveness of an intervention and one's own capability to implement (Forman, Fagley et al., 2009); and lack of administrator support or absence of personal commitment to the intervention program (Forman et al., 2012). The developers of psychosocial EBIs also expressed challenges to the dissemination of their programs that were similar to those endorsed by school psychologists (Forman, Olin et al., 2009). In terms of trauma-specific EBIs, Langely and colleagues (2010) found factors that impeded implementation of CBITS to be similar to implementation barriers documented in studies that analyzed psychosocial EBIs

globally; these barriers included school logistics, administrative and teacher support, competing job responsibilities, and lack of parental engagement.

Graduate Training as a Solution to the Research-to-Practice Gap

School-psychology implementation science research emphasizes graduate training to be an important feature in promoting usage of evidence-based approaches (Kratochwill, 2007; Stoiber & Kratochwill, 2002). Quality education in EBP through coursework and fieldwork prepares practitioners to deliver effective EBIs as they enter the field (Kratochwill & Stoiber, 2000; Shernoff et al., 2017; Stoiber & Kratochwill, 2000). Even so, a graduate training focus on EBP seems to have only recently gained momentum in school psychologist preparation (Gonzalez et al., 2019); the use of evidence-based methods of intervention was reflected in 2010 NASP training standards, and reaffirmed in the 2020 NASP professional standards revision.

To get a pulse on current EBI training trends, implementation science research to date has primarily relied on graduate trainers as informants (Gonzalez et al., 2019; Reddy et al., 2017; Shernoff et al., 2003), and not the school psychologist implementors themselves. These studies provide insight into the current state of graduate instruction, but do not explain how practitioners apply the implementation knowledge gained in graduate school into their daily practices. In one study that did address implementors specifically, Forman and Fagley et al. (2009) investigated the use of psychosocial EBIs by recently graduated school psychologists who had taken an EBI course. Although the findings of this study highlighted the personal and environmental factors involved with implementation, little descriptive contextual information regarding the factors inhibiting or enabling intervention delivery were present in the analysis. In an effort to better understand the social and ecological validity of TI EBIs in school settings, the present study

aimed to fill in these knowledge gaps of implementation processes by employing a qualitative interview format to elicit detailed contextual information related to implementation behaviors.

The need for an investigation into involvement of school psychology practitioners in all types of EBIs is clear, but research that explores TI EBIs is especially timely given the overwhelming need for trauma-related services (SAMHSA, 2014) and the recent proliferation of TI EBIs into practice. Childhood traumatology is a relatively new field (Terr, 1991); the first chapter about PTSD in children was published only 25 years ago (Blank, 2007). Within the following decade, ground breaking neurobiological research focused on the impact of childhood trauma on the developing brain (Perry et al., 1995) was published signaling a need for the development of new therapies geared towards the unique experiences of traumatized children— like CBITS (Stein et al., 2002). Around this time the term "trauma-informed" was coined in literature (Harris & Fallot, 2001), just ahead of the validation of the bulk of TI EBI interventions created for use in schools (Reinbergs & Fefer, 2017; Rolfsnes & Idsoe, 2011). Health researchers suggest the uptake of newly published research into practice takes around 17 years (Morris et al., 2011). Thus, the school-based TI EBI movement is at a crucial point in the translation process, warranting further investigation into implementation processes to support dissemination (Reinbergs & Fefer, 2017). Many effectiveness trials establish the empirical soundness of TI EBIs in school settings (see Reinbergs & Fefer, 2017; Rolfsnes & Idsoe, 2011) and TI practices are currently picking up traction in K-12 school settings, but the field of school psychology has a paucity of research documenting the key pragmatic factors enabling the successful training in and delivery of these interventions.

Current Study

The purpose of this qualitative interview-based study was to explore the TI intervention implementation experiences of novice school psychologists (≤ 5 years of practice), with regard to the distinct barriers and facilitators experienced within the *in vivo* school context. Early career psychologists were chosen for this study sample to elicit the experience of practitioners (a) trained within an EBP framework and (b) who served in job roles with the capacity for student mental and behavioral health intervention. In addition, an aim of this investigation was to develop an understanding of the discrete TI practices or programs used during intervention delivery. Lastly, this study investigated the training implementors received during graduate preparation and professional development (PD) post-graduation on TI EBIs. The research questions of this study are:

1. What perspectives do novice school psychologists have about their experience implementing TI supports to students with known or suspected traumatization?

    a. What emerges, according to participant responses, as facilitators of implementation?

    b. What emerges, according to participant responses, as barriers of implementation?

2. What intervention programs or strategies have novice school psychologists used to support children with known or suspected trauma exposure?

3. What are the training experiences of novice school psychologists in TI evidence-based intervention?

Literature Review

This chapter begins with a discussion about childhood traumatization and the lasting impact it has on childrens' ability to learn. Key terminology introduced in this section includes the conceptualization of intervention, EBP, and TI used in this study. Examined next are school-based TI EBI programs and their therapeutic component parts, along with the organizational and behavioral factors that impede their implementation. Addressed last are (a) the role graduate

training in EBIs plays in closing the research-to-practice gap and (b) implementation science, the theoretical framework underpinning this research.

Childhood Traumatization

Traumatization is defined as experiencing directly or witnessing first hand a stressful life event that threatens death, injury, or violence; alternatively, traumatization can occur vicariously through indirect exposures such as being privy to the details of another person's traumatization (American Psychiatric Association, 2013). During traumatic events, feelings of terror, horror, and helplessness spur toxic stress, causing an overload of one's parasympathetic nervous system. The result is a physiological and emotional traumatic stress response (i.e., "flight, fight, or freeze") (Perry & Szalavitz, 2017). A variety of events and situations including neglect, physical or sexual violence, abuse, natural disasters, medical and illness-related events, terrorism, and grief can cause traumatization (National Child Traumatic Stress Network [NCTSN], 2017).

The traumatic-stress response is an adaptive response to the threat of danger. However, a severe or prolonged stress response impacts the neurobiology of the developing brain (Center on the Developing Child - Harvard University, 2017) by altering its neurological processes, leading to a variety of emotional, behavioral, cognitive, social, and physiological deficits (DeBellis & Zisk, 2014) that can cause diminished abilities in the areas of reasoning, learning, and emotions (Trauma and Learning Policy Initiative [TLPI], 2017). Notable examples of this include the overdevelopment of structures that control fear response in the brain (Perry et al., 1995); sleep disturbances related to imbalances in dopamine, serotonin, and other neurotransmitter systems; and dysregulation of biological stress systems resulting in maladaptive externalizing behaviors (DeBellis & Zisk, 2014).

Post-Traumatic Stress Disorder (PTSD)

If a child's symptoms become severe, formal identification of Post-Traumatic Stress Disorder (PTSD) is warranted. Approximately 25% of traumatized young people receive this diagnosis (Pine & Cohen, 2002). PTSD symptoms typically appear within three months of the exposure, but can manifest years later. According to the Diagnostic and Statistical Manual of Mental Disorders - 5th Edition (American Psychiatric Association, 2013) symptoms of PTSD include re-experiencing the traumatic event; avoidance of and reactivity to people, places, or situations related to the trauma; hypervigilance; challenges with concentration and attention; recurrent and invasive thoughts about the traumatization; and a negatively affected cognition/mood. PTSD is clinically recognized when symptoms persist longer than a month and include: (a) at least one re-experiencing symptom, (b) at least one avoidance symptom, (c) at least two arousal and reactivity symptoms, and (c) at least two cognition and mood symptoms (American Psychiatric Association, 2013). PTSD can also be comorbid with a variety of other behavioral and affective disorders such as depression, attention-deficit hyperactivity disorder, reactive attachment disorder, adjustment disorder, oppositional defiant disorder, conduct disorder, anxiety disorder, phobic disorder, and borderline personality disorder (American Psychiatric Association, 2013; Cook et al., 2005; Pine & Cohen, 2002; Terr, 1991).

The symptoms of traumatic stress-related disorders manifest differently in children (defined as individuals 0 through 17-years of age) depending on developmental level at time of traumatization and onset of symptoms, sex/gender, and other personal factors (NCTSN, 2010). Negative self-image and worldview, memory loss, persistent negativity, incapability to experience positive emotions, self-blame, emotional detachment, and lack of interest in previously enjoyable activities characterize the range of cognitive and mood-related symptoms of PTSD expressed by young people (American Psychiatric Association, 2013). Also observed is

dissociation (a disruption in memory, consciousness, identity and/or perception of the environment) that can be a stress response to threatening stimuli (i.e., a "defeat" response) or can occur post-exposure as a response to memories of the event (Perry & Szalavitz, 2017). Disassociation often manifests as numbing, compliance, and avoidance in children (Diseth, 2005). Externalizing behavioral responses such as irritability, aggression, and self-destructive behavior are also commonplace symptoms in children (TLPI, 2017). In young children psychosomatic symptoms, such as headaches and stomach aches, and the loss of speech and toileting skills have been documented (American Psychiatric Association, 2013; NCTSN, 2010).

Other Trauma-Related Disorders

In addition to post-traumatic stress disorders, young people exposed to trauma are at higher risk for psychotic symptoms (Arseneault et al., 2011), including decreased self-esteem and suicidal ideation (Cohen, 2011; Marshall et al., 2013). When compared with those who have not experienced trauma exposure, rates of mental health disorders are doubled in populations of young people who have been traumatized (Copeland et al., 2007). In urban areas where community violence is prevalent, these effects occur at higher levels (Nanney et al., 2015; Ruchkin et al., 2007). Increased behavioral problems and juvenile delinquency (Arnold & Fisch, 2011; Perry & Szalavitz, 2017), as well as heightened levels of substance abuse (Fletcher, 2003), have been linked to mental health disorders caused by childhood traumatization. When young people develop maladaptive behavioral patterns, they become vulnerable to future traumatic exposure (Cook et al., 2005). Supportive, non-abusive relationships and therapeutic intervention can help to break these cycles of re-victimization (Egeland et al., 1988).

Impact of Traumatization on School Performance

The effects of PTSD and trauma-related disorders can interrupt the learning of traumatized students. To achieve success in school, students must use executive functioning and self-regulatory skills such as organization, communication, focus, planning, memory engagement, mental flexibility, and self-control (TLPI, 2017). Students are expected to comply with school rules and follow procedures. Likewise, social-emotional skills such as the ability to identify emotions, self-motivate, solve problems, and build relationships with others are necessary to thrive in the cooperative classroom environment. Dysregulated behavior impairs a child's ability to perform the expected behaviors and cognitive functioning required for academic and social-emotional achievement in schools (Jaycox et al., 2012; Milwaukee Public Schools [MPS], 2015; Wolpow at al., 2009).

The reported impact of cognitive and emotional dysregulation on children includes diminished academic achievement, such as decreased IQ and reading ability (Delaney-Black et al., 2002), lower GPA and grades (Hurt et al., 2001; Saigh et al., 1997), and a higher risk of behavioral problems (TLPI, 2017). Students exhibiting trauma-related disorders also have a greater likelihood of placement in special education (Grevstad, 2007). In addition, traumatization due to violence exposure has a relationship with absenteeism in elementary, middle, and high school students (Bowen & Bowen, 1999; Hurt et al., 2001; Strøm et al., 2016). Due in part to these issues, lower rates of high school graduation are observed in students who experience trauma exposure (Grogger, 1997).

In the classroom, the increased risk for externalizing behavioral disorders (e.g., meanness, fighting, and aggression) observed in young people with a trauma history (Perry & Szalavitz, 2017; TLPI, 2017) often draws negative attention from school staff. For many of these students, problem behaviors translate into frequent infractions causing office discipline referrals,

suspensions, and expulsions (Margolin & Gordis, 2000). Beyond taking away crucial classroom time, problem behavior can also be a forewarning of diminished future outcomes. Evidence suggests that children who display patterns of disruptive and aggressive behavior in elementary school are at increased risk for academic problems, truancy, substance abuse, and antisocial behavior (Schaeffer et al., 2003). One study reported behavioral dysregulation observed in maltreated preschoolers was a predictor for poor achievement scores obtained years later, suggesting the link between trauma exposure and school achievement can be enduring throughout a child's academic career (Carlomagno et al., 2018).

Students with post-traumatic disorders often present their behavioral symptoms in ways that are misunderstood by school staff. For example, young people in hyper-aroused states may display unexpected reactions to a minor stressor (e.g., loud noises, being touched), as the brain has been wired through prolonged exposure to violence to react to any threating stimuli with the stress response (Perry et al., 1995). Similarly, internalized reactions to stressors, such as freezing (i.e., appearing robotic and nonreactive) due to overwhelming anxiety, can present as oppositional defiance. To a school staff member unfamiliar with TI practices, these behaviors can appear as intentional acts of defiance that require a punitive response; and as a result of punishment the child risks re-traumatization (Pinter, 2017).

Importantly, automatic assumptions of a trauma history should not be made about children with symptoms that present as trauma-related (TLPI, 2017). Instead, screening any student suspected of having trauma-related issues should occur using a multisource, multimethod assessment protocol before intervention services are provided (Reinbergs & Fefer, 2017).

Intervention

"Intervention" holds dual meaning in the field of school psychology, below the terminology is discussed in both the contexts of a process and a treatment.

Intervention as a Process

The act of intervention broadly refers to the application of a treatment with the aim of interrupting the observed problematic behaviors/processes by providing more adaptive alternatives (Fixsen et al., 2005). Within this conceptualization, intervention illustrates the act of involvement in direct service within a "wide range of prevention, treatment, educational, and service programs that are typically used in clinical and/or educational settings" (Kratochwill, 2007, p. 830). The APA (2006) further expands intervention to include "all direct services rendered by health care psychologists, including assessment, diagnosis, prevention, treatment, psychotherapy, and consultation." (p. 273)

Intervention as a Treatment

In another conceptualization of the term, specific therapeutic practices and programs are also commonly referred to as interventions within the literature. The APA (2006) illustrates this definition of intervention to mean "specific psychological treatments that have been shown to be efficacious in controlled clinical trials." (p. 273) A clear related definition from the What Works Clearinghouse (2008) refers to an intervention as a program, policy, or practice that is "intended to increase skills, competencies, and outcomes in a targeted area" (Stoiber & DeSmet, 2010, p. 213). This definition aligns with that of the Task Force on Evidence-Based Interventions in School Psychology (Stoiber & Kratochwill, 2002), which conceptualized an intervention as a therapy program. This manuscript uses primarily this definition of intervention as a treatment practice or program.

Evidence-Based Distinction

The term evidence-based suggests a strong empirical basis. An EBI is a treatment that has shown primary and/or secondary outcomes within empirical studies (Forman et al., 2013). The APA (2002) noted a variety of methods can contribute to an evidence base (such as expert consensus, clinical observation, and empirical research), but the greatest emphasis is on randomized controlled experiments. However, empirical research is most valuable when the "what" being implemented is enhanced by knowledge of the "how" it is implemented (Blase et al., 2012). Accordingly, Kratochwill and Stoiber (2002), Kratochwill and Shernoff (2004), and Stoiber and DeSmet (2010) advocated for the definition of an EBI to expand to incorporate pragmatic considerations, including the efficacy of an intervention in applied contexts.

Practices and interventions with empirically proven results are the gold standard for intervening in mental health issues in school. The No Child Left Behind Act mandated the use of interventions proven effective by "scientifically-based research" in schools; the Every Student Succeeds Act of 2015 replaced this language with "evidence-based interventions" (California Department of Education, 2018). The NASP (2020) practice and training guidelines advocate for the use and teaching of EBIs.

In school psychology, a best practice is the use of a classifying framework to judge the empirical soundness of an intervention. The Task Force on Evidence-Based Interventions in School Psychology (Kratochwill & Stoiber, 2002) created a 4-point scale ranking system for interventions: strong (3), promising (2), weak/marginal (1), and no evidence/support (0). These ratings are based on study characteristics such as design, measurement quality, outcomes, replicability, and dissemination (Stoiber & DeSmet, 2010). These ratings, along with the other informative guidelines proposed by the Task Force, seek to demystify the evaluative process undergone by a practitioner when choosing and seeking to promote well-founded EBIs.

Databases that list school-based EBIs, such as the What Works Clearinghouse (WWC; www.whatworks.ed.gov), exist as well. These databases are a good resource to support school psychologists' intervention decision making; however, a variety of groups, all with varying evaluative criteria, review the evidence base for each intervention (Gonzalez et al., 2019; Stoiber & Gettinger, 2016). Thus, school psychologists should rely on their knowledge of research and scientific thinking to evaluate the utility and credibility of an intervention program or practice before using it (Kratochwill, 2012).

Trauma-Informed Evidence-Based Interventions

In this study, TI EBIs at the Tier 1 (universal, school-wide) level refer primarily to practices and programs that "support the academic competence of students, provide tools to support students and staff in managing emotional and behavioral challenges, and support teachers and other staff in negotiating difficult situations" (NASP, 2015). At the Tier 2 and Tier 3 (intensive and targeted) levels, TI EBIs refer to fully developed therapy programs created specifically for treating trauma-related symptoms that have: (a) a treatment model and instructional guide available and (b) at least one peer-reviewed study that examines the effectiveness of the treatment (Black et al., 2012). Based on a definition utilized by Black et al. (2012) in a metanalysis of TI therapies, the operationalization of TI EBI used by this study intentionally emphasizes manualized therapies because manuals help to define the content, materials, methods, and measures within the sequence of the therapy (Kratochwill & Stoiber, 2000). This is because TI EBIs are comprised of a variety of therapeutic component parts (NCTSN, 2018; Santiago et al., 2018)—like mindfulness (Greenberg & Harris, 2012) and cognitive coping (Otte, 2011)—that have empirical support as an entity separate from a specific TI therapeutic program. Research typically relies on manuals for replication; therefore, the

manualized sequence of an intervention, not its component parts, receive the seal of evidence-based (Kratochwill & Stoiber, 2000; Stoiber & Kratochwill, 2000).

However, in practice, research-supported therapeutic component parts of TI EBIs are frequently used outside of the context of the manualized intervention sequence. As such TI EBPs, which refer more generally to common practice elements—practices and discrete intervention components with empirical support (Shernoff et al., 2017), are used to describe approaches to TI support that are not manualized therapies. As an example, CBITS is a manualized curriculum sequence considered an EBI; mindfulness, although a component part of CBITS, is an EBP. EBPs refers to distinct activities implemented by a school psychologist, EBP refers to a school psychologist's "practice" in the sense of their overall holistic approach to direct service.

Trauma-Informed

TI service delivery "(a) realizes the widespread impact of trauma and understands multiple pathways for recovery; (b) recognizes the signs and symptoms of trauma in clients and families; (c) responds to trauma by fully integrating knowledge about it into practices, procedures and policies; and (d) works actively to prevent re-traumatization" (SAMHSA, 2014, p. 9). As a global term, TI refers to a shift in thinking and practice that extends beyond the provision of mental health treatments to include all facets of organizational decision making and functioning (Branson et al., 2017). According to Reinbergs and Fefer (2017, p. 251), this description is "lacking definitional clarity" and child-serving personnel prefer more concrete guidelines of the practices that fall under the umbrella of TI (Donisch et al., 2016).

TI, within an intervention context, refers to social-emotional learning and behavioral management approaches that support student perceptions of safety (academically, physically, and

emotionally) with an acknowledgment that past or ongoing trauma interrupts current student academic capacity (TLPI, 2017). SAMHSA (2014) outlines six guiding principles for TI care that include: safety; trustworthiness and transparency; peer support and mutual self-help; collaboration; empowerment; voice and choice; and cultural, historical, and gender considerations. The therapeutic components of TI EBIs used in schools manifest these guiding principles.

TI Versus Trauma Sensitive. The terms "trauma informed" and "trauma sensitive" are both commonly used to describe interventions, practices, and delivery techniques that address the effects of trauma. According to the TLPI (2017), trauma-sensitive schools describe learning communities focused on the creation of a culture that eases the impact trauma has on learning to make all students feel safe and supported. Distinguishing between the two terms allows for the roles of school staff and mental health providers (MHPs) to be separated, with trauma sensitive emphasizing that educators are not therapists. Trauma-sensitive practices represents the spectrum of school-wide practices (Tier 1) that support students outside of behavioral health services (TLPI, 2017). These terms are typically used interchangeably; however, this paper aims to use TI when referring to the EBIs of interest because this term suggests targeted behavioral health approaches, such as a therapeutic program.

Universal TI EBIs

At a universal level, TI care in schools occurs organizationally through practices and mindsets that enable staff to create protected environments for students to develop healthy relationships with adults and peers, calm their emotions, cultivate focus, and feel confident in themselves to academically and socioemotionally achieve (TLPI, 2017). One framework to develop trauma-sensitive schools is Trauma-Sensitive Schools (TLPI, 2017). Similarly, various

guidebooks such as Child Trauma Handbook (Greenwald, 2005), Helping Traumatized Children Learn (TLPI, 2017), and The Heart of Learning and Teaching: Compassion, Resiliency, and Academic Success (Wolpow et al., 2009) embrace such a framework.

Embedded within these models are universal programs to support traumatized students, such as the explicit teaching of psychosocial competencies through social-emotional learning curriculums (Reinbergs & Fefer, 2017). One popular universal program, PBIS (Sugai & Horner, 2009), involves teaching consistent expectations and increasing positive interactions between students and staff in an effort to support the development of prosocial behaviors. Tier 1 programs proactively support all students, including those who may be at risk academically or behaviorally, but they are not comprehensive therapy programs designated for children exhibiting specific traumatic stress symptoms.

Tier 2/Tier 3 TI EBIs

Students identified with trauma-related concerns who are not responding to universal level interventions can benefit from targeted intervention services in group (Tier 2) or individual (Tier 3) settings (Reinbergs & Fefer, 2017). Regardless of delivery setting, Tier 2 and Tier 3 TI EBIs are comparable in content and general purpose (Santiago et al., 2018). TI EBIs for school use are largely an adaptation of cognitive-behavioral (CB) clinical psychology interventions that "outside the clinical environment can serve large segments of high-risk populations" (Wong, 2008, p. 399). In these programs, treatment is typically split into three stages: (a) *stabilization and safety*, (b) *trauma processing*, and (c) *reconnection*. These stages typically occur in this order, but do not have to be linear and are adjustable to fit needs of a young person based on the complexity of their trauma (Green & Myrick, 2014).

There are a variety of school-adapted TI interventions used by school psychologists (see Santiago et al., 2018), including some specific to adolescents (see Black et al., 2012). TI EBIs commonly found in the literature for use in schools include TF-CBT, CBITS, and Students Exposed to Trauma (SSET) (Reinbergs & Fefer, 2017).

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). TF-CBT is a Tier 3 intervention for young people aged 3 to 18-years-old carried out in individual sessions with a trained practitioner (Fitzgerald & Cohen, 2012). School-based CBT curriculums are available to develop skills like coping, managing emotions, and building social problem solving; however, researchers designed TF-CBT specifically for young people and their caregivers who have experienced trauma-related distress (Trauma Focused-Cognitive Behavioral Therapy National Therapist Certification Program, 2017). In schools, TF-CBT is delivered in a group-based format with parallel parent sessions held during the 8 to 18-week treatment duration (Rivera, 2012). TF-CBT has proven its effectiveness in reducing symptomology of PTSD through numerous studies in urban, suburban, and rural communities with ethnically, racially, culturally, and socioeconomically diverse students (Cohen et al., 2005; Konanur et al., 2015 Murray et al., 2013). As a shorthand for the sequence of treatment, TF-CBT uses the acronym PRACTICE: psycho-education and parenting, relaxation, affective modulation, cognitive coping, trauma-narrative, in-vivo exposure, conjoint parent-child sessions, and enhancing safety and future development.

Cognitive Behavioral Intervention for Trauma in Schools (CBITS). CBITS has strong evidence to support its promise for reductions in PTSD symptomatology (Jaycox et al., 2009; Jaycox et al., 2012; Stein et al., 2003). CBITS was developed in the late 1990s through a community-university partnership with the Los Angeles Unified School District to address the

effects of violence exposure on recent immigrant students (Stein et al., 2002). It has since shown its effectiveness in reducing PTSD symptomatology and its utility, as it has proven to be effective even with modifications—such as facilitation by teachers or delivery to specific cultural groups (Jaycox et al., 2009; Stein et al., 2003).

CBITS is a group-based, 10-week early intervention aimed at developing skills and coping strategies to reduce the psychological manifestations occurring after trauma exposure. The intervention is geared toward middle and high school students aged 10 to 15-years-old. Bounce Back was designed as an elementary adaptation of the program and was found to have moderate empirical support (Langley et al., 2015). CBITS focuses directly on reducing symptoms of anxiety, depression, and PTSD in addition to building resilience that enables adaptive social functioning (Stein et al., 2002). Psycho-education explores the common effects of trauma including avoidance of trauma reminders, recurrent thoughts, sleep problems, irritability, and depression. The group sessions also include relaxation training, emotional self-monitoring, cognitive therapy, exposure, creating an experience narrative, and problem-solving. After the 10 weeks of group programming, a meeting with parents and an education session with the child's teacher occur as additional program components (Jaycox et al., 2012).

The outcomes of CBITS are well documented, earning it the distinction of an EBI. Studies have shown a decrease in student reported PTSD symptomatology during the 10-week intervention period that continued to lessen (or be maintained at a less frequent level than pre-intervention) at a 3-month check-in (Jaycox et al., 2012). Also, significant decreases in student PTSD symptoms (Kataoka et al., 2003), lower anxiety and depression scores (Margolin & Gordis, 2000), and non-significant changes in teacher and parent-reported student behavior (Stein et al., 2002) were reported after the intervention periods. One seminal study of CBITS

showed a 64% reduction in PTSD symptoms from baseline compared to a 24% reduction in control groups (Stein et al., 2003).

Support for Students Exposed to Trauma (SSET). TF-CBT and CBITS were designed to be facilitated by trained MHPs in schools; however, in some areas, there is a scarcity of trained professionals. A modified CBITS program, SSET, was developed for delivery by non-clinically trained school staff such as teachers and support staff (Jaycox et al., 2009). SSET, like CBITS, is a 10-lesson series with elements of psycho-education, relaxation training, cognitive coping, exposure to trauma reminders and stressors, processing traumatic memories, and social problem-solving. In contrast to CBITS, SSET has a curricular lesson plan format and excludes the parent and individual breakout sessions from the treatment process (Jaycox et al., 2009). Once trained, teachers were able to deliver SSET with fidelity. SSET was found to reduce reported PTSD symptomology, but this effect was smaller than reductions observed with CBITS implementation (Jaycox et al., 2009).

Common Treatment Components of TI EBIs

The targeted therapeutic programs mentioned above are vetted for use by school-based MHPs, but are based in clinical interventions (typically CBT modalities) and are comprised of core intervention components of established psychotherapy (Santiago et al., 2018). According to Fixsen et al. (2005) core intervention components "refer to the most essential and indispensable components of an intervention practice or program." (p. 24) Below core intervention components essential to TI EBIs are addressed.

Psycho-Education. Psycho-education teaches both the child and caregiver what defines a traumatic event, how these events impact those exposed, and how symptoms of traumatic-stress disorder manifest after the event has happened (Carrion & Hull, 2010). Information about the

common effects of trauma (e.g., avoidance of trauma reminders, recurrent thoughts, sleep problems, irritability, and depression) is included in psycho-education. Likewise, the practice prompts discussion of other traumatic-stress related reactions such as self-harm, substance abuse, school, social problems, and other related risk-taking behavior (Cohen et al., 2012). Often the first step in treatment, psycho-education can occur in both group and one-on-one settings. The advantage of group settings is the normalization of traumatic-stress issues as it allows students to feel less isolated by their symptoms. Similarly, it enables parents and caregivers to piece together their child's experience within the context of their current functioning, allowing them to be more sympathetic and supportive (Santiago et al., 2018).

Relaxation Training, Emotional-Self Monitoring, and Regulation Skills. These approaches target the anxiety associated with post-traumatic exposure through techniques like progressive muscle relaxation, slow breathing, and positive imagery; or associated movement-based activities such as yoga or stretching. Equipping students with a plan of self-care and soothing sensory activities they can engage in at home or school (e.g., taking a bath, hugging a stuffed animal, or moving to a quiet area) are also components of this approach (Santiago et al., 2018). Relaxation training and regulation skills are the prerequisites to any further trauma-treatment as the student needs regulation ability to calm the automatic nervous system before trauma processing can begin (Green & Myrick, 2014).

Social Problem Solving. Social problem solving is an important component of building pro-social behaviors and adaptive relationships because research has found traumatized students have deficits in attention, memory, cognition, and attachment; as well as problematic social behaviors with peers and adults (TLPI, 2017). Social problem solving refers to the social-emotional skill of finding solutions to everyday problems. This requires instruction of a specific

cognitive and behavioral process including (a) identifying and defining a problem, (b) generating solutions, (c) assessing and completing the most appropriate solution, and (d) evaluating the outcome (Smith & Daunic, 2006).

Mindfulness. Mindfulness is "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003). Mindful activities include isolating the senses (e.g., blindly touching an object in a bag and describing it), intentionally avoiding distractions, developing mantras, and meditating. These techniques are similar to CB techniques, relaxation training, and emotional-self monitoring/regulation skills; however, mindfulness activities emphasize acceptance of present circumstances without self-judgment. These activities increase self-acceptance in addition to reducing somatic symptoms, anxiety, and reactivity (Santiago et al., 2018).

Safety Planning. For students who experience ongoing traumas or threats of violence, a crucial therapeutic component is to create and rehearse detailed arrangements for personal safety. This process is helpful for young people whose ability to judge the safety of a situation is impaired due to anxiety and distorted cognitions (Santiago et al., 2018). In this case, teaching youth social problem-solving in the context of personal safety is advantageous. For adolescents, safety planning includes age-appropriate activities such as developing a safety contract—a self-care and coping plan aimed at setting limits on risky behavior (Green & Myrick, 2014). In cases of ongoing trauma, the therapist must consider the youth's developmental level and ability to carry out the plan. Additionally, a non-offending caregiver's capacity to be a source of safety and the availability of others to act as a back-up source of safety should be examined (Cohen et al., 2011).

CB Components. These integral approaches help children understand the relationship between feelings, thoughts, and actions to develop cognitive coping skills that combat distress. CB components instruct individuals to recognize maladaptive thinking; allowing for inaccurate, unrealistic beliefs and thoughts to be challenged. Subsequently, individuals are taught to replace these thoughts with adaptive, positive alternative cognitions. Recognition of one's influence over self-thoughts gives students the autonomy to be change agents in their own cognitive processes, helping them regain the sense of control diminished by traumatization (Jaycox et al., 2012).

Exposure Therapy. Cohen, Mannarino, Berliner, and Deblinger (2000) describe exposure as the following:

> Exposure, whether intense or prolonged (such as an in vivo or imaginal flooding) or graduated (such as gradual exposure), involves ongoing exposure to stimuli that produce fear or anxiety—typically for traumatized individuals, these stimuli represent specific aspects of the traumatic event. (p. 1204)

Exposing an individual to traumatic memories overtime reduces emotional reactivity. Namely, avoidance and anxiety are reduced through habituation—the successful unpairing of thoughts and negative emotions (Cohen et al., 2012). Self-soothing and relaxation skills are taught before exposure, so young people can calm themselves during the exposure process.

Trauma Narrative. Exposure prepares a young person to create a trauma narrative that is a more detailed and substantial story of their exposure. In the narration process, children write, speak, illustrate, or express their personal experience of the traumatic event. Students are prompted to expose themselves to the trauma to intelligibly piece together the often confusing and vague details of the event (Cohen et al., 2017). The trauma narrative permits the therapist to identify problematic or incorrect interpretations of the event. The purpose of a trauma narrative

is to help the child make sense of their experience through the development of a tool that communicates personal exposure and allows the child to gain social support (Santiago et al., 2018). Although practitioners may be hesitant to facilitate this component, a trauma narrative is especially efficacious to the treatment process. Trauma-related fear and anxiety were documented at lower rates in young people who completed a trauma narrative during TF-CBT when compared to those who did not (Deblinger et al., 2011).

Peer and Caregiver Support. Caregiver-child involvement is one of the most important features of TF-CBT, both in joint parent-child session and through parent communication/psycho-education (Cohen et al., 2012). Likewise, family participation has been proven to aid in parent feelings of guilt, self-blame, and denial. Some parents have also experienced traumatization themselves and can benefit from learning CBT skills, both in the context of their own treatment process and to support their child (Green & Myrick, 2014). Parent involvement is important in all stages of intervention but is particularly powerful in the psycho-education, trauma narrative, and safety planning stages (Santiago et al., 2018). In conjoint parent sessions, trauma is directly processed together and parenting skills responsive to common trauma behaviors (such as withdrawal, aggression, or defiance) are taught; troubleshooting parenting techniques occurs; and the therapist supports and promotes positive parenting styles (Deblinger et al., 2011). In school settings, it can be beneficial to also include those who work closely with the student, such as teachers and support staff, in their treatment process (primarily through psycho-education) (Rivera, 2012).

Grief Work. Traumatic grief specific topics include grieving a loss, managing ambivalent feelings, and preserving positive memories of the deceased. Young people are also prompted to reevaluate the relationship with the deceased and given skills to engage fully in

current relationships (Cohen et al., 2017). Treatment of grief is tailored specifically to issues of loss and resilience.

Assessment of Trauma Disorders

Although it is outside the purview of a school-based psychologist to diagnose trauma-related disorders; practitioners are equipped to recognize, screen for, and intervene with students displaying trauma-related internalizing and externalizing behaviors (or related academic deficits) (NASP, 2017b). In schools, teachers who are aware of the student's trauma history typically refer students with traumatic exposure to school-based mental health clinicians. Sometimes, when a referred student's academic problems or behavioral issues are further explored, they are found to have roots in trauma exposure. Schools can also administer universal screeners (a brief assessment given to all students in the district, school, or a grade level) to determine what students may be at risk for trauma exposure and post-traumatic stress issues (Eklund et al., 2018).

After completing universal screening, follow-up procedures for children identified as at risk of PTSD should include the use of clinical assessment tools to determine the severity of traumatic stress and the need for intervention services (Reinbergs & Fefer, 2017). One such tool is the CBITS Trauma Exposure Checklist (TEC) (CBITS, 2017). The TEC is a two-part self-report assessment that measures exposure to violence and levels of PTSD symptomatology. The TEC was developed by the creators of CBITS for use in schools and is available online free of charge. The measure includes questions regarding if a student has been a witness or victim to violence (e.g., punching, attacks, stabbings, shootings) or if they have experienced other stressful events such as natural disaster or grief. Sleep disturbances, depressive thoughts, avoidance, hypervigilance, emotional dysregulation, and other PTSD symptoms are ranked by severity on a

Likert scale of 0 (not at all) to 3 (almost always) (Stein et al., 2003). Students who have: (a) one or more lifetime exposures to trauma and (b) PTSD symptoms in the clinical range related to trauma (a score of 14 or higher on the TEC) should be a priority for intervention (CBITS, 2017). Other PTSD specific clinical scales, such as the Child PTSD Symptom Scale (Foa et al., 1997), also exist for school practitioners to implement. School-based and clinical tools that measure anxiety and depression related traumatic stress, such as Children's Depression Inventory-2 (Kovacs, 1985) or the Spence Children's Anxiety Scale (Spence et al., 2003), can be used.

TI assessments should not assume a history of trauma, based on student characteristics, or presume that trauma exposure is the cause of student academic and behavioral issues. Trauma assessments should be multi-method, multi-source, and multi-setting; and school psychologists should stay within limits of their training in conducting these assessments (Reinbergs & Fefer, 2017).

Graduate Training and EBIs

The EBI research-to-practice gap, evidenced in low rates of intervention implementation, is suggested to be exacerbated by a *university-to-practice gap*. That is, practitioners are not receiving adequate training experiences in EBIs or are not appropriately translating their scientist-practitioner training to their applied context. Graduate training is a key leverage point in response to the diversification of school psychologists' role as a mental health interventionist, and strong training in EBIs creates professionals with an ability to support the delivery of interventions (Gonzales et al., 2019; Shernoff et al., 2017).

School Psychologist Graduate Preparation

Most school psychologist professionals have attained an Educational Specialist (Ed.S.) or Doctor of Philosophy (Ph.D.) degree. An Ed.S. degree, the most common degree held by school

psychologists (Gadke et al., 2017), requires a minimum of 60 graduate credit hours and 1200 hours supervised internship in a school setting over a minimum of three years full-time study or equivalent (NASP, 2020). Individuals with an Ed.S. degree primarily work in school settings, as only a few states allow individuals with this degree to practice in non-education settings (NASP, 2018). Ph.D. degrees in school psychology require a minimum of 90 graduate credit hours and 1500 hours supervised internship (with a minimum of 600 of these hours in a school setting) over a minimum of four years full-time study (including a doctoral level internship, or equivalent) (NASP, 2020).

School psychology professionals develop competency during their graduate preparation in the following 10 practice domains: data-based decision making; consultation and collaboration; academic interventions and instructional support; mental and behavioral services and interventions; school-wide practices to promote learning; services to promote safe and supportive schools; family, school, and community collaboration; equitable practices for diverse student populations; research and evidence-based practice; and legal, ethical, and professional practice (NASP, 2020). These domains outline the "comprehensive and integrated services that can be expected of school psychologists" (NASP, 2020, p. 28) and also illustrate the field's service model for the delivery of school psychology services.

The roles and responsibilities of school psychologists vary by school district, however historically major responsibilities included psychological assessment, evaluation, and other special education processes (Castillo et al., 2016; Langley et al., 2010). Nonetheless, school psychologists are increasingly diversifying their roles and preforming tasks such as consultative services, counseling and intervention delivery, partnering with families and communities, and school-wide programming (NASP, 2020).

Scientist-Practitioner Model

The scientist-practitioner model, which is currently reflected in school psychology training standards (NASP, 2020), provides a framework for EBP that emphasizes the integration of research into practice. Underlying this model is the philosophical belief that practitioners should develop the clinical skills necessary to apply the scientific method of studying and solving problems in naturalistic contexts (Tilly III, 2008). Kratochwill and Shernoff (2004) describe the scientist-practitioner model as including three dimensions:

> (a) the involvement of practitioner in research agendas; (b) practitioner use of research-based procedures and techniques in practice; and (c) evaluation of interventions in practice through research or program evaluation (e.g., use of single-participant or time-series design to evaluate treatments). (p. 46)

Researchers suggest that the scientist-practitioner framework be taught, implemented, and reinforced in graduate education while novice practitioners are gaining the knowledge necessary to critically consume and disseminate research appropriately to colleagues (Kratochwill & Shernoff, 2004). Fundamentally, the scientist-practitioner model develops school psychologists' EBP at the pre-service level through education in empirical thinking and exposure to research-validated direct service methods (APA, 2006).

Although the integration of science into practice was a tenet of the field of school psychology from the onset, the scientist-practitioner model was adopted into the training of clinical psychologists after the National Institutes of Health and the APA's 1949 Boulder Conference (Tilly III, 2008). Shakow (1942) originally outlined an educational sequence as follows:

1. Year 1: the establishment of a knowledge base of psychology and other applied sciences

2. Year 2: therapeutic principles and practices development

3. Year 3: field experience internship

4. Year 4: complete research dissertation

The scientist-practitioner framework prioritizes accountability through the utilization of scientific processes in everyday practice, primarily through the use of problem-solving models and outcome-focused results. Due to the reliance on problem-solving models, it is argued that the scientist-practitioner model reaffirms the medical model by maintaining that the problem lies within the individual, which causes the model to only work reactively once a problem arises (Tilly III, 2008). However, school psychologists increasingly employ strengths-based, psychosocial approaches in their practice and research. One example of this is the use of supplementary frameworks and theories, such as the data-based problem-solver model (Edwards, 1987) or ecological theory (Bronfenbrenner & Morris, 1998).

Nonetheless, the evolving responsibilities of school psychologists require science-based progress indicators, tools, interventions, data collection, and analysis processes. In the absence of solid scientific skills, the use of ineffective, pseudo-scientific practices proliferates. It has been suggested that an increased dependence on evidence-based practices will help to diminish the research-to-practice gap (Lilienfeld et al., 2012).

EBP

EBP broadly describes the holistic approach to direct service a competent psychology practitioner should develop; it refers to the application of the best available research evidence into all domains of professional functioning including assessment, diagnosis,

intervention/therapy, consultation, and evaluation (Kratochwill, 2007). The APA (2006) stated

that EBP combines the scientific knowledge of a practitioner with clinical expertise and a

"consideration of the patient's values, religious beliefs, worldviews, goals, and preferences for

treatment." (p. 278) Clinical expertise is the professional know-how that "develops from clinical

and scientific training, theoretical understanding, experience, self-reflection, knowledge of

research, and continuing professional education and training" (APA, 2006, p. 276). Stoiber and

Vanderwood (2008) describe EBP as a method of "infusing professional activities" (p. 265) with

scientifically-proven techniques and approaches. EBP is further illustrated by Stoiber and

colleagues as a process of "evidence-base-applied-to-practices," (p. 227) where specific practices

that stem from a variety of different methodologies and sources become informed by the

practitioners' own clinical expertise (Stoiber & DeSmet, 2010). EBP has been recently reflected

in the 2020 NASP practice standards, as Domain 9 has been changed from a focus on research

and program evaluation to an emphasis on research and EBP. Domain 9 (NASP, 2020) reads as

follows:

> School psychologists have knowledge of research design, statistics, measurement, and
>
> varied data collection and analysis techniques sufficient for understanding research,
>
> interpreting data, and evaluating programs in applied settings. As scientist practitioners,
>
> school psychologists evaluate and apply research as a foundation for service delivery and,
>
> in collaboration with others, use various techniques and technology resources for data
>
> collection, measurement, and analysis to support effective practices at the individual,
>
> group, and/or systems levels. (p. 29)

Graduate Training in EBIs

Over a decade ago, Kratochwill (2007) articulated that the challenges to providing graduate trainees an effective education in EBIs included: a lack of clarity on what defines evidence-based, trainee knowledge of the methods used to establish an evidence base, an over-focus on the treatment of diagnosable disorders, and a lack of student knowledge of structural influences on the selection of interventions. More recent work by Shernoff et al. (2017) suggested current issues to training in EBIs include: (a) intervention programs having too narrow of a focus, inhibiting the ability to address comorbid issues; (b) common intervention formats necessitating pullout services, constraining the practitioners' ability to build capacity of stakeholders to support the child; (c) lack of program cultural responsiveness; and (d) the cumbersome task of teaching constantly evolving interventions across tiers of support.

Implementation research has prompted the advancement of training models that efficiently prepare evidence-based practitioners via the promotion of common practice elements, strengthened applied implementation experiences, and dissemination activities (Shernoff et al., 2017, p. 226). In light of this, implementation science researchers have argued training future school psychologists in "common practice elements or principals" (Shernoff et al., 2017, p. 221) of EBIs—practices and discrete intervention components with empirical support—may prove more efficient for developing science-practitioners than instruction on specific EBI programs (Stoiber & Kratochwill, 2000). Shernoff et al. (2017) suggested a training emphasis of common practice elements provides a "streamlined, efficient model in which school psychologists are trained in a smaller number of principles or practices… (as opposed to many different manuals with overlapping content)." (p. 223)

In addition, university training program investment in practicum and internship sites that allow for authentic implementation experiences may improve future school psychologists'

implementation abilities (Gonzalez et al., 2019). Training standards necessitate such intervention experiences as a required component of supervised field experiences—NASP (2020) guidelines call for "the design, implementation, and evaluation of services that support socialization, behavioral and mental health, and emotional well-being (e.g., counseling, behavior analysis and intervention, social-emotional learning)" (p. 21) to be implemented at any MTSS tier. Strong implementors are said to understand the stages of implementation and promote the assessment of the quality of drivers that support success; thus, an understanding of applied implementation processes is a crucial skill for school psychologists to develop (Blase et al., 2012). Central to applied implementation experiences is a competency in "nonspecific treatment components (e.g., empathy, listening, establishing rapport)" (Shernoff et al., 2003, p. 479) that develop most authentically through applied practice.

A school psychologist needs knowledge and competence in intervention practices, in addition to confidence, to successfully implement quality intervention services. Competency is developed throughout the training sequence by means of coursework and applied experiences, with the latter being the more important factor for competency development (Mullen et al., 2015; Tang et al., 2004). However, when investigating school psychology training, researchers found that current dissemination practices were insufficient because many trainers were not familiar with EBIs and cited that exposure to interventions was more likely to occur in coursework than in applied practice in their programs (Shernoff et al., 2003).

Researchers have explored the training and implementation of EBIs by surveying practicing school psychologists and their training program directors. Hicks et al. (2014) found rates of primarily Ed.S. and masters level (83% of sample) NCSP psychologists who were required to take a class on EBIs in graduate school was around 50%, with those attending NASP

accredited programs reporting a higher rate of EBI training. But, training in EBIs does not guarantee future usage. In a related study, with a sample of primarily doctoral school psychologists (80%) who had completed a course in EBIs at an accredited program generic counseling, which is not considered research-based, was indicated to be a frequently used practice (Forman, Fagley et al., 2009).

Regardless, the overall state of EBI education in school psychology programs appears to be improving since changes in training requirements in 2010 (NASP). A contemporary study by Reddy and colleagues (2017) found that 75% of sampled training directors stated their program required an EBI course. This finding suggests a recent shift to the prioritization of EBIs as an important component of a scientist-practitioner training framework (Gonzalez et al., 2019). Nonetheless, program directors in the Reddy et al. (2017) study noted that in practicum placements, students received more experience in evidence-based assessment than in EBIs. Thus, it appears that applied implementation experiences still lag behind exposure theory-based coursework.

Determining how EBI training rates differ between doctoral and educational specialist level school psychologists is difficult given differences in samples of the aforementioned articles (Forman, Fagley et al., 2009; Hicks et al., 2014; Reddy et al., 2017), but it is likely doctoral level practitioners receive more training in EBIs because (a) they complete a longer course sequence and have opportunity for practica and internship experience in settings outside of schools, (b) a greater depth of competencies for doctoral students emphasized by current training standards (NASP, 2020), and (c) different accrediting bodies dictate training agendas/objectives (APA applies to only to doctoral training; NASP, which emphasizes skills acquisition rather than proficiency [Shernoff et al., 2017], applies to both doctoral and specialist level training). Extant

research has shown differences between Ed.S. and Ph.D. school psychology students in the knowledge of and willingness to implement interventions (Hicks et al., 2014).

Implementation Science

The APA Division 16 Working Group on Translating Science to Practice (Forman et al., 2013) defined implementation as putting a program into place within an organizational context. Thus, implementation is viewed as a process that requires actions to ensure that the intervention is completely and appropriately facilitated to clients. Stages of implementation and the factors influential to the success of an intervention are the core facets of implementation science in school psychology.

Stages of Implementation

Fixsen et al. (2005) articulated that "implementation is a process, not an event." (p. 15) Forman et al. (2013) organized the implementation process into four stages: (a) *dissemination*, sharing of information about the intervention with all stakeholders; (b) *adoption*, selection of the intervention, (c) *implementation*, delivery of the program, and (d) *sustainability*, continuation of implementation (Forman et al., 2013). In the initial stages, stakeholders disseminate information about the program and the organization decides to adopt. Initial implementation occurs next, followed by a period of maintaining the program (Durlak & DuPre, 2008).

Blase et al. (2012) describe the sub-stages characterizing this process including exploration/adoption, installation, initial implementation, full implementation, sustainability, and innovation. These refined stages capture a more detailed picture of implementation processes: considering the goals of the organization, building behind the scenes infrastructure, the difficulties of the first stages of implementation, and the subsequent sustainability and fidelity measurement of the intervention. Other parts of implementation include determining financial

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and pragmatic factors for sustainability, and consideration to maintaining fidelity before adapting

any features of the program. Conceptualized as fluid and non-linear, the process of putting a

program in place requires ongoing, data-based problem solving (Blase et al., 2012).

Factors Influencing Implementation

A variety of ecological determinants influence the decisions made about implementation.

Durlak and DuPre (2008) found in their review of health programs studies that these

determinates group into five categories: (a) community-level factors, like funding and policy; (b)

provider characteristics, such as the person-level skills and beliefs held by implementors; (c)

characteristics of intervention program; (d) organizational capacity, including the practices and

processes as well as leadership of an organization; and (e) training and technical assistance. The

APA Division 16 Working Group on Translating Science to Practice condensed ecological

factors into three broad groupings: *external environmental (*community-level factors*)*;

*organizational context (*characteristic of intervention program, organizational capacity, training,

and technical assistance), referring to compatibility with the climate and goals, leadership, and

training and assistance; and *personal implementer factors* (provider characteristics), such as

goals, personal philosophy, and perceived self-competence of providers (Forman et al., 2013). A

lack of necessary implementation factors advantageous to delivery can greatly impact the

process, preventing implementation or affecting quality.

Implementation Drivers. Blase et al. (2012) noted that strong implementors understand the

stages of implementation, champion interventions, and promote the assessment of quality

drivers. As further described by these authors, implementation drivers are the factors required for

the successful carrying out of a program. Implementation drivers are the elements that provide

knowledge and guidance to a practitioner, develop readiness in an organization, work at a

systems level to create sustainability of interventions, and indicate the need to monitor and adjust as needed. Implementation drivers are outlined into the domains of competency (assuring necessary skills), organization (policies and procedures), and leadership (guidance appropriate for challenges faced) (Blase et al., 2012).

Barriers and Facilitators to Implementation

Much of the contemporary research on the pragmatic factors impacting the delivery of EBIs in school settings addressed implementation barriers and facilitators (Forman, Fagley et al., 2009; Forman, Olin et al., 2009; Forman et al., 2012; Hicks et al., 2014; Langely et al., 2010; Reddy et al., 2017; Shernoff et al., 2003). The APA Division 16 Working Group (Forman et al., 2013) suggested research on the factors that help or hinder programs are especially important to practitioners who experience firsthand the influence organizational structures of schools have on implementation. Barriers indicate challenges that prevent the usage of EBIs, and facilitators are factors that support successful implementation. Studies with a specific focus on TI EBIs are scarce; therefore, barriers and facilitators to implementation of mental health interventions are discussed below.

In school environments, a variety of organizational factors—determinants that exist externally within ecology of an organization and typically lie out of the control of an implementor (Cane et al., 2012)—are reported to hamper the delivery of TI services. Gonzales et al. (2019) refers to these as proximal influences or factors "within the school and community setting." Examples include the resources available and the social and cultural influences present within the school environment. Lack of time and competing responsibilities are frequently noted challenges to delivering EBIs (Langley et al., 2010). A randomized survey of practicing NCSPs reported a serious barrier to the implementation of EBIs was lack of time (Hicks et al., 2014).

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Although school campuses may have support staff capable of delivering psychosocial intervention (such as school counselors, guidance counselors, social workers, and school psychologists) many of these professionals are assigned to responsibilities outside of providing therapeutic interventions or have work frequently interrupted with urgent situations. This breakdown in continuity makes allotting time for direct therapeutic services difficult; especially, considering the time it takes from the other direct service roles of school psychology practitioners such as consultation, prevention activities, and skill-building with stakeholders (Forman, Olin et al., 2009). Related is the challenge of scheduling intervention services that must take place outside of the time mandated for classroom instruction. Intervention developers in one study believed this problem occurs because of federal, state, and district policies, such as the No Child Left Behind (now Every Student Succeeds Act), that places a greater emphasis on academic testing than on social, emotional, and behavioral development (Forman, Olin et al., 2009).

Practitioners noted a lack of resources as an organizational barrier that prevents implementation (Castillo et al., 2016). Explicitly, school-based MHPs indicated financial constraints were a serious impediment to intervention uptake in school buildings (Hicks et al., 2014; Langley et al., 2010). In a study of intervention program developers, participants expressed schools are eager to use interventions listed as evidence-based due to mandates from funding agencies who require this label on programs as part of the funding process, but about 75% of these interventions had to be sustained by school through unsustainable grant funding (Forman, Olin et al., 2009).

School-based MHPs have also articulated a lack of parent engagement (Langley et al., 2010) and obtaining informed consent for referrals (Massey et al., 2005) prevents them from carrying

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out quality intervention services. These hurdles are pertinent to TI EBIs that rely heavily on parent involvement (Jaycox et al., 2012).

The social influence of colleagues is another organizational factor implicated in the low rates of EBI delivery. Clinically trained school staff noted a lack of administrator and teacher support as a barrier to providing students social-emotional learning groups (Langley et al., 2010). Administrator knowledge about an intervention program appeared to be less of a barrier than principal leadership styles, according to Forman, Fagley et al. (2009). Interventions were found by this research to be more successful when school leadership championed interventions by holding positive views and actively reinforcing implementation through training and follow up at staff meetings.

Research indicated teacher buy-in to be a pivotal factor for implementation sustainability because teachers often carry out universal intervention curriculums in their classroom (Reinbergs & Fefer, 2017). Similarly, teacher engagement increases impact because their role in coaching the student receiving intervention services in the classroom environment enables the generalization of socioemotional skills learned in a therapeutic setting (Forman et al., 2012). School staff who do not align in their support of EBIs make integration of interventions into the school community more challenging, causing these programs to be ineffective (Massey et al., 2005). When support for therapeutic intervention services is low, practitioners have asserted that carrying out these EBIs would not be acceptable or feasible in their environmental context (Chafouleas et al., 2009).

Conversely, practitioners suggest that implementation is more effective when they feel connected with other professionals conducting TI EBIs within their school, organization, or area (Langley et al., 2010). In a study on career growth of school psychologists, Guest (2000) found

that participants indicated the biggest influence on their professional development was mentorship and guidance from others in the field. Consequently, support from other school psychology professionals appears to be a strong facilitator of implementation in environments where support from other staff is absent, especially throughout the training sequence.

Person-level behavioral variables that factor into decision making and applied practices (Cane et al., 2012), also can have an influence on EBI implementation. Referred to as *distal factors* by Gonzales et al. (2019), previous studies have found behavioral roadblocks include a lack of knowledge or awareness of EBIs (Chafouleas et al., 2009) and the appropriate understanding of how they are used in practice (Shernoff et al., 2003). Similarly, inadequate or lack of training can make interventions inaccessible because training in specific programs is costly to the district (Hicks et al., 2014).

Self-held beliefs (including those about personal capabilities, competence, and professional orientation) have also appeared as a theme within the literature. Feeling underequipped to deliver services and providing services that felt outside their role hindered implementation for some practitioners (Forman, Fagley et al., 2009). Research has also shown that anxiety about retraumatizing clients prevented MHPs from providing services (Palfrey et al., 2018). Some practitioners have also voiced that they feel delivering EBIs is not consistent with their personal approach as a school psychologist (Hicks et al., 2014), and that delivery is partially contingent on congruency of the intervention with their specific philosophical orientation (Forman, Fagley et al., 2009).

Self-held beliefs about the perceived impact of an intervention also appear to affect an individual's decision to implement. In one study, a school psychologist's belief that the intervention was not applicable to the practice situation or student needs, as well as the belief

that the intervention would not affect students in a positive way, prevented the provision of services (Forman, Fagley et al., 2009).

Ease of use was also a consideration for many school psychologists. Compared with doctoral-level practitioners, nondoctoral practitioners rated 'effort necessary to implement EBIs seems unreasonable' as a significantly more serious barrier (Hicks et al., 2014, p. 480). One survey-based study found that specific beliefs held by NCSPs acted as catalysts for the implementation of psychosocial interventions; especially powerful were the beliefs that the intervention would be culturally appropriate for the student and that it would have positive outcomes (Forman, Fagley et al., 2009).

Methods

This section details the sampling, data collection, interview process, coding, and data interpretation techniques of the current study. Qualitative methods were used to capture a broad understanding of the views of novice school psychologists on their use of TI EBIs.

Participants

Participants in this study were recruited based on the following criteria: (a) had implemented any type of TI intervention with a traumatized student, (b) were within their first 5 years of practice as a school psychologist, (c) had attended a NASP approved graduate training program, and (c) were currently working in a school-based setting. The sample consisted of 16 school psychologists. The mean years of practice of the sample was 3 years; 75% of participants ($n = 12$) had ≤ 3 years of experience. Two participants were in their internship or first year of practice. Two of the 16 participants were male (remainder identified as female); all reported their race/ethnicity as White.

Participants with ≤ 5 years of experience as a school psychologist —including those in their internship year—were selected for this study to elicit the experiences of recent graduates

who had been prepared in programs with nationally implemented evidence-based training standards (NASP, 2010; 2020). Implementation science research suggests a recent proliferation (within the past decade) of EBI coursework and fieldwork in school psychology graduate training programs (Gonzalez et al., 2019; Hicks et al., 2014; Reddy et al., 2017). Hicks and colleagues (2014) found that graduates ≤ 5 years out of their training programs were significantly more likely to rate their program as adequate in comparison to those who were nonrecent graduates. These findings suggest that the range of years of experience reflected in this sample is appropriate given the research aims.

Participants graduated primarily from school psychology training programs in Wisconsin; nearly every NASP-approved University of Wisconsin (UW) system Ed.S. training program in the state at the time of data collection was represented in the sample including UW-Eau Claire, La Crosse, River Falls, Stout, and Milwaukee (only UW-Whitewater was not represented in the sample). In addition, the sample contained graduates from the University of Minnesota-Twin Cities and the Chicago School of Professional Psychology. The majority of participants were Ed.S. level practitioners; only two participants held a Ph.D. degree in School Psychology.

At the time of data collection, 63% (n = 10) of participants practiced in Wisconsin and 25% (n = 4) worked in Minnesota; of the remaining, one participant worked in Colorado and the other in California. The majority of informants worked in an urban setting (n = 12), three participants worked in suburban settings, and one in a rural setting. Participants held job roles that serviced a variety of grade ranges: 75% (n = 12) stated they worked in some capacity with elementary students (kindergarten through 5th grade), 69% (n = 11) with middle schoolers (grade 6-8), 38% (n = 6) with early childhood, and 44% (n = 7) with high schoolers (grade 9-12).

Recruitment and Sampling Techniques

The primary researcher used convenience sampling and university program recruitment to obtain participants. Recruitment strategies used by the primary researcher included emailing known school psychologist colleagues directly and emailing program directors of two school psychology training programs in Wisconsin. Recruitment emails sent by the primary researcher provided information from an IRB-approved promotional flyer about the methodology, purpose, and expectations of the study. A $15 gift card was offered to participants in exchange for their participation in the study. See Appendix A for the recruitment email template.

Prospective participants were directed to a Qualtrics link containing a demographic questionnaire/pre-interview survey detailed in Appendix B. Using this online prescreening form participants provided basic information: name, gender, race/ethnicity, university program name and location, degree held, years of practice, and geographic and demographic information of their current job placement. A qualifying question, "Have you ever used a social-emotional intervention to support a student with trauma-specific needs?", was presented and the survey was designed to route any individual who responded "no" to this question to a screen explaining they were deemed ineligible to participate. However, all participants who began the pre-interview survey were eligible for the study.

Participants were then asked to provide information about EBI courses they had taken in graduate school, any PD in TI EBIs outside of their graduate training, and were asked to indicate the therapeutic intervention programs they had received training in from a list of TI EBIs. The list of TI EBIs presented in the pre-interview survey (see Appendix B) was developed by the primary researcher of the current study from the results of three meta-analyses of TI EBIs (see Black et al., 2012; Reinbergs & Fefer, 2017; Rolfsnes & Idsoe, 2011) and the trauma treatment database provided by the NCTSN (2019) website.

Three types of EBIs were included on this list: (a) Tier 2/3 psychosocial interventions empirically validated to be suitable for delivery in schools in studies conducted within the United States (items 1-13); (b) CB skills groups (item 14: DBT [dialectical-behavioral therapy] skill groups and item 16: CBT skill groups); and (c) NASP PREPaRE (item 15), a school-wide crisis management framework. Generalized CB skills groups were included because the intervention components that typically characterize these skills groups have an empirical basis for use with traumatized populations (Shernoff et al., 2017). DBT is heavily based on CBT (both modalities share core intervention components), but DBT "emphasizes validation, or accepting uncomfortable thoughts, feelings and behaviors instead of struggling with them" (National Alliance on Mental Illness, n.d.). Item 14 and 16 were not labeled as "trauma-informed" or "trauma-specific" because it was of interest to capture training in a range of practices and program (both EBPs and manualized EBIs) that have empirical support for use with traumatized populations for later comparison to rates of training in TI manualized CBT EBIs.

Procedures

Data for this study were collected using semi-structured phone interviews. Subsequent to approval from the University of Wisconsin-Milwaukee University Institutional Review Board, the researcher disseminated pre-interview survey links to prospective participants. Upon survey completion, the researcher followed up with participants to schedule an interview time. Consent was obtained in written format at the time of survey completion, and also verbally prior to the recording of interviews. Interviews ranged in length from 30-60 minutes. Audio recording of interviews were captured via a laptop. Audio was also transcribed in real time during the interviews with the use of the Android Live Transcribe app. Immediately after the interview, the primary researcher checked live-transcribed interview transcripts for veracity by replaying the audio recording at a slowed speed while reviewing the live-transcribed transcript text. Interviews

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were conducted between December 2019 and April 2020. It is important to note that half (8) of the interviews occurred in April 2020—a month after the nationwide COVID-19 pandemic school closures. In interviews that occurred post-school closures, participants were asked to speak about implementation experiences that happened prior to the transition to virtual learning; nevertheless, some participants also spoke to the impact of an abrupt interruption on intervention delivery caused by the pandemic. Audio recordings and transcripts were given a corresponding participant identification number (PIN) and stored in a password protected Google Drive.

Interview Protocol

Phone interviews followed a semi-structured interview protocol (see Appendix C). The primary researcher completed all interviews. Subsequent to building rapport, the primary researcher read the interviewee a consent script prior to starting the audio recording. The interview protocol included a brief introduction script summarizing the aim of the study and the broad questions: "Can you tell me about the experiences you had delivering social-emotional interventions to children with trauma-specific issues? What intervention did you deliver? What practices, techniques, or approaches did you use?" Leading with a broad, open-ended question allowed the participant ample opportunity to comprehensively convey their viewpoint (Giorgi, 1997). The primary researcher addressed any participant responses that ambiguously described the specific factors that facilitated and/or hindered implementation with a follow-up prompts that explicitly requested what helped intervention delivery or made it more difficult.

Throughout the course of the interview, each participant was asked three additional broad questions pertaining to: (a) where they obtained their training for the intervention used, (b) how they knew the student they worked with had experienced trauma, and (c) what training they received regarding TI EBIs in their graduate program sequence. The broad questions were

reflective of the research aims regarding the attitudes and perspectives that characterize implementation decision making. Follow-up probes were used by the primary researcher to elicit detailed contextual information. The structure of interview protocol was modeled after a study that explored teachers' barriers to the implementation of a physical education intervention (Weatherson et al., 2017); the language of questions asked was adopted from the related implementation science literature (Hick et al., 2014).

Data Analysis

Data analysis procedures were informed by an interview transcript analysis process described by Hycner (1985) and also thematic analysis (see Braun & Clarke, 2006). This approach to data extract analysis during coding is associated with an inductive approach, but it is also aligned with deductive approaches that incorporate the existing ideas or concepts of the researcher during interpretation. Thus, the methodology of this research represented both paradigms, as features of the codebook were decided *a priori* based on extant relevant school psychology literature (Forman et al., 2012; Forman, Fagley et al., 2009; Gonzales et al, 2019; Hicks et al., 2014; Langely et al., 2010; Reddy et al., 2017) and implementation science frameworks (Blase et al., 2012; Cane et al., 2012; Fixsen et al., 2005).

Coding

Codebook. A codebook, used to promote consistency between coders and clarity of analysis (Bryman, 2012), was created by the primary researcher on Google Sheets to capture data. A tab was added to the sheet for each broad question on the interview protocol; corresponding a priori *question subcomponents* were then listed in the top cell columns on each tab. A question subcomponent was a distinct categorical element of the larger question. For example, "barrier" was a subcomponent of the broad question, "Can you tell me about the experiences you had delivering social-emotional interventions to children with trauma-specific

issues?" and "specific intervention name" was a subcomponent of broad question, "What intervention did you deliver?/What practices, techniques, or approaches did you use?"

Coding began after the transcription of the first four interviews; the initial line codes extracted from these four interviews resulted in a beginning codebook. The primary researcher and secondary coder, a practicing school psychologist and doctoral student attending the same program as the PI, engaged in consensus coding of the first four interviews. In this process, both coders sat in the same room and dialoged as they concurrently completed the line coding process described below (Hycner, 1985). Once line codes were agreed upon by the two coders, they were entered into the codebook.

The codebook was further developed as the primary researcher independently coded interviews 5-16. Qualitative interview methodology does not require a specific number of participants to prove a concept (Castillo et al., 2016; Tracy, 2010); as such, the researcher gathered data until a point of saturation—the point at which sampling more data will not lead to additional information (Fusch & Ness, 2015). After reviewing interviews 1 through 10, the researcher was not able to extract any further novel line codes from the transcripts. As a result, three more interviews (interviews 11-13) were conducted, transcribed, and coded to determine if saturation had been reached. Once these additional transcripts were reviewed and no further novel line codes were extracted, the researcher determined saturation had been reached. However, additional participants had been recruited, so the researcher included an additional three interviews until 16 interviews were conducted.

Coding Process. After transcripts were completed and checked for accuracy, the researchers (primary and a secondary coder) read them twice to gain familiarity with the content. Then, the text of transcripts was separated into *meaningful units* (units of general meaning) via

line by line analysis. To establish meaningful units, the researchers "chunked" the text into unique and coherent units that ranged from short keywords and phrases to sentences and groups of sentences with distinct meaning (Hycner, 1985).

Next, these meaningful units were distilled into a *line code*—a shorthand summary that captured the main idea of the meaningful unit (e.g., a meaningful unit of a participant explaining that they knew a student was traumatized because "they hit other students" was given the line code of "externalizing aggression"). Line codes were then (1) entered into a cell under the corresponding broad question subcomponent category column on the Google sheet codebook and (2) tagged with the PIN. The inclusion of attaching a PIN to line codes allowed the primary researcher to trace back responses to specific participants.

As coding progressed, if a line code extracted by the researcher matched a line code already captured in the codebook, the interviewee's PIN was added to the cell containing the extant line code and PINs of previous interviewees. This identification process provided the basis of theme development, as multiple PINs tagged on a single line code cell suggested a higher frequency; and therefore, a greater prevalence in the data set. If additional information was needed to properly document line code meaning, a *subline code* was added in an adjacent cell. For example, the previously mentioned line code "externalizing aggression" would carry the subline code of "hitting." Subline codes were used primarily for contextualizing line codes during the analysis.

Emergent question subcomponent columns were added as needed to accommodate novel line codes that did not fit within question subcomponents determined a priori. Line codes that did not collate into the a priori or emergent question subcomponents columns were given their own "catch-all" column. After principal coding by the primary researcher, the codes within these

catch-all columns were analyzed again to either fit into to a relevant question subcomponent or be discarded. Then, repeat or related line codes were condensed and organized into smaller categories within their question subcomponent column to improve the ease of the codebook. For example, the line code "teacher didn't keep track of behavior plan scores" in interview 3 conveys the same meaning as the line code "teacher did not fill out daily points sheet" found in interview 5; thus, both of these codes would collapse into the single code of "teacher didn't progress monitor intervention" (which better encompasses overall meaning); then, this line code cell would be tagged with the PIN 3 and PIN 5.

Thematic Development

As principal coding for interviews 5-16 was finalized, the primary researcher completed a cyclical process of collating and clustering cells containing related line codes, then organized these clusters under relevant question subcomponent category columns on the codebook. During this process the primary researcher generated reflective notes, which were attached as comments to relevant line code cells in the codebook, to aid in categorization and classification of categories. Notes included questions and thoughts related to defining, describing, comparing, and labelling content. Vaismoradi et al. (2016) suggest "notes facilitate reflexivity and provide researchers with an opportunity to remember, question, and make meaning of data…they also allow researchers to remain faithful to participants' perspectives and improve the validity of theme development." (p. 105) Reflexive notetaking permitted data to be compared across the data set and allowed the researcher to identify repeated patterns of meaning (Braun & Clark, 2006); it also provided a structure to organize the responses and enforced a manageable number of categories, allowing for a richer and more cohesive output.

As line codes with related meaning were clustered and organized by question subcomponent, the primary researcher gave descriptions to these emerging categories (Hycner, 1985). Categories were recorded in cells under the question subcomponents columns listed a priori on the codebook, which aided in the organization of categories of similar meaning; additionally, subcomponent columns were added as new categories emerged from the dataset. At this point, the codebook displayed data in organized tables of cells; categories were reviewed to assure meaningful coherence between the line codes in the clusters. In this phase, the researcher engaged in re-focusing "the analysis at the broader level of themes, rather than codes" (Braun & Clark, 2006, p. 89). Some considerations for vetting themes were assuring clear and identifiable distinctions between themes, relating themes to existing concepts from the literature, and examination of how the themes combined to build a narrative of participant experiences (Vaismoradi et al., 2016).

Themes were defined and named by the primary researcher. Codes, categories, themes, and sub-themes generated were informed by relevant school psychology literature (Forman et al., 2012; Forman, Fagley et al., 2009; Gonzales et al, 2019; Hicks et al., 2014; Langely et al., 2010; Reddy et al., 2017) and implementation science frameworks (Blase et al., 2012; Cane et al., 2012; Fixsen et al., 2005); as such, interpretation of the data was also rooted in concepts from the literature. Each unique line code was present only once in the data set; however, when thematic areas were conceptualized contextual information from many categories was considered to operationalize a comprehensive understanding of participant experiences. For example, to construe the outcomes of an intervention many factors necessitated consideration such as the goals of intervention, barriers to implementation, participants' training and facilitation history, and the level to which the implementation environment was TI.

Prevalence, measured by the frequency of line codes describing a similar idea in a categorical cluster, aided in the researcher's determination of the significance of a theme; however, theme development was also guided by the importance of the theme to the research question (Braun & Clarke, 2006). Larger thematic areas were broken into sub-themes as appropriate. Frequencies of categories were used to report the results to provide information of the observed prevalence of concepts in the dataset. Hyncer (1985) suggests that the prevalence of a topic indicates some sort of significance; however, how the topic was mentioned by a participant should also be considered. To address this, an effort was made to keep as much contextual information intact with line codes.

In the process of data analysis, the primary researcher sought to reach credibility, which according to Tracy (2010) refers to "the trustworthiness, verisimilitude, and plausibility of the research findings." (p. 842) For the research to be credible it must be reliable, replicable, consistent, and accurate. The use of a second coder was one method of assuring credibility. Another consideration for credibility is thick description that considers the contextual and cultural factors of experience (Tracy, 2010); as such, direct participant quotes and contextual information were included in explanations of themes.

Reliability/Creditability

The primary researcher and second coder completed consensus coding together on interviews 1-4 to create the codebook; the primary researcher then independently completed principal coding on interviews 5-16. Subsequent to this, the second coder carried out independent ancillary coding on a random subset of four transcripts of interviews 5-16 (Bryman, 2012). During independent ancillary coding, the secondary coder repeated the same line coding procedure as the primary researcher; however, instead of generating novel line codes and adding them into cells on the codebook, the second coder determined the extant line code of best fit and

left a comment with the PIN of the transcript being second coded on the cell of the selected extant line code. Any new codes identified by the second coder that was not already reflected in the codebook by the primary researcher, or instances of disagreement, were discussed between the second coder and the primary researcher (Hycner, 1985). Across the subset of eight interviews (both interviews 1-4 consensus coded with the primary researcher and the subset of four interviews independently coded by the second coder), 298 lines codes were derived; of these 293 were agreed on between raters resulting in an agreement of 98%, suggesting reliability between coders was strong and acceptable.

Results

Relevant themes were developed via line code collation into question subcomponent categories; thematic areas were determined by analysis of subcomponent categories present across the dataset. A priori and novel themes defined by the researcher during analysis are organized by research question and reported below. Illustrative participant quotes are included in the descriptions of the thematic categories.

Research Question 1: What Perspectives do Novice School Psychologists Have About Their Experience Implementing TI Supports to Students with Known or Suspected Traumatization?

Five thematic areas were identified by the primary researcher from participant responses regarding TI intervention delivery experiences: (a) intervention design, (b) goals of intervention, (c) outcomes of intervention, (d) implementation logistics, and (e) traumatization identification. The five thematic areas described above contained participant line codes derived primarily from responses to the broad open-ended question, "Can you tell me about the experiences you had

delivering social-emotional interventions to children with trauma-specific issues?", in addition to any intervention delivery related responses shared by participants throughout the interview.

Intervention Design

Student-driven intervention design was the most frequently reported approach to TI services (n = 11). Student-driven intervention design is characterized by the researcher as an individualization of support services established through a selection of activities, lessons, and resources from a variety of different curriculums and therapeutic modalities. Participants stated they engaged in this approach to leverage student interest (for increased buy-in) and to address specific student skills deficits. As one participant described:

> So, it's a pick or choose type of thing, and, I guess it's almost like cross-battery evaluations—I don't do that, but I do that in therapy. Definitely like choose one from this book, choose one from this other around the same type of concern—anxiety or anger management; but, it's not a sequential thing.

Speaking more directly to the incorporation of student voice, one interviewee explained "…it just depends completely on the students, and what I think will work best for them, and what they say they're interested in. So, kind of trying to incorporate that, and especially working with the younger ones." Another interviewee stated they offered students a list of related topics and allowed them to design their own treatment sequence to increase student engagement. Modification of curriculum for a best fit with each unique student was also a component of student-driven treatment design. As stated by one interviewee, "I really like to modify existing curriculums to be trauma focused. So, adapting them to be either more like culturally responsive or trauma focused based on whatever the kid is presenting with."

Goals of Intervention

Development of adaptive psychosocial skills was the most widely discussed goal of intervention (n = 7). Specifically, self-regulation ability was cited most frequently as the target of intervention; however, coping, self-awareness, emotional expression, and social-problem solving were also frequently discussed goals. Participants responses indicated the overarching aim of building pro-social skills was to improve overall emotional functioning and to increase student educational achievement. For some participants, another objective of services was to build adaptive educational functioning skills to enable a student to meet their specific goal, such as transitioning back into the regular education setting or recovering high school credits for graduation.

Three interviewees stated that their implementation goal was to create a schoolwide TI culture. Participants who articulated this discussed they wanted to improve their school climate and make students feel safe and welcomed. A participant commented on the power of a systems level approach to TI intervention:

> I think that when staff take you know, a TI approach to dealing with behaviors or lack of engagement, I know I think that we see achievement gaps close and we see office referrals go down. Those are kind of the two big metrics that I think our district really cares about most and I think that taking a TI approach can really help improve not only the overall climate of the school, but also the social emotional and academic outcomes for individual students.

Outcomes of Intervention

School psychologist participants reported a variety of intervention outcomes including improved interpersonal relationships, pro-social skill development, academic achievement, and school-wide culture and climate improvement; in some cases, undesirable outcomes such as

qualification for special education or learned skills not being generalized to all settings occurred. In this study, 50% of school psychologists in the sample (n = 8) reported positive outcomes in interpersonal skills and relationships. Most notably, improved relationships with adults at school was an outcome endorsed by six participants; half of these six participants mentioned that specifically, the relationship between the teacher who provided a TI intervention and the student was strengthened. Similarly, increased school connection, including more frequent student attendance and the student feeling a sense of community at the school, were expressed by participants. As an example, this issue was discussed by an interviewee who shared, "A couple students just seem comfortable coming to school and feeling like school is a safe place for them—that I am reliable that they can come talk to me afterwards, if something else were to happen."

Adaptive psychosocial skill development was an outcome of intervention discussed by seven participants; in addition, increased self-awareness, improved social problem solving, and self-regulation were also mentioned as outcomes. Talking about the results of intervention, an interviewee reported, "I think, you know, when we finish up with our kiddos, they have a toolbox of strategies…we design a tool box they can use at school or tools they can use at home, or in any other significant setting that they might have."

Unfortunately, not all participants experienced optimistic intervention outcomes—some respondents pointed out disappointments including a student's failure to respond to the intervention (resulting in qualification for special education services) and a lack of generalization of social-emotional skills developed throughout intervention.

Implementation Logistics

Progress monitoring of intervention data was mentioned by 31% of respondents (n = 5) during interviews. All of these participants stated they relied on observational data, such as behavior charts and anecdotal observation, to determine effectiveness of intervention. One participant described the use of student-self rating scores to supplement behavioral and observational information from teachers.

The majority of total participants (n = 11) delineated their implementation delivery setting; of these 11 participants 63% (n = 5) delivered TI intervention in a small group setting, 63% (n = 5) delivered intervention one-on-one, and 27% (n = 3) carried out Tier 1 level TI supports (some participants discussed delivery in more than one setting). Small group delivery settings were described by participants to contain five to seven students with similar needs; participants also stated the focus of these groups was skill development. Most participants expressed the use of manualized curriculum in small groups; however, in one-on-one settings most participants described using a generalized talk therapy approach. Of the 11 participants who described their intervention delivery setting, seven expressed a need for Tier 1 TI interventions at their school (but only three had carried out this type of intervention). The three participants who did carry out a Tier 1 TI intervention all explained their Tier 1 intervention was a school-wide or class-wide social-emotional learning (SEL) program.

Traumatization Identification

A large number of participants shared how they made determinations regarding student traumatization and need for social-emotional support services. Common ways participants learned about student trauma exposure included (a) disclosure of a traumatic event by caregivers or by school staff and (b) student self-disclosure. In some cases, knowledge of a salient traumatic event, such as a housefire or homelessness, clued the participant into the potential need for TI

services. Other means of discovering student trauma included being privy to student historical information available in cumulative records or through information given by community MHPs. Table 1 displays commonly discussed sources of student trauma history disclosure.

Table 1

Sources of Student Trauma History Disclosure

Source of Disclosure	Total Participants	Percent of Sample	Example Methods of Disclosure
Caregiver	10	63%	• Disclosed in the process of a special education referral • Caregiver asked for services
Teacher/school staff	10	63%	• Social worker knowledge • Discovered during MTSS meetings • Teachers report home concerns they become aware of
Student self-disclosed	8	50%	• Student directly states trauma experience • Expressed through drawing or writing
Found out from known event	5	31%	• Homelessness • Refugee experience • House fire • Found out from event that was publicized in the news • Medical trauma/hospitalization
Reported in student records/historical information	4	25%	• Past special education or outside provider reports
Outside mental health provider (MHP)	2	13%	• Outside MHP directly provided information

Direct trauma disclosure did provide participants with concrete evidence of traumatization; however, it was reported that disruptive behaviors and lack of social skills, poor academic performance, school attendance, and some physical indicators (e.g., dirty clothing, wounds, poor grooming) also signaled possible traumatization. A common experience amongst

some interviewees was to determine need for TI supports based on externalizing behaviors manifested in the school environment. The most frequently reported problem behaviors were dysregulated emotions (n = 5); mood, attitude, or behavior changes (n = 3); aggression (verbal or physical) (n = 3), and opposition/defiance (n = 3). Two respondents discussed becoming aware of a trauma history through discovering a student's problematic internalizing behaviors, such as the student "shutting down".

Four participants discussed a formalized screening approach to traumatization identification; these approaches included the BEST (Behavior Emotional Social Traits) and DESSA (Devereux Student Strengths Assessment) screeners, as well as the Youth Behavior Risk Survey. Three participants mentioned use of school-wide MTSS systems to identify students.

Research Question 1.a and 1.b: Barriers and Facilitators of Implementation

Research sub-questions 1.a and 1.b pertained to the facilitators and barriers interviewees experienced during TI intervention implementation in the school setting. Implementation facilitators and barriers extracted from the data grouped into the themes of: (a) school-home engagement, (b) additional student support personnel, (c) school psychologist beliefs, (d) teachers, (e) school administration/school culture and climate, (f) time, (g) intervention delivery context and resources, (h) student-school psychologist relationship, and (i) systems of identification. Lack of training in TI EBIs was discussed by some participants in the context of a barrier, however, results related to training are reported under the Research Question 3 section. All frequencies, descriptions, and illustrative quotes are organized by theme and sub-theme (if applicable) and are reported in Appendix D. Frequencies are further categorized into (a) barrier only, (b) facilitator only, or as (c) both (i.e., participant brought up the thematic topic as both a facilitator and barrier at different points in the same interview) based on situational context of the

participant response. Table 2 presents the same frequency information for each theme/sub-theme, but displays this information in rank order of the most to least prevalent theme/sub-theme.

Table 2

Frequencies of Barrier/Facilitator Theme/Sub-Theme Ranked by Prevalence

Total Participants	Percent of Sample	Barrier	Facilitator
11	69%		Additional student support personnel
10	63%	School psychologist beliefs	
9	56%	Teacher willingness to participate in intervention (theme: teachers)	
8	50%	Time constraints	
7	44%	Communication and collaboration between the school personnel and student families (theme: school-home engagement)	Communication and collaboration between the school personnel and student families (theme: school-home engagement)
			Support from school administration (theme: school administration/ school culture and climate)
6	38%	Lack of additional student support personnel	Teacher willingness to participate in intervention (theme: teachers)
		On-going, complex trauma occurring in home setting (theme: school-home engagement)	Student-school psychologist relationship
		Intervention delivery context and resources	
5	31%	Student school attendance (theme: school-home engagement)	School psychologist beliefs
		Student-teacher relationships (theme: teachers)	Systems for identification
4	25%	Teacher knowledge of trauma and the social-emotional intervention process (theme: teachers)	Teacher knowledge of trauma and the social-emotional intervention process (theme: teachers)
			Student-teacher relationships (theme: teachers)

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		Lack of support from school administration (theme: school administration/ school culture and climate)	Administration sets tone for organizational environment (theme: school administration/ school culture and climate)
		Administration sets tone for organizational environment (theme: School Administration/school culture and climate)	
2	13%		Intervention delivery context and resources
1	6%	Student-school psychologist relationship	Time Constraints
		Systems for identification	
0	0%		On-going, complex trauma occurring in home setting (theme: school-home engagement)
			Student school attendance (theme: school-home engagement)

School-Home Engagement

This thematic category is comprised of two sub-themes relating to (a) communication and collaboration between school staff and student families, and (b) the impact of student home environment on school functioning. Participants who endorsed school-family partnerships as facilitative commented on how helpful it was to work with caregivers who held common outcome goals. Caregiver buy-in, evidenced by frequent communication with the school and consistency of behavior management between school and home, was the second most prevalent facilitator (n = 7) observed in the data. Related to partnership with caregivers was student school attendance, which is typically dependent on the engagement of caregivers—five interviewees mentioned that poor attendance made it difficult to maintain intervention fidelity, and thus, affected generalizability of learned skills and overall goal attainment.

Participants who found school-home partnerships impeded their work made it clear that lack of caregiver engagement was a serious threat to the fidelity of treatment sequences with built-in parent session components. In some cases, lack of caregiver engagement prevented interventions from happening altogether if caregiver consent for student participation could not be obtained. In addition, 38% of the sample (n = 6) endorsed difficulty being successful with TI supports when the student was currently immersed in a home or community setting where traumatization was on-going and complex.

Additional Student Support Personnel

The availability of other student support staff capable of collaborating on, or independently facilitating, TI interventions was the most prevalent facilitator of implementation extracted from the data. The additional support personnel named by interviewees was most frequently a MHP associated with a school-community mental health partnership. Ten of 16 total interviewees mentioned access to one of these MHPs within their school setting. A few participants mentioned they referred severely traumatized students to these providers, instead of providing services to these students. According to respondents, MHPs embedded in the educational context helped to reduce barriers to therapy, were beneficial sources of information about student trauma history, and proved useful for consultation on managing school-specific student needs.

Other commonly mentioned additional support staff personnel included school social workers (n = 4) and school counselors (n = 5). Participants suggested that they may choose to have another school support staff provider work with the child when that provider had a better relationship with the child, had more work time allotted to direct student support, or when the defined role of other support staff was better aligned to managing student psychosocial needs.

School psychologist participants also found collaboration and consultation with other student support staff to be beneficial to implementation. However, it was stated that transient or non-existent additional support staff translated to a lack of team-based support for students, and an overburden on a school psychologist's caseload.

School Psychologist Beliefs

This theme encompassed the spectrum of judgements participants made about their ability, job role, or a process in relation to the successful delivery of TI interventions. Some interviewees reported that TI practices and SEL groups were helpful, important, and within their job roles. However, interviewees more frequently expressed negative views about their own perceived abilities (n = 10). In further aggregation of participant responses related to self-held beliefs as barriers, line codes clustered into three contextual areas (a) competence (n = 5), (b) job roles (n = 6), and (c) suitability (n = 2) (some of the 10 participants discussed this area in more than one context). In terms of job roles, the sense was that some participants (n = 5) found the treatment of trauma to be outside of their job role, and asserted that their role was to address school-based issues—described as primarily assessment and evaluation. Others felt that trauma treatment was outside of the purview of the school in general.

In terms of suitability, one participant had a hard time finding materials suitable for the developmental level of their students. Another asserted, in reference to engaging in a discussion with a student about their traumatic experience, "I don't really think that's what kids need for trauma." Additional responses reflected participants' perceived competence in intervention processes—both a lack of comfortability (due to limited training) with addressing trauma and lack of confidence in ability to deliver specific core component practices (such as trauma narrative) were discussed by informants. Some participants cited that they did not know what

interventions to use and were hesitant to address trauma as they wanted to be sure they were not, as one participant put it, "doing any harm" and did not want to risk re-traumatization.

Teachers

Responses related to teachers were heavily documented in the data. Over half the sample (n = 9) expressed that teachers unwilling to buy-in to the intervention—either by refusing to deliver, reinforce, or see value in the intervention—was detrimental to effective outcomes. Interviewees felt teacher reluctance to be based in the teacher's style of instruction, as well as their understanding of and perceived role in SEL. A few interviewees alluded to difficulties with veteran teachers with many years of experience who were described by one participant as "stuck in their ways." Often, according to a different participant, these teachers "didn't want to hear it or try it" when it came to SEL interventions. A similar comment was made by a participant who described that school staff with "authoritarian styles" were the most hesitant to adopting TI practices.

Conversely, teachers open to collaborating with participants greatly helped intervention delivery, as participants mentioned how beneficial it was to have teachers who were consistent and committed to supporting the child. For example, one participant detailed how a teacher intentionally used language consistent with the language used by an intervention program to help students generalize social-emotional skills to the classroom. Two others described the importance of staff who value TI intervention, as these were the teachers that were able to see student gains—even if those gains were minimal. Some participants mentioned teachers involved with implementation continued to champion TI practices within the school as a result of their openness to engaging in TI practices.

A sub-theme regarding teacher knowledge of trauma and the social-emotional intervention process was also identified. According to participants, teacher expectations of the process; and subsequent outcomes; of TI interventions seemed to impact intervention effectiveness. Throughout interviews, participants expressed that teachers often wanted problem behavior to extinguish faster than what is typically observed in behavior-based interventions. According to some interviewees, when teachers did not immediately see the results they expected, they became more reluctant to collaborate on and carry out the intervention. In addition, three participants mentioned a substantial problem was teachers with little knowledge of traumatization and its effect on school performance. Furthermore, one participant tied some lackluster therapeutic outcomes they had experienced to the teachers' insufficient understanding of data collection and management. The participant believed that teachers who did not understand the importance of data, specifically when and how to report data to school-wide MTSS teams, prevented progress monitoring with fidelity and intervention analysis.

Four participants indicated that teacher knowledge was a protective factor in creating successful interventions. One interviewee mentioned intentionally highlighting student progress with teachers increased buy-in and served as a means to further educate the teacher on the importance of data collection. Another participant stated a key strategy they used was to keep interventions as simple as possible for teachers and explain what reasonable outcomes may look like before engaging in the intervention. A third participant described the use of "suggestive strategy," which involved deliberate validation and reinforcement of teacher's participation in consultative meetings, to lead teachers toward implementing supports.

A crucial piece of any student learning, teacher-student relationships, was brought up by 44% of the sample (n = 7). One participant spoke to the importance of educators with knowledge of TI

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approaches, as educators with this background knowledge better understood "…that a student's behavior might not even reflect the situation that triggered it." The participant further stated that a teacher's capacity to build relationships, with consideration to traumatization, was "a huge skill that was super helpful for students." Also, those who saw teacher relationships as a protective factor for delivery noted an effective strategy for interpersonal interventions (e.g., CICO) was to intentionally pair teachers and students who had either an extant positive relationship or the potential for one based on personality traits.

Five participants found contentious teacher-student relationships to be an impeding factor, as participants described that teachers were often "black and white" in their opinion of a child—simply put, they "were already putting into place positive behavior supports, or reluctant." Other participants mentioned that a strained relationship was often present in cases where the behavioral needs of the student overwhelmed the teacher's behavioral management capacity. In these cases, participants alluded to teachers that seemed to just want kids to "go away" and interventions were then carried out punitively to "prove a child needed to be in special education."

School Administration/School Culture and Climate

This theme encompassed two sub-themes related to school leadership: (a) participant responses specific to the direct administrative support of intervention delivery, and (b) responses related to the influences of school leadership styles on organizational culture and climate. Participants found principals who (a) understood the importance of mental health and SEL, and (b) were willing to engage in alternatives to punitive behavior management were beneficial to implementation. Furthermore, one participant felt the autonomy provided by their administration was crucial to their ability to deliver services; another interviewee noted communication with

their school leadership was integral to being allotted the time and resources necessary to be successful.

Also represented in the overarching school administration/school culture and climate theme was the sub-theme regarding the impact administration's actions and decisions had on overall school culture and climate. One participant explained how the culture of a school is set by administration and "…trickles down into teachers and paras [staff that support teachers]." There was a sense across the interviewees who endorsed school leadership as a facilitator that interventions occurred more successfully in settings where school leadership prioritized inclusive classrooms and a positive approach towards behaviors supports. School leaders who operated in a reactionary, punitive manner were noted by four participants to be a hinderance, as punitive approaches to behavior management run contrary to the tenets of TI practice.

Time Constraints

Lack of time was a commonly reported (n = 9) barrier to the provision of services; and most commonly, this was due to the interviewee having a variety of other roles that filled their day. Some participants noted that their time was split across school buildings within their district, making it difficult to find time to build relationships and maintain consistency with students. Crisis response also detracted from the ability of participants to provide intervention services. Also, assessment, report writing, special education paperwork, and meetings were mentioned as competing responsibilities. Less frequently cited was a limited amount of time to collaborate with teachers due to the confines of teacher work hours. Similarly, a few interviewees mentioned difficulty scheduling time to meet with middle and high school students who had busy class schedules. Only one individual discussed time in the context of a facilitator, stating that due to

their administration's support of social-emotional interventions, they were able to prioritize setting time aside to deliver TI interventions.

Intervention Delivery Context and Resources

This diverse theme was defined as a circumstance of an intervention delivery environment that discourages or encourages successful implementation (Atkins et al., 2017). Included in this category was access to tangible intervention materials (such as curriculum books), the physical space treatment occurred in, and student conduct during intervention services. One participant described that access to books, curriculums, and other materials enabled them to carry out treatment; another mentioned that an intentionally structured physical environment conductive to relaxation was helpful.

One participant who viewed the environmental factors present in their delivery context as a determent noted the hectic, small physical space they used as an office provided little privacy to meet with students about confidential issues. Another stated a challenge was finding "the perfect curriculum" for the student's presenting needs, and then obtaining access to it. Three other participants discussed student engagement issues that impeded delivery including students unwilling to do the intervention work, the topic of trauma being difficult for young people to discuss, and the difficulty of managing off task behaviors while providing group-based services.

Student-School Psychologist Relationship

Student-school psychologist relationships were discussed overwhelmingly as a key influencer in delivering successful services. Participants used a variety of approaches to develop these positive relationships including learning about and leveraging students' protective factors in treatment design. Also, interviewees mentioned avoiding preconceived notions about students and offering consistency to maintain positive interactions.

One participant discussed the loss of a strong interpersonal relationship with a student as a barrier that halted their ability to support the student. Specifically, the participant mentioned no longer communicating with the student after the student's transition from elementary to middle school because the participant did not service middle school students in their job role. This account of circumstances indicates that the presence of the relationship was a protective factor; however, it was coded as a barrier because the loss of the relationship was an event that impeded the ability to provide the intervention services.

Systems of Identification

Methods and systems of collecting information and identifying students with a trauma history were previously described in the section regarding Research Question 1. According to five participants, a functioning MTSS system (embedded in strong Tier 1 social-emotional practices and supported by relevant student data), which enabled systematic teacher referrals and use of trauma-related screening tools, acted as a facilitator. On the other hand, one participant felt that the lack of such a system was a substantial challenge to trauma informed practice:

> Most of the times, I think that a big problem is just a lack of a direct referral system for that kind of thing [traumatization]. So most of the times, I find it's best to just take a TI approach, you know, it's rare that we know exactly [that a student has been traumatized]. But is a child is exhibiting like, you know, a lot of dysregulation or they seemed really uncomfortable by a certain presence or person? There are clues. But, most of the time we don't, or at least in my experience at my school, we don't know for sure what, or if any, trauma related situation has occurred.

Research Question 2: What Intervention Program or Strategies Have Novice School Psychologists Used to Support Children with Known or Suspected Trauma Exposure?

Research question 2 was related to the distinct practices and curriculum programs participants employed during intervention services with students. Overall, interviewees provided the names of manualized curriculum; as well as practices, techniques, and approaches that were utilized for the school-based support of traumatized students. All participant responses are included in Table 3. In this table, the names of manualized curriculums are in italics, and the practices/programs that were named by 25% or more of interviewees are bolded. Practices/programs that were named by 25% or more of interviewees are also listed by prevalence (based on frequency throughout responses) in Table 4.

Table 3

Practices/Programs Used by Participants for School-Based Mental Health Intervention of Students with Traumatization

Type of Intervention	Intervention Practice/Program

General Social-Emotional	• **Social-emotional learning (SEL) small group covering the topics of:**
	  o Emotional regulation
	  o Coping
	  o Externalizing problem behaviors
	  o District provided curriculum
	  o Leadership group
	• *MindUp*
	• *Girls in Real Life Situations*
	• *Everyday Speech* - SEL lessons
	• Friendship curriculum
	• Social skills training
	• Social problem-solving curriculums
	  o *Social Thinking*
	  o *Superflex*
	  o *S.S. Grin*

Mentorship/Interpersonal Relationship-Based	• ***Check-In/Check-Out (CICO)*** • **Restorative practices** • *Check and Connect* • Informal check-in with an adult • General mentoring • Breakfast/lunch club • Motivational interviewing • Interpersonal techniques

	o Supportive relationship building o Validating feelings o Consistency o Offering choice o Predictability o Positive reinforcement o Forced choice
Trauma-Specific	• *One Minute-Interventions for Traumatized Children* • Polyvagal model • Provided TI (trauma-informed) PD (professional development) to staff • *Trauma-Focused CBT (cognitive-behavioral therapy)* • *CBITS (Cognitive-Behavioral Intervention for Trauma in Schools)*

Tier 1-Specific	• Positive Behavior Interventions and Supports (PBIS)
	• Class-wide social emotional learning
	• Intentional set up of physical environment to minimize triggers
	• *Second Step*
	    o *Bully Prevention Unit*
	    o *Child Protection Unit*

Consultative	• **Consulting and collaborating with teachers** • Consultation with outside providers • Consultation with caregivers • Consulting with district trauma team
Functional Behavior	• Functional behavior assessment and plan

Cognitive-Behavioral Therapy Based	• ***Zones of Regulation***
	• Anxiety specific curriculums
	    o *Coping Cat*
	    o *When My Worries Get Too Big*
	• CBT components
	    o **Mindfulness**
	    o **CBT approach (general, unspecified)**
	    o Psychoeducation
	    o Relaxation training/emotional self-monitoring
	    o Coping skills
	    o Self-care
	    o Social problem solving
	    o Journaling

Crisis Response	• **Crisis response (general)** • CPI (Crisis Intervention and Prevention) • NASP PREPaRE • Risk assessment
Grief Curriculums	• *Be a Hero to Grieving Children Toolkit* by the National Alliance for Grieving Children

Executive Functioning	• *Classroom Survival Skills* • *Homework, Organization, and Planning Skills (HOPS) Intervention*
Movement	• Motor breaks
Therapeutic Techniques	• **Informal drop-in counselling** • Art therapy • Play therapy • Music therapy • Family therapy • Talk therapy • Solution-focused therapy

Table 4

Practices/Programs Used by Participants for School-Based Mental Intervention of Students with Traumatization Ranked by Prevalence

Total Participants	Percent of Sample	Intervention/approach
6	38%	SEL small groups *CICO*
5	31%	Consulting and collaborating with teachers
4	25%	Restorative practices *Zones of Regulation* CBT approach (general, unspecified) Crisis response (general) Informal drop-in counselling Mindfulness

SEL Small Groups

The general SEL small groups category captured a range of responses relating to the arrangement of students with similar behavioral needs into focused groups. During these groups, participants facilitated explicit lessons designed to develop pro-social skills. This category is described as "general" because the participant did not articulate the use of a specific SEL program or curriculum. Participants mostly described they chose activities for the intervention

sequence of these groups using the student driven, modular intervention design approach (that is, extracted key components or strategies).

It is important to note the prevalence of targeted small SEL skill groups is likely much higher than reported as participants carried out many of the other programs listed in Table 4 in a small group setting as well. The SEL curriculums and practices articulated by participants indicated self-regulation and social problem solving (as well as anxiety) were common targets of intervention.

CICO

CICO was the most prevalent program facilitated by school psychologist participants; with many other related mentorship and interpersonal practices also being mentioned. A number of participants drew attention to the importance of interpersonal relationships between young people and trustworthy adults at school. To one participant, the discrete components of effective interpersonal relationships were "…offering choice, offering consistency, predictability, routines—those trauma-sensitive practices." Another articulated the power of solid positive relationships with students because they "…also prevent a lot of situations from escalating further." In addition, restorative practices; behavioral management strategies that repair harm, restore relationships, and teach prosocial alternatives to problematic behavior; was mentioned by 25% of participants as a structured way of processing incidents of anti-social behavior and rule violations. Participants also mentioned the utility of generalizing restorative language outside of formal restorative circles.

Consulting and Collaborating with Teachers

Consultative techniques were also documented in the data, and consulting and collaborating with teachers was the most popular method of participants' provision of indirect

support to students. Interviewees described the use of a collaborative partnership with teachers to aid in all intervention processes—from decision making to implementation, progress monitoring, and analysis. Promoting inclusive practices, creating TI class environments, and recognizing and managing the signs of and behaviors consistent with traumatization were brought up as topics of collaboration with teachers. One participant mentioned the significance of teacher partnership in judging the effectiveness of intervention:

> I think my big thing is talking to the teacher and seeing what's working…if they've been like using any strategies or anything that we've been talking about—that is how I gauge outcomes. But it's also hard, because I used to evaluate every session; but, they're [the student] always great with me and then they go back into class. And so that wasn't really reflective, I think, of what we were doing or what my goal was. So, it's been more of a conversation now with the teacher.

The use of functional behavior techniques and formalized functional behavioral analysis as a means to manage externalizing problem behaviors was also observed in the data. As participants alluded to, a functional behavior plan (a structured arrangement of behavioral supports based on observations of the antecedents to and consequences of a student's behavior) relies heavily on consistency of behavior management across staff and settings; thus, functional behavior management techniques are a type of teacher consultative strategy. One participant described their main strategy for problem behavior as "…function based, you know simple classroom strategies, so you know, just noncontingent reinforcement or the consequential reinforcement of the replacement behavior. And trying to keep it pretty simple for teachers and make it as accessible to them as possible." Interviewees also articulated consulting with outside mental health agencies, the student's caregivers and families, and teachers.

In addition to consultative strategies, another way that school psychologist participants spread their reach to students was to champion Tier 1 universal level SEL practices. The most frequently named school-wide SEL program was *Second Step* and the auxiliary *Bully Prevention Unit* and *Child Protection Unit* programs. The use of PBIS programs and incentives were also mentioned by a participant.

Therapeutic Modalities/CBT Components

Interviewees shared a variety of therapeutic modalities informed their approach to work with traumatized children. These included art, play, music, and family therapy models; as well as general counseling/talk therapy. Participants expressed that talk therapy happened most often in an informal drop-in, one-on-one context where students stopped by their office for a brief conversation. In these instances, the focus was on the current presenting problem and may or may not have involved follow-up or entry into a more formalized intervention sequence.

The most prevalent therapeutic techniques in the data were CBT related approaches to intervention—most notably, general CB components and the use of mindfulness. Although not used within a formalized sequence, many CBT components that have been proven to be beneficial for traumatized children were articulated by participants including psychoeducation; relaxation training/emotional self-monitoring; developing coping skills and self-care; social problem solving; and journaling (Reinsbergs & Fefer, 2017; Rivera, 2012; Santiago et al., 2018). Mindfulness was the most popular CBT component (n = 4). *Zones of Regulation*, which the creators of the program claim as underpinned by a cognitive-behavioral approach to self-regulation (Kuypers Consulting, (n.d.)), was used by 25% of school psychologists interviewed (n = 4).

Trauma-Specific Interventions

Two research-based interventions specific to trauma that were extracted from the data, *Trauma-Focused Cognitive-Behavioral Therapy* and *Cognitive Behavioral Intervention for Trauma in Schools (CBITS)*, also fall within the family of CBT-based interventions. Another trauma-specific intervention mentioned by a participant was the Polyvagal model, a theory about the role the vagus nerve plays in the activation of a nervous system response dubbed the "social engagement system"—a response that allows an individual to navigate relationships and cope adaptively (Porges, 2009). The participant received training on this model, but was not able to integrate it into practice due to COVD-19 related school closures.

The book *One Minute-Interventions for Traumatized Children* was also mentioned by a participant. This curriculum is rooted in the SITCAP (Structured Sensory Interventions for Traumatized Children, Adolescents and Parents) model. According to STARR Commonwealth (2019), the creators of the model, this program is designed to "safely revisit and rework the primary subjective experiences of trauma, within the sensory, not cognitive context in which they are experienced, stored, and remembered." The sensory components of these interventions differentiates them from CBT, which focuses on cognitive processes. While sensory approaches to trauma treatment do have an evidence base (Perry, 2009; Steele & Kuban, 2013; Steel & Raider, 2001), research pertaining to the specific program was not readily available.

Participants frequently described crisis response as a job responsibility that detracted their time away from preventative means of trauma treatment; however, interviewees provided few details on their approach to crisis management. Three interviewees described learning the NASP PREPaRE model in graduate school; two others mentioned use of risk assessments (in the context of a risk to others, not a risk of self-harm) and Crisis Intervention and Prevention.

Nineteen percent of the sample explicitly expressed they had never used a specific curriculum or manualized intervention; instead, they relied on stand-alone techniques or practices to address the trauma related concerns of students. Three participants reported they were unaware if the practices they used were supported by an evidence base. Less mentioned by participants were the use of executive functioning curriculums, movement-based techniques, and grief-specific curriculums.

Research Question 3: What training do novice school psychologists have in TI evidence-based intervention?

The training school psychologists received in TI EBIs was the focus of research question 3. Below, results from the pre-interview survey are combined with information from interviews to illustrate (a) participants' graduate school training experiences, (b) post-graduate school PD experiences, and (c) what participants wished they had learned in graduate school.

Graduate School Training

The pre-interview survey data indicates that 15 participants (94% of sample) were required to take an EBI course; 13 (82% of sample) of those that took an EBI course stated this class involved content specific to psychosocial interventions. One participant attended a program that did not require an EBI course. Three participants reported taking an additional, nonrequired EBI course during their program sequence.

During the interview, when asked about graduate education regarding interventions globally, 44% (n = 7) of participants stated they learned about a specific manualized psychosocial intervention. 19% (n = 3) of the sample discussed engaging in applied intervention delivery during their practicum; however, these accounts indicated these experiences were not authentic to the implementation conditions experienced in professional practice. For example,

one interviewee reported carrying out "mock" interventions with other graduate students as "participants"; others noted that their practicum experiences occurred in settings with little student diversity.

During the interviews, 63% of participants (n = 10) expressed that their graduate training included at least some trauma-related content. The majority of these responses indicated this content was, as one participant put it, "surface level" and did not involve examining the evidence-base for TI interventions. One participant discussed a more comprehensive exposure to TI approaches, as they had received instruction on using a "TI checklist" and how to include "student voice and choice" in intervention. Another participant stated they had a one-time brief discussion during a non-EBI course about childhood traumatization and the impact on school related outcomes. According to a third participant, just as they were graduating their program had made it a priority to expand the breadth of TI topics covered throughout various courses within the graduate training sequence.

Post-Graduate School PD

According to pre-survey data, the majority of participants (n = 13) received PD on TI topics after the completion of their graduate training. During interviews, participants described sources of post-graduate training that grouped into the themes of PD and self-education.

PD was a prevalent means of TI post-graduate education; and according to the pre-interview survey, participants most commonly received this training through their school district (see Table 5). Guest lecturers, staff meetings, and school district and Wisconsin Department of Pupil Instruction training modules were all reported as sources of trauma-specific education during interviews. Trainings, conferences, and workshops offered by school psychologist professional organizations were also well documented sources of continuing education. During

the interview, six participants stated they had attended a trauma-specific session at a national

NASP convention; three reported they had done so at a state-level school psychologist

professional organization conference.

Table 5

Sources of Post-Graduate Trauma-Informed PD

Source of Training	Total Participants	Percent of Sample
School district training/conference/workshop	12	75%
Professional organization (NASP, WSPA, etc.) training/conference/workshop	10	63%
Outside organization (Big Brothers/Big Sisters, Children's Hospital, etc.) training/conference/workshop	4	25%
Other	1	6%
University training/conference/workshop	0	0%

During the interviews, 56% (n = 9) of participants reported self-educating on TI topics to

learn ways to better support traumatized student populations. Participants who reported self-

educating stated they did this by buying curriculums/tool kits (n = 4) or reviewing information

about trauma (n = 3); others sought out observational or collaborative implementation

opportunities with other professionals (n = 2). One participant explained their self-education

approach as, "… just a lot more self-research on different things before I go buy the curriculum.

I have a lot of my own stuff [curriculum books] that come with me wherever I go." Another

participant, who worked in a school with a large population of newcomers to the United States,

indicated they sought out information specific to refugee-related traumatization, in addition to

information pertinent to the individual child's culture, so that they could "…better understand

what they [the student] experienced so that the next time I interact with them, or I work with

them, I just have a better understanding."

Training in TI EBIs

In terms of TI EBI training, 14 of the 16 participants (88%) endorsed they had received training in one of the interventions, either in graduate school or through post-graduate PD, listed on the pre-interview survey (see Table 6). However, only six participants were trained in TI-specific psychosocial intervention (e.g., CBITS, TF-CBT, Trauma-Focused Coping in Schools, SSET, and Integrative Treatment of Complex Trauma for Adolescents and Children)—the other eight indicated some combination of DBT skill groups, CBT skill groups, or NASP PREPaRE.

Table 6

TI EBIs Participants Received Training in During Graduate Training or Post-Graduate PD

Intervention	Total Participants	Percentage of Sample
NASP PREPaRE	9	56%
CBT skill groups	7	44%
CBITS	5	31%
Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)	3	19%
Trauma-Focused Coping in Schools	3	19%
DBT skill groups	3	19%
Support for Students Exposed to Trauma (SSET)	1	6%
Integrative Treatment of Complex Trauma for Adolescents or Children	1	6%
Multimodal Trauma Treatment (MMTT) or Trauma-Focused Coping in Schools,	0	0%
Stanford-Cue Centered Therapy (SCCT)	0	0%
Seeking Safety	0	0%
TARGET	0	0%
Bounce Back	0	0%
Trauma Grief Component Therapy for Adolescents	0	0%
Overshadowing the Threat of Terrorism	0	0%
Enhancing Resilience Among Students Experiencing Threat	0	0%

"What I Wish I had Learned in Graduate School"

When asked what they wish they had learned in graduate school, participants endorsed a desire for a greater focus on social-emotional intervention globally (n = 4). Participants also stated they wish they had instruction in applied TI interpersonal and therapeutic skills (n = 6) and wished they had developed more knowledge of trauma (n = 4) during their university preparation.

Some interviewees echoed that SEL was not a priority of their training, but became a large component of their day-to-day work once hired by a school district. One participant viewed their lack of knowledge of psychosocial interventions as a hinderance to their development as a school psychologist:

> I feel like it's [SEL] so, so important. I wish more graduate school programs would, and maybe I just had a fluke program, I have no idea. But, I just wish…that would be like an entire class, like social-emotional curriculums or like teaching social emotional skills because it's just not something that was on my radar and I feel like I'm definitely lacking in that area. So just something that I wish graduate school programs would stress more.

The majority of participants (n = 10) mentioned coursework that covered TI topics in some way, but there was also a sense among some of these participants that what they had learned about trauma was surface-level and lacked the detail required for them to feel competent in delivering TI services. A few participants (n = 4) hoped they would have received more information on traumatized populations and best practices. As one participant summarized:

> I think just in general a lot more guidance and teaching like practical things that we can do to better work with children who have, or may have, experienced trauma. And then, also maybe even how to best work with staff. Rather than just like telling them what to do, because obviously that's most likely not going to work with the staff that really need

it; but the best way and approach to maybe in some way influence those staff in their approach.

In addition, six participants felt it would have been beneficial to have developed more competency in TI nonspecific treatment components during their training programs. A few participants divulged they had only a superficial education in intervention provision and therapeutic skills. For example, a participant stated:

I think you know it would have been nice to get a little bit more training in trauma-specific practices. I think we were introduced to them. You know, we were introduced to CBITS and you know other things like that, but it wasn't necessarily something that was specifically provided for us. It was offered as like, 'Hey, this is something you can do on the outside,' or something of that nature. So, it wasn't necessarily built into the program itself, so I just think it would have been nice to get a little bit more in that as well.

One participant voiced how their theoretical orientation filled in the EBP knowledge gaps:

Learning like the Bronfenbrenner's model of like ecological systems of a child I think was the first time I really realized that when we're looking at students, especially trauma, you've got to look at the whole picture—the student and what else is going on. Where their supports? Do they have supports? What is their family like at home—do they have siblings? Do they have parents that see what is there? Like, where do they live? I mean, I think that is like the basis of a lot of our trauma-based practices and I feel like we had good exposure to that part. So, I feel like not the strongest evidence-based practices that we learned about, but we did have a good teaching of the ecological model which I think is the basis for all TI practices.

Although participants overall expressed their satisfaction with their training, most also recalled facing knowledge gaps between their formalized training and real-world practice upon entering the field. Overall, 25% of the sample suggested that they had learned more from their work experience than their preparation program. In discussing this issue, a participant expressed:

> I think that the sense I had in grad school and throughout my training was that everything was going to be kind of 'plug and play' and it would just kind of, you know, you deliver this evidence-based intervention and you'll see improved outcomes. A lot of what I find myself doing I think can be tied to practices that have been shown to work in research, but a lot more what I'm finding is that it's more practice-based evidence than evidence-based practice, per se.

Discussion

This qualitative study aimed to examine TI EBI implementation experiences of novice school psychologists with regard to the distinct barriers and facilitators experienced within the in vivo school context, the specific TI interventions and practices used by school psychologists, and graduate and post-graduate training in TI topics. The results of the study are viewed as informing the knowledge base on the TI intervention practices of early career school psychologists in the real world of school-based implementation. Several important trends and findings were revealed in the qualitative interviews. Although several recent studies suggest that school psychologists are increasingly engaged in implementation of EBIs (e.g., Gonzalez et al., 2019; Hicks et al., 2014; Reddy et al., 2017), participants in this study of TI EBI use indicated their intervention implementation was most frequently one based on self-curated, student-driven therapeutic modular sequences to achieve targeted pro-social student outcomes. Interview data suggested little use of manualized TI EBIs with fidelity, but did present evidence of the frequent use of TI

EBPs (in contrast to EBIs). Additionally, participant responses showed a variety of contextual and personal barriers discouraged implementation fidelity including school psychologist beliefs, teacher reluctance to implement, and difficulty engaging with students' families. Collaboration with teachers and other student support staff (i.e., administrators, school social workers, guidance counselors, community MHPs embedded in school settings) were prominently identified by participants as facilitators of implementation. Findings regarding the judicious use of targeted practices, in light of the barriers present within a real-world implementation context, to achieve individualized student goals affirms the benefits of a continued scientist-practitioner emphasis in pre-service training to produce school psychologists capable of being responsive to their implementation context to achieve intervention success.

Educational level and background experience in TI EBPs was observed to impact perception of job role, and training in TI EBPs was a key factor influencing participants' belief of their role in trauma treatment. Participant responses from the interviews revealed limited graduate training in TI EBIs (n = 10, 63%), but promising rates of graduate education in psychosocial EBIs globally (n = 15, 94%) on the pre-interview survey. The rates of EBI instruction observed in this sample were greater than that of other larger scale studies (Reddy et al., 2017), suggesting that current rates of graduate training in EBIs may be, at least regionally in the Midwest, trending higher than previously measured. Although graduate training in TI topics was found to be mostly cursory, encouraging evidence of TI post-graduate training via PD offered by school districts, community organizations, and professional organizations was reported by participants (n = 13; 81%) in the pre-interview survey. However, the quality of training (i.e., degree to which topics covered were evidence-based, relevant to school psychologist roles, contained practice elements, etc.) participants received from community

organizations, professional associations, and school districts has not been established by this study. Thus, the finding that higher rates of training in TI topics were observed post-graduate preparation suggests graduate trainers should consider the integration of TI topics throughout the training program sequence, but especially in EBI and consultation courses (as both areas were implicated by this study as playing a key role in intervention success). Also, practicing school psychologists should seek continuing learning in TI topics to build their proficiency in TI EBP implmentation.

The current investigation is valuable given the lack of descriptive research focused on school psychologist implementors' delivery of TI intervention within real-world school environments (Gonzalez et al., 2019; Reddy et al., 2017; Shernoff et al., 2003); novel contributions of this study include the distal factors (person-level behavioral variables) and proximal influences (organizational factors) that influence implementation. In addition, this study better illustrates the perceived roles of school-based school psychologists in trauma treatment by exemplifying the connection between graduate and post-graduate training opportunities and current beliefs about implmentation. It is hoped the results of this study will help to better define the disconnects between research theory and real-world application by providing insight into the challenges to TI EBI implementation, in addition to bringing to light the mechanisms that improve intervention success.

TI Intervention Implementation Decision Making

When mapped on to two of the components of the TI therapeutic sequence described by Green and Myrick (2014)—(a) stability and safety and (b) reconnection—the findings of this study regarding in vivo implementation experiences illustrate school-based TI intervention as a dynamic EBP driven implementation process. Although interview responses indicate that informants were unlikely to implement an evidence-based manualized curriculum with fidelity or

progress monitor interventions; some key features of implementation captured by this study—including student identification, intervention goals, the programs and practices used, and the intervention outcomes observed—suggest that school psychologists still operated with somewhat of a developed sense of EBP to achieve meaningful outcomes for traumatized students.

Safety and Stability

In this study, participants expressed that disruptive externalizing behaviors were the most frequent cause for student referral to support staff; subsequently, it was observed that emotional regulation ability was the most commonly cited goal of intervention. Taken together, it appears that TI supports were often carried out in the school setting in response to a student's need for stability and safety. Based on participant responses, minimizing disruptive behaviors is implicated as an immediate goal of TI supports because these behaviors exhaust teachers, warrant the involvement of student support staff, inhibit the student's ability to learn, and upset classmates' education (TLPI, 2017).

To achieve safety and stability, participants reported that they sought to develop pro-social student skills and emotional coping competencies through the facilitation of explicit SEL programs and related practices that target disruptive student behavior. Zones of Regulation, the most frequently reported manualized curriculum (n = 4), is not considered an intervention for the treatment of trauma—rather it was developed to address self-regulation development in students with neurobiological impairments (specifically autism and attention-deficit hyperactive disorder) (Kuypers Consulting, n.d.). The developers of the program list only three studies on their website to support the curriculum as a "promising practice;" as such, with further vetting for evidence-based distinction Zones of Regulation may offer utility within the continuum of school-based TI supports, but is not considered a TI EBI at this time.

In addition to explicit social skills training, other practices used by participants to provide stability and support include a variety of CB approaches. General CBT approaches were heavily documented in the interviews. Participants also mentioned use of CBITS and Trauma-Focused CBT in the interviews; however, it was unclear if these participants explicitly used the Trauma-Focused CBT curriculum or were simply referring to their CBT approaches as "trauma-focused." As mentioned in the literature review, the bulk of TI EBIs available for use in schools are therapeutic programs with core intervention components of established clinical interventions (Santiago et al., 2018), which have been documented to be effective for delivery in the school environment (Reinsbergs & Fefer, 2017; Rivera, 2012). Thus, the finding that participants utilized CBT-related components, such as mindfulness and social problem solving, further suggests many of the techniques used by participants have an empirical basis and are appropriate for school use with traumatized populations.

Reconnection

Reconnection, as it relates to student attachment and belongingness, was emphasized in participant responses to be important to supporting traumatized students in the classroom. Thematic areas identified in this research related to reconnection include the faciliatory capability of intentional relationships between students and caring school staff, the widespread usage of supportive mentorship and interpersonal intervention techniques, and student outcomes related to connectedness. A variety of themes found in this study demonstrate the importance of a relationship bond between a traumatized student and a trusting adult, typically a teacher or school psychologist, at school. Forty-four percent of the sample endorsed teacher-student relationships as a facilitator, and 38% of the sample suggested the same about student-school psychologist relationships. Participants spoke to the importance of teachers who understood the

impact of trauma on learning, actively built a sense of security in their classroom environments, and worked toward building trust with students.

Addressing the dynamics of their own relationship with students, participants described a more strategic and intentional approach to building trust. Student-psychologist relationships, according to participants, were beneficial to discovering student strengths, interests, and protective factors that could be incorporated into the intervention sequence; thus, the relationships participants shared with their students appeared to be a leveraging factor for intervention success.

It is possible that findings regarding the importance of student connection with trusted adults at school could indicate relationships between the student and their intervention provider are the most impactful; however, it seems that regardless of implementor, it is teachers who, in the words of one participant, "drive the intervention home." As a result of their scientist-practitioner training, school psychologists are often the most equipped among school staff to make decisions regarding intervention processes (Shernoff et al., 2017); but, the sense among participants was that implementation could not successfully occur in the school setting without teacher input in all aspects of intervention design and implementation decision making. Student trauma disclosure via school staff was indicated by the majority of the sample ($n = 10$), which suggests many students were identified for intervention because of the established trust teachers have with their students and students' families. According to participants, teachers also provided input into student strengths, presenting concerns, current levels of functioning, family resiliency factors, and other considerations for intervention design; helped determine student goals; progress monitored; and provided beneficial feedback on outcomes.

Teacher buy-in and participation, implicated as key factors in TI intervention success in other studies (Hick et al., 2014), was observed in this dataset to also impact intervention effectiveness. In addition to knowing their students well, participants described that teachers were responsible for another crucial component of TI intervention implementation—the culture and climate of the classroom environment where student skill development is reinforced. Conversely, teacher reluctance to implementation, endorsed by 56% of the sample, was reported to be a major impediment to implementation. In addition, teacher knowledge of SEL learning and behavior intervention processes was brought up equally as both a facilitator (n = 4) and barrier (n = 4) in 25% of the sample.

Supportive mentorship and interpersonal techniques (e.g., CICO, restorative practices, and others detailed in Table 3) were commonly endorsed by participants as successful ways to addressed trauma-related student concerns. Furthermore, half of the participants in the sample reported positive outcomes in student development of interpersonal skills; and improved relationships with adults at school was endorsed by six participants. Increased school connection and more frequent student attendance were also observed. Extant research suggests supportive relationships are an essential component of any trauma treatment and are crucial to minimizing the negative effects of traumatization (Egeland et al., 1988), and the findings of the current study highlight how strong connections between traumatized students and school staff can impact intervention outcomes. Although improved relationships are difficult to measure, there is a particular power in interpersonal outcomes for traumatized children, as Green and Myrick (2014) asserted the most important factor in their three-phase trauma treatment model was a nonjudgmental therapeutic relationship because it enables young people to see their worth.

As a whole, findings related to implementation decision making suggested when TI EBI programs are not accessible, due to the myriad of barriers present in school settings, the school psychologists interviewed for this study guided implementation with a sense of EBP. According to Hick et al. (2014) "many practitioners can engage in EBP without necessarily implementing specific, manualized EBIs." (p. 482) The results of the present study implicate that a strong foundation in EBP guided participants' ability to creatively leverage the resources available in their context to overcome barriers to implementation. The intentional curation of activities rooted in evidence-based therapeutic component parts implemented with the aim of achieving meaningful, individualized student goals embodies the "conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al., 1996, as cited in Kratochwill, 2007, p. 830) that is central to practice as a school psychologist scientist-practitioner.

Barriers and Facilitators

Many of the barriers and facilitators extracted from the data of this study parallel, whilst also adding further context to, the findings of previous psychosocial EBI implementation science literature (Castillo et al., 2016; Chafouleas et al., 2009; Forman, Fagley et al., 2009; Forman, Olin et al., 2009; Gonzalez et al., 2019; Hicks et al., 2014; Langley et al., 2010; Shernoff et al., 2003). Salient barriers and facilitators from this study—including additional student support personnel, school-home engagement, and the role of administration—are discussed below.

Additional Student Support Personnel

Participants found partnerships with colleagues to be a facilitative factor of implementation. Although much of the responses in this thematic category pertained to the MHPs embedded within the educational setting, participant collaboration with other student support professionals (including social workers and school counselors) also illustrated this

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theme. These findings implicate consultative practices as a crucial factor of implementation success. As such, one consideration for school psychologist professionals is the creation of formal collaborative spaces, such as staff consultation meetings or support circles, with the aim of increasing intervention capacity and implementor willingness because "providers may experience a greater sense of support if they know they can confer with another implementor" (Langely et al., 2010, p. 112). Similarly, the strong presence of consultative and collaborative approaches to implementation seem to echo the effectiveness of a team-based approach to student stability, safety, and reconnection at school.

Most of the sample (n = 10) had the ability to refer students with significant mental health needs to a certified MHP embedded in the school. Langely et al. (2010) found schools that partnered with mental health agencies—through the sharing of resources and expertise between school-based implementors and clinically trained MHPs—were more likely to successfully implement CBITS. The results of the present study confirm the benefit of school-community mental health partnerships, as participants expressed that MHPs were helpful to implementation because they provided relevant historical information and tips on how to manage a students' unique behaviors. Participants who worked in California, Colorado, Minnesota, and Wisconsin all mentioned the availability of community MHPs in their schools, suggesting this may be a nationally widespread school-based mental health model. Investigation into mental health service delivery models involving school psychologists and MHPs embedded within the school setting should be a priority of future research, as further understanding of the effectiveness of these models would allow for replication of promising school-community mental health partnerships to increase capacity to serve traumatized students.

School-Home Engagement

The prevalence of the school-home engagement theme, specifically the difficulty of communication and collaboration with caregivers, suggests that home-school connections are important for student success, but can be challenging to maintain for school psychologists, whose job roles and training typically limit their ability to intervene in meaningful ways in settings outside of the educational environment. Although inability to obtain consent from guardians, strained communication, and lack of engagement were all observed to limit intervention capacity in the present study; it appears ongoing traumatization occurring in the home or community setting was the most insurmountable caregiver-related barrier. It is difficult to stabilize a child within a school setting that is living within a home environment of continual crisis; however, it seemed that participants best able to minimize the effects of complex trauma maintained a continued partnership with caregivers throughout the sequence of implementation.

Partnership with families in crisis can be challenging, and there is a variety of personal and societal level factors that may play into interactions between school psychologists and student families that increase that challenge. All participants in this study were White, educationally privileged individuals who were practicing in a variety of community contexts with diverse students who do not share the societal advantages of the participants. Furthermore, school psychologists are situated within the historically segregated, stratified American educational institution and hold a level of intimidating "status" as mandated reporters and gatekeepers into special education. As such, there is a need for practitioners to continuously reflect on the influence their personal bias and privilege have on their professional practice; and subsequently, actively work to interrupt any injustice present within their implementation context. It is not clear from the data collected for this study how identity and societal factors influenced school psychologist-caregiver relationships, but a future research focus on cultural

competence as it relates to child and family TI intervention would help to further unpack culturally relevant school psychologists-caregiver partnership dynamics.

Role of Administration/School Culture and Climate

A novel finding of this study on trauma-informed practices was that a clear association emerged in the participants' responses suggesting a link between school leaders' behaviors and the impact those behaviors had on overall school culture, climate, and intervention feasibility. That is, every participant who discussed creating a TI school culture and climate (n = 6) also discussed how their school leaders' behaviors set an organizational tone conductive to TI intervention. The findings of the present study corroborate the results of previous research that suggested administrator support of an intervention was more important to implementation than administrator understanding of the intervention (Forman, Olin et al., 2009), but introduces further understanding of school leaderships' effect on implementation beyond their direct support (i.e., allotting time, resources, and training). The key to creating and sustaining a truly TI climate, according to participant responses, seemed to be an established school leader who was open to alternatives to punitive behavior management (such as restorative justice and PBIS) and prioritized SEL and mental health.

Other barriers and facilitators derived from the data were similar to those found in related school psychology implementation science studies, including a lack of knowledge of interventions (Chafouleas et al., 2009) or understanding how the interventions should be used (Shernoff et al., 2003), and limited training (Hicks et al., 2014; Shernoff et al., 2003). In addition, lack of time (Castillo et al., 2016; Langley et al., 2010; Hicks et al., 2014; Forman, Fagley et al., 2009) was also observed in the data set. Overall, the barriers and facilitators indicated in this study provide novel contextual insight into the belief-driven and collaborative

nature of TI intervention implementation. The distal factors and proximal influences implicated to help, or hinder, TI implementation in the present study suggest that many of the barriers and facilitators experienced in school-based TI intervention implementation are similar to those that impede, or aid, psychosocial intervention generally.

Graduate Education and Post-Graduate PD in TI EBIs

The present qualitative study intended to describe the training school psychologist implementors received in TI EBIs during graduate training and post-graduate practice. Overall, participants indicated a high level of training in EBPs on the pre-interview survey (94% of the sample took an EBI course during graduate school; 82% of the sample received EBI content specific to psychosocial interventions during their graduate sequence); and during interviews, 44% of the sample reported learning a specific intervention in their graduate EBI courses. Reddy et al. (2017) reported approximately 75% of school psychology programs represented by trainers in their sample required a course on EBIs; thus, it seems training programs represented in the sample of the present study (largely Wisconsin-based Ed.S. training programs) may have higher rates of EBI training than reported nationally.

Findings regarding applied EBI implementation experiences during university preparation were not well documented in the interview data, as only three participants discussed intervention delivery during their graduate training. A weakness of this study was the lack of differentiation between implementation experiences that occurred during the school practica component of graduate training versus those occurring during the supervised internship component. The pre-interview survey and interview protocol did not emphasize the exploration of applied experiences in either of these areas, so these findings cannot be further extrapolated. Future research centered on examining the specific implementation-related competencies gained through applied experience would be of benefit as few studies, this one included, have focused

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on this aspect of training. Given that participation in implementation is essential for applying the knowledge gained in coursework (McHugh & Barlow, 2010), understanding the role applied experiences play in the university-to-practice gap would be beneficial.

In terms of graduate preparation in trauma-specific intervention, during the interview 63% of the sample expressed their graduate program covered some cursory content specific to trauma. The frequency of responses indicating participants were exposed to some trauma content during graduate training suggest that most school psychology program faculty of programs represented in the sample are likely aware of the need for preparing pre-service school psychologists to work with traumatized populations. However, based on the responses of the current study participants, TI intervention practices may not be fully integrated as best or evidence-based practices within their training sequence. Considerations for the inclusion of TI content during graduate preparation are explored further in the Implications section of this paper.

Results of the pre-interview survey show that participants were most commonly trained—either during graduate school or through post-graduate PD—in NASP PREPaRE (n = 9), CBT skills groups (n = 7), and CBITS (n = 5). NASP PREPaRE provides a system-wide framework for school safety, crisis management, and emergency response (NASP, n.d.); but, is not a manualized intervention with components related to improving student psychosocial skills. In regard to CBT skills groups, as discussed in the Methods section of this manuscript, the survey did not make a distinction between general and TI CBT/DBT groups; so, it is possible that the participants who endorsed training in these skills groups may have received training in generalized CB components. Thus, CBITS appears to be the trauma-specific psychosocial intervention most commonly addressed by graduate programs represented in the sample.

Interestingly, very few participants who had indicated they had training in a manualized TI EBI spoke directly about a time they had delivered that specific intervention; interviews instead contained conversations about the use of TI practices more globally. This lack of specificity evidences a training-to-practice gap; although, it remains unclear in what ways this discrepancy is related to graduate training given the pre-interview survey did not differentiate between TI EBIs learned in graduate school versus those learned later through PD. Nevertheless, these findings suggest that even when participants had training in TI EBIs, they were unlikely to facilitate them with fidelity. These results are congruent with the findings of Hicks et al. (2014) that suggested although over half of respondents indicated that they took a course on EBIs, 89% reported rarely or never implementing EBIs.

Results of the pre-interview survey indicated the most common source of TI post-graduate PD for school psychologists in this sample was through the school district that employed them; but, there was little clarity on the evidence-base for the PD topics covered during these trainings. Likewise, some participants mentioned receiving TI training through community organizations, but were not asked to specify any further details about the source of or content covered during the trainings, and it is likely these sessions varied in quality based on the organization type. However, it is probable that the information covered at NASP or equivalent state level school psychologist professional organization conferences was evidence-based and school psychologist specific; thus, it is encouraging that 63% of the sample did receive TI intervention training from these sources.

As scientist-practitioners, school psychologists are likely the most capable school staff member to evaluate the empirical basis for practices and topics covered by school district PD (Shernoff et al., 2017). As such, to address the threat of pseudo-science in schools they should be

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critical consumers of school district PD and advocates for the advancement of empirically supported TI EBPs. However, upon graduating and ending official affiliation with a university, access to up-to-date research is challenging. When participants stated "I did my research," they were typically indicating they browsed TI curriculums and programs to select one that would work best for their population; few participants (n = 3) expressed they read research articles or content regarding TI EBIs published by school psychologist professional organizations (e.g., *NASP Communiqué*). It is unclear what information participants were consuming to aid in their selection of interventions, and what criteria, if any, they used to determine if a program was empirically supported. These results signal that professional conferences and workshops may be the most likely source of research dissemination for the practicing school psychologists in this sample. Implications of this finding may be the prioritization of conference and workshop attendance for school-based practitioners, especially in light of their instrumental role as EBP advocates in school districts.

Given that conferences are not accessible for all practitioners due to financial, time, or other restrictions; a need exists for a creative and diverse means of research dissemination. One idea advanced by Gonzales et al. (2019) was the development of collaborative workgroups to produce "consensus ratings or recommendations of EBPs (including particular intervention or assessment packages/programs or key practice components)." (p. 13) Gonzales et al. (2019) further suggested an expansion of collaborative spaces, the creation of a dissemination information hub, and the inclusion of resources related to adaption of core components of EBIs to meet the needs of students and families in varied contexts. It would be of benefit to prioritize workgroups and activities specific to TI practices in these suggestions. Furthermore, research indicates practitioners new to the field may have more preparation in EBIs (Hicks et al., 2014);

and newly trained school psychologists can offer creative and fresh approaches to virtual research dissemination through novel means such as social media, blogs, or other methods of digital communication that will be necessary to promote the resources that are practical and tailored for use in the increasingly virtual modern school environment.

Local investments in regional school psychology professional organizations may prove advantageous in expanding the reach of intervention dissemination, as conferences and workshops hosted by local organizations may be more cost effective and accessible to school-based practitioners than national conferences. Similarly, a consideration for professional affiliations and school districts is to partner with universities or buy licenses to allow school psychologists access to up to date implementation science literature. Overall, improved and innovative partnerships between professionals across the field in the form of workgroups, tasks forces, and research and dissemination activities would prove useful for the advancement of TI EBPs.

Considering the relatively high rates of graduate preparation in EBPs, lack of access to peer-reviewed literature may partially explain the concerning finding that some participants "did not know" if what they were using was research-based. Alternatively, this could mean that participants who endorsed not knowing if a practice had an evidence-base may not have developed an understanding of any classifying framework to judge empirical soundness. It would be beneficial for future research to investigate how implementors operationalize EBP in each of the discrete stages of implementation—dissemination, adoption, implementation, and sustainability (Forman et al., 2013)—to gain an understanding of how school psychologists use their knowledge to navigate psychosocial intervention. Research that descriptively details the

stages of implementation would help to further delineate if practitioners are indeed engaging in EBP, or if 'practice-based evidence' is guiding intervention decisions.

Limitations

The limitations of this study should be considered when interpreting the results. In the pre-interview survey, a list of primarily manualized TI EBIs derived from relevant literature was presented below the question, "Have you received training, either during your graduate training or in professional development since, on any of these interventions?" During the interview, a few participants indicated this list gave them preconceived notions of what a TI intervention *should* be; specifically, participants expressed that the list gave the impression that the present study was concerned only with the implementation of TI EBIs—and that experiences with other non-manualized practices or programs were not of interest. If participants approached the interview with the belief the only legitimate TI interventions were manualized curriculums, it is possible the inclusion of the list limited the range of their responses. Similarly, it is feasible because the names of some manualized interventions contained the names of common therapeutic supports (e.g., "Trauma-Focused Cognitive-Behavioral Therapy" contains "Cognitive-Behavioral Therapy") some participants may have incorrectly endorsed they had training in a manualized intervention when they did not.

Response bias may have occurred as a result of the relationship between the researcher and participants. Many of the participants were known to the researcher either because they had attended the same graduate school or worked in the same school district; others were sourced through recruitment via university program directors and were unknown to the researcher. The relationship between the interviewer and interviewee may have caused interviewees to operate with a social-desirability bias, causing "overreporting of socially desirable behaviors or attitudes and underreporting of socially undesirable behaviors or attitudes" (Lavrakas, 2008, p. 24). To

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minimize this bias, the researcher read a statement that reassured confidentiality, established there were no right or wrong answers, and stated responses would not be judged by the interviewer. Alternatively, the relationship of the participants to the researcher, either because the researcher was known to the participant before the interview or because the researcher was a colleague in the field, may have also proved to be beneficial for collecting candid, honest experiences. Additionally, all parts of this research—including the pre-interview survey and interview—relied on respondents' self-report, which may not fully reflect their true training and facilitation experiences.

When interpreting this study, it should be taken into consideration that half-way through the data collection process, nationwide school closures due to the COVID-19 pandemic occurred. Half (8) of the interviews were conducted and analyzed after these closures; however, there is no indication of major thematic changes in comparison to interviews collected before school closures. A few participants discussed how COVID interrupted implementation and made determining outcomes difficult. One participant suggested a relative advantage of COVID closures—they noted an increase in parent engagement when the primary educational setting became the home. The 2020-2021 school year began virtually in most school districts nationwide, and it would be of interest for future research to discover how all aspects of TI intervention—identification, implementation, and progress monitoring—are adapted for implementation in the virtual environment.

Participant demographics should be considered when extrapolating the results of this paper. First, a pre-requisite to participate in the study was experience facilitating TI intervention; thus, the results do not indicate the prevalence of TI intervention. Instead, this would indicate that a need for psychological services and some faciliatory implementation factors—at minimum, a job

role that allowed for psychosocial service provision—was also in place. Second, the racial, gender, and training diversity of the sample is limited because all participants identified as White, the majority identified as female, and every school psychologist was trained within the Midwest. Identity and experience, especially in relation to population served, is a consideration for the delivery of culturally competent services that was not fully addressed by this study.

Lastly, it is important to note that while participant's work experience ranged from a few months to 5 years, participants' years of experienced skewed towards an average of 3 years of practice (n = 7) and 75% of the total sample had worked in the field ≤ 3 years. As a result of the majority of the sample having only a few years of practical experience, the findings of the study may be more characteristic of newly graduated psychologists. Similarly, as a consequence of the small sample (n = 16), all results of this study have limited generalizability, but still offer intriguing insight of TI EBP usage that warrants further investigation on a larger scale.

Implications and Future Directions: Interrupting the Research-to-Practice Gap

In addition to the implications mentioned throughout the Discussion section of this manuscript, this study further impacts the field in the areas of graduate training, implementation science, and TI intervention. Below areas specific to the TI intervention implementation process including (a) nonspecific treatment components and applied implementation experience, (b) consultative practices, (c) cultural relevance, (d) knowledge of trauma-informed best practices, (e) EBP and common practice elements, and (f) school psychologists' role in trauma treatment.

Nonspecific Treatment Components and Applied Implementation Experience

When asked what they wish they had learned in graduate school participants commonly expressed a desire to learn, as stated by one interviewee, "…practical day to day things, like what to even say to a traumatized student." Given the findings of sometimes inauthentic applied psychosocial intervention implementation practice during graduate training, this could be taken

to mean participants would have felt more prepared to work with traumatized students if they had more participation in supervised implementation activities during school based practica or internship. Likewise, it could also speak to a lack of preparation in nonspecific treatment components (e.g., empathy, listening, establishing rapport) that support the ability to provide effective intervention and prevention services. A solution to deficits in nonspecific treatment component competencies is graduate training that emphasizes applied fieldwork to develop competency in direct service provision, as well as self-efficacy and confidence through first-hand experience (Shernoff et al. 2003; Reddy et al., 2017).

Research has documented university trainers face obstacles to partnering with trainings sites dedicated to EBPs, as one study indicated it was sometimes their students who brought these practices to the site (Reddy et al., 2017). To address this, Gonzalez et al. (2019) suggested an "educating the educators" approach to university-training site partnerships that includes "collaborative training experiences involving both school psychology faculty and site-based supervisors in EBPs" (p. 11) to build the capacity of local training sites to develop competent school psychologists. It could benefit pre-service school psychologists to be involved with such conversations as advocates and ambassadors of TI EBPs as doing so would further their ability to arrive in their future job roles competent, confident, and committed to disseminating and implementing best practices for supporting traumatized students.

Consultative Practices

Participants suggested collaborative partnerships with teachers and other school support personnel had a positive impact on intervention success, indicating a strong foundation in consultative practices is imperative to TI intervention implementation. Participant responses across the data set illustrated the wide spectrum of a school psychologist's job duties, roles, and

responsibilities; and often, these workplace expectations limited capacity to provide mental health interventions to traumatized students. While it may be difficult for trainers to adequately equip pre-service school psychologists with all the skills necessary to operate in a variety of job roles, training in consultative practices seems to be one way to expand school psychologists' reach beyond traditional assessment and evaluation activities. Strong consultative practices minimize the need for pullout services and build capacity for preventive Tier 1 practices, effectively expanding school psychologists' ability to support traumatized students while also decreasing the need for future referrals for problem behaviors (Shernoff et al., 2017).

A continued focus on consultative processes in graduate preparation programs, including applied practicum and internship experiences, is warranted. Furthermore, future research specific to school psychologist consultation within a TI framework may be helpful for determining how to better disseminate these models. The end goal of these research and training efforts would be incorporating these models into graduate preparation to develop culturally competent, prevention focused school psychologists with the knowledge and skills to intervene within a MTSS continuum of TI supports.

Cultural Relevance

Kratochwill and Stoiber (2002) describe, "Many intervention concepts, theories, and approaches have been developed from a predominantly Euro-American perspective and context, which may have limited or partial application to the emerging ethnic and culturally diverse populations of our schools." (p. 367) As such, a priority of researchers should be to investigate "the differential effectiveness of interventions across ethnic and cultural groups" (Kratochwill & Stoiber, 2002, p. 367) by means of inclusion of diverse participants (as recipients of treatments) at levels adequate for determining "the relative benefit of these interventions or the need for

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adaptations to increase cultural fit" (Shernoff et al., 2017). Furthermore, culturally responsive considerations should expand to all areas of school psychology implementation science professional discourse as a "Euro-American" bias will persist in the literature if multicultural voice is left out of research teams, work groups, task forces, and other areas instrumental to EBP evaluation and research dissemination. A priority should then be an effort to recruit, develop, and retain diverse professionals in the field of school psychology including a particular focus on the intentional development of diverse graduate students for future supervisory, research, and leadership roles in the field.

Findings from this study suggest that participants were already engaging in the modification of TI EBIs for a best fit with their local population, however, it is unclear how far these modifications of TI EBIs deviated from their intended design. Furthermore, there was no indication in the data that any participant engaged in or received training in any systematic process for culturally responsive intervention modification. Some research suggests that these therapeutic components are adaptable to the population by incorporating culturally relevant themes, developmentally appropriate language, or play (Cohen et al., 2012; Green & Myrick, 2014), but the field has not yet reached a consensus regarding the empirical support for this practice. Shernoff et al. (2017) advanced the use of culturally responsive consultation connected to real-time progress monitoring and a process of factoring student characteristics into the determination of response-to-intervention. Models of culturally responsive EBI adaption and modification warrant further investigation and adoption into school psychologist training coursework—particularly into the Ed.S. level training sequence, as this is the level of training most school psychologists practicing in school settings hold. Development of culturally

responsive modification models should be a priority of the field reflected in future research, professional workgroups, and graduate training course content.

Knowledge of Trauma-Informed Best Practices

According to NASP, "Trauma-sensitive schools have the potential to increase positive outcomes among all students, regardless of trauma history." (NASP, 2015) Thus, incorporating TI intervention content in to school psychologist graduate training and PD is an efficient way to disseminate best practices that are "more bang for your buck." A consideration for graduate training is to infuse coursework with psychosocial intervention practices that reduce emotional and behavior problems and develop resilience. It is crucial for school psychologists to be equipped with this knowledge because other school staff, including teachers, are rarely trained to identify or educate traumatized students (Wong, 2008).

Findings of this study indicate school psychologists can have impact on all levels of MTSS: at Tier 1, a TI culture and climate can be achieved through the use of SEL skills curriculums and positive behavior supports, and at Tier 2/3 provision of targeted TI EBPs in groups and individual implementation settings allow for individualized student support. NASP (2015) suggested that TI interventions are most effective when implemented within a larger framework of mental health supports for all students, indicating that a priority for school psychologists is to work with other school stakeholders to assure interventions "are organized, prevention focused, based in data, involve the whole school community, and be resource efficient" (Reinbergs & Fefer, 2017, p. 259). Partnership with school leaders is implicated by the findings of this study to be particularly important to creating a TI school culture and climate; thus, cooperation with school leaders should be a consideration of practicing school psychologists as they begin to develop a TI school climate and culture.

Similar to Stoiber and Vanderwood (2008) who discovered school psychologist professionals desired PD in classroom-based behavioral intervention, therapeutic interventions, and functional assessment; this study highlighted participants desire to learn more about these same intervention areas as they related to traumatized students. The intent to develop competency in psychosocial intervention expressed by participants suggests that the school psychology professionals interviewed for this study are continuing to steer the field toward preventative and intervention-focused service delivery (Stoiber & Vanderwood, 2008), and a more robust education in TI supports would meet this need.

EBP and Common Practice Elements

Although the intent of this study was to discover the TI EBIs newly graduated school psychologists had been trained in and were using, it appears that few manualized curriculums were used with fidelity by participants; thus, it may be more appropriate to discuss the services delivered by participants as "TI EBPs." In this study, the distinction between EBIs and EBPs is that EBIs refer more directly to manualized intervention programs; whereas EBPs describe discrete practices. The semantics of these terms bares importance because their usage indicates distinct implementation approaches; and EBPs more accurately describes the modular approach to TI intervention implementation.

Participants highlighted a major advantage of the modular approach was the ability to intervene at the student's developmental level and address comorbid concerns with relevant supports. This is not only indicative of thoughtful EBP, but this method also emulates propitious clinical best practices of TI therapeutics, such as the Neurosequential Model of Therapeutics (NMT) (Perry, 2009). As a guiding framework, NMT assists clinicians in designing an appropriate sequence of focused therapeutic exercises (often repetitive sensory and motor

activities) that elicit activation of parts of the brain that have been altered by trauma; the goal of treatment is to build a child's capacity to self-regulate, and subsequently engage in CB approaches (Child Trauma Academy, 2018). Just as TI EBIs curriculum programs available for school use were derived from clinical psychology, conceivably TI therapeutic models could also be adapted for school use. The adoption of the tenets of NMT could be applied to TI school-based intervention and consultation to enable school psychologists to make specific recommendations for the selection and sequencing of therapeutic, educational, and enrichment activities that match the needs and strengths of the individual child. As one keen participant described:

> I think we looked at curriculums like CBITS in the past for these younger grades and often times, it is just they don't have the basic skills to really get the most benefit out of it. You know, in order to kind of start to access some of that trauma specific practice, to be able to regulate and have some sort of emotional awareness; it's just starting to get some of those basic feeling words down, especially with the little ones.

Further investigation into the modification of TI clinical best practices for school-based use may be advantageous to the goal of expanding the capacity of mental health service provision in schools. A school-adapted version of NMT could lend to utility in many areas of practice, and would be especially beneficial in the areas of consultation and implementation.

There is, however, a downside of a modular approach—notably, the loss of treatment integrity. Tangible ways of monitoring intervention effectiveness, such as progress monitoring and intervention evaluation, were not brought up by participants as frequently as other aspects of implementation, despite being an essential tenet of EBI. What this may indicate is participants were more fluent in some stages of implementation such as adoption and direct service delivery;

but, monitoring outcomes and sustainability may have presented a challenge. Alternatively, this difficulty could be a result of the myriad of threats to in vivo implementation in the school context; or a product of the unstandardized, loosely sequenced modular approach itself. Regardless of cause, a possible solution is a continued effort to develop practitioners with an understanding of flexible intervention problem-solving strategies for designing, monitoring, and evaluating for intervention planning (Kratochwill & Stoiber, 2002).

Findings regarding the widespread use of a modular approach authenticate the appropriateness of a graduate preparation that Gonzalez et al. (2019) described as a training model that prioritizes common practice elements "shared by empirically supported interventions for addressing disorders having similar etiological models and symptoms" (p. 13) situated within the larger EBP framework. Furthermore, other authors have suggested this model of training may be more efficient in training new school psychologists than attempting to teach multiple EBIs with overlapping elements (Shernoff et al., 2017). A consideration must also be the continued development and dissemination of accessible and uniform guidelines for judging the quality of the research base for EBPs and EBIs (Stoiber & Kratochwill, 2002).

School Psychologists' Role in Trauma Treatment

School psychologists can provide mental health supports (NASP, 2017b), and the results of the present study suggests they did so by (a) developing student safety and stability in the school setting and (b) supporting reconnection. However, based on this qualitative study, school psychology participants' involvement with the trauma processing component of the TI intervention sequence was limited. As reported in other studies (Forman, Fagley et al., 2009; Forman et al., 2012; Langley et al., 2010), the results of this study imply that involvement in assessment, evaluation, crisis response, and other competing responsibilities may be a factor

limiting feasibility of TI EBP delivery. However, the most critical limiting factor impacting on the school psychologists' implementation of TI EBPs appeared to be participants' belief that trauma treatment was not within the purview of their training and reach as a school psychologist; or that trauma treatment was completely outside the scope of what should be addressed by schools.

Sixty-three percent (n = 10) of participants provided a response during their interview that indicated self-held beliefs negatively affected their use of trauma supports; responses fell within three contextual areas: (a) competence (n = 5), (b) job roles (n = 6), and (c) suitability (n = 2). In terms of perceived competence, participants voiced they didn't feel competent in addressing trauma, largely because of a lack of knowledge on what interventions to use, a lack of comfortability facilitating the intervention, and feeling as though they had limited training. Low levels of training in TI EBIs was further indicated in the pre-interview survey, which corroborates these sentiments and suggests they may be explained by limited training and experience. Participants had relatively limited years of experience (≤ 5 years) and research indicates that applied experiences are more important than coursework for intervention competence (Mullen et al., 2015; Tang et al., 2004).

TI interventions carried out by participants were unlikely to extend to any trauma processing, which suggests participants held beliefs about the limits of their training and the purview of their job roles that restricted their involvement in trauma treatment to only areas they perceived were related to school-based concerns; or areas where they felt they had the competence and confidence to effectively intervene. For example, the primary goals of intervention articulated by participants (self-regulation, coping, self-awareness, emotional expression, and social-problem solving) are parallel to the goals of the stabilization and safety

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phase of trauma treatment, which are defined as "enhanced symptom control, affect and impulsive-control skills building, psychoeducation regarding symptoms and treatment, and the establishment of a collaborative therapeutic alliance" (Green & Myrick, 2014, p. 137). Stability and safety practices characterize the beginning stages of trauma treatment and are a pre-requisite to any further trauma processing (Green & Myrick, 2014). However, evidence from this study suggests trauma processing was less of a concern for school psychologist participants, as participant responses indicated behavior directly related to school performance (e.g., psychosocial skill development, behavioral improvement, and education related outcomes) were points of intervention.

Trauma processing largely seemed to be out of the scope of what participants believed was their role as a school psychologist. Participant responses emphasized that it was of less importance to attempt to pinpoint exact traumatizing events, instead it was more beneficial to focus on the child's current presenting issues. In addition to rigid work roles, it is possible that participants also indicated they did not attempt trauma processing because of lack of confidence, training, and familiarity in implementing TI EBPs. Participants reported intervening using the following core components of TI EBIs and EBPs: psychoeducation, relaxation training, emotional-self monitoring, regulation skills, social problem solving, mindfulness, CB components, peer and caregiver support, and griefwork. Another core component, safety planning, was not operationalized by participants, but equipping students to maintain personal safety in the school environment was addressed. Teaching students to maintain personal safety was achieved by building students' self-regulation capabilities, through the development of pro-social skills and a TI culture in climate with predictability, consistency, and connection to adults. Two TI core components directly related to trauma processing—exposure therapy and trauma

narrative—were not documented to be used in the school setting, according to participant responses.

Engaging in intervention linked solely to school-related concerns suggests participants found it to be appropriate to intervene with students when their trauma-related problem behaviors inhibited functioning in the school context; whereas intervention to address other mental health concerns observed in the home or community were best left to community MHPs. As one participant stated, "If they're okay in the classroom, but there's stuff going on at home, I try to refer them for outside support." This is further evidenced in one participant's response:

> Interventions to treat trauma may be beyond the purview of school psychologists…I feel like…the treatment of trauma might be better accomplished by you know, outside service providers. I think that a school psych's role should really be more of, you know, creating a climate that is not re-traumatizing for the youth.

Participants alluded to a number of factors that may inform their understanding of their role in TI intervention including their job description (as defined by their school district), the needs of their school environment, and areas of personal interests or training expertise. Another major factor was how their school district articulated school psychologists' role in psychosocial intervention, including the degree to which school psychologists had the opportunity to work with students (a) on social-emotional skill development, (b) in a prevention and intervention capacity, and (c) who are not considered special education students. However, regardless of the roles held, across interviews a belief in limited involvement in trauma processing was evidenced.

According to the NASP 2020 Practice Model, addressing trauma is explicitly articulated as an area of professional practice; the model states school psychologists should "demonstrate an

understanding of the impact of trauma on social, emotional, and behavioral functioning and, in collaboration with others, work to implement practices to reduce the effects of trauma on learning and behavior" (NASP, 2020, p. 6). Despite this practice expectation of NASP, participant responses indicated that they did not receive training in their graduate program that allowed them to fully engage in this practice standard. However, NASP (2020) also defines school psychologists should "recognize the strengths and limitations of their graduate preparation and experience, engaging only in practices for which they are qualified." (p. 45) Responses indicating intervention in areas explicitly related to school functioning evidences participants' adherence to this standard. Furthermore, the NASP (2020) Practice Standards articulates school psychologists should "enlist the assistance of other specialists in supervisory, consultative, or referral roles as appropriate in providing effective services" (p. 45); and when there are no other options for student support by a credentialed provider, school psychologists should explain the limits of their training and "seek consultation, continuing professional development, and supervision as appropriate and necessary to ensure that students do not go without assistance." (p. 45) Referral to community MHPs (suggested by the majority of respondents as an approach to connect students with mental health services), the prevalence of consultative activities indicated as a facilitator of intervention, and findings regarding training in TI occurring primarily post-graduate support the belief that participants' understanding of their bounds of training are justified.

The purpose of graduate training is to build the foundational skills needed for practice, with the understanding that fluency in these skills will likely not be developed within the short duration of the formalized university training experience (NASP, 2020; Shernoff et al., 2017). The majority of participants in this study held Ed.S. level degrees; however, two participants

interviewed had obtained a Ph.D. level education and had completed doctoral internships in clinical settings. It is conceivable that the trauma processing component of trauma treatment may be within the bounds of an Ed.S. level school psychologists' training with continued professional development and practical experience in TI intervention; but, for doctoral level practitioners with longer training sequences and clinical experience engaging in trauma processing components of TI intervention may be appropriate.

On the pre-interview survey, doctoral level participants accounted for two of the three responses endorsing training in Trauma-Focused CBT; one doctoral level participant also accounted for responses indicating previous training in (a) Integrative Treatment of Complex Trauma for Adolescents or Children and (b) Support for Students Exposed to Trauma. During interviews, one doctoral participant articulated a challenge was adapting interventions used in clinical settings to fit the needs and purpose of school-based services. The other doctoral participant stated they had some experience in TI intervention, but hesitated to use TI EBI curriculums without further supervision. The unique perspective of a doctoral level practitioner implementing in a school setting is evidenced in these responses, which further implicates graduate training as a key factor in TI implmentation.

Researchers have made compelling arguments for the benefits of a scientist-practitioner training model that emphasizes common practice elements at the doctoral level (Shernoff et al., 2017); however, it remains unclear how these models could be applied to the shorter educational specialist level sequence with "significant constraints" on the addition of any content as there is a need to "remain competitive by not exceeding 60 semester credits" (Shernoff et al., 2003, p. 479). Information from the present study maintains that school psychologists implementors at all degree levels need to be prepared for the expanding roles of the profession; as such, it would be

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of benefit for university trainers to be responsive to the wide range of job duties typically expected of school psychologists by curating training sequences that allow for authentic applied experiences and coursework in psychosocial EBPs and/or implementation of EBP components with data-based decision making incorporated for examining effects and for program evaluation purposes. Future research comparing implementation behaviors across school psychologist experience level, both in terms of years of practice and level of education, could further delineate what TI intervention core components are appropriate to be carried out by school psychologists in school settings.

This study underscores the need for continued qualitative implementation science research focused on the social and ecological validity of TI EBIs/EBPs to fill the gaps in larger scale quantitative research. Greater qualitative knowledge of TI intervention implementation behaviors can be used to reform existing practice and produce more effective interventions (Nastasi & Schensul, 2005). In this research, qualitative methodology allowed for the cohesive understanding of implementation behaviors and enabled the discovery of novel findings; such as the widespread use of a student-driven, EBP approach to TI intervention and the faciliatory power consultation had on TI intervention; that were unlikely to have been discovered with a quantitative approach. A consideration for implementation science researchers is to use the qualitative method as a mechanism to capture data gleaned from real-world implementors, as expert consensus and clinical observation are essential elements in consideration of an intervention's evidence-base (APA, 2002). Furthermore, the inclusion of key stakeholders—such as teachers, parents, administrators, and mental health therapists embedded in school settings—in implementation science research design would strengthen the understanding of the most effective ways to comprehensively support traumatized students and their families.

Overall, the findings of this study signal an increased affirmation of the importance of a scientist-practitioner graduate training model to develop practitioner EBPs. It seems school psychologists who are able to utilize common elements of practice in response to referral concerns, implement interventions with competency, effectively consult with stakeholders, and be advocates for TI EBPs at their school site will continue to advance the role of school psychologists as capable of more than just assessment and special education evaluation. The present study also implicates school psychologist engagement in post-graduate TI training opportunities to broaden the roles of school psychologists as mental health providers and build capacity to support traumatized children in school. Furthermore, evidence from this study suggests that for the school psychologists in this sample, the practices they have found to be successful through their "practice based-evidence" are some of the same TI EBPs supported by literature to be effective for school-based use (Reinsbergs & Fefer, 2017; Rivera, 2012; Santiago et al., 2018). Ultimately, what participants experienced as realistic in the school setting was to make intervention decisions based on the ecology of the referred student and to respond with practices that are feasible, given the implementation context. Simply put, participants' supported using what you know to do the most you can with what you've got—an approach those accustomed to the in vivo school environment are most likely to have developed. Further, there was evidence that they combined this knowledge of strategies with the experiential and evidence-based type of practices they felt were needed to perform well within the constraints of "real world" school contexts.

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<center>**Appendix A**</center>

<center>**Recruitment Email**</center>

Hello,

      I am Abby Lopez, a doctoral student at UW- Milwaukee, and I am conducting a dissertation study that involves interviewing school psychologists early in their career. I am looking to interview participants within their first 5 years of practice in the field (including those in their internship year). I'm am interested in hearing about the graduate training new school psychologists have received in trauma-informed practices and their experiences delivering social-emotional interventions to students with known or suspected traumatization. I received your name and information from my training director, Dr. Karen Stoiber and I am contacting you because I am looking to source participants from a variety of graduate training programs in Wisconsin. I am wondering if you could forward this email, or the below information to your interns/recent graduates:

_____

Hi,

      I am Abby Lopez, a doctoral student at UW- Milwaukee, and I am conducting a dissertation study that involves interviewing school psychologists early in their career (within their first 5 years of practice in the field, including those in their internship year) about their experiences supporting students who have experienced trauma. Participants will be asked to complete a short (~10 minute) online survey and engage in a 30-45-minute phone interview. I will be asking about your graduate training in evidence-based interventions and approaches

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you've taken to working with students with a known or suspected trauma history. Participants also receive a $15 gift card.

If you are able to participate please follow the link below to begin the pre-screening survey. After you complete the survey, I will be in contact with you to set up a phone interview.

https://milwaukee.qualtrics.com/jfe/form/SV_1OhAfFjkaFCoIBL

This is a great opportunity to reflect on personal practice, as some of us are looking for relevant school psychology activities to complete or are considering ways to further our reach to students at this time.

Your participation is appreciated and will allow for further exploration into the expansion of ways we effectively support students with a trauma history!

Abby Lopez
School Psychology Doctoral Student, University of Wisconsin - Milwaukee
School Psychologist Milwaukee Public Schools

Appendix B:

Pre-Interview Survey

University of Wisconsin-Milwaukee

Informed Consent to Participate in Research

Study title: A QUALITATIVE EXAMINATION OF SCHOOL PSYCHOLOGISTS' USAGE OF TRAUMA-INFORMED INTERVENTIONS

Researcher[s]: Karen C. Stoiber, Ph.D.; Professor and Training Director, School Psychology

Abigail Lopez; Doctoral Candidate, School Psychology

We're inviting you to participate in a research study. Participation is completely voluntary. If you agree to participate now, you have the right to withdraw without negative consequences at any time.

What is the purpose of this study?

The purpose of this research study is to document the experiences school psychologists have had implementing social-emotional interventions to traumatized children in school-based settings. We are interested in hearing about how you implemented these interventions both during your graduate training and/or in your subsequent job roles as a licensed school psychologist. The aim of the research is to discover more about the interventions school psychologists use to support the learning of children who have experienced trauma. As part of this study, you will:

- Fill out a brief pre-interview online survey about your graduate training and job roles
- Complete a 30-45-minute interview over the phone/online software (your interview will be audiotaped for transcription purposes)

What will I do?

The pre-interview survey will ask questions about your graduate training and current job roles; it should take around 15 minutes. After the pre-interview survey, you will be prompted to set up an interview time via Doodle software. In the 30-45-minute phone interview, we will ask you questions about your experiences working with traumatized youth in schools

Risks

- There is a small chance some questions may be upsetting. You can skip any questions you don't want to answer, or stop the pre-interview survey and/or interview entirely.
- Online data being hacked or intercepted: This is a risk you experience any time you provide information online. We're using a secure system to collect this data, but we can't completely eliminate this risk.
- Breach of confidentiality: There is a chance your data could be seen by someone who shouldn't have access to it. We're minimizing this risk in the following ways:

o Audio recordings will only be shared with the researchers associated with this project.

o All audio recordings will be transcribed, identifying information (e.g., names, university programs, school district names, etc) will be removed, and the audio files will be deleted after the project is complete.

o We'll store all electronic data on a password-protected, encrypted computer.

Possible benefits:

- Benefits of participating include contributing to the field of research in implementation science. You will be providing useful information to help us understand the ways traumatized students are being served in schools.

Estimated number of participants: 11-15 participants

How long will it take? Interviews will take place over telephone/online software and take 30-45 minutes

Costs: There will be no cost to participate.

Compensation: A $15 gift card

Future research: Your data won't be used or shared for any future research studies.

Confidentiality and Data Security

We'll collect your name and the following identifying information for the research: information about your graduate training and job role. This information is necessary for analysis of data.

In order to protect the privacy of others, please refrain from including the names of instructors, supervisors, etc. in your responses.

Where will data be stored? Data collected via the online pre-interview survey will be stored on the servers for the online survey software (Qualtrics) and on the researcher's password protected computers. All audio recordings and interview transcriptions will be stored on a password-protected computer and deleted after the research is completed.

How long will it be kept? Survey data, audio recordings, and transcriptions will be destroyed after 1 year

Who can see my data?

- We (the researchers) will have access to identifiable (with your name included) data. This is so we can analyze the data and conduct the study.
- The Institutional Review Board (IRB) at UWM, the Office for Human Research Protections (OHRP), or other federal agencies may review all the study data. This is to ensure we're following laws and ethical guidelines.
- We may share our findings in publications or presentations. If we do, we may use direct quotes from you, but we'll use pseudonyms (fake names). When we analyze the data from this study, we will group responses from participants together in any report or presentation- so there will be no way to identify individual participants.
-

Contact information:

For questions about the research

For questions about the research	Abby Lopez Karen Stoiber	allopez@uwm.edu kstoiber@uwm.edu
For questions about your rights as a research participant	IRB (Institutional Review Board; provides ethics oversight)	414-229-3173 / irbinfo@uwm.edu
For complaints or problems	Abby Lopez Karen Stoiber	allopez@uwm.edu kstoiber@uwm.edu
	IRB	414-229-3173 / irbinfo@uwm.edu

Abigail Lopez

Please print or save this screen if you want to be able to access the information later.

IRB #: 20.112

IRB Approval Date: 12. 3. 19

Agreement to Participate

If you meet the eligibility criteria below and would like to participate in this study, click the button below to begin the pre-interview survey. Remember, your participation is completely voluntary, and you're free to withdraw at any time.

- I am at least 18 years old
- I am a licensed school psychologist practicing in a K-12 school
- I have delivered a social -emotional intervention in a school setting to a child with known or suspected traumatization

By signing below I consent to participate in the study, including the pre-interview survey and audio-recorded interview

Type your name below

_____

1. **Choose one or more races that you consider yourself to be:**

   White (1)

   Black or African American (2)

   American Indian or Alaska Native (3)

   Asian (4)

   Native Hawaiian or Pacific Islander (5)

   Other (6) _____

   Hispanic/Latino (7)

2. **What is your gender?**

   Male (1)

   Female (2)

   Other (3)

3. **Have you ever used a social-emotional intervention to support a student with trauma-specific needs?   This includes any intervention applied in a school setting designed to influence emotional, behavioral, or social functioning of a student with known or suspected trauma.**

   Yes (1)

   No (2)

4. **Where did you obtain your school psychology degree? Please type the name of the university.**

   _____

5. **Which state is your university program located in?**

   ▼ Alabama (1) ... Wyoming (52)

6. **What degree do you hold (or are in the process of obtaining)?**

   MS (1)

   EdS (2)

   PsyD (3)

PhD (4)

7. **Is this your internship year?**

Yes (1)
No (2)

8. **How many years have you been a practicing school psychologist (including your internship year)?**

_____

9. **What range of grades do you service in your current job role? (Choose all that apply)**

Early Learning/Headstart (1)

Elementary School (K-5) (2)

Middle School (6-8) (3)

High School (9-12) (4)

Other (5) _____

10. **What is the setting of your current job role?**

Urban (1)

Suburban (2)

Rural (3)

11. **In which state is your current job role located?**

12. **During your school psychology graduate program training sequence:** Were you required to take an evidence-based interventions (EBIs) course?

Yes (1)

No (2)

12.a. *If you were required by your program to an EBI course, did you take this course?*

Yes (1)

No (2)

12.b. *Did this course cover social-emotional EBIs?*
  Yes (1)
  No (2)
13. **During your school psychology graduate program training sequence: Did you take any *non-required* courses which covered EBIs?**

Yes (1)

No (2)
14. **Outside of your graduate program: have you received professional development on interventions to use with traumatized children?**

Yes (1)

No (2)
  14.a. *If yes, how did you receive the professional development?*

    School district training/conference/workshop (1)

    Professional organization (NASP, WSPA, etc.) training/conference/workshop (2)

    University training/conference/workshop (3)

    Outside organization (Big Brothers/Big Sisters, Children's Hospital, etc) training/conference/workshop (4)

    Other (Describe) (5) _____
15. **Have you received training, either during your graduate training or in professional development since, on any of these interventions?**

Multimodal Trauma Treatment (MMTT) or Trauma-Focused Coping in Schools (1)

Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) (2)

Stanford-Cue Centered Therapy (SCCT) (3)

Seeking Safety (4)

TARGET (5)

Cognitive Behavioral Intervention for Trauma in Schools (CBITS) (6)

Bounce Back (7)

Support for Students Exposed to Trauma (SSET) (8)

Trauma-Focused Coping in Schools (9)

Trauma Grief Component Therapy for Adolescents (10)

Overshadowing the Threat of Terrorism (11)

Enhancing Resilience Among Students Experiencing Threat (12)

Integrative Treatment of Complex Trauma for Adolescents or Children (13)

DBT skill groups (14)

NASP PREPaRE (15)

CBT skill groups (16)

16. **What is the best phone number to reach you? (Please include area code)**

_____

17. **What is your email address?**

_____

Appendix C:

Interview Protocol

Date: _____

Participant: _____

Interviewer: _____

Directions: Questions highlighted in dark gray (introduction, broad questions, final questions, and wrap-up) are to be administered to all participants. Follow-up questions are asked as needed to elicit more specific responses to experiences expressed by the participant.

Begin:

Hello, my name is (INSERT NAME OF INTERVIEWER) and I am a student at the University of Wisconsin- Milwaukee in the school psychology program. I am interviewing you today as part of a research study about the experience of implementing social-emotional interventions to traumatized children in school-based settings. I am going to go through some information you read before the pre-interview survey but want to remind you of. Today's interview should take approximately 30-45 minutes; your response will be audio recorded and transcribed for later analysis. The recordings and transcriptions will be kept confidential. There is a small chance that some of the questions may make you feel uncomfortable; if so, you do not have to answer any questions. Before we begin, I want to let you know that there are no right or wrong responses to these questions. Also, your thoughts or feelings will not be judged in any way. I can email all this information to you again if you wish. Do you agree to participate in this study?

Move to **Introduction**

Purpose	Question
Introduction	Today, I would like to learn about your experiences implementing social-emotional interventions to support the learning of traumatized children in school. These experiences could have taken place during your graduate training or in current practice as a school psychologist.
Broad Questions	Can you tell me about the experiences you have had delivering social-emotional interventions to children with trauma-specific issues? • What intervention did you deliver?/What practices, techniques, approached did you use? • How did you obtain your training for this intervention? • What graduate training did you receive in EBIs? (trauma sensitive and in general) • How did you know the student you worked with had experienced trauma? How else have you been involved with trauma-informed interventions?
Follow-Up Questions/Probes	How did you decide what approaches/strategies to us? What were the outcomes/impact?

	What did you find helpful for implementation?/ What factors helped you carry out the intervention?
	What did you find made implementation more difficult?/ Did you find anything challenging?
	What supports did you have?/ Did you receive/require any additional support/resources?
	Did you feel the intervention was successful/unsuccessful? Why?
	What else did you wish you had learned in graduate school?
	How does your experience before that time compare to your experience now?
	Please tell me more about that.
	What do you mean by…
	Can you describe that process?
	That seems_____, can you tell me more?
	You mentioned that….
	Can you walk me through your decision-making process?
	What did you try next?
	What specific resources/environmental factors, etc. are you referring to?
	If you could change anything about that experience, what would it be?
	Was it in your current job role or a different job role? Tell me about that job role.
	Did you use a manualized therapy program?
	When did this happen-what year? How long ago? What time during the school year?
	Can you give me an example of what you mean?
Final Questions	Is there anything else you would like to add about your experience in implementing social-emotional interventions with traumatized children?
Wrap-Up	Thank you for participating in this dissertation study. Your responses are appreciated.

Appendix D:

Barriers and Facilitators Table

Theme/Frequency (n = # of interviewees out of 16 total interviewees)	Sub-Theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
School-Home Engagement **n = 12** **% of total interviews = 75%**	Communication and Collaboration Between the School Personnel and Student Families n = 12	5	5	2	**Barrier:** "Sounds kind of cynical and bad, but a lot of times those non-responders to Tier 1 interventions are the students where we really need that collaboration and communication with their parents or caregivers. And usually, it's a big reason why they're having those problems—it's because of what's going on at home. And, so it's all very difficult."
					Facilitator: "Parent involvement has significantly helped. A lot of parents have been, even if they're not the biological parent, have been forthcoming about what trauma they've experienced and what could have happened as a result of that. And really wanting to help their functioning at school, because usually it's affecting their functioning at home too."
	On-going, Complex Trauma Occurring in Home Setting n = 6	6	0	0	**Barrier:** "So, I feel like we're kind of trying to constantly, you know intervene and treat kids that have been through trauma or adverse childhood experiences; and they're kind of still exposed to those experiences and those environments so it can be kind of a challenge to actually make sustained growth and sustained progress."
	Student School Attendance n = 5	5	0	0	**Barrier:** "Like any intervention attendance, attendance certainly has an impact. It is difficult. We have transient populations, our kids who are kind of moving around a lot, can be difficult. We have

Theme/Frequency	Sub-theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
					McKinney-Vento, so it allows them to have some consistency; but, the attendance piece is a big, big barrier."
Additional Student Support Personnel Availability of additional personnel to support implementation **n = 12** **% of total interviews = 75%**		1	6	5	**Barrier:** "To be honest, none [no additional personnel]- I have school counselors; there are four school counselors at my school who I help do Student Success team meetings with but that's literally it. I collaborate with the head of special education on cases, but it's not in any extent any kind of like trauma-informed care social emotional intervention. It is pretty much just me."
					Facilitator: "Some people I went to grad school with, we share resources talk about like this really helped with this kid. Like we're always talking about, you know different situations that we're working or the kids that were working with. So, I think that's also helped me."
Theme/Frequency	Sub-theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
School Psychologist Beliefs **n = 11** **% of total interviews = 69%** Acceptance of the truth, reality, or validity about a personal ability, job role or process that a person can put to constructive use (Atkins et al., 2017)		6	1	4	**Barrier:** "I found really difficult was obviously talk therapy. I don't I don't know that, I don't really think that's what kids need for trauma." "I truly feel that the treatment of trauma might be better accomplished by you know, outside service providers. I think that a school psych's role should really be more of you know, creating a climate that is not re-traumatizing for the youth. Just in terms of, you know, scheduling and all this, especially if you're at a school just a few days a week. I think that it can be tough to get some type of routine treatment for individual or groups in place that have

					experienced trauma. I think our district kind of provides like a very general view of what trauma is so that we know what it looks like and know how to kind of prevent re-traumatization. But, when it comes to actually I think, you know, treating and encouraging student to kind of overcome their individual trauma, I don't know I feel like sometimes that's better left to people that are have been more explicitly trained in those types of interventions and approaches. Not saying that it's not possible; but for me and my school, I see it being very tough."
					Facilitator: "I think it's so important [TI EBIs] and I know that so many of our students have trauma in their backgrounds and they need to build these skills and I understand the importance of it."
Teachers **n = 11** **% of total interviews = 69%**	Teacher Knowledge of Trauma and the Social-emotional Intervention Process n = 7	3	3	1	**Barrier:** "A big barrier also—teachers who don't see the impact of social emotional health on academics can be a barrier impact the ability for things to be successful. You know, like 'That's just something you do with her [the school psychologist] in her office', like minimizing or saying like that it [skills learned during treatment process] should not be something that we generalize… So inconsistent training and follow through across the staff. I think sometimes does cause a limitation as well."
					Facilitator: "I've seen the most success with the teacher who uses [curriculum specific] social-thinking terms seamlessly within her conversation with kids. So, he'll [the student] have like … an outburst in class and…she doesn't have to think about it [the social-thinking terms]. And her kids are the ones that I oftentimes see the most success coming faster and I

					think some of it is the fact that it's coming across environments. It's being reinforced outside of just the 30 minutes a couple times a week in my office."
	Student-teacher Relationships n = 7	3	2	2	**Barrier:** "Sometimes the kids have that toxic relationship with the teachers, and vice versa. It's very hard to get information from the teacher; or even with the kids, sometimes they already think that they're the teacher hates them. It's not their [the student's] fault, they're not doing anything wrong. So, me trying to give them [the teacher] strategies; sometimes it just kind of goes over their head."
					Facilitator: "I saw a lot of great relationship building especially, you know, the behaviors we saw were very extreme and teachers faced a lot of aggression and violence from students; and their ability to like reestablish that rapport and not hold that against the student. I think was like just a huge skill that I think was super helpful for students."
	Teacher Willingness to participate in Intervention n = 11	5	2	4	**Barrier:** "Teachers perceptions of their role can be a challenge in my experience. It is either, the teacher is already kind of just naturally engaging in a lot of you know, trauma-sensitive practices; or they're reluctant to integrate them into their practice- and if that's the situation then I think they're, they're kind of expectations of that child kind of go away. And that's when I think you see a lot of the child leaving the classroom, going to rooms to kind of take breaks that take a long time. There's not a lot of willingness to kind of fully support that child if it's not already something that they're kind of, you know, inherently doing."

					Facilitator: "The support of his teacher too…his general education teacher was really on board with what we were doing and so we worked together too, you know outside of the counseling sessions. She had a prize chart and having special time or just time to play games with me was like a reward for him. So, working together with his teacher in that way was helpful."
Theme/Frequency	Sub-theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
School Administration/ School Culture and Climate n = 10 % of total interviews = 63%	Support from School Administration n = 7	0	3	4	**Barrier:** "I guess the building, like as long as you're like principal is also good to let you have that autonomy, because I know some principles are very like, they tell their psych what they want them to do like in the classrooms or whatever."
					Facilitator: "I think the biggest thing is like strong communication with administration, so that they can really advocate for the time and the resources that are spent on these interventions."
	Administration Sets Tone for Organizational Environment n = 6	2	2	2	**Barrier: "**I think it's just the culture of my school. Well, I know can have happen other places, but I really think that that just seems to be the culture of my school and the climate of my school. And, I think it's modeled a lot by administration and it trickles down into teachers and para's, so it's really hard to kind of, you know cut in and have teachers like do those things when it's not modeled by other people."
					Facilitator: "Having an administration that, I think, it creates a culture where teachers are really willing to, you know, look at and be supportive of students mental health and understanding it's not just what's happening at school that is affecting our students

Theme/Frequency	Sub-theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
					and affecting their behavior and their social emotional health. I think that's a huge one."
Time Constraints **n = 9** **% of total interviews = 56%** Capacity to facilitate interventions given other demands of job		8	1	0	**Barrier:** "It's really hard because you know finding the time to meet with a kid, even like every other week is really difficult because if I'm not testing or doing MTSS, like there's always some sort of crisis that comes up - like a threat assessment or suicide risk assessment. So, I have to respond to those all the time, but it's really difficult like getting to know a decent amount of the kids; like pretty much the kids that I get to know well are the kids that I've done testing with." "Just the logistics of the population I serve can make it really hard to like, have a quiet office because there's constantly kids knocking on my door, my phone's constantly ringing, they're just always that need to be in support and like about I block off that group time, but that doesn't mean that there aren't other things that are trying to happen at the same time."
					Facilitator: "Making sure I've got time to consistently see the kids has been helpful. When the kids are not able to see me consistently, I don't see the progress or I don't see it as quick."
Theme/Frequency	Sub-theme	Barrier Only	Facilitator Only	Both	Illustrative Quote
Intervention Delivery Context and Resources **n = 7**		5	1	1	**Facilitator:** "Creating a space that is very like welcoming and feels very safe for kids. I think that's initially like really important and that's something that I always like immediately do any new space; and I feel like kids are really receptive. They would come in and were like, 'This is like so calming here'

% of total interviews = 44% Circumstance of an intervention delivery environment that discourages or encourages successful implementation					and there were things for them to fidget with, and there were comfy chairs, and you know Kleenex and kind of what they needed was in there, like snacks." **Barrier:** "I think you look at your whole population, you try to group the kids and then you figure out what intervention fits for that group, of the interventions that you have, right? Like sometimes you think oh my gosh, if we had a curriculum, that was X, Y, and Z that would be great, but there's either not one out there or you don't have access to one or something like that."
Student-School Psychologist Relationship **n = 6** **% of total interviews = 38%** Established connection between school-psychologist and student		0	5	1	**Barrier: "**That's been a tough, we talked about making that [maintaining the psychologist-student relationship] work; we can with technology… He kind of drifted off from me. And then the main teacher he had last left the building and took a different job. But the intention was the teacher in the building was going to keep the relationship going, and he didn't do that; and he [the student] kind of stopped communicating with me and stopped hanging around that after school basketball thing… So, having that bridge between buildings and everything is like a goal of the district, I would say."

ABIGAIL L. LOPEZ-CESAR

EDUCATION

University of Wisconsin-Milwaukee

Doctor of Philosophy, Educational Psychology: School Psychology   **January 2021**
Dissertation: "Evidence-Based Practice or Practice-Based Evidence? A Qualitative Examination of School
    Psychologist Implementation of Trauma-Informed Interventions"
Advanced Opportunity Fellow, 2017-2019

Masters of Science, Educational Psychology: School Psychology   **Winter 2019**

University of Minnesota-Twin Cities
Bachelors of Arts in Sociology, Youth Studies and Social Justice   **December 2010**

CREDENTIALS

P001 - Pupil Services Provisional License, 7062 - School Psychologist   **Expires: 6/30/2023**
License Number: 3001024093

SCHOOL PSYCHOLOGY INTERNSHIP AND PROFESSIONAL EXPERIENCE

Milwaukee Public Schools   Milwaukee, Wisconsin
School Psychologist   **August 2019-Current**

- Successfully completed school psychology doctoral internship 2019-2020 school year
- Special education IEP team and re-evaluation responsibilities including assessment, reporting writing, data analysis, and meeting facilitation
- 504/ADA coordination and evaluation
- Provide individual and group counseling/therapeutic services for a school-related concerns
- Building coordination for and processing of initial special education referrals
- Collection and monitoring of school-wide academic and behavioral data; determining appropriate interventions (e.g., FBA/BIPs, PBIS, CICO, EBIs); collaborating with and supporting teachers regarding intervention planning and monitoring
- Consultation with teachers and parents regarding academic and behavioral concerns
- Deliver professional development sessions to school staff
- Crisis intervention

Sebastian Family Psychological Practice   Milwaukee, Wisconsin
Doctoral Intern   **August 2019-May 2020**

- Completed 126 clinical hours during school psychology doctoral internship during 2019-2020 school year, Supervisor: Dr. Sebastian Seempijja, Ph.D. (Clinic Director) and Dr. Mary Enright, Ph.D.
- Experience with urban, refugee, and culturally/linguistically diverse populations; guardianship re-evaluations; working with interpreters; non-verbal assessment; school-community mental health partnerships

SCHOOL PSYCHOLOGY PRACTICA

Milwaukee Public Schools
Riverwest Elementary, Supervisor: Kate Schmidt, Ed.S.   **2018-2019**
Office of Violence Prevention/Project Prevent, Supervisor: Travis Pinter Ed.S.   **2017-2018**

Elmbrook School District
Pilgrim Park Middle School/Swanson Elementary   **2016-2017**
Supervisors: Nick Pflinger Ed.S. & Dr. Susan Phelps, Ph.D

PRESENTATIONS & PUBLICATIONS

Lopez, A., Stoiber, K.C., Carse, S. and Koppel, R. (2017, February). *Effects of instructional coaching on shared book-reading instruction.* Paper presented at the National Association of School Psychologists Annual Convention, San Antonio, TX.

Klingbeil, D.A., Maurice, S.A., Van Norman, E.R., Nelson, P.M., Birr, C., Hanrahan, A.R., Schramm, A.L., Copek, R.A., Carse, S.A., Koppel, Rachael A, & Lopez, A.L. (2019). Improving mathematics screening in middle school. *School Psychology Review*, *48*(4), 383–398. https://doi.org/10.17105/SPR-2018-0084.V48-4

WORK EXPERIENCE

Acelero Learning/New York University   Greater Milwaukee/Racine Area, Wisconsin **May 2016-May 2019**
Research Assessor, Acelero Learning

- Over 150 hours of preschool assessment utilizing the TEMA-3, EOWPVT-4, and TOPEL at HeadStart locations in the Milwaukee and Racine areas.

University of Wisconsin-Milwaukee   Milwaukee, Wisconsin
Instructor, Upward Bound   **June 2016-Febuary 2020**
- Instruct "Academic Success", a course aimed at providing Milwaukee Public Schools high school students in the Upward Bound Program the academic tools and strategies necessary to succeed in college.

University of Wisconsin-Milwaukee   Milwaukee, Wisconsin
Instructor, Educational Psychology Department   **August 2016-May 2017**
- Facilitated twice weekly discussion sections of 40 freshman students who entered UWM through the Academic Opportunity Center, an office that admits students who have the potential for success but have lack the GPA, test scores, or academic history to be admitted directly into their major.

Milwaukee Public Schools/University of Wisconsin-Milwaukee   Milwaukee, Wisconsin
Research Assistant   **August 2015-August 2016**
- Assisted Dr. Karen Stoiber on implementation of literacy and social emotional interventions, gathered observational information, and managed/inputted project data at elementary school sites within MPS.
- Coached K4 Headstart teachers on shared group book reading, observed teachers facilitating reading program and provided feedback.

Matoska International Baccalaureate Elementary   White Bear Lake, Minnesota
Behavior Specialist   **September 2013 – August 2015**

- Provided positive, proactive and crisis social emotional and behavioral support to at risk Tier 2 & 3 students with the aim of reducing the number of referrals for special education.

Project for Pride in Living   St. Paul. Minnesota
Literacy and Behavior Interventionist   **September 2013 – August 2015**
- Created individualized literacy tutoring and behavioral plans, maintained student literacy data and coordinated interventions carried out by college volunteers for up to twenty elementary students living in a transitional housing building.

Teach for America   Minneapolis, Minnesota
First Grade Content Team Leader   **September 2014- August 2015**
- Lead first grade content specific professional development sessions once per month to a cohort of four second-year teachers working in high-poverty, linguistically and culturally diverse schools.

Minneapolis Public Schools   Minneapolis, Minnesota
Homebound Teacher   **September 2013- June 2014**
- Organized and implemented an instructional program in-home to meet the needs of students who are unable to attend school.

Teach for America/University of Minnesota CEHD/Northside Achievement Zone   Minneapolis, Minnesota
Teacher Mentor   **Summer 2014**
- Mentored and supervised three new teachers through supportive coaching and co-teaching over the course of the eight-week pilot of the Twin Cities new teacher preparation summer residency.
- Created first grade summer curriculum scope and sequence.
- Facilitated communication and consistency with all community and university partnerships to ensure that teachers were successful in leading 83% of our students up a benchmark reading level.

Tulsa Public Schools   Tulsa, Oklahoma
Faculty Advisor   **Summer 2013**
- Developed four new teachers during summer training institute

Tulsa Public Schools, Celia Clinton Elementary   Tulsa, Oklahoma
First Grade Teacher   **August 2011- August 2013**
- Facilitated, communicated and tracked accurate data records using DIEBELS, Literacy First and Fountas and Pinnell testing systems to drive whole and small group instruction for a class of twenty-three first grade students in a Title I school.
- Class achieved average 1.3 years reading growth and averaged 81% mastery on all math unit tests.
- Member of school-wide behavior response plan committee, Tulsa Classroom Teachers Association school delegate, federal tutoring grant data leader, leadership committee, child study IEP writing team and assistant soccer coach for students third through sixth grade.
- Rated As "highly effective" on the Tulsa Teacher/Leader Effectiveness rubric.

UNDERGRADUATE ACCOMPLISHMENTS
AWARDS AND SCHOLARSHIPS

University of Minnesota Dean's List and Presidential Scholarship Award Winner   **2007 – 2010**
Girl Scout Gold Award Scholarship, for creation of outstanding Gold Award Project   **2007 – 2008**

Senior Thesis: *"Evaluation of the Impact of Peace Education on Elementary School Violence"*

Distinction: Community Engagement Scholar, 800 hours of work in the community

International Study: Higher Education Consortium for Urban Affairs (HECUA)'s "Northern Ireland: Democracy and Social Change" Program

University of Ulster, Coleraine, Northern Ireland, UK
2010
Participated in an experiential study abroad program focused in post-conflict societal reconciliation. Completed internship at Northern Ireland Alternatives where I carried out a research project on the use of restorative justice practices for low level crime and societal reconciliation. I also completed research on the impact of interfaces on the mental health of youth in Belfast. Returned to HECUA as an alumna in 2011 to help establish an anti-racism working group focused on recruiting students of color to HECUA programs.

UNDERGRADUATE TEACHING EXPERIENCE

Race, Class and Gender, Professor Enid Logan   **2010-2011**
Introduction to the American Criminal Justice System, Professor Joel Samaha   **2009-2010**

UNDERGRADUATE INTERNSHIPS

Southside Family Social Justice School   Minneapolis, Minnesota
Volunteer and Community Educator   **2009 –2011**

Northern Ireland Alternatives   East Belfast, Northern Ireland
Youth Work Intern   **Spring 2010**
Gained experience in fundamentals of restorative practice, mediation, detached and counseling-based youth work working with urban youth and ex-prisoners in this community based restorative justice organization. Created and provided programming for groups of at-risk youth.