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School Psychologists' Beliefs, Perceived Competence, Knowledge, Social/Norms Expectations, and Implementation of School-based Trauma-Focused Interventions

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SCHOOL PSYCHOLOGISTS' BELIEFS, PERCEIVED COMPETENCE, KNOWLEDGE,

SOCIAL NORMS/EXPECTATIONS, AND IMPLEMENTATION OF SCHOOL-BASED

TRAUMA-FOCUSED INTERVENTIONS

by

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ABSTRACT

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Amanda Hanrahan

The University of Wisconsin-Milwaukee, 2020
Under the Supervision of Professor Kyongboon Kwon, PhD

Two out of every three children will experience a traumatic event before the age of 16

(APA, 2008). Due to a variety of barriers, many of these children will not receive the mental

health treatment and support they need (GAO, 2009). Researchers have identified School

Psychologists as the primary school-based mental health professionals to provide services in

schools (Jaycox et al., 2007). The present study aimed to better understand the prevalence of

childhood trauma, analyze the factors that lead to increased intervention implementation for

School Psychologists, and identify factors that decrease the negative association between barriers

and implementation frequency of school-based trauma-focused interventions. The Theory of

Planned Behavior (TPB) served as a theoretical framework, which identifies four factors

(Beliefs, Perceived Competence, Knowledge, and Social Norms/Expectations) that lead to

increased engagement in a desired behavior (Ajzen, 1991; Ajzen et al., 2011). The results

indicated that barriers were negatively associated with intervention implementation and that all

four TPB factors were positively associated with intervention implementation frequency.

However, none of those factors moderated the relation between barriers and implementation

frequency. Based on these results, school psychologists should focus on professional

development that increases their knowledge, increased their competence, and instills belief in a

given intervention. Also, it is important that school districts and school administrators work to promote an environment and culture that promote a trauma-informed approach to education. It may be necessary for school psychologists to advocate for this approach and for professional development to increase their own personal factors that are associated with increased implementation frequency. Lastly, the TPB factors likely play an important role in predicting implementation frequency as the magnitude of the positive correlation between TPB factors and implementation frequency was greater than the negative correlation between barriers and implementation frequency.

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School Psychologists' Beliefs, Perceived Competence, Knowledge, Social

Norms/Expectations, and Implementation of School-Based Trauma-Focused Interventions

Recent research about the prevalence and impact of trauma on children and adolescents

has demonstrated an increased need for school-based interventions. Broadly, the Substance

Abuse and Mental Health Services Administration (SAMHSA) defines trauma as "an event,

series of events, or set of circumstances that is experienced by an individual as physically or

emotionally harmful or life threatening and that has lasting adverse effects on the individual's

functioning and mental, physical, social, emotional, or spiritual well-being" (2018). According to

a 2008 Presidential Task Force on Post-traumatic Stress Disorder (PTSD) and Trauma in

Children and Adolescents, approximately 67% of children will experience a traumatic event by

the age of 16 (APA) and one third of those will exhibit significant PTSD symptoms (Fletcher,

2003). For each of those children, symptom presentation will vary significantly. Some children

experience extreme emotional distress such as flashbacks, nightmares, and the inability to

distinguish between positive and negative situations. Also, children may exhibit significant

behavioral symptoms including irritability, aggression, withdrawal, or are quicker to react

negatively (Kataoka, Langley, Wong, Baweja, & Stein, 2012; National Child Traumatic Stress

Network [NCTSN], 2016). Experiencing a traumatic event and the associated distress can lead to

negative outcomes such as poor mental health (Hurt, Malmud, Brodsky, & Giannetta, 2001;

Jaycox et al., 2002), increased behavioral problems (Farrell & Bruce, 1997; Kataoka et al., 2012;

Ruchkin, Henrich, Jones, Vermeiren, & Schwab-Stone, 2007), and poor academic outcomes

(Delaney-Blackwell et al., 2002; Hurt et al., 2001).

One way to improve functioning is for children to receive trauma-focused mental health

treatment. Typically, a family seeks treatment from a community mental health provider (i.e.

therapist, counselor, psychologist, social worker). Unfortunately, there are many barriers that prevent children and families from receiving necessary mental health treatment, especially in a time of trauma or grief (United States Government Accountability Office [GAO], 2009). Barriers such as insufficient amount of mental health providers, unstable housing, unreliable transportation, and other familial stressors that lead to poor follow through to receiving treatment in the community (GAO, 2009). Therefore, researchers recommend utilizing schools to minimize community barriers to treatment (Jaycox, Stein, Amaya-Jackson, & Morse, 2007; Rappaport, Osher, Garrison, Anderson-Ketchmark, & Dwyer, 2003).

In response to the increase in knowledge about the prevalence and outcomes associated with experiencing trauma, many schools adopted a trauma-informed approach to student learning. The Substance Abuse and Mental Health Services Administration (SAMHSA) started the movement toward schools becoming trauma- informed began in the early 2000s (2015). It was not until 2015, when the Every Student Succeeds Act (ESSA) was enacted, that the U.S. Department of Education recognized the need to have trauma-informed and evidence-based school based mental health services. A school is classified as trauma informed when staff are able to recognize the signs of trauma and traumatic stress (SAMHSA, 2015). Also, school personnel need to be trained and willing to respond to trauma related distress. The main goal of a trauma informed school is to build a supportive community that promotes coping with a variety of symptoms related to experiencing trauma and traumatic stress (Treatment and Services Adaptation Center, 2017). To minimize the impacts of a traumatic experience, it is necessary to implement trauma-focused school-based mental health services, which includes therapy, social/emotional education, and coping techniques (Cole, Greenwald O'Brien, & Gadd, 2005).

Due to a unique skill set, researchers identified school psychologists as the primary school-based mental health providers in schools (Jaycox et al., 2007; Rappaport et al., 2003).

Over the past 50 years, the field of school psychology has undergone a paradigm shift from the medical model to the ecological perspective model, which promotes school psychologists as interventionists across various systems impacting a child's development (Burns, 2011; Sheridan & Gutkin, 2000). Previously, school psychologists followed the medical model and their primary responsibility was to "test and place" (Sheridan & Gutkin, 2000). Specifically, the medical model within school psychology focuses on "assessing, diagnosing, and treating the internal pathologies of referred students" (Sheridan & Gutkin, 2000, p. 486). Often times focusing exclusively on the child and his or her internal pathologies ignores critical factors underlying the presenting concerns (Burns, 2011; Sheridan & Gutkin, 2000). The ecological model, which stems from Bronfenbrenner's Ecological Theory (1977), is the study of different environments, their interactions, and the impacts on the individual's development. Specifically, for a school psychologist this means it is their responsibility to assess the numerous factors that impact the child. Specific examples include mental health, peer involvement, family factors, culture, system involvement, etc. (Burns, 2011).

This paradigm shift has contributed to the expansion of the role of school psychologists to include consultation and intervention (Bardon, 1994; Bradley-Johnson & Dean, 2000). Currently, the job description of a school psychologist varies greatly based on the school, district, region, and state. In general, the primary responsibilities continue to involve administering psychological assessment, and now also include implementing intervention for a variety of academic and social/emotional deficits, and consulting with parents, school staff, and community members. The current philosophy within the field of school psychology, following

the ecological perspective model, supports a systemic approach to school training and a wide range of responsibilities in practice (Burns, 2011).

Through years of graduate education on theory and supervised practica, school psychologists possess the skills of a mental health professional within the school community (Sheridan & Gutkin, 2000) and research advocates for them to be in that role (Jaycox et al., 2007). School psychologists receive training in evidence-based interventions and therapeutic techniques for individuals, small groups, and large groups (National Association of School psychologists [NASP], 2010c), which allow them to implement a multitude of treatments. As the identified needs of schools and students change, school psychologists are expected to adjust and implement interventions based on the data (NASP, 2010b).

As previously noted, trauma has recently been identified as an area that school psychologists should respond with trauma-focused interventions and trauma-informed care practices, rather than addressing specific symptomology (i.e. anxiety, depression; NCTSN, 2017). Presently, two evidence-based manualized trauma interventions exist in schools: Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox, 2004) and Support for Students Exposed to Trauma (SSET; Jaycox et al., 2009). Rather than implement a trauma-focused evidenced-based group intervention, some school psychologists modify other interventions targeted at specific symptomology to include key trauma-focused components (i.e. ensuring safety, trauma narrative; Cohen, Mannarino, & Staron, 2006).

There are both individual and systemic factors that impact a person's engagement in a given behavior. The Theory of Planned Behavior (TPB) has outlined that attitudes, perceived behavioral control, and knowledge are personal factors and subjective norms are a systemic factor (Ajzen, 1991). Generally, this theory posits that increased attitudes about a behavior and

increased perceived behavioral control of a behavior are associated with increased engagement in a desired behavior and decreased engagement in an undesired behavior (Ajzen, 1991; Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). For example, believing that cheating is wrong is associated with decreased cheating (Ajzen, 1991). Additionally, higher rates of subjective norms, level of importance by others, are associated with increased engagement in a preferred behavior (Ajzen, 1991). The language used in the TPB is not consistent with school psychology literature. Therefore, the following equivalent terms are used. Attitudes are equivalent to beliefs, perceived behavioral control is perceived competence, and subjective norms are social norms/expectations.

Within school psychology literature, research on these personal factors within indicates that a school psychologist's belief in an intervention's effectiveness greatly impacts their willingness to implement (Forman, Fagley, Chu, & Walkup, 2012). School psychologists' beliefs are comprised of their perception of the intervention's value, ease of implementation, and acceptance of intervention by others (Eckert, Miller, DuPaul, & Riley-Tillman, 2003). Consequently, people are more apt to intervene if they believe the intervention is necessary and will be effective (Ajzen, 1991; Eckert & Hintze, 2000; Eckert et al., 2003). Specifically, for a school psychologist, belief that intervention implementation is a part of their role directly correlates to increased rates of intervention implementation (Forman et al., 2012). Research demonstrates that school psychologists' value evidence-based intervention in general (Suldo, Friedrich, & Michalowski, 2010); however, there is no research indicating if their opinion of evidence-based intervention changes based on target area. For example, research does not indicate practicing school psychologists' viewpoint on their responsibility or the ability to implement trauma-focused interventions in schools.

Research on school psychology practices confirms the need for a practitioner to be

confident they can implement the intervention before they initiate the behavior (Stoiber & Vanderwood, 2008). In one study, school psychologists reported that it is important to intervene for mental health concerns, but they are not confident in their intervention skills and, therefore, are not engaging in intervention implementation (Stoiber & Vanderwood, 2008). Also, in focus groups, school psychologists reported that not receiving enough time to develop or practice their skills as an interventionist, while being supervised, has led to feeling "rusty" or not having mastered the skills to intervene (Suldo et al., 2010, p. 365). Having confidence to engage in a behavior or skill is different from having knowledge about that behavior. School psychology graduate training directors found that 75% of school psychology graduate programs require a course on evidence-based interventions (Reddy, Forman, Stoiber, & Gonzalez, 2017). Another study found that half of school psychologists report education on evidence-based interventions, but 89% report that they rarely or never use them (Hicks, Shahidullah, Carlson, & Palejwala, 2014). Based on this information, school psychologists are taught about evidence-based interventions; however, they are not engaging in the behavior of implementing them.

In regard to social norms/expectations, school psychologists have the potential to receive support from many different professionals at the school level, district level, and national organization level. In focus groups, school psychologists identified support as a primary factor that contributes to their engagement in general mental health services, which includes individual intervention and individual therapy/counseling (Suldo et al., 2010). It is important to understand how these factors impact implementation frequency of school-based trauma-informed interventions. Therefore, the TPB factors [using language that is more congruent with school psychology literature (beliefs, perceived competence, perceived knowledge, and social norms/expectations)] will be utilized in the present study to determine if factors that,

theoretically, have shown to lead to engagement in a desired behavior can impact the negative association between barriers and implementation frequency.

The present study aims to better understand the relationship between barriers, TPB factors, and the frequency of school-based trauma-informed intervention implementation. In order to achieve this, there are three research objectives. The first objective is to provide data from the perspective of school psychologists regarding the frequency of trauma, distress related to trauma, intervention implementation, and how these vary based on the reported demographics (e.g. school setting, size of school, years of experience). The second objective is to evaluate the associations between the four TPB factors (beliefs, perceived competence, perceived knowledge, and social norms/expectations) and implementation frequency. Finally, the third objective is to determine if any of the four TPB factors significantly mitigates the association between barriers and implementation frequency. These three research objectives aim to improve our understanding of trauma in schools, trauma intervention in schools, and the association between factors that promote and factors the impede intervention implementation.

Literature Review

Trauma

It is expected that 25% of children in the United States will experience a trauma classified as "high magnitude" before the age of 16, and 75% of youth will experience the loss of a family member or close friend before the age of 10 (Costello, Erkanli, Fairbank, & Angold, 2002, p.100). Exposure to trauma, both experiencing and witnessing, disproportionally impacts minority children living in urban areas and/or identified as low-socioeconomic status (Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003). It is projected that approximately 36% of children and adolescents who experience trauma or a significant loss will exhibit symptoms of PTSD

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(Fletcher, 2003), such as irritability or aggression, persistent negative thoughts about themselves and the world, and recurrent, involuntary, intrusive memories (APA, 2013).

Characteristics. Symptom manifestation differs greatly among children who have experienced or witnessed a traumatic event(s). Even children who experience or witness the same trauma within the same family will present with different symptomology, at different times (Kerig, Sink, Cuellar, Vanderzee, & Elfstrom, 2010). Often symptomology presents and intensifies within a few months after the trauma; however, it is possible for symptoms to begin years after the traumatic event has occurred and is referred to as "delayed expression" (APA, 2013, p.272).

There are differences in the way thoughts manifest. For some, there are repeated visualizations or feelings of reliving the event, more commonly referred to as flashbacks. These intrusive thoughts or visualizations are distinguished from ruminations or perseverations based on their involuntary nature (APA, 2013). Nightmares are the most common form of involuntary visualization of a traumatic event (APA, 2013; NCTSN, 2016). In addition to intrusive cognitions, the Diagnostic and Statistical Manual of Mental Disorders (DSM)- 5th Edition identifies multiple possible cognitive and mood disturbances such as memory loss, increased negative images of self, others, or the world, self-blame, inability to experience positive emotions or a persistent negative emotional state, being detached, and decreased interest in previously preferred activities (APA, 2013).

Additionally, there are differences in the behavioral presentations in children after experiencing or witnessing a traumatic event(s). Specifically, after witnessing violence, such as shootings, stabbings, or beatings, children often exhibit more violent responses and actions (APA, 2013; Farrell & Bruce, 1997). Additionally, some people will become easily irritable or

aggressive, while others withdraw and avoid social situations (APA, 2013; NCTSN, 2016). Additionally, the DSM-5 notes that people may also engage in self-destructive behavior, become hypervigilent, have trouble concentrating, and demonstrate an "exaggerated startle response" (APA, 2013, p.272). Lastly, psychosomatic symptoms emerge in many young children, including headaches and stomachaches (NCTSN, 2016). Overall, the various symptom presentations make identification symptomology related to distress due to experiencing a traumatic event and appropriate treatment selection difficult.

Outcomes. Experiencing trauma in childhood leads to increased negative lifetime outcomes. For example, increased mental health problems (Copeland, Keeler, Anglod, & Costello, 2007; Hurt et al., 2001; Jaycox et al., 2002), increased behavioral problems or juvenile delinquency (Farrell & Bruce, 1997; Ruchkin et al., 2007), and poor academic performance (Delaney-Blackwell et al., 2002; Hurt et al., 2001; Kataoka et al., 2012) are common outcomes as a result of experiencing trauma. Each of these possible outcomes can lead to other maladaptive behaviors or further negative consequences that, without intervention, will influence a child's ability to become successful in life, be a productive member of society, and to cope with future stressors or additional trauma.

A primary concern, for children who experience trauma, is the long-term impact on their psychological functioning (Hurt et al., 2001; Jaycox et al., 2002; Kataoka et al., 2012). Early research on children who recently immigrated indicated that youth who experienced high rates of exposure to violence and victimization had persistent mental health concerns including PTSD, depression, and anxiety (Jaycox et al., 2002). Similar findings were reported for children living in urban communities. Specifically, exposure to violence in urban communities is associated with decreased self-esteem, increased depression and anxiety, and 19% of participants reported

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suicidal ideation (Hurt et al., 2001). In rural communities, approximately 13% of children who had experienced a traumatic event were presenting with post-traumatic stress symptoms and children experiencing their first traumatic event were less likely than their peers who experienced multiple or complex traumas to experience adverse effects (Copeland et al., 2007). Ruchkin and colleagues (2007) found that post-traumatic stress fully mediated the relationship between exposure to violence and emotional distress, in girls. This indicates that stress associated with traumatic experiences explains the association between violence exposure and increased mental health concerns.

Increased behavioral problems and juvenile delinquency are often associated with exposure to violence and traumatic events (Farrell & Bruce, 1997; Ruchkin et al., 2007). As previously mentioned, students in urban communities are exposed to increased violence and research has shown that an increase in exposure to violence is related to an increase in violent behavior (Farrell & Bruce, 1997). The presence of post-traumatic stress partially mediated this relationship for boys, but not girls (Ruchkin et al., 2007). This finding indicates that negative behavioral outcomes in boys may be explained by exposure to violence and the presence of stress related to traumatic events.

Another outcome related to a traumatic experience is poor academic functioning. Research has found that exposure to trauma was associated with decreased IQ, lower grades, higher absence, and decreased graduation rates (Kataoka et al., 2012; Perfect, Turley, Carlson, Yohanna, & Saint Gilles, 2016). Specifically, when looking at children from urban communities research found that increased violence, such as exposure to gun shots, dead bodies, and drug dealing, was associated with a lower grade point average and more days absent from school (Hurt et al., 2001). Similarly, suburban students who were victims of violence reported lower

grades and lower support from adults in school (Brockenborough, Cornell, & Loper, 2002).

Additionally, Delaney-Blackwell and colleagues (2002) found that young children, also from an

urban community, who were exposed to violence, had lower IQ scores by an average of 7.5

points and lower reading scores by an average of 9.8 points as compared to non-traumatized

peers.

Overall, these outcomes do not bode well for children who experience trauma, especially

at a young age. Most of the outcome data has been conducted with urban youth; however, the

Great Smoky Mountain Study identifies that rural youth experience trauma and PTSD

symptomology at similar rates to urban youth. Unfortunately, outside of psychological

functioning, there is limited outcome data about the children in this study (Copeland et al.,

2007). Also, a small amount of research has highlighted similarities between urban and suburban

youth in regard to academic outcomes; however, there is little behavioral or psychological

functioning outcome data for suburban youth (Brockenborough et al., 2002; Thompson &

Massat, 2005). The high prevalence of trauma across settings, in conjunction with these profound

negative outcomes, indicates that there is a need for evidence-based interventions that are easily

accessible to families. Also, more information or further studies/data collection about trauma

prevalence and subsequent functioning across settings would be beneficial.

Types of trauma. Due to the overwhelming number of ways a child can be traumatized,

it is necessary to categorize into types of trauma. The NCTSN created 13 child specific

categories: community violence, complex trauma, domestic violence, early childhood trauma,

medical trauma, natural disasters, neglect, physical abuse, refugee trauma, school violence,

sexual abuse, terrorism, and traumatic grief (2017). Due to comorbidity between the 13 types of

trauma and certain traumas having limited presence in schools, six trauma categories were

created and reviewed in the present study. The six categories are Community Violence, Family and Child maltreatment Related Trauma, Natural Disasters, Refugee Trauma, School Violence, and Traumatic Grief.

Each trauma type identified by NCTSN (2017) is not necessarily unique or individually identifiable. Complex trauma and early childhood trauma are not specific traumatic events; rather they are a group of the other types of trauma or a trauma occurring early in life. In regards to treatment, a psychologist would likely not identify a child with early childhood trauma but rather with the specific type of trauma. Therefore, due to the overlap between these two types and the other eleven, complex trauma and early childhood trauma were removed for this research project to minimize over-reporting or inflammation of reported trauma.

Terrorism trauma is likely not highly prevalent in the U.S. as there has not been a high casualty foreign terrorist attack on U.S. soil since 2001. In communities that experience a terror attack, 28-50% of children will experience symptoms that warrant a PTSD diagnosis (Gurwitch, Sitterle, Young, & Pfefferbaum, 2002). However, presently this is likely not an area that school psychologists are observing in high prevalence. The four remaining categories (community violence, natural disasters, refugee trauma, school violence) are standalone categories that might be more common in schools and school psychologists are witnessing related distress.

Children who experience chronic health problems, such as Cystic Fibrosis, Type 1 Diabetes, Sickle Cell Anemia, etc. can experience medical trauma due to their hospitalizations and frequency of medical care. Pediatric Health Psychologists in hospitals or clinics would be the primary mental health providers for these children. In a school setting, there are limitations to the amount of intervention a school psychologist can do for children who experience medical trauma. For example, it may be difficult for a school psychologist to intervene due to frequent or

excessive absences from school and the distress may not be related to the school setting. In these situations a school psychologist would likely be involved in a supportive role through initiating a Section 504 accommodation plan (U.S. Department of Education, 2015b).

Additionally, there is a group of traumas (domestic violence, physical abuse, sexual abuse, and neglect) that together are family and child maltreatment related and overlaps in a significant number of situations (Appel & Holdon, 1998; Edleson, 1999; Moylan, Herrenkohl, Sousa, Tajima, Herrenkohl, & Russo, 2010). It would be unlikely for a psychologist to have a client who experienced only one of these four types of trauma. Therefore, research suggests that combining these four types into one category helps to minimize inflated reports of child maltreatment related traumas (Edleson, 1999; Moylan et al., 2010). In accordance with research, for the present study there will be one category titled family and child maltreatment related traumas.

Community violence. Children can experience trauma as a perpetrator, witness, or victim of community violence (NCTSN, 2017), regardless of age or stage of development (Groves, 1997). NCTSN indicates that community violence is either a physical conflict between unrelated people in the community (e.g. assault with or without a weapon, gun use) or those acts deemed "predatory" such as theft or rape (2017). Community violence is possible in every neighborhood; however, the rates are much higher in urban, inner city areas with researchers finding that 61-72% of elementary students (Richters & Martinez, 1993) and 93% of high school students (Mazza & Reynolds, 1999) were exposed to one event of community violence at minimum. Community violence is associated with increased presentation of mental health symptomology related to PTSD, depression, suicidal behaviors, aggression, and academic problems (Hardaway, McLoyd, & Wood, 2012; Mazza & Overstreet, 2000).

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Family and child maltreatment related trauma. The following four types of trauma comprise the category of family and child maltreatment related trauma.

Domestic violence. Domestic violence, also known as intimate partner violence, domestic battery, or domestic abuse, has been defined differently by various organizations (NCTSN, 2017). However, the following ideas are consistently found across clinical definitions: physical violence, threat of violence, psychological abuse, or financial control between adults who are engaging in an intimate relationship (McNeal & Amato, 1998; Socolar, 2000). Research estimates that anywhere from three to 10 million children are witnesses to domestic violence in a given year and the impact on a child varies based on child factors and situational factors (Fantazzo & Mohr, 1999; NCTSN, 2017; Socolar, 2000). There is a significant overlap between domestic violence and child maltreatment (Appel & Holdon, 1998; Edleson, 1999; Moylan et al., 2010).

Neglect. According to NCTSN, Neglect is the most common form of abuse reported to child welfare authorities (2017) and is defined as when a parent or caregiver fails to provide a child's basic needs (Juntunen, 2013), including physical, medical, educational, or emotional (Child Welfare Information Gateway, 2013). Legally, when a child fails to receive these basic needs due to poverty or cultural value, the family is deemed in need of assistance, not prosecution (Child Welfare Information Gateway, 2013). However, the psychological or emotional damage to a child is possible even when the neglect is not considered intentional or illegal by law (Juntunten, 2013). Signs a child has experienced neglect include learning problems, lack of medical care for known problems, sudden changes in behavior or academic performance, and avoidance of going home (Child Welfare Information Gateway, 2013). The

impacts of neglect can carry over into adult and psychological impacts that can last indefinitely without treatment (Wolfe & Wekerle, 1993).

Physical abuse. Physical abuse is the intentional or accidental injury of a child by a parent or caregiver (Juntunen, 2013). Children who are physically abused are more likely to suffer academic, social, and emotional difficulties (Runyon, Deblinger, Ryan, & Thakkar-Kolar, 2004; Young & Widom, 2013). Specifically, they may experience intrusive thoughts, anxiety, anger outbursts, poor problem solving skills, lower levels of empathy, concentration problems, and misinterpretation of events as negative (Runyon et al., 2004). Many of these issues may persist into adulthood, unless the abuse is stopped and an intervention is implemented during childhood (Wolfe & Wekerle, 1993; Young & Widom, 2013). Per the World Health Organization (2016), physical violence is often combined with neglect and sexual abuse under the term child maltreatment.

Sexual abuse. The American Psychological Association (APA) defines sexual abuse as "unwanted sexual activity, with perpetrators using force, making threats or taking advantage of victims not able to give consent" (2017, para. 1). Short-term symptoms of sexual abuse are aggression, anxiety, depression, fear, inappropriate sexual behavior, and hostility (Browne & Finkelhor, 1986). Long-term symptoms include self-destructive behavior, feeling isolated, feeling stigmatized, poor self-esteem, lack of trust, and sexual maladjustment (Browne & Finkelhor, 1986). Many of these symptoms persist because the perpetrator and the victim know each other (APA, 2017). Additionally, sexual abuse victims are more likely to be victims again compared to those that have never been sexually abused (Browne & Finkelhor, 1986).

Natural disasters. According to Merriam-Webster, a natural disaster is "a sudden and terrible event in nature (such as a hurricane, tornado, or flood) that usually results in serious

damage and many deaths" (2017). Often children are perceived as more resilient than adults; however, in the context of natural disasters (natural or man-made) and the ensuing chaos, displacement, and instability children are more vulnerable to psychological distress than their adult counterparts (Lubit & Eth, 2003). It should be noted the NCTSN separates natural disasters from terrorism based on intent; therefore, if a man-made event was intentional it would be classified under terrorism, not natural disaster (2017).

Refugee trauma. There are many causes of trauma specific to refugees such as forced migration, being child soldiers, going into hiding, changing identity, violence, homelessness, hunger, and traumatic loss or grief (Gadeberg & Norredam, 2016). Children in refugee situations are relatively unique because they will likely experience a combination of traumas related to different aspects of war, traumatic grief, and/or forced relocation (Jensen & Shaw, 1993). Children who are forced into guerrilla warfare as child soldiers often face many difficulties such as guilt, nightmares, anxiety, flashbacks, attention problems, and emotion regulation problems (Beah, 2007). As a result children experience emotional and physical distress that leads to anxiety, depression, somatic symptoms, withdrawal, and attention problems (Mollica, Poole, Son, Murray, & Tor, 1997).

School violence. According to NCTSN, school violence includes threats of violence, presence of weapons at school, injury of students or faculty, death of a student or faculty, and fighting on school grounds (2017). According to the National Center for Education Statistics, in the 2013-2014 school year there were 48 deaths associated with school and in 2015 there were approximately 840,000 instances of nonfatal victimizations of middle and high school students (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017). Violence in schools can lead to

increased absenteeism, anxiety, withdrawal, lower academic performance, and increased

attention problems (Mazza & Overstreet, 2000).

Traumatic grief. Bereavement is when a loved one dies and the objective experience that

follows, whereas grief is defined as the emotional, behavioral, physical, and cognitive reactions

to death of someone significant in a person's life (Stroebe, Hansson, Stroebe, & Schut, 2001).

During childhood, grief becomes traumatic after a period of one year when a person cannot

experience a typical process of bereavement (NCTSN, 2017). Traumatic grief often coincides

with the presentation of PTSD symptoms such as re-experiencing the death, avoidance or

withdrawal from specific activities and places, or increased behavioral outburst (Cohen &

Mannarino, 2011; Stroebe et al., 2001).

Trauma informed care in schools.

History of trauma informed schools. The concept of trauma informed care, trauma

informed schools, and trauma informed practices have been present throughout the trauma

literature for many years (Cole et al., 2005; SAMHSA, 2015); however, it was not until the 2015

enactment of ESSA that the U.S. Department of Education recognized that school based mental

health services need to be "based on trauma-informed practices that are evidence-based."

(S.1177-178; U.S. Department of Education, 2015a). Some researchers believe that this

movement originally began in 1964 when Caplan published an article supporting a multi-tiered

approach to the prevention and intervention of mental health disorders in outpatient and inpatient

settings (Chafouleas, Johnson, Overstreet, & Santos, 2016). But, it was not until the early 1990s

that a multi-tiered approach, Response to Intervention (RtI), was first utilized in education to

improve academic outcomes (VanDerHeyden & Jimerson, 2005). In 2004, the re-authorization

of the Individuals with Disabilities Education Act (IDEA) was the first time that RtI or any

multi-tiered system was mentioned as a viable option for special education eligibility. Since

Caplan (1964) and the first implementation of RtI in the early 1990s (VanderHeyden &

Jimerson, 2005) there have been multi-tiered systems of support in schools that include: Positive

Behavioral Interventions & Supports (PBIS), School-Wide PBIS (SWPBIS), and Multi-Tiered

Systems of Support (MTSS). Presently researchers are recommending that schools utilize this

same system when conceptualizing trauma informed care within schools (Cavanaugh, 2016;

Chafouleas et al., 2016; Reinbergs & Fefer, 2018). This argument aims to support the whole

child throughout the day in every class and activity they attend. It is not just support during a 30-

minute intervention, but also through continual support in math class, history class, at recess, in

art, during intervention, etc. A trauma informed school is not complete or as effective without

trauma intervention implementation, too (Walkley & Cox, 2013).

At the same time that schools were implementing a tiered or system approach to mental

health and intervention, SAMHSA (2015) was in the process of understanding and responding to

the needs of the nation in regards to trauma informed care. Throughout the 1970s the feminist

movement surrounding rape and domestic abuse (Burgess & Holmstrom, 1974) and the

increased awareness of child abuse in the 1980s (Wilson, Pence, & Conradi, 2013) contributed to

SAMHSA holding the 1994 *Dare to Vision* conference. This conference concentrated on

physical and sexual abuse trauma histories of women and the mental health field's response. The

primary purpose of this conference was to allow survivors to discuss their experiences and bring

trauma and the associated psychological distress to the forefront (SAMHSA, 2015). Ten years

later SAMHSA built on the first conference at the *Dare to Act* conference to discuss the needs of

trauma survivors and the need for trauma informed care. At this conference researchers,

practitioners, and policy makers examined recent research in regard to best practices,

intervention implementation, and services specifically for trauma. Then, in 2005 SAMHSA's Center for Mental Health Services funded the formation of the National Center for Trauma-Informed Care (NCTIC). The goal of this organization is to provide consultation, education, outreach, and resources about trauma informed care in multiple settings throughout the community, including schools. Lastly, in 2008, the *Dare to Transform* conference was held to discuss progress made towards trauma informed care implementation and share creative solutions to barriers in a variety of settings.

Over the past 40 years, the U.S. has seen a growth in the knowledge about trauma, the impacts of trauma, and the need for a holistic approach to trauma-informed care. Looking over the timeline to multi-tiered systems in schools and the attention to trauma in the general society, it is clear that the trauma informed movement in schools did not begin until the early 2000s and really did not become a main topic until the 2010s. Resources were available, such as the *Helping Traumatized Children Learn* series, which was published in 2005 to help educators guide their practices to creating trauma-sensitive schools (Cole et al., 2005). Also, at this time trauma interventions in schools were being developed (Jaycox, 2004), but it was not until recently that researchers started advocating for a systemic trauma informed care approach that follows the multi-tiered approach (Cavanaugh, 2016; Chafouleas et al., 2016; Reinbergs & Fefer, 2017).

Characteristics of a trauma informed school. In the years leading up to the movement of a multi-tiered approach to trauma informed care, researchers were investigating factors that are important for a trauma informed system. Cavanaugh (2016) identified that a trauma-informed organization must have the following six necessities: safety and consistency, positive interactions, culturally responsive practices, peer supports, target supports, individualized

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supports. Additionally, in order to be a trauma informed organization it is necessary that the staff understand the prevalence of trauma, can recognize the signs/symptoms of trauma, fully integrate trauma knowledge into their practice, and actively work to prevent re-traumatization (NCTIC, 2015).

Specifically, in schools, it has been determined that schools can no longer be just a place of education on academics but rather a place to develop and educate an entire person (Paccione-Dyszlewski, 2016). Expanding on the six factors identified by Cavanaugh (2016) that are necessary of any trauma informed organization, schools need to also consider the following ideas. When a child is acting out it is necessary to work to understand their motivation rather than just focus on minimizing or stopping the behavior. Additionally, moving away from strict discipline to an environment that promotes non-violence is necessary to promote safety and improve self-regulation (Blitz, Yull, & Clauhs, 2016). Researchers note the importance for educators to assume that all students have been directly or vicariously impacted by trauma. It is necessary for teachers, administers, and support staff to view all children in a school through a trauma lens rather than individualizing the response (Cole, Eisner, Gregory, & Ristuccia, 2013; Paccione-Dyszlewski, 2016). Lastly, it is recommended that educators take a strengths based approach for all children, meaning that they focus on promoting a child's strengths and utilizing those strengths to improve their areas of weakness (Blitz et al., 2016; Cavanaugh, 2016).

The path to becoming a trauma informed school is not quick or easy and there are many obstacles to overcome. This is due to inconsistent definitions of trauma informed care model (Reinbergs & Fefer, 2017) and a vague plan to establishing a trauma informed care (Donish, Bray, & Gewirtz, 2016). Typically it is up to school based mental health professionals to take the trauma informed care model and put it into practice for their individual school or district

(Reinbergs & Fefer, 2017). This is not easy considering that there are years of culture and existing procedures that need to be changed (Walkley & Cox, 2013). Changing policy and school culture is a lengthy process. Getting buy-in from staff, families, and the community is necessary for this to happen (Walkley & Cox, 2013). These drawbacks make it difficult but not impossible and research continues to analyze ways to minimize the barriers within this framework.

Based on a multi-tiered system and knowledge of trauma Reinbergs and Fefer (2017) have outlined a mutli-tiered approach to trauma informed care in schools. The focus of tier 1 is on social emotional learning and PBIS. These practices should be consistently implemented across a school and should utilize school-wide resources such as *Helping Traumatized Children Learn* to inform and educate staff on best practices (Cole et al., 2005). The focus of tier 2 is on small group intervention for children who have experienced a trauma and are displaying psychological distress and/or changes in academic performance (i.e. CBITS, SSET). Finally, Tier 3 is primarily referral to the community for Trauma Focused Cognitive Behavioral Therapy (TF-CBT) because it is not presently evidence-based in schools (Cohen, Deblinger, Manarino, & Steer, 2004). Trauma-Focused CBT has similar components to CBITS but TF-CBT is an individualized intervention that is considered to be more intensive. This plan is just the start of a system for implementing trauma informed practices in schools.

Trauma interventions in schools. There are two main evidence-based interventions to help children address their trauma and cope with symptoms related to trauma in a school setting: CBITS (Jaycox, 2004) and SSET (Jaycox et al., 2009). Cognitive Behavioral Intervention for Trauma in Schools (CBITS) is a group-based intervention, involving modules that address maladaptive or fearful thoughts, coping/relaxation skill development, social problem solving skills, and identification of trusted adults/safe spaces (Jaycox, 2004). The aim of this program is

to minimize PTSD and depressive symptoms in 10-15 year old students at school (Jaycox, 2004). Since the conception of CBITS, there have been a number of studies, supporting that CBITS reduces the occurrence of PTSD and depressive symptoms. Researchers, using a quasi-experimental design, found that children that recently immigrated to the United States and completed the entire CBITS curriculum experienced a decline in PTSD symptomology and depressive symptoms (Kataoka et al., 2003). Using a randomized control trial, Stein and colleagues (2003) found similar results, showing that after 12 weeks of intervention, participants reported reduced PTSD symptomology and decreased depressive symptoms, further strengthening the effectiveness of CBITS.

It is recommended that implementation of CBITS be completed by someone trained in mental health services or counseling (Jaycox, 2004). In-person training for the CBITS program costs $4,000 per trainer for up to 15 trainees (University of Colorado-Boulder, 2016); however, it is possible to receive an online certification in CBITS. Not every school psychologist has the resources to receive the in-person training or feel comfortable with an online training. Therefore, SSET was developed where teachers and untrained school officials can implement the intervention (Jaycox et al., 2009). SSET is similar to CBITS in that it includes modules around psychoeducation, relaxation training, coping with fearful thoughts, and social problem solving. Research found that SSET, implemented in two schools with a minority population and most students coming from a low socioeconomic status home, was both feasible and accessible (Jaycox et al., 2009). Additionally, there were high rates of satisfaction with the intervention from teachers, parents, and youth. Specifically, Jaycox and colleagues (2009) found that, in comparison to a control group, students who received SSET as implemented by teachers saw a greater reduction in PTSD and depressive symptoms (Jaycox et al., 2009).

Both CBITS and SSET are group interventions that research has shown to lead to positive outcomes for children and adolescents who have experienced trauma (Jaycox, 2004; Jaycox et al., 2009). A group-based intervention can be helpful when there is a large group of students impacted by one type of trauma, such as that caused by natural disaster (e.g. hurricane Katrina), war, or acts of terrorism. However, when children are experiencing a family specific traumatic event, or a traumatic event impacting a small area, it can be beneficial to use a more individualized approach to accommodate the individual needs of the child. Unfortunately, while CBITS and SSET are evidence based for group intervention, they are yet to be deemed evidence-based for individual therapy. Modifying these programs for an individual is problematic because many of the activities are designed for a group. By using group activities with an individual the group problem solving, discussion component, and social norms/expectations are lost.

Trauma adaptations to other interventions. A trauma intervention does not have to be a manualized intervention specific for trauma; rather it can be adaptations to another intervention to include the specific components of a trauma intervention. One approach to addressing mental health concerns in schools is Cognitive Behavioral Therapy (CBT). In general, CBT is an evidence-based therapy technique that helps students with a multitude of issues (Cohen et al., 2004). There are many programs specific to different problems. For example, Coping Cat for childhood anxiety (Kendall & Hedtke, 2006) or Coping Power for anger management (Lochman, Wells, & Lenhart, 2008). There already is a CBT intervention adapted for trauma called TF-CBT; however, research has not yet demonstrated that TF-CBT is evidence-based in school (Cohen et al., 2004). Since TF-CBT itself is not yet evidence-based in schools, school psychologists are asked to use their clinical judgment to implement CBT or another individual

therapy technique and adapt it to children experiencing symptoms related to trauma exposure (NASP, 2010b).

Interventions adapted for trauma should include the main components of the base intervention. For CBT, the main intervention techniques include psychoeducation, cognitive restructuring, role-playing, etc. For psychoeducation, in addition to a discussion of symptomology, presentation, and prevalence, psychologists should be discussing trauma in general. Specifically, discussing the prevalence of trauma, the different types of trauma, and then the outcomes associated with experiencing trauma (Cohen et al., 2006). In addition, to altering the existing components, additional components are added. Interventions for trauma should typically include a safety component, a trauma narrative, and desensitization of trauma triggers (Cohen et al., 2006).

First, at the beginning of an intervention for trauma there needs to be a session on safety. Safety is key to helping the child feel secure not only in the therapy environment but also to help them to find safe environments in their life (Cohen et al., 2006). Second, a trauma narrative involves the child talking, writing, or drawing about the specific details of the trauma for a few weeks in a row, increasing the amount of information recalled and discussed each week (Cohn et al., 2006). This is beneficial because it "gives a voice" to the children who are experiencing trauma (Dittman & Jensen, 2014). In order to help the child minimize their own reactions to non-threatening situations, that due to their trauma they perceive as dangerous, the therapist will spend time role playing and exposing the child to different stimuli (Cohen et al., 2006).

School psychologist's role in trauma interventions.

General role description of a school psychologist. Over the past 50 years, the role of a school psychologist has expanded and is expected to continue to expand and change in the

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coming decades. The change began by demonstrating that school psychologists have utility beyond assessment related to special education determination decisions and are needed to provide other services (Bardon, 1994). In the 1990s school psychologists started providing professional development to improve school culture and prevent behavior problems. However, researchers noted that school psychologists needed to do more and indicated that students would benefit from school psychologists providing a greater range of services, both direct and indirect (Bradley-Johnson & Dean, 2000). As of 2000, it had become clear that the school psychologists were no longer considered the "gatekeepers" of special education but rather as those that conduct assessment for special education determination and consultants for staff and families (Bradley-Johnson & Dean, 2000).

A previous President of NASP noted school psychologists need to effectively deal with education concerns, specifically responding to the concerns that the American public have, not just those well established within the school community (Bardon, 1994). School psychology is a holistic field and therefore, the practices of a school psychologist need to reflect student support in a variety of areas (Sheridan & Gutkin, 2000). While it has been recommend that school psychologists focus on indirect services (i.e. referrals to community agencies; Bardon, 1994), the reality of the growing awareness of student mental health concerns and decreasing availability of community resources (GAO, 2009), school psychologists will need to fill the gap between home and community (Sheridan & Gutkin, 2000).

As of 2017, the role of a school psychologist has grown to include assessment, intervention implementation, consultation with staff, families, and the community, and crisis responders (NASP, 2010a; NASP, 2017). To become competent in these areas NASP outlined 10 domains that a student of school psychology should receive education on and experience in the

field prior to becoming a licensed school psychologist. These 10 domains are data-based decision making and accountability, consultation and collaboration, interventions and instructional support to develop academic skills, interventions and mental health services to develop social and life skills, school-wide practices to promote learning, preventive and responsive services, family-school collaboration services, development and learning, research and program evaluation, and legal, ethical, and professional practice (NASP, 2010b). The domain area interventions and mental health services to develop social and life skills includes trauma intervention.

School psychologists as a school based mental health service provider for trauma intervention. For over 25 years the school psychology community has become aware of the fact that the role of a school psychologist needs to expand beyond assessment to incorporate more direct services including counseling and therapeutic interventions (Bradley-Johnson & Dean, 2000; Sheridan & Gutkin, 2000). Barriers to receiving mental health services in the community include an insufficient amount of qualified community clinicians who accept Medicaid and/or income based payments, unreliable transportation, and managing other familial stressors (i.e. unstable housing, multiple caregivers, lack of financial resources; GAO, 2009). In fact, of the students who seek mental health, approximately 75% receive services or treatment in their school (Rones & Hoagwood, 2000). Research suggests that school based mental health may be successful due to a focus on evidence-based practices and treatment as compared to community providers (Evans & Weist, 2004). This remains consist when looking at trauma-specific interventions (Jaycox et al., 2010).

Both school psychologists and school counselors receive training in mental health practices. Therefore, intervention developers view them as the primary professional to advocate

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for implementation, facilitate the intervention, and coordinate intervention related services (Forman, Olin, Hoagwood, Crowe, & Saka, 2009). The ability to implement interventions across levels within a system (individual, group, school-wide) resulted from the school psychology field shifting to the ecological perspective (Burns, 2011). There are multiple mental health professionals in schools (i.e. school counselors, guidance counselors, social workers), school psychologists have a distinct skill set that combines knowledge of learning and education with psychological practices and theory (Rappaport et al., 2003). Additionally, school psychologists have specialized training in school-wide programming and interventions, as well as interventions at various levels within a system, such as small group and individual counseling (Burns, 2011; Splett et al., 2013). As a result, researchers suggest that school psychologists provide school based mental health services to minimize the barriers and provide children and families the services they need (GAO, 2009; Jaycox et al., 2007; Rappaport et al., 2003).

Jaycox and colleagues advocate for school psychologists as the interventionist for trauma-focused interventions (2007). School psychologists receive training in a variety of interventions across the spectrum of interventions within a school, such as individual services, group counseling, whole-class intervention, and school-wide programming (Burns, 2011; Splett, Fowler, Weist, McDaniel, & Dvorsky, 2013). Researchers have identified school psychologists as the primary interventionist for school-based trauma-informed interventions and their level of training would indicate they are qualified to be in this position, there is little research supporting this conclusion (Forman et al., 2009). Most research implementing school based interventions for trauma utilize outside providers or researchers, not school based personnel (Forman et al., 2009; Jaycox et al., 2010). Therefore, while school psychologists have the training (Jaycox et al., 2007) there is limited implementation research where school psychologists in the schools are the

primary implementers of trauma interventions (Forman et al., 2009; Jaycox et al., 2010). In summary, researchers have concluded based on quality and variety of training that school psychologists should be the primary implementers of school-based, trauma-informed interventions; however, there is no data confirming or refuting this conclusion.

School psychology training in trauma intervention. School psychologists have to be able to respond to a wide-range of problems, consult on many different issues, and implement interventions that are efficacious (NASP, 2010a). Because of the need to be an expert in many areas and to become competent in the 10 domains outlined by NASP (2010b) higher education is required. Most practicing school psychologists have obtained at minimum an Education Specialist degree (Ed.S.; Merrell, Ervin, & Peacock, 2011), as recommended by NASP and required to become a Nationally Certified School Psychologist (NASP, 2010a). This degree requires a minimum of 60 graduate credit hours and 1200 hours supervised internship in a school setting over a minimum of three full time years or equivalent for part time students (NASP, 2010c). Some practicing school psychologists have a Master's degree, where the 1200 internship is not required. Most states require that school psychologists have an Ed.S. degree for licensure unless they are grandfathered in under the previous law (Merrell et al., 2011).

In *Standards for Graduate Preparation of School Psychologists* NASP, the main accrediting body for school psychology programs, outlines the expected standards for graduate programs (2010c). These standards, in combination with the 10 domains should be consistently utilized and taught across all school psychology programs (NASP, 2010b; NASP, 2010a). In addition to the standards outlined by NASP, school psychology graduate program training directors believe that coursework on evidence-based intervention and evidence-based assessment is important (Reddy et al, 2017). With 75% reporting that their programs require a course on

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evidence-based interventions and 98% reporting that their programs require a course on evidence-based assessment (Reddy et al., 2017).

In addition to receiving graduate training, it is necessary for graduate students to engage in implementation of evidence-based practices during practicum. Without connections between both education and practice, it is unlikely that school psychologists in training will develop competence in that area (Reddy et al., 2017). School psychologists report prevention/intervention activities to be important to implement but they are unlikely to actually implement or lack confidence in implementation of interventions (Stoiber & Vanderwood, 2008). Additionally, half of school psychology practitioners surveyed specifically about implementation of school based mental health services indicated that they did not believe their graduate training prepared them to feel competent to implement school based mental health interventions (Suldo et al., 2010). In another study, across all given vignettes less than half of school psychologists indicated they had training in CBT; the therapeutic approach for many school based interventions (i.e. Coping Cat, Coping Power, CBITS). Specifically, in the context of treatment adherence for diabetes, the researchers reported that "very few" (p. 217) school psychologists indicated they had received training in CBT and in the context of depression only two-thirds noted they had training in CBT (Forman et al., 2012).

Per graduate training directors school psychologists receive adequate training, during their graduate education, in a variety of prevention and intervention activities based on the NASP requirements for graduate training (NASP, 2010a) and graduate training directors reports that majority of school psychology graduate programs require courses on evidence-based interventions (Reddy et al., 2017); however, in one study only half of school psychologists reported having graduate education on evidence-based interventions (Hicks et al., 2014). Based

on this information, there appears to be a discrepancy between what graduate trainers report is being taught (Reddy et al., 2017) and what practicing school psychologists report they have learned (Hicks et al., 2014). It would appear that this gap exists for trauma specific interventions as well; however, presently there is no research to confirm that conclusion.

The two evidence-based trauma-related interventions in schools (CBITS, SSET) are all based on the principles of CBT (Cohen et al., 2004; Jaycox et al., 2002). Research has found that about a third of school psychologists in their study did not recognize the components of CBT in the context of depression treatment (Forman et al., 2012). The lack of recognition of a CBT model and the base of trauma interventions being CBT is concerning.

Further research demonstrates that the issue may not be knowledge acquisition but rather ability to implement that knowledge in a supervised environment. Suldo and colleagues (2010), using focus groups of school psychologists determined that school psychologists do not receive enough supervised on-the-job training in evidence-based interventions or school based mental health. Graduate training directors corroborate this by reporting that only 39% of practicum sites utilize evidence-based interventions (Reddy et al., 2017). The two main trauma interventions in schools are within the category of evidence-based interventions. Lacking supervision of evidence-based interventions in general would lead to the conclusion that this same trend is present for trauma interventions; however, the data is not present in the research.

In summary, some graduate programs are providing education on evidence-based interventions, but the number of programs varies based on the perspective of graduate training directors (Reddy et al., 2017) and practicing school psychologists (Hicks et al., 2014). In addition, there is a lack of applied practice of the learned skills through supervised practica or internship (Reddy et al., 2017). In regards to trauma intervention, while there is no corroborating

data, the same gaps in education and supervised practice is expected because both school based trauma focused interventions are evidence-based.

Barriers to receiving intervention.

Community barriers. There are many barriers to obtaining mental health services, such as those associated with the family context, socioeconomic status (SES), and culture. Children and adolescents are often relying on adults in obtaining or providing transportation to evaluations and appointments. Unreliable transportation or relying on public transportation is often cited as the most impactful barrier to receiving mental health services (GAO, 2009). Furthermore, there are many other family priorities, such as unstable housing, inability to pay, and other family members' needs. Each of these stressors on the family unit decreased the importance of mental health services post-disaster or trauma. These factors have been identified by relief agencies after natural disasters because they have observed families put housing and employment ahead of mental health services (GAO, 2009).

As a result of family and cultural barriers to community treatment, schools have been identified as a primary location for targeting children's mental health (Greenwood, Kratochwill, & Clements, 2008) with the goal of improving one, some, or all of the following outcomes: academic performance, peer relationships, and classroom behavior (Atkins, Graczyk, Frazier, & Abdul-Adil, 2003). Also, mental health services in schools focus on improving functioning, which has been recognized as a limitation of community providers where the focus of services and interventions is on symptom reduction (Hoagwood, Jensen, Petti, & Burns, 1996). Additionally, community health providers are reporting high rates of no-shows (Atkins et al., 2003), some as high as 50%; therefore, schools are a location of easy access to the children for intervention (Kazdin, 1996).

School barriers. To address the barriers observed in community settings, it has been proposed that schools become an alternative place to receive mental health services (GAO, 2009). Schools were originally designed to educate children and are not necessarily equipped to handle implementation of mental health services (Cunningham & Henggeler, 2001). School psychologists noted that space constraints impacted their abilities to effectively intervene with children (Suldo et al., 2010). In addition to navigating logistical issues, school psychologists have identified a multitude of other barriers. Suldo and colleagues (2010) conducted focus groups with school psychologists. All of the focus groups identified that schools have unique barriers associated being the location for implementing general mental health services (e.g. scheduling problems, inconsistent treatment, and accountability for academic success only and insufficient time). Other barriers identified included problems with school personnel (e.g. lack of support from administration), insufficient support from department and district administration (e.g. department-assigned role and responsibilities), insufficient training (e.g. lack of knowledge), challenging student factors (e.g. low parent support), caseload at the school, personal characteristics (e.g. burnout and apathy toward job), and role strain.

Other researchers identified the same barriers as Suldo and colleagues (2010) did during their focus groups. For example, a lack of professional training and support are indicative of lower implementation rates of interventions (Ringeisen, Henderson, & Hoagwood, 2003). Forman and colleagues (2012) identified four barriers: school psychologists' beliefs about acceptability and efficacy of an intervention, their perceptions of organizational resources, social norms/expectations from administration, and their commitment to intervention delivery. Of those, beliefs about acceptability and efficacy and perceptions of organizational resources are the

two most important factors for predicting intent to implement intervention. Lacking any of these factors is indicative of lower rates of implementation.

Schools have been identified as primary locations to overcome barriers to services in the community (Atkins et al., 2003; Greenwood et al., 2008); however, based on the barrier identified within schools, implementing mental health services has not been easy for school psychologists. All of the above studies are a result of general mental health service delivery or intervention implementation. The research is lacking information about specific barriers to implementation of trauma-specific interventions/services. It is likely that the barriers to trauma-specific interventions are similar to general mental health service delivery, but without data it is impossible to be definitive. The present study aims to identify the primary barriers to trauma specific interventions.

Theoretical Background: Theory of Planned Behavior

The Theory of Planned Behavior (TPB) explains the impact of personal factors and systemic factors on the engagement in a planned behavior (Ajzen, 1991). In original literature about TPB, the researchers identified attitude and perceived behavioral control as the personal factors and subjective norm as the systemic factor (Ajzen, 1991). Attitudes are made of a person's beliefs about a specific behavior or action. Perceived behavioral control is defined as the belief that a person has the ability to engage in the behavior or belief that they have the necessary skills to complete a given behavior. Lastly, subjective norms are the measure of perceived importance of an action by other people (Ajzen, 1991). Generally, the TPB is a conceptual framework designed to help define the factors that may contribute to engagement in a given behavior and how they relate to actual engagement in that behavior.

Overall, research on TPB has found that positive beliefs about a behavior, higher levels of perceived behavioral control, and high rates of perceived social norms/expectations are all associated with her rates of engagement in positive behaviors and lower rates of engagement in negative behaviors. For example, Ajzen (1991) found that in regards to cheating and shoplifting, the two key factors that impacted engagement in those activities was attitude and perceived behavioral control. Subjective norms were not related. In regards to lying, subjective norms and perceived behavioral control were related to engagement in the behavior; however, attitude about lying was not. These differences show that behavior is not always dependent on all three factors. By identifying which factors are important to a given behavior, researchers can identify where intervention should occur to increase or decrease engagement in a behavior.

As research on TPB continued to evolve, researchers determined that perceived behavioral control was likely capturing two different factors: perceived behavioral control and knowledge. Knowledge is measured by assessing a person's known factual information about a given behavior. Researchers have found that general knowledge about the subject matter and general knowledge of the behavior were not associated with engagement in the actual behavior. Additionally, research has shown that when knowledge predicts behavior, the effect size is typically small or is only significant when another factor is mediating the relationship (Ajzen, Joyce, Sheikh, & Cole, 2011). Based on this research, perceived behavioral control and knowledge have been determined to be two different constructs and therefore, it would be beneficial to run analyses separately (Ajzen et al., 2011).

Researchers have indicated that it is possible to use TPB to inform intervention to increase engagement in a desired behavior or decrease engagement in an undesirable behavior. As previously noted, not all of the factors predict increased or decreased engagement in a

behavior. Steinmetz and colleagues (2016) found that the intent to avoid alcohol was associated with attitudes about alcohol consumption and perceived behavioral control, but not subjective norms. Therefore, if the goal were to increase alcohol avoidance, one would want to work to increased attitudes and/or perceived behavioral control rather than subjective norms. For some behaviors, all three factors are related to the desired behavior. For example, Ajzen and Driver (1991) found that attitudes, subjective norms, and perceived behavioral control were related to engagement in leisure activities. They suggested that increasing attitudes towards these activities, increasing societal support these activities, and/or increasing a person's confidence to engage in leisure activities would increase the intent to engage in these behaviors. Similar research studies have evaluated engagement in problem drinking (Schlegel, D'avernas, Zanna, DeCourville, & Manske, 1990) and condom use (Otis, Godin, & Lambert, 1991). Steinmetz and colleagues (2016) found that gender and education experience may increase the effectiveness of interventions implemented to increase engagement in a desired behavior.

Most research on the TPB has focused on social psychology or industrial-organizational psychology. This theory has been used to better understand engagement in social behaviors (i.e. drinking, lying, cheating, shoplifting; Ajzen, 1991; Ajzen & Zheikh, 2013) and engagement in new techniques or strategies in business (Agarwal, 2000). There is no research using this specific theory within school psychology or to analyze the use of different interventions in an education setting. Education research or research within the field of school psychology has focused on intervention implementation, beliefs about interventions, and competence to implement interventions individually (Reddy et al., 2017; Splett et al., 2013; Stoiber & Vanderwood, 2008; Suldo et al., 2010), but has yet to combine them into a framework or model similar to TPB. The

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purpose of this study is to utilize TPB to better understand intervention implementation in schools.

Definition of Key Constructs

The constructs of TPB overlap with constructs and concepts of existing literature in school psychology. The specific language utilized in the TPB does not cross over into the school psychology literature; however, there are existing terms that have similar definitions. For example, what is referred to as attitudes within the TPB is consistent with the term beliefs in literature in school psychology journals (see Forman et al., 2012). Attitudes are defined as beliefs about a given behavior (Ajzen, 1991) and within the school psychology literature beliefs are defined as thoughts about the effectiveness and acceptability of an action (Forman et al., 2012) or the level of importance (Stoiber & Vanderwood, 2008). Based on these definitions, the constructs are similar. Second, subjective norms are defined by TPB as the importance of an action by other people. In school psychology, Suldo and colleagues (2010) found that school psychologists' engagement in mental health services (including individual and group intervention) increased when there was clear social norms/expectations, such as clear definition of their role. Perceived behavioral control is similar to perceived competence within the school psychology literature. Stoiber & Vanderwood (2008) defined competence as the ability to perform a task. Perceived competence is when competence cannot be directly measured, but rather it is a person's perception of their ability to complete a task. Lastly, within the school psychology literature beliefs, perceived competence, and perceived knowledge are all labeled as personal factors and social norms/expectations is considered a systemic factor (Suldo et al., 2010). For continuity within the school psychology literature these terms (beliefs, perceived competence, perceived knowledge, and social norms/expectations) will be utilized.

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Theory of Planned Behavior Concepts in School Psychology Literature

Even though the TPB has not been directly utilized within school psychology literature, the components of it have been researched. School psychologists' beliefs are comprised of their perception of the intervention's value, ease of implementation, and acceptance of intervention by others (Eckert et al., 2003). An increase in beliefs can lead to increased engagement in a desired behavior (Ajzen, 1991; Eckert & Hintze, 2000; Eckert et al., 2003). Forman and colleagues (2012) pose that school psychologists need to believe that intervention implementation is a part of their role/responsibilities in order for intervention implementation to occur. Research has established that school psychologists' value evidence-based intervention implemented by school mental health professionals within a school (Suldo et al., 2010), but there is no research that extends the literature from general evidence-based intervention to specific target areas, such as trauma-focused interventions. Generally, school psychologists receive training on evidence-based interventions (NASP, 2010a; NASP, 2010b); however, ethically, NASP indicates, "school psychologists must practice within the boundaries of their competence" (NASP, 2010d, p. 1). Some specific target areas, such as trauma-focused interventions, may be considered outside of a school psychologist's competence (Splett et al., 2013) and therefore, may negatively impact a school psychologist's belief that it is important that these interventions are implemented by a school psychologist or within a school. According to TPB, having more belief in a behavior is associated with higher rates of engagement in that behavior (Ajzen, 1991)

Perceived competence stems from having an opportunity to practice a skill or engage in a behavior multiple times (Reddy et al., 2017). School psychologists report that it is important for children to receive mental health intervention; however, they are not confident in their skills and therefore, do not implement the intervention (Stoiber & Vanderwood, 2008). School

psychologists identified they did not have enough time to develop or practice their skills as an interventionist while being supervised; therefore, lack mastery of the skills necessary to intervene. Some school psychologist indicated they received the supervised practice but without use, now report feeling "rusty" (Suldo et al., 2010). For a practicing school psychologist, practicum or internship would be the appropriate times to receive supervised on-the-job intervention implementation experience (NASP, 2010b). According to graduate training directors only 39% of practicum sites engage in implementation of evidence-based interventions (Reddy et al., 2017). According to the TPB, low levels of perceived competence are associated with decreased intent or actual engagement in a given behavior (Ajzen, 1991).

Researchers have found that having knowledge of a behavior does not directly impact one's intent to engage in a behavior (Ajzen et al., 2011). In the context of school psychologists, one study of graduate training directors found that 75% of graduate programs for school psychology require a course on evidence-based interventions (Reddy et al., 2017). Another study found that half of school psychologists report education on evidence-based interventions, but 89% report that they rarely or never use them (Hicks et al., 2014). Based on the TPB research from Ajzen (2011a), the "factual knowledge" component does not help predict engagement in a behavior.

Within a school there are a number of social norms/expectations. A school psychologist in any given district will have other school psychologists, school staff (i.e. teachers), administration, and district staff/administration who have ideas about what their role entails or what services they should be providing. School psychologists identified that having their role clearly defined helps facilitate engagement in a variety of mental health services, which includes individual intervention and individual therapy/counseling (Suldo et al., 2010). Specifically,

Splett and colleagues (2013) identified a potential source of social norms/expectations may come from school staff and administration identifying that the role of a school psychologist is to implement evidence based practices. Lastly, researchers recommend national school psychology organizations advocate for school psychologists to be the primary mental health professionals in school (Splett et al., 2013). Clarity of social norms/expectations has shown to facilitate increased engagement in the desired behavior, engagement in school-based interventions (Suldo et al., 2010).

Most of the previously cited literature from the field of school psychology demonstrates that it may be possible to utilize TPB within this subject area. The big question is not necessarily what factors are associated with increased engagement, but rather do any of these behaviors increase engagement in the desired behavior enough to overcome barriers. As previously outlined, there are many barriers preventing the implementation of trauma-focused interventions in school settings. The TPB model may be valuable to determining what specific areas (beliefs, perceived competence, perceived knowledge, or social norms/expectations) help to overcome barriers to implementation of school-based trauma-informed interventions. Generally, applying the existing research to an established theory and understanding the relationship between all constructs may help better understand the factors that are positively and negatively impacting intervention implementation frequency.

Present Study

Many children around the United States are exposed to trauma and a relatively large number of these children experienced subsequent distress (APA, 2008; Fletcher, 2003). Due to the aforementioned barriers, children are not receiving the mental health services they need in the community, including services for trauma (GAO, 2009; Jaycox et al., 2007). Therefore, it has

been determined that school psychologists, through school-based mental health services, play an important role in helping these children (Jaycox et al., 2007). While researchers determined school psychologists to be the primary services providers, there are a variety of factors that facilitate or hinder implementation frequency. There are a number of barriers that negatively impact a school psychologist's ability to implement interventions (Suldo et al., 2010) and TPB indicates that personal and social norms/expectations might facilitate implementation. Specifically, TPB can be used to better understand how the different factors impact implementation (Ajzen, 1991). The personal factors outlined in TPB are beliefs, perceived competence, and knowledge (Ajzen, 2011b; Ajzen, 1991). Forman and colleagues (2012) found that beliefs about the intervention and the effectiveness of a given intervention either promote or impede implementation. Additionally, it has been found that training/knowledge (Suldo et al., 2010) and perceived competence is associated with school psychologists' implementation of school- based mental health services (Reddy et al., 2017). Additionally, perceived social norms/expectations impact a school psychologist's ability to implement school based interventions (Reinke, Stormont, Herman, Puri, & Goel, 2011).

The first objective of the research was to provide descriptive data on frequency of trauma, distress related to trauma, and intervention implementation from the perspective of school psychologists in one Midwestern state in the US. The descriptive data were further examined based on the reported demographics (e.g. school setting, size of school, years of experience). The second objective was to use the TPB framework to examine the association between the TPB components (beliefs, social norms/expectations, perceived competence, and knowledge) and intervention implementation. Lastly, the third objective of this study was to determine if the personal factors or social norms/expectations variables moderated the negative

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association between barriers and intervention implementation. Ultimately, the goals of the study were to provide insight into factors that can help promote implementation frequency of school-based trauma-focused interventions.

Research Objective 1

The first objective of this study was to provide data from the perspective of school psychologists about the frequency of trauma, distress related to trauma, intervention implementation, and how they varied based on the reported demographics (e.g., school setting, size of school, years of experience). This research objective was descriptive and, therefore, no hypotheses were formulated.

Research Objective 2

The second research objective was to examine the degree to which school psychologists' personal factors (beliefs about, perceived competence of skill, and perceived knowledge of school-based trauma-informed interventions) and perceived social norms/expectations were associated with the implementation of trauma-formed interventions in schools over and above that accounted for by gender and years of experience.

Hypothesis 2a. Based on TPB (Ajzen, 1991), it was hypothesized that school psychologists who have high levels of belief in trauma intervention will also have high implementation frequency. Research indicated that higher levels of beliefs predict engagement in that behavior (Ajzen, 1991; Eckert et al., 2003; Suldo et al., 2010). The most important factor to predict school psychologists' intent to implement is their belief in the intervention (Forman et al., 2012). It was hypothesized that higher perceived competence for skills will be associated with higher implementation frequency. Increased amount of training was significantly correlated with intent to implement (Forman et al., 2012). Gender was determined to mitigate the association

between TPB variables and intervention effectiveness (Steinmetz, et al., 2016). It was hypothesized that, after accounting for gender and years of experience, perceived knowledge would not be associated with implementation frequency. Research indicates that confidence in skills is important and "factual knowledge" is not (Ajzen et al., 2011, p. 115).

Hypothesis 2b. School psychologists' perceptions of organizational resources are a key predictor of intent to implement an evidence-based intervention (Forman et al., 2012). Also, according to TPB, perceived social norms/expectations impact an individual's intent to complete an action (Ajzen, 1991). It was hypothesized that, after accounting for gender and years of experience, a high level of perceived systemic factors or social norms/expectations from school leadership, district officials, or administration will be associated with higher frequency of implementation.

Research Objective 3

The third research objective was to determine if the personal factors or social norms/expectations moderated the association between barriers and implementation frequency. In other words, the study aimed to analyze if any of the personal factors or social norms/expectations would mitigate the negative association between barriers and implementation frequency over and above that accounted for by gender and years of experience.

Hypothesis 3. School Psychologists reported that even when they had training or wanted to implement an intervention, there were other factors (i.e., insufficient time, lack of space) that impacted their ability to implement interventions (Suldo et al., 2010). It has been established that barriers impact implementation frequency (Forman et al., 2012; Reddy et al., 2017; Suldo et al., 2010). As such, it was expected that higher rates of barriers is associated with lower implementation frequency. Further, it was hypothesized that after accounting for the gender and

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years of experience, social norms/expectations, beliefs, and perceived competence will moderate the negative association between barriers and implementation frequency. Additionally, perceived knowledge is not associated with increased implementation (Ajzen, 2011).

Methods

Participants

The study sample includes 237 practicing school psychologists in the state of Wisconsin. Of the 237 participants, 205 were female (86.5%) and 220 identified as white/Caucasian (92.8%). In 2016, the Wisconsin Department of Public Instruction (DPI) reported that there were 885 school psychologists employed in the state of Wisconsin (WI DPI, 2019), which would indicate a 26.8% response rate. Of the 885 school psychologists in 2016 in Wisconsin, 80.8% were female and 95.4% identified as White/Caucasian. Comparatively, the present study sample was generally representative of the gender and race breakdown of school psychologists in the state of Wisconsin.

Other demographic information about the study sample included size of school, location of school, and years of experience. In regards to school size, most participants worked in schools with less than 1000 students. Specifically, 77 school psychologists (32.8%) worked in schools with less than 500 and 107 (45.5%) worked with between 501-1000 students. The location in which the school psychologists worked was relatively even with 85 (35.9%) working in rural settings, 85 (35.9%) working in suburban settings, and 65 (27.4%) working in urban settings. The amount of experience that the school psychologists had in this sample ranged from 1 to 40 years with an average of 12.4 years (*SD* = 9.66 years). For all demographics see Table 1.

Procedure

Prior to beginning the data collection, the present study was approved by the Institutional Review Board (IRB) at the University conducting the study. After receiving IRB approval, the primary researcher conducted a Pilot Study to establish the reliability of the two scales that were created for this study (Knowledge and Perceived Competence). See Appendix A for a copy of the pilot study survey. The pilot study was conducted in the summer prior to data collection. The sample of the pilot study was recent graduates of the School Psychology Education Specialist program from the University conducting the study. For the pilot study, there were 42 respondents and both scales were determined to have acceptable levels of reliability (Knowledge, $\alpha = 0.83$; Perceived Competence, $\alpha = 0.95$); therefore, no edits were made to the content of the scales. A few respondents noted a few edits for clarity were needed, which were completed and approved by the IRB. Additionally, in this pilot study, the respondents were asked if they thought that the questions measuring knowledge actually measured knowledge and if those measuring perceived competence actually measured perceived competence. Approximately 93% of respondents indicated that knowledge and 90% of respondents indicated that perceived competence appeared to measure the construct they intended. This contributes to the face validity for each of these scales.

In order to recruit participants to complete the full study, the primary investigator completed applications for the survey to be disseminated by Wisconsin School Psychology Association (WSPA) and three school districts. Two school districts and WSPA approved dissemination of the survey and one school district declined. Over 700 school psychologists were emailed directly by the primary researcher. The emails were found on district websites that were systematically searched alphabetically based on a master list of school districts in the state of

Wisconsin. Each email sent utilized an IRB approved email, which included the survey link. See Appendix B for copies of the IRB approved emails.

Data were collected through an online survey using Qualtrics and was distributed to practicing school psychologist by WSPA, their district, or an individual email by the primary investigator. Prior to administering the first survey question, participants were asked: Are you a practicing school psychologist? If they indicated *yes* the survey was administered. When they indicated *no* the survey ended and they were thanked for their participation. There were 248 respondents; however, nine indicated that they were not practicing school psychologists and another two did not consent to participate in the survey. Therefore, those 11 surveys were excluded from the total sample. After excluding non-practicing school psychologists, participants consented to participate by clicking *yes* to the consent question. When a participant selected *no* the survey ended and they were thanked. The entire survey took no longer than 10-15 minutes of participants' time. The survey was available for 16 weeks. All 248 respondents, regardless of survey completion, had the option to enter their name and email to enter the raffle to win one of 25 $10 Amazon Gift Cards. The name and email was only used for the drawing and was not associated with the data submitted.

Measures

Demographics. Five questions were asked to assess gender, race, school size, years in practice, and school setting location (rural, suburban, urban) for the participating school psychologists.

Trauma prevalence, implementation, and need. The 13 types of trauma identified by NCTSN (2017) were omitted or combined to create the six categories based on overlapping categories and comorbidity. For example, complex trauma and early childhood trauma were

omitted because any of the other trauma types could have co-occurred making it complex or occurred during early childhood. Additionally, Family and Child Maltreatment Related Trauma is a combination of physical abuse, sexual abuse, neglect, and domestic abuse because there is a high comorbidity between these types of trauma (Appel & Holdon, 1998; Edleson, 1999). The final categories for the current study included Community Violence, Family and Child maltreatment Related Trauma, Natural Disasters, Refugee Trauma, School Violence, and Traumatic Grief.

Six questions were used to assess prevalence, implementation, and need of each of the six trauma categories. Four questions assessed the frequency of trauma in general and by category, the number of children experiencing distress related to trauma, and frequency of implementing trauma-focused interventions in schools. To measure each of these questions, a 5-point scale with the terms rare, occasional, sometimes, frequent, and excessive was used. Each term was assigned a numerical range in an attempt to define the terms used. These values were assigned based on the descriptor (e.g., rare for 0-10%). Implementation was determined based on the reported frequency at which school psychologists provide intervention when a child was referred for concerns related to a traumatic event or history of trauma. Intervention was defined as a multi-week structured group or individual intervention, not one time crisis intervention. The last two questions assessed the categories of trauma that were intervened for and the nature of the intervention implemented (e.g. individual, group, manualized). Both of these questions were used to describe the implementation that is occurring in schools. Specific questions can be seen in Appendix C.

Barriers. Based on previous research (see Forman et al., 2012; Suldo et al., 2010), the three most common categories of barriers to intervention implementation included insufficient

time/problems integrating into the school system, insufficient support from department and district-level personnel, and problems with school-level personnel (e.g. lack of support from building administrator, unsupportive teachers, lack of awareness of school psychologists job responsibilities). Three questions were created based on each barrier to create the scale. School Psychologists rated the frequency at which they experience each of the three barriers on a 5-point scale (*rare, occasional, sometimes, frequent,* and *excessive*). Chronbach's alpha for the three items that comprised this scale was .70. This scale meets the requirements for content validity based on the fact that previous researchers (Suldo et al., 2010) identified that the three barriers utilized were the most common experienced by school psychologists. The items directly assessed the identified barriers, which appropriately measure the content of the scale.

Social norms/expectations for implementation. Social norms/expectations for implementation concerned a school psychologist's perceived level of social norms/expectations they received to implement school-based trauma-informed interventions. Four questions were developed based on the surveys from two studies (Agarwal et al., 1998; Suldo et al., 2010). Agarwal and colleagues (1998) assessed social norms/expectations through two questions that measured respondents' perception that the 'people who influence their behavior' or 'people who are important' to them think they should be engaging in a given behavior (Agarwal et al., 1998 p. 18). Suldo and colleagues (2010) identified four groups of people (Other school psychologists, district administration, school personnel, and direct supervisors) that provided support for school psychologists. Participants were asked how much they agreed that each group of people thought that they should be implementing school-based trauma-informed interventions (e.g., District administration thinks that I should be implementing school-based trauma-informed interventions). For each question respondents were asked to respond using a 6-point Likert-type

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scale (*strongly disagree, disagree, somewhat disagree, somewhat agree, agree, strongly agree*).

Chronbach's alpha for this four-item scale was 0.90. This scale meets the requirements for content validity based on the fact that the definition of social norms/expectations is the support from people who influence or are important to the school psychologists. The items directly assessed if four groups of people who either work with, supervise, or influence the job of a school psychologists think they should be implementing school-based trauma-informed interventions, which appropriately measures the content of the scale.

Perceived competence and perceived knowledge. In 2015, APA released a report titled *Guidelines on Trauma Competencies for Education and Training.* This report was based on a 2014 national consensus conference on trauma (Cook, Newman, & the New Haven Trauma Competency Group) and outlined the minimum competencies for an entry-level psychologist to meet in order to implement trauma-focused practices. Some of the competencies were divided into multiple questions to ensure that only one component was being assessed. The competencies presented in the report were based on two different areas: perceived competence of skill and perceived knowledge. Based on these competencies 11 questions were created to assess school psychologists' perceived competence of skill to implement school-based trauma-focused interventions (e.g., *How confident are you in your abilities to react to students' trauma-related experiences without judgment?*) and were measured with a four-point scale (*not confident, somewhat not confident, somewhat confident, and confident*). Three questions were created to assess for school psychologists' perceived knowledge of school-based trauma-focused interventions (e.g. *How familiar are you with the current literature on school-based trauma-informed interventions?*). The three perceived knowledge questions were assessed using the 4-point scale (unfamiliar, somewhat unfamiliar, somewhat familiar, and familiar). The

Chronbach's alphas for the current study were 0.90 and 0.93 for the Perceived Knowledge scale and for the Perceived Competence scale, respectively. Both scales meets the requirements for content validity based on the fact that the definition of perceived knowledge is the school psychologists perception they have the knowledge of school-based trauma-focused interventions and perceived competence is school psychologists reporting that they believe they are capable to implementing the interventions. The items for perceived knowledge assess different aspects of knowledge specifically for school-based trauma-focused interventions (e.g. underlying theory, components of intervention) and the items for perceived competence assess the different ways in which a person can be competence (e.g. monitoring progress, ability to react to trauma narratives, collaborate), which appropriately measures the content of this scale.

Beliefs about trauma-focused interventions. Modeled after Forman and colleagues (2012) survey measured beliefs about implementation of evidence-based interventions, 11 items were adapted to be specific to school-based trauma-focused interventions (*e.g. School-based trauma-informed interventions are acceptable interventions. It would be worth my time and energy to implement school-based trauma-focused interventions*.). The entire survey can be found in Appendix C. Each of the 11 statements were evaluated using a six-point likert scale (*strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree*). Chronbach's alpha for this scale was 0.93. Forman and colleagues (2012) found that higher beliefs about evidence-based interventions were highly correlated with increased commitment to implement evidence-based interventions, which shows criterion-related validity.

Data Analysis

The data were imported from the online format into the statistical program, SPSS. Once the data were imported it was evaluated for missing values, homogeneity of variance, and to

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ensure that the variables were normally distributed. For the questions that are descriptive, there were only a few missing values and those have been documented by reporting the number of participants who answered each question. For the regression analyses, listwise deletion was utilized for missing data. There were no more than 6 individuals with missing data for any given analysis. For homogeneity of variance, the residuals by predicted plots for each scale (beliefs, perceived competence of skill, perceived knowledge, social norms/expectations) were visually inspected for even spread of variance across the midline and across predicted values. Based on visual inspection of the predicted plots there were no severe violations of homogeneity of variance. See Appendix D for the specific plots. To assess for normality, skewness (measure of symmetry) and kurtosis (measure of peakedness) were calculated and converted to z scores using the formulas z = skewness/($\sqrt{6}/n$) and z = kurtosis/($\sqrt{24}/n$). Three (perceived competence, perceived knowledge, and social norms/expectations) of the four scales met the assumption of normality. The belief scale had a kurtosis that was outside of the -2 to 2 range for Z scores. When the belief scale was transformed using logarithmic transformation the kurtosis increased; therefore, the belief scale was used without transformation. The belief scale had a mean of 5.14 with a maximum 6, indicating that the sample of school psychologists strongly believes that school-based trauma-informed interventions should be implemented, indicating skewness in the distribution.

The first objective of the present study was to present descriptive information about the frequency of trauma, distress related to trauma, intervention implementation, and how they varied based on the reported demographics (e.g. school setting, size of school, years of experience). For this objective, descriptive analyses were conducted to determine the frequencies of each variable and to communicate the trauma trends in Wisconsin from the perspective of

school psychologists. Additionally, to analyze how the frequency of trauma, related distress, and implementation frequency varied based on demographic variables one-way ANOVA (Analysis of Variance) analyses were performed. One-way ANOVAs were used to determine if the means of three or more groups were significantly different (e.g. urban, rural, suburban). The Bonferroni Correction post hoc test was performed to determine which two group means were significantly different. For the Bonferroni Correction post hoc tests the p-value was adjusted to account for the number of pairwise comparisons. For example, for school location there were three analyses (urban, suburban, rural), therefore, the p-value utilized to determine significance is (.05/3) = .017. The specific p-value used to determine significance is reported with each analysis in the results section.

The second objective of the study was to determine the relationship between personal factors (beliefs, perceived competence of skill, and perceived knowledge) and system factors (perception of social norms/expectations) and frequency of implementation of trauma-focused school-based interventions. To address this goal, four multiple regressions were performed. One multiple regression was conducted for each of the three personal factors and for the social norms/expectations. The dependent variable was frequency of implementation of trauma-focused school-based interventions and the independent variable (beliefs about school-based trauma interventions, perceived competence of skills, or perceived knowledge). Gender and years of experience were entered as control variables.

The third objective of the study was to determine if any of the personal factors (beliefs about school-based trauma interventions, perceived competence of skills, or perceived knowledge) or system factor (social norms/expectations) mitigated the association between barriers and implementation frequency of trauma-informed school-based interventions. To

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analyze this goal, four multiple regressions were performed. The dependent variable was frequency of implementation of trauma-focused school-based interventions and the independent variable (beliefs about school-based trauma interventions, perceived competence of skills, or perceived knowledge). Additionally, interaction terms were entered into the model to analyze moderation. Interaction terms were created; in order to create interaction terms, the scales were centered, which is done by subtracting the mean from each value so that the new mean is equal to zero. Then an interaction term was created between each scale and barriers (e.g. PerceivedCompetenceXbarriers, BeliefsXbarriers). Gender and years of experience were entered as control variables.

<div align="center">

Results

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Descriptive Analyses

The first objective of the research study was to provide descriptive data on the frequency of trauma, distress related to trauma, intervention implementation, and how they varied based on the reported demographics (e.g. school setting, size of school, years of experience). See Figures 1-7 for visual representations of descriptive statistics.

Trauma frequency and types of trauma. First, the frequency of trauma was analyzed for overall and types of trauma. Of the 237 responses (2 missing), six were rated as Rare, 73 were rated at Occasional (11-30%), 73 were rated as Sometimes (31-50%), 70 were rated as Frequent (51-80%), and 15 were rated as Extensive (81-100%). Traumatic grief and family and child maltreatment related trauma were the most frequently endorsed by the school psychologists. Refugee and natural disasters had the lowest frequency.

Trauma frequency and location. A one-way ANOVA was conducted to compare trauma frequency for urban, suburban, and rural settings. There was significant effect of school location

on trauma frequency at the *p* < .05 level for the three conditions [*F*(2, 232) = 26.95, *p* < .001].

Post hoc comparisons using the Bonferroni Correction at the p < .017 level indicated that urban

schools (*M* = 3.66, *SD* = .99) have statistically higher trauma frequency than suburban schools

(*M* = 2.59, *SD* = .85, *p* < .001) and rural schools (*M* = 3.07, *SD* = .84, *p* < .001). Additionally,

rural schools have statistically higher trauma frequency than suburban schools (*p* = .001).

Overall, this data showed that suburban schools had the lowest frequency of trauma regardless of

the type compared to rural and urban schools. Likewise, urban schools had the highest frequency

of trauma regardless of type.

     Trauma frequency, types of trauma, and location. Six, one-way ANOVAs were

conducted to compare the frequency of each trauma type for urban, suburban, and rural settings.

When there was significant effect of the condition (location) on the trauma frequency, a post hoc

comparison using the Bonferroni Correction at the *p* < .017 level was utilized to determine the

specific differences between the three locations. Overall, the frequency of trauma was higher in

urban schools as a whole and significantly higher for four of the six types of trauma when

compared to suburban schools and significantly higher than rural schools for community

violence, refugee, and school violence. Of note, there was no significant difference in the

frequency of natural disaster or traumatic grief based on school location.

     Distress. Similar to the distribution for overall experience of trauma, five percent of

respondents indicated that students rarely experienced distress rarely, 34.7% indicated

occasionally experiencing distress, 33.9% indicated sometimes experiencing distress, 21.3%

indicated frequently experiencing distress, and 3.3% indicated an extensively experiencing

distress. There was significant effect of school location on experienced distress at the p < .05

level for the three conditions [$F(2, 231) = 6.89, p = .001$]. Post hoc comparisons using the

Bonferroni Correction at the p < .017 level indicated that students from urban schools ($M = 3.14$,

$SD = 1.01$) had higher rates of experienced distress than suburban schools ($M = 2.58, SD = .88, p$

$= .001$). The rate of experienced distress between rural ($M = 2.85, SD = .89$) and suburban

schools and rural and urban schools was not significant.

Trauma intervention. While School Psychologists reported that there were varying

amounts of trauma experience and similar rates of distress related to experienced trauma, the

rates of intervention do not match. Forty-six percent of the school psychologists were rarely able

to intervene, 29.3% were occasionally able, 12.6% were sometimes able, 8.8% were frequently

able to intervene, and 2.1% were able to intervene extensively. When intervening school

psychologists most often intervened for Family and Child Maltreatment Related trauma and

Traumatic Grief. Approximately 72% of the school psychologists reported using individual

interventions and 40% used group interventions. The interventions used were primarily adapting

an existing intervention.

Implementation frequency and years of experience. Due to the years of experience

variable being continuous, a correlation between years of experience and implementation

frequency was conducted. The results showed that there is a significant negative correlation

between years of experience and implementation frequency, $r(232) = -.15, p = .02$. This means

that as years of experiences increases, implementation frequency decreases. Additional

correlational analyses were conducted to compare implementation based on type of trauma with

years of experience and there were no significant correlations between implementation frequency

by type of trauma and years of experience.

Implementation frequency and size of school. For the following analysis, only three groups of school size were utilized. The three groups were less than 500, 501-1000, and more than 1000. This change was made in an attempt to make the groups more equal; so four groups (1001-1500, 1501-2000, 2001-2500, more than 2500) were combined into one. As a result, 32.2% of the sample was from schools with less than 500, 44.8% from schools with 501-1000 student, and 21.3% from schools with more than 1000 students. A one-way ANOVA was conducted to compare the frequency of trauma intervention implementation based on school size. While there was some variation in the amount frequency of implementation with the trend that the smaller the school, the higher the implementation, there was no significant difference between the three groups [$F(2, 230) = 2.04$, *ns*]. Due to the ANOVA not being significant no Post hoc analyses were conducted. These results indicated that school size alone was not a factor in determining the frequency of intervention implementation.

Implementation frequency and location. There was significant effect of school location on the amount of trauma intervention implemented at the $p < .05$ level for the three conditions [$F(2, 232) = 9.44$, $p < .001$]. Post hoc comparisons using the Bonferroni Correction at the $p < .017$ level indicated that urban schools ($M = 2.37$, $SD = 1.26$) had statistically higher rates of intervention implementation than suburban schools ($M = 1.73$, $SD = .96$, $p = .001$) and rural schools ($M = 1.71$, $SD = .90$, $p < .001$). The rate of intervention implementation was not significantly different between suburban and rural schools. This means that significantly more interventions are being implemented in urban schools than in rural or suburban schools.

Implementation frequency, trauma type, and location. Six, one-way ANOVAs were conducted to compare the frequency of intervening for each trauma type for urban, suburban, and

rural settings. When there was significant effect of the condition (location) on the trauma frequency, a post hoc comparison using the Bonferroni Correction at the $p < .017$ level was utilized to determine the specific differences between the three locations. Overall, the frequency of trauma intervention was higher in suburban schools for community violence, school violence, and refugee trauma than urban and rural schools. Of note, there was no significant difference in the frequency of intervention for family and child maltreatment related trauma, traumatic grief, and natural disasters.

Barriers to implementation and location. The barriers scale was analyzed based on the three school locations (urban suburban, rural) with a one-way ANOVA. There was no significant effect of school location on the barriers scale at the $p < .05$ level [$F(2, 228) = .61$, *ns*]. Therefore, no post hoc comparisons were conducted. These results indicate that school psychologists in schools across different geographical locations (urban, suburban, and rural) perceived barriers to be equally present.

Factors Impacting Intervention Implementation

Correlations among study variables. All correlations among the study variables are presented in Table 2. First, the two control/demographic variables, gender and years of experience, were not significantly correlated to barriers or any of the personal factors. Additionally, while gender was not related with social norms/expectations or implementation frequency, years of experience was negatively correlated with both social norms/expectations ($r = -.22$, $p = .001$) and implementation frequency ($r = -.14$, $p = .03$). This means that school psychologists with more experience perceive lower levels of social norms/expectations and implement school-based trauma informed interventions less often.

Second, barriers were negatively correlated with perceived competence ($r = -.16$, $p = .02$), social norms/expectations ($r = -.20$, $p = .003$), and implementation frequency ($r = -.15$, $p = .03$). These results indicated that higher levels of barriers were associated with lower levels of perceived competence and social norm/expectations to implement intervention. Additionally, higher levels of barriers were associated with lower levels of implementation frequency.

Third, the personal factors (perceived knowledge, perceived competence, beliefs) were all positively correlated with each other and implementation frequency. The same positive correlation trend was observed between the personal factors, social norms/expectations, and implementation frequency. The strongest correlation was between perceived knowledge and perceived competence ($r = .70$, $p < .001$). While these two variables were highly correlated, they conceptually represent two different constructs and, therefore, were analyzed separately.

Overall, the correlation results indicated that more years of experience a school psychologist had the less likely they were to perceive social norms/expectation to implement intervention and the less likely they were to implement intervention. Additionally, when school psychologists perceive higher levels of barriers, they had lower levels of perceived competence, less likely to implement intervention, and perceived fewer social norms/expectations to implement an intervention. A school psychologist having more perceived knowledge also had higher perceived competence and an increased level of belief in the intervention. Also, school psychologists who had higher levels of perceived competence had an increased level of belief in the intervention. Implementation frequency is higher when a school psychologist believed in an intervention, had perceived knowledge of the intervention, and perceived they were competent to

implement the intervention to a higher degree. Lastly, when school psychologists' perceived more social norms/expectations, they were more likely to implement intervention.

Personal factors and implementation. Three multiple regressions were performed to analyze the association between each personal factor (perceived knowledge, beliefs, perceived competence) and implementation of trauma-focused intervention. The first regression analyzed the unique association between perceived knowledge and implementation frequency. Only gender and years of experience were utilized in these analyses. The other variables were excluded due to the sample being very homogeneously White/Caucasian, school size was determined not be a beneficial demographic measure, and school location was used descriptively. After controlling for gender and years in practice, there was a significant positive association between perceived knowledge and implementation frequency ($\beta = .36$, $p < .01$). The model explained 14% of variance in intervention implementation. The result of the regression analysis is in Table 3.

The second regression, analyzed the association between perceived competence and implementation frequency. After controlling for gender and years in practice, there was a significant positive association between perceived competence and implementation frequency ($\beta = .34$, $p < .01$). The model explained 13% of variance in intervention implementation. The result of the regression analysis is in Table 4.

The third regression, analyzed the association between beliefs and implementation frequency. There was a main effect of years of experience on implementation frequency ($\beta = -0.14$, $p = .03$). This means that as years of experience increased, implementation frequency decreased. After controlling for gender and years in practice, there was a significant positive

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association between beliefs and implementation frequency ($\beta = .18$, $p < .01$). The model explained 5% of variance in intervention implementation. The result of the regression analysis is in Table 5. In general, all three personal factors were positively associated with implementation frequency. Overall, this indicates that higher levels of personal factors (knowledge, perceived competence, and beliefs) were associated with higher implementation frequency.

Social norms/expectations and implementation. A multiple regression was performed to analyze the association between social norms/expectation and implementation frequency. After controlling for gender and years in practice, there was significant positive relationship between social norms/expectations and implementation frequency ($\beta = .40$, $p < .001$). The model explained 16% of variance in intervention implementation. The result of the regression analysis is in Table 6. This means that perceptions of higher social norms/expectations were associated with higher implementation frequency.

Moderating effect of personal factors and perceived norms. Four multiple regressions were performed to analyze if the personal factors (perceived knowledge, perceived competence, beliefs) and social norms/expectations moderate the inverse relation between barriers and implementation. The first regression assessed the impact of perceived knowledge. After controlling for gender and years of experience there was a main effect of barriers ($\beta = -0.14$, $p = .02$), which means that as the impact of barriers increased, implementation frequency decreased. Also, there was a main effect of perceived knowledge ($\beta = .34$, $p < .001$). The model explained 14% of variance in intervention implementation. The interaction between barriers and perceived knowledge was not significant ($\beta = -.02$, *ns*), indicating that perceived knowledge did not

mitigate the negative impact of barriers on implementation. The result of the regression analysis is in Table 7.

The second multiple regression assessed the impact of perceived competence. After controlling for gender and years of experience, there was a main effect of perceived competence ($\beta = .33$, $p < .001$). The significant main effect of perceived competence indicates that even after taking into account the negative effect of barriers on implementation, higher perceived competence is associated with increased implementation frequency. The model explained 13% of variance in intervention implementation. The interaction between barriers and perceived competence was not significant ($\beta = -.02$, ns), indicating that perceived competence did not mitigate the negative of barriers impact on implementation. The result of the regression analysis is in Table 8.

The third regression assessed the impact of knowledge. There was a main effect of years of experience on implementation frequency ($\beta = -0.14$, $p = .04$), barriers ($\beta = -0.15$, $p = .02$), and beliefs ($\beta = .18$, $p < .01$). The significant main effect of beliefs indicates that even after taking into account the negative effect of barriers on implementation, more belief in the intervention was associated with a higher frequency of implementation. The model explained 6% of variance in intervention implementation. The interaction between barriers and beliefs was not significant ($\beta = -.01$, ns), indicating that beliefs did not mitigate the negative impact of barriers on implementation. The result of the regression analysis is in Table 9.

The final regression assessed the impact of social norms/expectations. After controlling for gender and years of experience there was a main effect of social norms/expectations ($\beta = .38$, $p < .001$). The significant main effect of social norms/expectations indicates that even after

taking into account the negative effect of barriers on implementation, higher perceived social norms/expectations was associated with increased implementation frequency. The model explained 16% of variance in intervention implementation. The interaction between barriers and social norms/expectations was not significant ($\beta = -.02$, *ns*), indicating that social norms/expectations did not mitigate the negative impact of barriers on implementation. The result of the regression analysis is in Table 10.

Discussion

The first goal of this research study was to provide descriptive data on trauma and school-based intervention reported by school psychologists from a Midwestern state. School psychologists reported the frequency of trauma, students' distress related to trauma, and intervention implementation. I analyzed how they vary based on reported demographics (e.g. school setting, size of school, years of experience). Previous research indicated the prevalence of childhood trauma was around 67% (APA, 2008) and approximately one third of these children will exhibit significant PTSD symptoms (Fletcher, 2003). The present research study showed that prevalence varies greatly with 90% of school psychologists reporting that anywhere from 11-80% of students have experienced a traumatic event. Due to reporting differences a direct comparison cannot be made between the childhood trauma prevalence data in this study to the national data; however, it is likely that the rates are comparable. As expected the frequency of trauma varies greatly across schools; however, the average prevalence rates appear to be in the 51-80%, with the national rate of 67% (APA, 2008) falling within that same range. Similarly, the reported rate of distress related to experiencing a trauma for the present study fell between the

11-30% range and 31-50% range, which is consistent with national data (approximately 33%; Fletcher, 2003).

Results indicated that children in urban communities experience significantly more trauma than students in rural and suburban schools and students in rural schools and communities experience a significantly higher level of trauma than suburban schools. The mean of responses for urban schools indicates that, on average, 50-80% of students have experienced a traumatic event. In rural communities, approximately 50% of students have experienced a traumatic event. When broken down by type of trauma, all but natural disaster and traumatic grief were reported to be significantly more frequent in urban communities. All three locations experience natural disasters and traumatic grief at equal rates. Additionally, school psychologists reported that students from urban communities experience significantly higher rates of distress compared to their suburban peers.

The frequency of trauma experienced by children from urban schools may not be surprising given economic and community hardships in urban communities (Barrera, Caples, & Tein, 2001). Urban communities and schools face unique challenges (overcrowded, high crime, substandard or unaffordable housing, homelessness, poor air quality, inadequate school buildings; Anonymous, 2016) and the results indicate that higher rates of trauma frequency and related distress are another challenge for educators to account for and consider. While rates are highest in urban communities, it is important to note that rural communities also had a significantly higher trauma frequency than suburban communities. Rural communities also face unique challenges, such as a lack of resources, an insufficient number of trained specialists, and lack of training or supervision to increase the number of specialists (Kenyon-George, 2016).

Even as the significantly lowest reported area, school psychologists in suburban schools still reported between 11-30% and 31-50% frequency of trauma. Evidently, no community is immune from the impacts of trauma. Additionally, understanding that natural disasters and traumatic grief hit all communities equally is important for training programs of school-based mental health professions, such as school psychologists. All training programs should be providing education on how to support students who experience trauma.

Overall, the rates for natural disaster related trauma was low (11-30% of students experienced), but this may be due to fewer natural disasters in this particular region. According to the Federal Emergency Management Agency (FEMA), the state of Wisconsin has experienced 52 disasters (severe storms, flood, tornado, snow, drought, fire, and hurricane) since 1953 (2020), which warranted a disaster declaration, which equates to less than one per year. The National Weather Services reports that on average Wisconsin experiences 23 tornadoes and three to five significant winter storms per year (U.S. Department of Commerce & National Oceanic and Atmospheric Administration, 2019). Additionally, the frequency for refugee trauma was lower than other areas. Again, this may be due to lower amounts of refugees in this region, including in urban and rural communities. Therefore, it is necessary for training programs and administration to understand the demographics of their communities, perhaps by asking their school psychologists or other school-based mental health professionals, to tailor professional development or courses to meet the community's specific needs.

Trauma Intervention

Approximately half of school psychologists (46%) indicated that school-based trauma intervention was something they *rarely* implement. An additional 29.3% indicated that they

could *occasionally* implement, which means that approximately three out of four school

psychologists implemented an intervention less than 30% of the time. This shows that there is a

gap between the amount of trauma and distress experienced by students and the services they

received at school. Of note, for the purpose of this study, an intervention was defined as "a multi-

week structured group or individual intervention, not one time crisis intervention." It is possible

that school psychologists provided informal counseling, crisis counseling, or other interventions

that are not evidence-based or trauma-informed; however, the results indicate that school

psychologists' involvement in systematic trauma intervention is relatively low.

In this study, I utilized the Theory of Planned Behavior (TPB) to examine factors that

contribute to school psychologists' trauma intervention implementation. The possible factors that

were investigated in this study were school location, size of school, years of experience of school

psychologist, and barriers. In regard to location, school psychologists from urban schools

reported a significantly higher rate of intervention implementation than suburban and rural

school psychologists. This may be due to the previously stated fact that urban communities

experience higher rates of trauma or another factor not assessed. Also, it may due to differences

in job description. In a large urban district in Wisconsin, the first duty of a school psychologist's

responsibilities is "Provide counseling, instruction, and mentoring to students struggling with

behavioral, emotional, or social problems" (Milwaukee Public Schools, 2020, para. 2). This

implies that the district is promoting the implementation of intervention, which may positively

contribute to higher rates of intervention in urban communities.

Although the overall implementation rate was higher in urban schools, implementation by

location further depended on the type of trauma. For community violence, school violence, and

refugee trauma, suburban schools implemented intervention at a higher frequency than urban or rural schools. Of note, there were no significant differences for the other three types of trauma. It is possible that, due to lower rates of trauma in suburban communities, there are fewer cases of complex trauma (multiple or co-occurring traumas). Therefore, it would be easier to identify what trauma type is being targeted in an intervention than in urban communities, which have higher numbers of complex trauma. The results of this study also indicated that four of the six types of trauma had higher rates of prevalence in urban communities. The data were congruent with other existing research that reported higher rates of complex or multiple-traumas in urban areas (Finkelhor, Omrod, & Turner, 2007).

The next factors that were investigated (school size and years of experience) were not significantly related to intervention implementation. The school size variable is likely not an important factor because it overlooks the size of a school psychologist's caseload. For example, a school with 3000 students and three school psychologists has the same ratio as a school with 1000 students and 1 school psychologist. Therefore, in future studies using school psychologist to student ratios maybe a better measure of that difference rather than school size. Due to the evolution of the job of a school psychologist from special education "gatekeeper" (Bradley-Johnson & Dean, 2000) to a role including testing, assessment, and consultation (NASP, 2010c) and the strong support of evidence-based intervention from training directors (Reddy et al., 2017), it was anticipated that school psychologists who have been in the field longer would implement fewer interventions. This assumption was supported with the correlation in that the more experienced a school psychologist was, the less likely they were able to implement a school-based trauma-informed intervention. The negative correlation between years of

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experience and implementation frequency was significant but weak ($r = -.14$), which may be due to professional development provided by districts, requirements for continuing education, or school psychologists seeking additional training based on the needs of their school, students, or community (Burns, 2011; Splett et al., 2013).

The last factor that was investigated was barriers. Overall, the barriers scale was negatively associated with trauma intervention implementation. This means that when a school psychologist identifies an increased number of barriers, they are less likely to implement an intervention. This association was small in magnitude. I adopted the scale of barriers that Suldo and colleagues developed (2010); the researchers explained that their sample came from two different school locations; however, they did not report any differences in the focus groups based on urban versus suburban. Therefore, to better understand the picture of barriers experienced across settings, I analyzed whether the perceived barriers varied based on school location. The results that there were no differences between school locations indicated that school psychologists experience similar degrees of perceived barriers across locations.

The Theory of Planned Behavior Applied to Intervention Implementation Frequency

The second research objective was to examine the degree to which personal factors and perceived social norms/expectations are associated with the frequency of implementation of school-based trauma-informed interventions. This objective directly aligned with the Theory of Planned Behavior (TPB; Ajzen, 1991; Ajzen et al., 2011). The TPB was originally developed in social psychology to better understand why people engage in certain behaviors and what factors lead to higher engagement in a desired behavior (Ajzen, 1991). Originally, the TPB only had three predictor variables (beliefs, perceived behavioral control, subjective norms; Ajzen, 1991)

and then with continued research, perceived behavioral control was divided into perceived competence and knowledge (Ajzen et al., 2011), resulting in four variables of engagement in a desired behavior. Multiple research studies found that all variables except knowledge were positively associated with increased engagement in a desired behavior (Agarwal et al., 1998; Ajzen et al., 2011; Ajzen & Zheikh, 2013). Literature from school psychology researchers (Bradley-Johnson & Dean, 2000; Forman et al., 2012; Reddy et al., 2017) and NASP (2017) promote engagement in evidence-based interventions. Therefore, applying the TPB to an investigation of factors relating to the implementation frequency of school-based trauma-informed interventions (a desired behavior) was a logical step to understanding how to increase implementation frequency.

The results of this study were generally consistent with previous TPB research (Agarwal et al., 1998; Ajzen et al., 2011; Ajzen & Zheikh, 2013). The primary difference was that the present study found that perceived knowledge was positively associated with implementation frequency whereas previous research found that knowledge was not associated with increased engagement in a desired behavior. For example, Ajzen and colleagues (2011) found that environmental knowledge was not associated with energy conservation and alcohol knowledge was not associated with drinking behaviors. Of note, the analyses were different (full versus separate) and the present study measured perceived knowledge.

In regard to the personal factors, it was hypothesized that higher levels of beliefs and perceived competence were positively associated with implementation frequency and perceived knowledge was not associated with implementation frequency. Two of the three hypotheses were confirmed. All three personal factors were positively associated with intervention implementation. Perceived knowledge was highly correlated with perceived competence. In the

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field of education, school psychologists are required to receive continuous professional development that often involves an applied component, such as support after training, district level support, and coaching (Chafouleas et al., 2016). In fact, three of the 12, Staff Development Standards outlined by the National Staff Development Council (NSDC; Hirsh, 2001) are directly related to continued support, coaching, collaboration, and continual instruction/guidance. This means that when a school psychologist acquires new knowledge, they also receive additional training or support to increase their perceived competence as well. Therefore, the high correlation between Perceived Knowledge and Perceived Competence and the positive association between Perceived Knowledge and Implementation frequency might be due to the model of professional development used within education. Researchers have shown that effective trauma-informed trainings require intensive trainings that include education, strategies, and coaching (Dorado, Martinez, McArthur, & Liebovitz, 2015). To ensure that Perceived Knowledge is positively associated with implementation frequency across schools, districts, and states, it will be necessary for trainings of trauma intervention to include follow-up support and coaching, in addition to the information provided.

In regard to social norms/expectations, the hypothesis that there would be a positive association with implementation frequency was confirmed. This finding is important because it shows that there are system-level factors outside of the individual that positively impact implementation. While school psychologists are individuals with their own perceptions, knowledge, and beliefs, they operate within a broader system (Bronfenbrenner, 1977; Burns, 2011). That broader system and the people in it impact the school psychologist's frequency of intervention implementation. Additionally, distress related to trauma cannot be treated in only the school psychologist's office. Other members of the school community and larger community

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need to be involved. For example, teachers and administrators involvement is necessary to ensure that the school has a trauma sensitive culture. When looking at successful trauma treatment, the trauma sensitive schools system has proven successful (Cole et al., 2005; Treatment and Services Adaptation Center, 2017). In regard to TPB, the results also align with previous research, which showed that support from others, especially those with influence, leads to increased intent to engage and actual engagement in a desired behavior (Ajzen, 2011b; Ajzen et al., 2011).

Moderating factors of barriers and implementation association. The third objective of this study was to determine if any of the TPB factors (personal and social norms/expectations) decreased the negative association between barriers and implementation frequency of school-based trauma-focused interventions. Finding ways to overcome barriers to providing educational and mental health services to students is crucial within any system. There are numerous barriers to services (e.g. lack of providers, transportation, over family stressors; GAO, 2009). As researchers if we can figure out how to overcome these barriers it could change the way that we train practitioners, provide continuing education/professional development, and the models in which we implement services. Unfortunately, the variables in this study did not decrease the negative association between barriers and implementation frequency. When one of the TPB factors was added to the model, none of them mitigated the negative association between barriers and implementation frequency. Although barriers were negatively correlated with the frequency of intervention implementation, the magnitude of this association was relatively small. Conversely, the TPB factors (perceived knowledge, perceived competence, beliefs, and social norms/expectations) were positively associated with intervention implementation frequency; the magnitude of each correlation between a TPB factor and intervention implementation frequency

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was larger than the correlation between barriers and implementation frequency. This likely contributed to why the TPB factors did not mitigate the negative correlation between barriers and implementation frequency.

The results of the current study and previous research (GAO, 2009) indicate that barriers negatively impact intervention implementation. However, this study shows evidence that the impact may not be as strong as previously thought. While the TPB factors did not mitigate the relationship between barriers and trauma intervention implementation frequency, the magnitude of the positive associations between TPB factors and implementation frequency was greater. This indicates that personal factors (perceived knowledge, perceived competence, beliefs) and social norms/expectations may have a larger impact on implementation frequency than barriers. However, this finding should be interpreted with the understanding that not all possible barriers were assessed in this study. I focused on logistical problems within the school, insufficient time in the school day, insufficient support from administration, and insufficient support from school staff (e.g. teachers, aids, etc.). It is possible that other barriers that are not assessed might negatively affect intervention implementation such as school psychologist to student ratio, and community support.

Limitations

Results obtained from this study should be interpreted considering several limitations. First, the cross-sectional design of this study only allows correlational interpretations between predictor and outcome variables as opposed to causal interpretations. With a cross-sectional study design, it is not possible to determine how changes in the variables impact the association and if there was a causal link. Also, there was the potential that third variables, not accounted for in the present study, are contributing to the associations observed.

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Additionally, the data were collected using an online self-report survey. This made it subject to administration bias and selection bias. In regard to administration bias, participants were able to complete the survey in the location of their choosing; therefore, the environment was not controlled. This means they could have completed the survey at work, at home, in the community, or another location. Additionally, they could have been interrupted, unfocused, or completed the survey in multiple sessions. Each of these factors could impact the attention dedicated to the survey and therefore, the accuracy of the reporting. Even though the survey was anonymous, the degree to which social desirability affected their responses is not known. Similarly for selection bias, this survey was voluntary and a brief description was provided in the recruitment email. This resulted in only the school psychologists who were inclined to participate completing the survey and consequently there may be higher rates of beliefs and implementation frequency due to that being an area of interest for the sample.

Another limitation is that the population surveyed was from only one state. Therefore, when generalizing these results to other school psychologists in other areas of the country or world the differences between regions should be considered. For example, it was previously discussed that this state has low rates of natural disasters. This is not consistent across all states or regions. Factors such as that should be considered when utilizing this data and these conclusions to other parts of the country.

Lastly, the perceived knowledge variable limits the interpretability of the results. This measure is comprised of three questions that measure a practicing school psychologist perception of how much they know about trauma-focused interventions. Without being able to measure their actual knowledge the results involving this measures should be interpreted with caution.

Implications for School Psychologists

The results of this study provide useful information that impacts the field of school psychology. First, looking at the descriptive information, it continues to be evident that trauma is impacting students. Trauma prevalence and related distress data from the present study was consistent with data from national studies. This study added information about the different types of trauma, which showed that schools in different areas have different rates of certain types of trauma. For a practicing school psychologist, this is important for a number of reasons. Obtaining data about the types of trauma that are most prevalent within a school or district would inform the types of trainings a school psychologist should seek, the trainings the school psychologist should provide their staff, and/or their approach to treatment. Additionally, if a school psychologist knows that a high percentage of students have experienced a certain type of trauma, it may be necessary to implement a universal intervention, whole school strategy, rather than a targeted intervention to a small group (Cole et al., 2005; VanDerheyden & Jimerson, 2005).

Also, all four TPB factors (perceived knowledge, beliefs, perceived competence, and social norms/expectations) were associated with higher implementation frequency. It is important that both training programs and school districts provide current and future school psychologists with training for school-based trauma-informed interventions that focus on all three personal factors, including increasing knowledge, increasing competence, and instilling belief in the intervention. In regards to social norms/expectations, it may be necessary for school psychologists to advocate for the interventions to increase buy-in from other school psychologists, other school personnel, and administrators.

For social norms/expectations it is important that school districts and school administrators work to promote an environment and culture that are conducive to implementing

school-based trauma-informed interventions. Specifically, that district administration, school personnel, and direct supervisors believe in a trauma-informed education. Additionally, it is important that school psychologists within a district support each other's work towards implementing trauma-informed interventions and growing their culture to be trauma-informed. The trauma-informed school-wide approach means that providing intervention or treatment for trauma is not solely a structured evidence-based trauma-focused intervention provided by a school based mental health provider (Cavanaugh, 2016; Chafouleas et al., 2016; Reinbergs & Fefer, 2018). Administrators, teachers, aides, and other school personnel who have trauma training and operate from a trauma-informed lens will add to the effectiveness of structured evidence-based interventions and promote positive outcomes in students (Walkley & Cox, 2013). Furthermore, in the present study school psychologists reported that when intervening they most frequently engaged in individual or group interventions. Providing professional development on how to expand individual or group intervention into a systemic approach would benefit the students (NCTIC, 2015).

Additionally, it is important to consider the implications for the difference in magnitude for the correlations between TPB factors with implementation frequency and barriers with implementation frequency. The magnitude for TPB factors and implementation frequency was larger and therefore, indicates that these factors likely play an important role in implementation frequency. This finding indicates that for school psychologists it will be beneficial to focus on increasing knowledge, competence, and beliefs, in addition to working systemically to minimize barriers.

In regards to allocating resources, it was found that students in urban communities experience trauma and distress related to trauma at higher rates as compared to their suburban

and rural counterparts. Additionally, urban school psychologists reported higher rates of implementation. Without the knowledge of school psychologist to student ratio it is difficult to make a conclusion about how schools should interpret this data when allocating resources. NASP recommends that the ratio of school psychologists to students be 1:500-700 (2010b). To better understand if this ratio is accurate and appropriate across school locations, it would be beneficial for future researchers to analyze the rate of implementation by school psychologist to student ratio in the different locations.

Future Directions

The present study addressed several aspects of the larger picture of trauma and trauma intervention in schools. It is important that future studies continue to collect prevalence data for childhood trauma to better describe the community, area, or sample that they are representing. Each area will have different rates of trauma types, which may impact the barriers present and the frequency of implementation frequency.

In the current study, I focused on school psychologists' perspectives; however, it is important to understand trauma and services from multiple perspectives. Presently, researchers collect data from communities (e.g. calls to Child Protective Agencies, emergency room visits, government data; GAO, 2009) or large scale, self-report measures such as the YRBS (Youth Risky Behavior Survey; CDC, 2020). The present study was on a much smaller scale, but the data representation was comparable. It is important that, regardless of the size of the study, research continues to assess the prevalence, including rates of distress, so that as a society and an education system we have an accurate picture of what children are experiencing. Also, it would be beneficial for future studies to analyze prevalence with multiple methods or multiple sources

to ensure that the information presented is comprehensive. Comprehensive data would require

for researchers to collect data from a number of sources. In schools, there are a number of people

who could deliver services and provide insight into childhood trauma and associated distress. In

addition to school psychologists, future researcher should survey school counselors, school

social workers, administration, teachers, aids, and the students.

Additionally, analyzing data, trends, and information over the course of childhood

through longitudinal studies is important to understand the impact of interventions, the impact

that increased training/exposure to evidence-based intervention has on implementation

frequency, impact of other school personnel trained in trauma/trauma-informed approaches on

students' functioning, etc. Trend data can also show how a school or community is changing

based on various interventions or programmatic changes. The more comprehensive data will

improve professional development and new initiatives/policies. The data collected and the

information ascertained from this study should be the beginning of other research on childhood

trauma. This would include, but is not limited to, the influence stakeholders have on the impact

of childhood trauma on students and the ways schools/school personnel overcome barriers to

ensure that children get the intervention they need. Overall, this study has many potential

implications for the field of school psychology; however, more research or continued research on

the barriers to implementation, factors that promote intervention implementation, and the

prevalence of childhood trauma is necessary.

In this study I measured perceived knowledge by measuring how familiar a school

psychologist self-reported they were with three facets of trauma-focused school-based

intervention. Future researchers should consider measuring school psychologists' actual

knowledge of school-based trauma-focused interventions. Two ways this research could be completed is through a survey to assess their actual knowledge or through a qualitative study with focus groups where questions prompt school psychologists to talk about their knowledge of school-based trauma-focused interventions.

When analyzing the results, each TPB variable was examined separately in relation to intervention implementation. In the future, it may be beneficial for researchers to run the full model in one analysis to further understanding of the theory of planned behavior within school psychology literature. Additionally, analyzing more nuanced effects may prove useful. For example, dividing the sample into subgroups by barriers and analyzing in relation to implementation frequency to better understand the influence that barriers have on practitioners. Overall, understanding how these variables interact will help to understand and promote school-based trauma-focused implementation.

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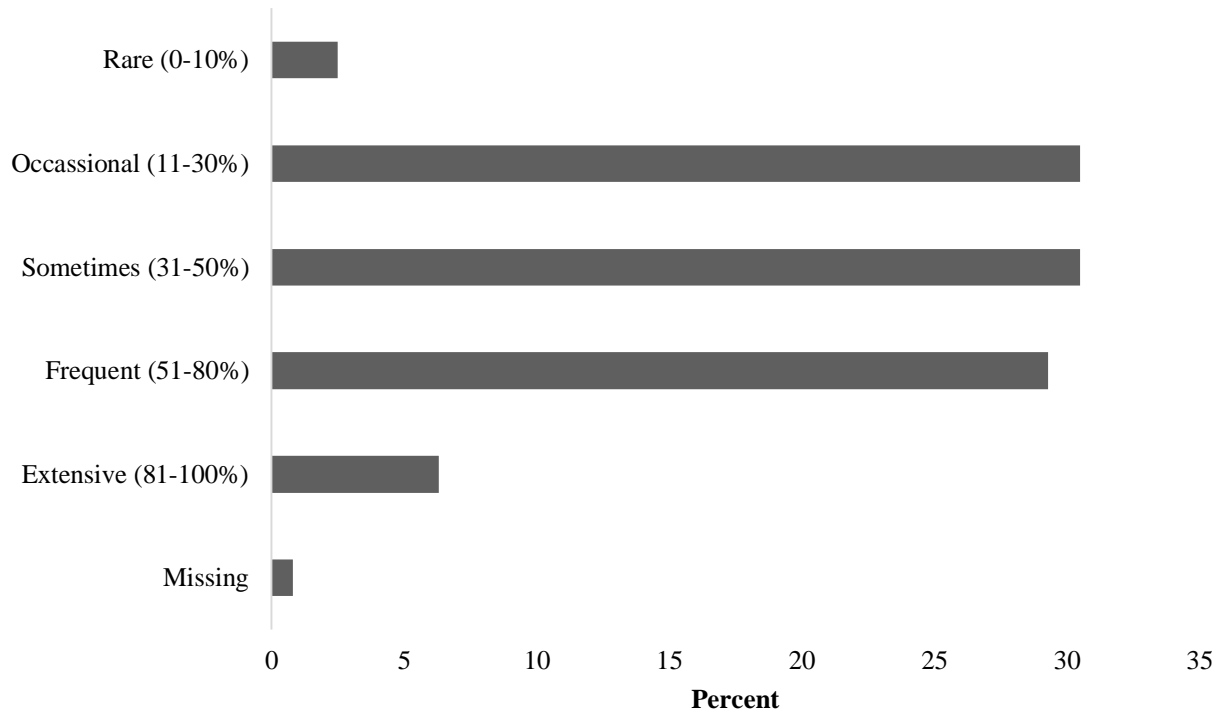
Figure 1. Percentage of students who experienced a traumatic event
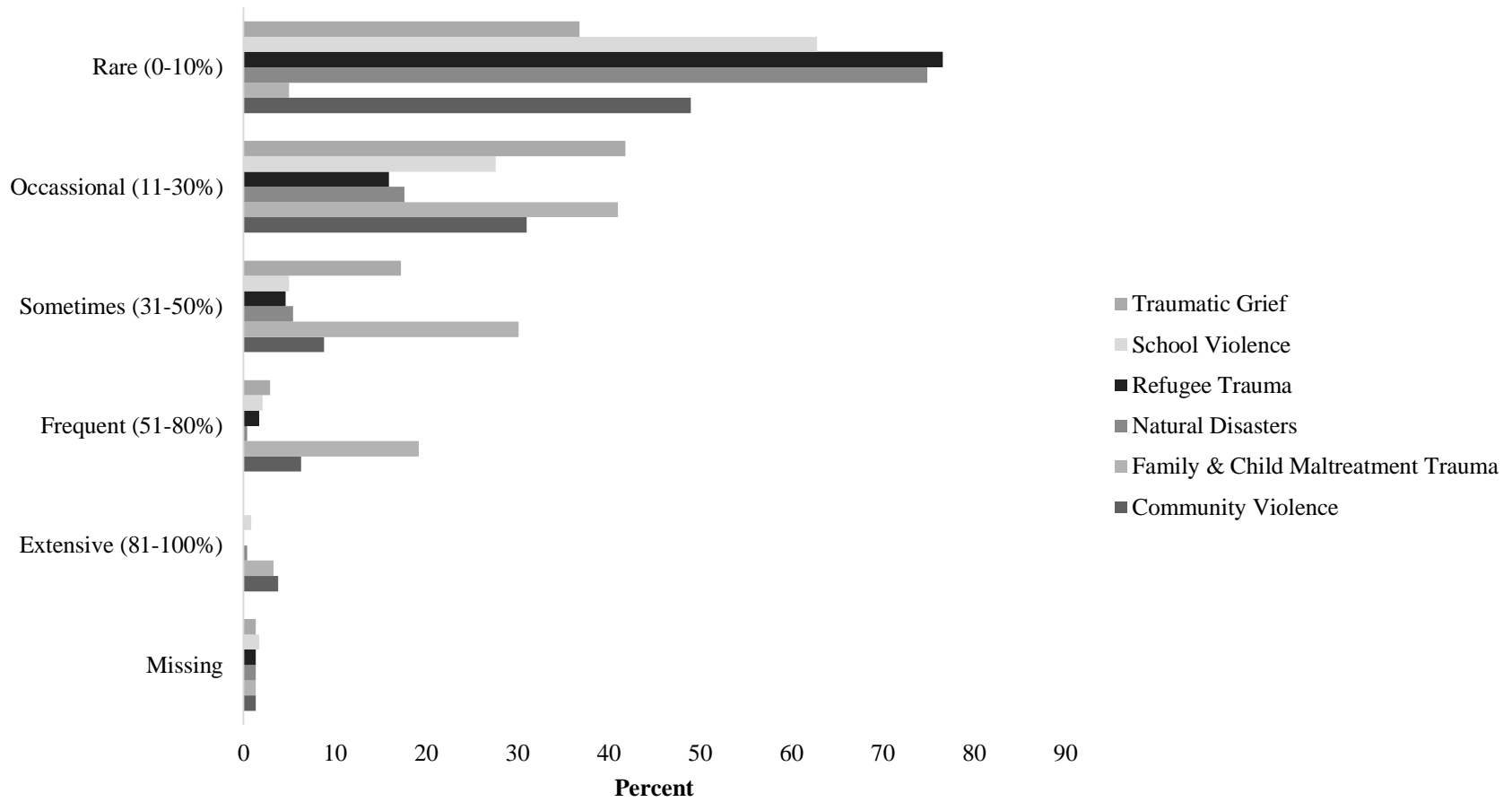
Figure 2. Percentage of students who experienced a trauma broken down by type of trauma
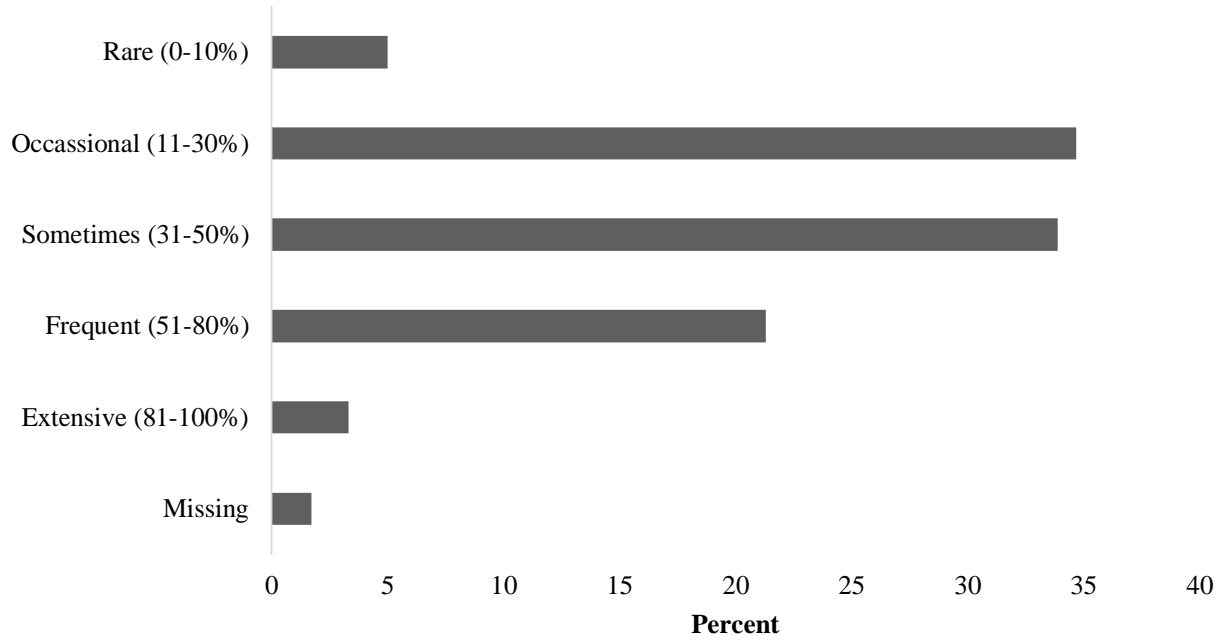
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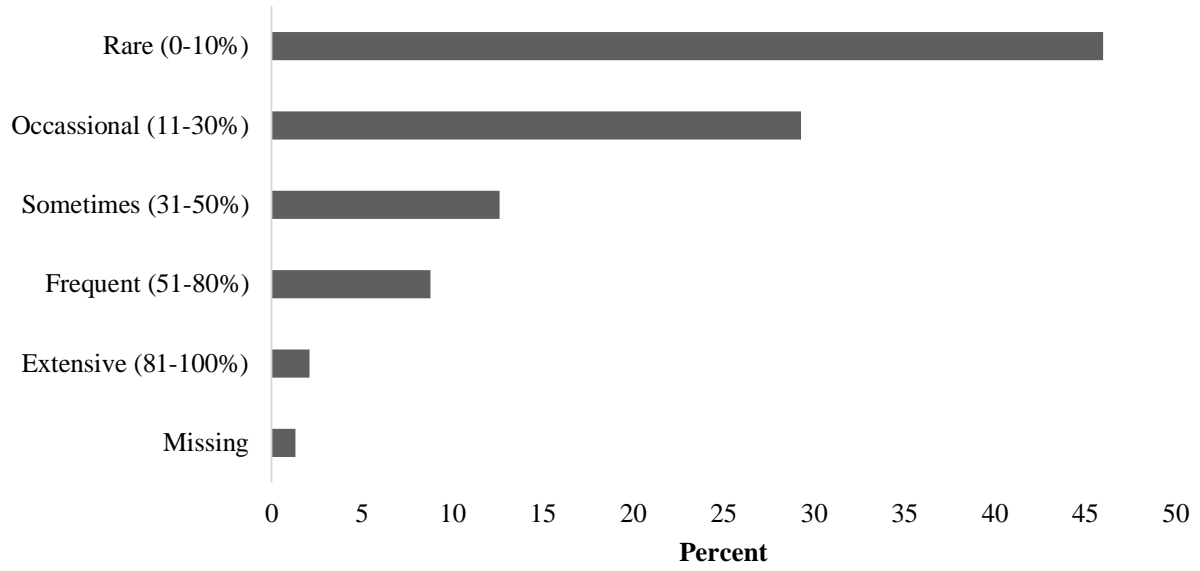
Figure 4. Overall implementation frequency of school-based trauma-informed intervention
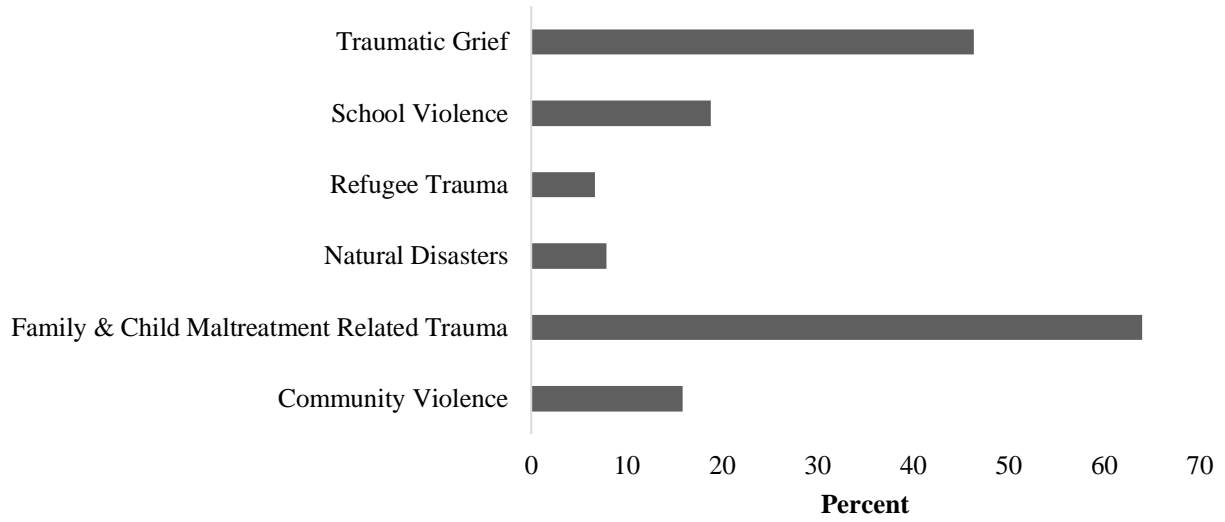
Figure 5. School Psychologists' intervention by the type of trauma
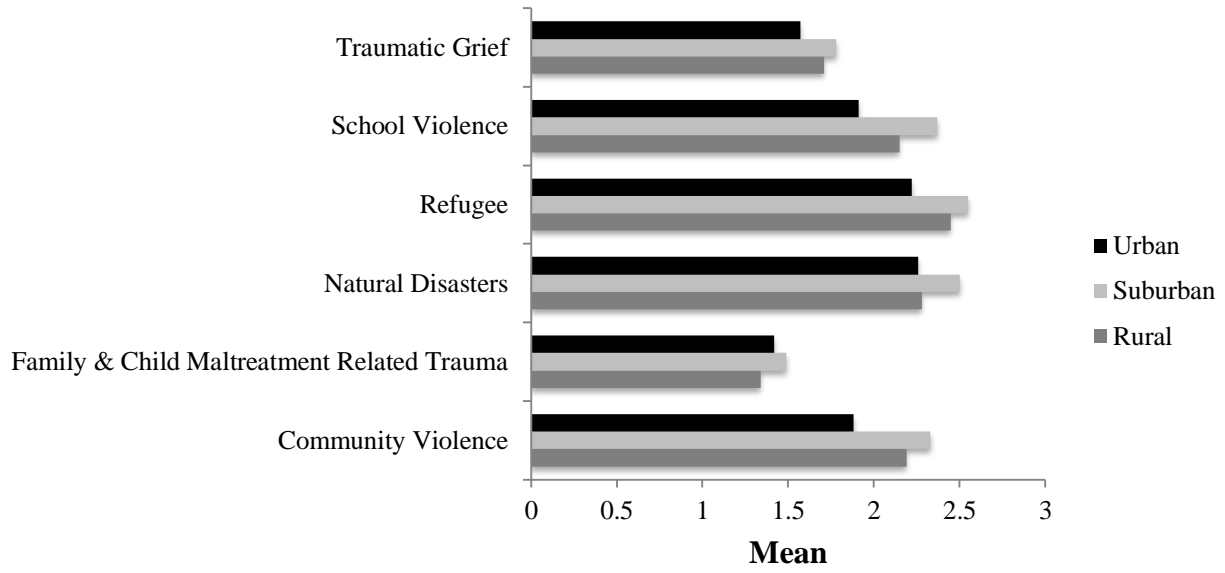
Figure 6. Mean implementation frequency separated by trauma type for each school location
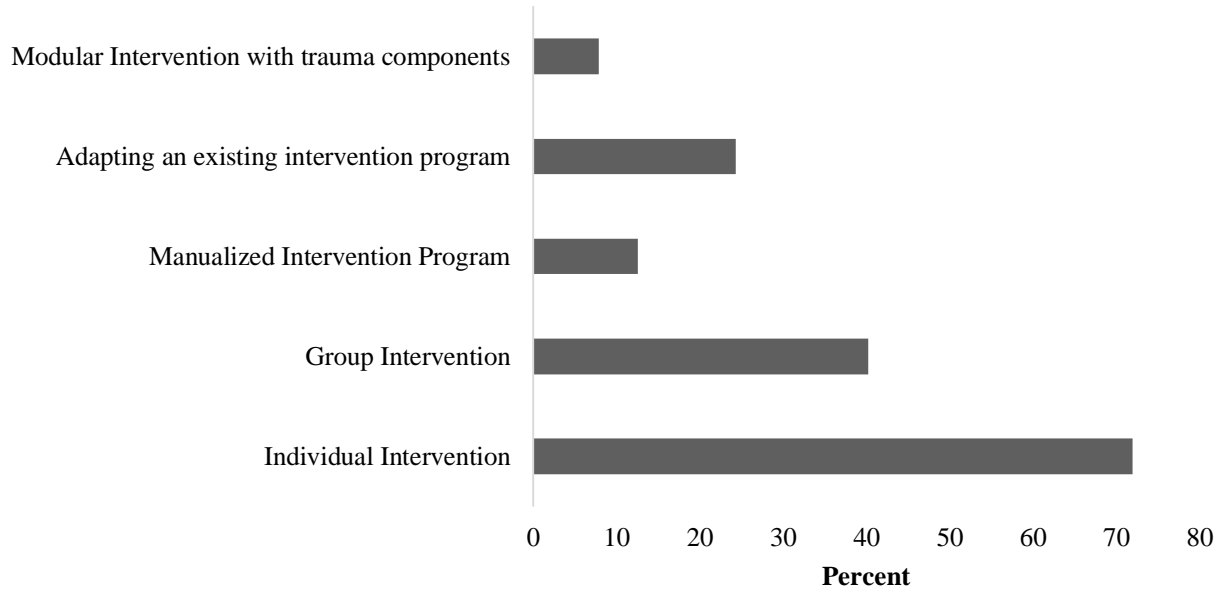
Figure 7. The type of school-based trauma-informed intervention provided by school psychologists

Table 1

School Psychologists Demographic Characteristics

Characteristics	M (*SD*)	%
Sex		
Males		12.1
Females		85.8
Other		0.4
Missing		1.7
Years in practice	12.40 (9.66)	
Race		
African American		1.3
American Indian/Alaskan Native		0.8
Asian American		0.4
Hispanic/Latino(a)		1.3
Caucasian/White		92.1
Two or more races		2.5
Missing		1.7
Location of School		
Rural		35.6
Suburban		35.6
Urban		27.2
Missing		1.7
School Size		
Less than 500 students		32.8
501-1000 students		45.5
More than 1000 students		21.3
Missing		1.7

Note. M = mean; *SD* = standard deviation

Table 2

Correlations, Means, and Standard Deviations of Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.
1. Sex (0=male)	--	-.10	.09	-.02	-.10	.01	.06	.05
2. Years		--	-.01	-.05	-.11	-.03	**-.22****	**-.14***
3. Barriers			--	-.09	**-.16***	.03	**-.20****	**-.15***
4. Perceived Knowledge				--	**.70****	**.34****	**.29****	**.36****
5. Perceived Competence					--	**.40****	**.36****	**.35****
6. Beliefs						--	**.33****	**.18****
7. Social Norms/ Expectations							--	**.41****
8. Implementation Frequency								--
Mean	0.89	12.27	2.53	2.83	3.08	5.17	4.21	1.90
SD	0.31	9.65	0.99	0.89	0.73	0.57	1.12	1.06

Note. SD = standard deviation; *p < .05, ** *p* < .01

Table 3

Multiple Regression Analysis of Perceived Knowledge and Implementation Frequency

Predictors	B	SEB	β
Sex (0=Male)	.15	.20	.05
Years of Experience	-.01	.01	-.12
Perceived Knowledge	.42	.07	**.36****
Adjusted R^2		.14	

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

Table 4

Multiple Regression Analysis of Perceived Competence and Implementation Frequency

Predictors	*B*	*SEB*	*β*
Sex (0 = Male)	.24	.20	.07
Years of Experience	-.01	.01	-.10
Perceived Competence	.49	.09	**.34****
Adjusted R^2		.13	

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

Table 5

Multiple Regression Analysis of Beliefs and Implementation Frequency

Predictors	B	SEB	β
Sex (0 = Male)	.10	.21	.03
Years of Experience	-.02	.01	**-.13***
Beliefs	.29	.10	**.18****
Adjusted R^2		.05	

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

Table 6

Multiple Regression Analysis of Social Norms/Expectations and Implementation Frequency

Predictors	*B*	*SEB*	*β*
Sex (0 = Male)	.05	.20	.02
Years of Experience	-.01	.01	-.06
Social Norms/Expectations	.37	.06	**.40****
Adjusted R^2		.16	

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

Table 7

Multiple Regression Analysis of Barriers, Perceived Knowledge, and Implementation Frequency

Predictors	*B*	*SE B*	*β*
Sex (0 = Male)	.18	.21	.06
Years of Experience	-.01	.01	-.12
Barriers	-.14	.07	**-.14***
Perceived Knowledge	.41	.07	**.34****
BarriersXKnowledge	-.02	.07	-.02
Adjusted *R²*		.14	

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

Table 8

Multiple Regression Analysis of Barriers, Perceived Competence, and Implementation

Frequency

Predictors	B	SE B	β
Sex (0 = Male)	.27	.21	.08
Years of Experience	-.01	.01	-.10
Barriers	-.11	.07	-.10
Perceived Competence	.47	.09	**.33****
BarriesXPerceived Competence	.02	.08	.02
Adjusted R^2		.13	

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

Table 9

Multiple Regression Analysis of Barriers, Beliefs, and Implementation Frequency

Predictors	*B*	*SE B*	*β*
Sex (0 = Male)	.16	.22	.05
Years of Experience	-.02	.01	**-.13***
Barriers	-.17	.07	**-.16***
Beliefs	.33	.12	**.18****
BarriesXBeliefs	-.01	.11	-.01
Adjusted *R²*		.06	

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

Table 10

Multiple Regression Analysis of Barriers, Social Norms/Expectations, and Implementation

Frequency

Predictors	*B*	*SE B*	*β*
Sex (0 = Male)	.09	.21	.03
Years of Experience	-.01	.01	-.06
Barriers	-.08	.07	-.08
Social Norms/Expectations	.36	.06	**.38****
BarriesXSocial Norms/Expectations	.01	.06	.01
Adjusted R^2		.15	

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

APPENDIX A:

Pilot Study Survey

1. How familiar are you with…

   a. The current literature on school-based trauma-informed interventions?
      i. Unfamiliar
      ii. Somewhat unfamiliar
      iii. Somewhat familiar
      iv. Familiar

   b. The therapeutic components specific to a trauma-focused intervention (i.e. developing trauma narrative, ensuring safety, using trauma-informed language)?
      i. Unfamiliar
      ii. Somewhat unfamiliar
      iii. Somewhat familiar
      iv. Familiar

   c. The underlying theory/mechanisms responsible for the change of a trauma-focused intervention?
      i. Unfamiliar
      ii. Somewhat unfamiliar
      iii. Somewhat familiar
      iv. Familiar

2. How confident are you with

   a. Tailoring a treatment to be individualized and trauma-specific?
      Tailoring/personalization in regards to survivors' trauma type and comorbidities, as well as culture, values, strengths, resources, preferences, parents/caregivers/families, and communities within the context of the recovery environment.
      i. Not confident
      ii. Somewhat not confident
      iii. Somewhat confident
      iv. Confident

   b. In your ability to use a trauma-focused evidence-based treatment for a child who has experienced trauma?
      i. Not confident
      ii. Somewhat not confident
      iii. Somewhat confident
      iv. Confident

   c. In your ability to monitor the effects of a school-based trauma-focused

intervention?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

d. In your abilities to react to students' trauma-related experiences without judgment?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

e. In your ability to utilize non-avoidant strategies in engagement, retention, and delivery of a trauma-focused intervention?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

f. In your ability to implement prevention programs related to trauma (i.e. safety, psychoeducation, mindfulness)?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

g. In your ability to adapt and appropriately individual factors **during** a school based trauma-focused intervention session?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

h. In your ability to adapt and appropriately individual factors **following** a school based trauma-focused intervention session?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident
- iv. Confident

i. In your ability to collaborate with trauma clients' families, social networks, and care systems?
- i. Not confident
- ii. Somewhat not confident
- iii. Somewhat confident

iv. Confident

j. In your ability to cultivate and maintain a therapeutic relationship with trauma-impacted **individuals** that fosters a sense of safety, trust, and openness?
  i. Not confident
  ii. Somewhat not confident
  iii. Somewhat confident
  iv. Confident

k. In your ability to cultivate and maintain a therapeutic relationship with trauma-impacted **families** that fosters a sense of safety, trust, and openness?
  i. Not confident
  ii. Somewhat not confident
  iii. Somewhat confident
  iv. Confident

3. Are all of these items clear and understandable? If no, please indicate which items?
   a. Yes
   b. No. Explain _____.

4. For question 1, do these items reflect the idea of "knowledge about school-based trauma-informed intervention"? If no, please indicate which ones.
   a. Yes
   b. No. Explain_____.

5. For question 2, do these items reflect the idea of "perceived competence of skills about school-based trauma-informed intervention"? If no, please indicate which ones.
   Perceived competence of skills refers to a school psychologist's beliefs about their ability to implement school-based trauma-informed interventions.
   a. Yes
   b. No. Explain_____.

6. Please provide any general feedback you have about these questions or the measure as a whole.
   _____

Recruitment Emails

Email to be distributed by Wisconsin School Psychology Association (WSPA)

Dear School Psychologists,

We are conducting an online survey as part of a research study to increase our knowledge of school-based trauma informed interventions. Specifically, we are looking to understand practicing school psychologists' beliefs about trauma interventions, perceived competence to implement trauma interventions, and factors contributing to the implementation frequency of trauma informed interventions. As a practicing school psychologist you are in the school building, observing the impacts of trauma on the students you serve, and therefore, are one of the best sources to obtain this information.

The survey takes around 15 minutes and is completed online. The survey is anonymous and responses will be kept confidential. Additionally, we will collect an email address so that, if you wish, you can be entered into a drawing for 1 of 25 $10 Amazon gift cards. Your email will be collected in a second survey and will not be connected to the survey responses.

If you are willing to participate please click on the following link to access the survey. https://milwaukee.qualtrics.com/jfe/form/SV_4Uu1B0JGOx0AAZv

Please do not hesitate to contact us with any questions.

Thank you,
Kyongboon Kwon, Ph.D.
kwonk@uwm.edu
Amanda Hanrahan M.S.
Hanrah33@uwm.edu

Email to a district supervisor

To whom it may concern,

We are conducting an online survey as part of a research study to increase our knowledge of school-based trauma informed interventions. Specifically, we are looking to understand practicing school psychologists' beliefs about trauma interventions, competence to implement trauma interventions, and factors contributing to the implementation frequency of trauma informed interventions. In an attempt to survey as many school psychologists as possible, we were hoping that you would be able to forward this survey on to the school psychologists within your district.

The survey takes around 15 minutes and is completed online. The survey is anonymous and responses will be kept confidential. Additionally, we will collect an email address so that, if they wish, respondents can be entered into a drawing for 1 of 25 $10 Amazon gift cards. The email will be collected in a second survey and will not be connected to the survey responses.

To participate, please click on the following link to access the survey
https://milwaukee.qualtrics.com/jfe/form/SV_4Uu1B0JGOx0AAZv

Please do not hesitate to contact us with any questions.

Thank you,
Kyongboon Kwon, Ph.D.
        kwonk@uwm.edu
Amanda Hanrahan M.S.
        Hanrah33@uwm.edu

Email direct to school psychologists

Dear School Psychologist,

We are conducting an online survey as part of a research study to increase our knowledge of school-based trauma informed interventions. Specifically, we are looking to understand practicing school psychologists' beliefs about trauma interventions, competence to implement trauma interventions, and factors contributing to the implementation frequency of trauma informed interventions. As a practicing school psychologist you are in the school building, observing the impacts of trauma on the students you serve, and therefore, are one of the best sources to obtain this information.

The survey takes around 15 minutes and is completed online. The survey is anonymous and responses will be kept confidential. Additionally, we will collect an email address so that, if you wish, you can be entered into a drawing for 1 of 25 $10 Amazon gift cards. Your email will be collected in a second survey and will not be connected to the survey responses.

If you are willing to participate please click on the following link to access the survey.
https://milwaukee.qualtrics.com/jfe/form/SV_4Uu1B0JGOx0AAZv

Please do not hesitate to contact us with any questions.

Thank you,
Kyongboon Kwon, Ph.D.
        kwonk@uwm.edu
Amanda Hanrahan M.S.
        Hanrah33@uwm.edu

1. Are you a practicing school psychologist? *

☐ Yes   ☐ No

* This question will be asked prior to consent to screen to meet inclusionary criteria.

Please answer the following questions about your school population to the best of your ability.

1. To your knowledge, what percentage of the students at your school have experienced a traumatic event?
   a. Rare *(0-10%)*
   b. Occasional *(11-30%)*
   c. Sometimes *(31-50%)*
   d. Frequent (*51-80%*)
   e. Extensive *(81-100%)*

2. Students experience various types of trauma. To the best of your knowledge indicate the prevalence of each category of trauma at your school.

Trauma Category	**Prevalence Rate**				
1.Community Violence *Physical conflict between unrelated people in the community or those acts deemed "predatory" such as theft or rape*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
2. Family & Child Maltreatment Related Trauma *Domestic violence, physical abuse, sexual abuse, and neglect. The physical or sexual exploitation or misuse of a child by a parent/caregiver, when a parent/caregiver fails to provide a child's basic needs, and/or being a victim or witness to actual or threatened violence between adults in an intimate relationship.*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*

4. Natural Disasters *Sudden or terrible event in nature, such as a hurricane, tornado, fire, or flood, that usually results in serious damage and/or many deaths (only consider natural disasters that occur in the region you work).*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
5. Refugee Trauma *Result of forced migration, being a child soldier, going into hiding, changing their identity violence, homelessness, hunger, and/or traumatic grief*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
6.School Violence *Violent acts that occur at school such as threats of violence, presence of weapons, injury of student or faculty, death of student or faculty, and fighting*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
7.Traumatic Grief *Persistent grief for a year or more that is causes significant distress compared to typical bereavement*	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*

3. To your knowledge, how frequently do the students at your school that experienced a traumatic event present with distressing symptoms related to the trauma?
    a. Rare *(0-10%)*
    b. Occasional *(11-30%)*
    c. Sometimes *(31-50%)*
    d. Frequent *(51-80%)*
    e. Extensive *(81-100%)*

4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.
    a. Rare *(0-10%)*
    b. Occasional *(11-30%)*
    c. Sometimes *(31-50%)*
    d. Frequent *(51-80%)*
    e. Extensive *(81-100%)*

5. To the best of your knowledge, indicate yes, no, N/A for which trauma categories you implemented a trauma-focused intervention in the 2016-2017 and 2017-2018 school years. N/A should be selected when no students in your school experienced distress related to this trauma category. Intervened refers to a multi-week structured group or individual intervention, not one time crisis intervention.

Trauma Categories	Intervened?		
1. Community Violence	Y	N	N/A
2. Family & Child Maltreatment Related Trauma	Y	N	N/A
3. Natural Disasters	Y	N	N/A
4. Refugee Trauma	Y	N	N/A
5. School Violence	Y	N	N/A
6. Traumatic Grief	Y	N	N/A

6. What is the nature of the interventions you implemented? (Select all that apply)
    a. Individual
    b. Group
    c. Manualized intervention program (i.e. CBITS)
    d. Adapting an existing intervention
    e. Modular intervention with trauma components
    f. Other: Please indicate in comments

7. How much do the following factors negatively impact your ability to implement trauma-focused interventions at your school?

Problems within school setting (i.e. space constraints, inconsistent treatment, scheduling problems)	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
Insufficient time and problems integrating into school setting	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
Insufficient support from department and district administration	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*
Problems with school personal (e.g. lack of support from building administrator, unsupportive	Rare *(0-10%)*	Occasional *(11-30%)*	Sometimes *(31-50%)*	Frequent *(51-80%)*	Extensive *(81-100%)*

teachers, lack of awareness of school psychologists job responsibilities)					

8. How much do the following factors positively impact your ability to implement trauma-focused interventions at your school?

District administration thinks that I should be implementing school-based trauma-informed interventions	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
School personnel in my building think that I should be implementing school-based trauma-informed interventions	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
My supervisors think that I should be implementing school-based trauma-informed interventions	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Other school psychologists in my district think that I should be implementing school-based trauma-informed interventions	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree

Please answer the following questions to the best of your ability.

9. How familiar are you with the current literature on school-based trauma-informed interventions?
    a. Unfamiliar
    b. Somewhat unfamiliar
    c. Somewhat familiar
    d. Familiar

10. How confident are you with tailoring a treatment to be individualized and trauma-specific? *Tailoring/personalization in regards to survivors' trauma type and comorbidities, as well as culture, values, strengths, resources, preferences, parents/caregivers/families, and communities within the context of the recovery environment.*
    a. Not confident
    b. Somewhat not confident
    c. Somewhat confident
    d. Confident

11. How confident are you in your ability to use a trauma-focused evidence-based treatment for a child who has experienced trauma?
   a. Not confident
   b. Somewhat not confident
   c. Somewhat confident
   d. Confident

12. How confident are you in your ability to monitor the effects of a school-based trauma-focused intervention?
   a. Not confident
   b. Somewhat not confident
   c. Somewhat confident
   d. Confident

13. How familiar are you with the therapeutic components specific to a trauma-focused intervention (i.e. developing trauma narrative, ensuring safety, using trauma-informed language)?
   a. Unfamiliar
   b. Somewhat unfamiliar
   c. Somewhat familiar
   d. Familiar

14. How familiar are you with the underlying theory/mechanisms responsible for the change of a trauma-focused intervention?
   a. Unfamiliar
   b. Somewhat unfamiliar
   c. Somewhat familiar
   d. Familiar

15. How confident are you in your abilities to react to students' trauma-related experiences without judgment?
   a. Not confident
   b. Somewhat not confident
   c. Somewhat confident
   d. Confident

16. How confident are you in your ability to utilize non-avoidant strategies in engagement, retention, and delivery of a trauma-focused intervention?
   a. Not confident
   b. Somewhat not confident
   c. Somewhat confident
   d. Confident

17. How confident are you in your ability to implement prevention programs related to trauma (i.e. safety, psychoeducation, mindfulness)?

a. Not confident
b. Somewhat not confident
c. Somewhat confident
d. Confident

18. How confident are you in your ability to adapt and appropriately to individual factors **during** a school based trauma-focused intervention session?
    a. Not confident
    b. Somewhat not confident
    c. Somewhat confident
    d. Confident

19. How confident are you in your ability to adapt and appropriately to individual factors **following** a school based trauma-focused intervention session?
    e. Not confident
    f. Somewhat not confident
    g. Somewhat confident
    h. Confident

20. How confident are you in your ability to collaborate with trauma clients' families, social networks, and care systems?
    a. Not confident
    b. Somewhat not confident
    c. Somewhat confident
    d. Confident

21. How confident are you in your ability to cultivate and maintain a therapeutic relationship with trauma-impacted **individuals** that fosters a sense of safety, trust, and openness?
    a. Not confident
    b. Somewhat not confident
    c. Somewhat confident
    d. Confident

22. How confident are you in your ability to cultivate and maintain a therapeutic relationship with trauma-impacted **families** that fosters a sense of safety, trust, and openness?
    a. Not confident
    b. Somewhat not confident
    c. Somewhat confident
    d. Confident

Please answer the following questions to the best of your ability.

23. School-based trauma-informed interventions are acceptable interventions.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree

d. Somewhat agree
e. Agree
f. Strong agree

24. Overall, school-based trauma-focused interventions would be beneficial for a child.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

25. Regardless if I implement trauma-focused interventions, I would recommend the use of school-based trauma-focused interventions to other school psychologists.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

26. School-based trauma-focused interventions are consistent with my general approach to working with students
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

27. I believe there is sufficient research evidence supporting school-based trauma-focused interventions.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

28. I believe most school psychologists view school-based trauma-focused interventions for trauma in a positive way.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree

f. Strong agree

29. School-based trauma-focused interventions would likely result in minimal negative side effects for the children.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

30. It would be worth my time and energy to implement school-based trauma-focused interventions.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

31. I would advocate for school-based trauma-focused interventions at my school.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

32. I would be willing to use school-based trauma-focused interventions.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

33. I would pursue training and professional development to deliver school-based trauma-focused interventions.
    a. Strongly disagree
    b. Disagree
    c. Somewhat disagree
    d. Somewhat agree
    e. Agree
    f. Strong agree

Please answer the following demographic questions to the best of your ability.

1. What is your gender?

   ☐ Male
   ☐ Female
   ☐ Transgender
   ☐ Other : _____

2. What is your race?

   ☐ Caucasian/White
   ☐ African American/Black
   ☐ Hispanic/Latino/a
   ☐ Asian/Pacific Islander
   ☐ Native American/Alaskan Native
   ☐ Other: _____

3. How many years have you been in practice?

   _____

4. Select the location of your present school setting.
   (select your primary setting)

   ☐Rural   ☐ Suburban   ☐Urban

5. How many students attend your school?
   *(select your primary setting)*

   ☐ Less than 500 students
   ☐ 500-1000 students
   ☐ 1000-1500 students
   ☐ 1500-2000 students
   ☐ 2000-2500 students
   ☐ More than 2500 students

APPENDIX D:
Statistical Plots
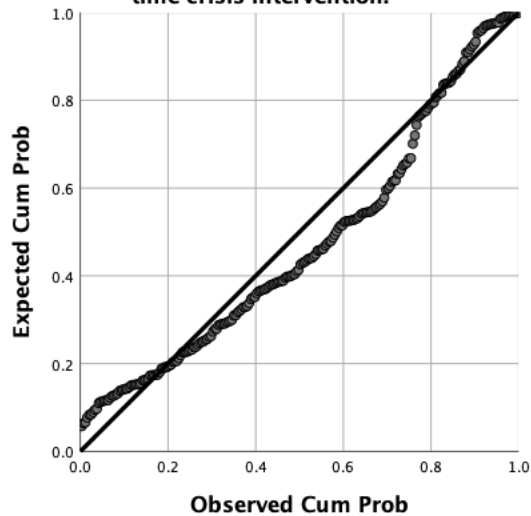
Variable: Social Norms/Expectations

Histogram

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

Mean = 1.19E-16
Std. Dev. = 0.989
N = 230
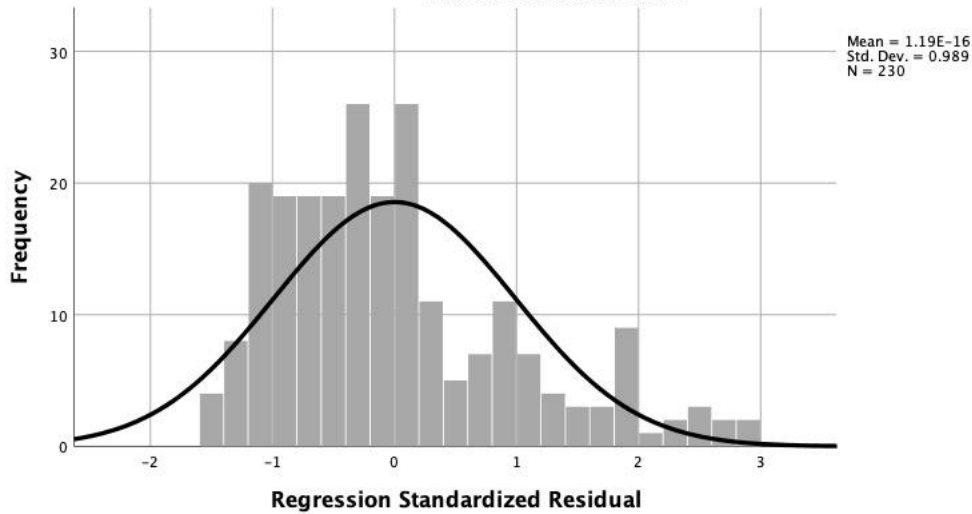
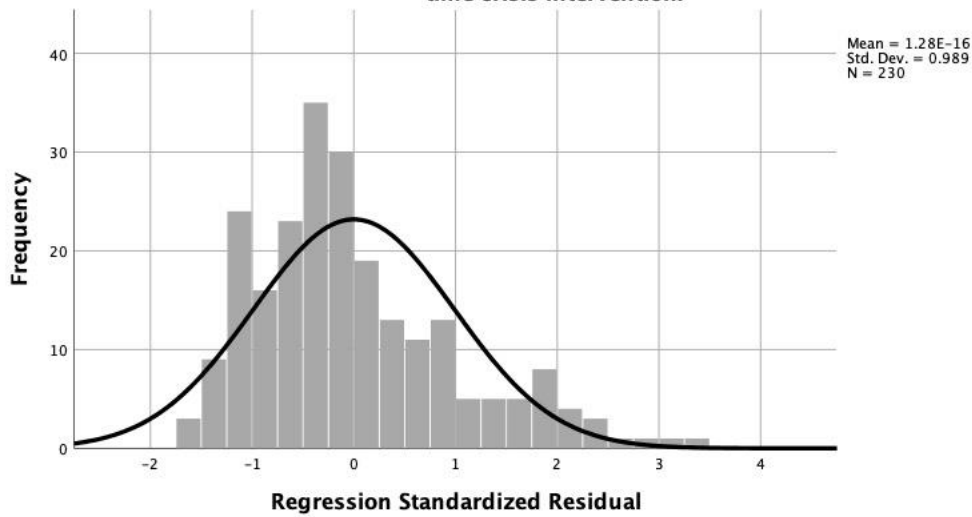**Normal P-P Plot of Regression Standardized Residual**

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.
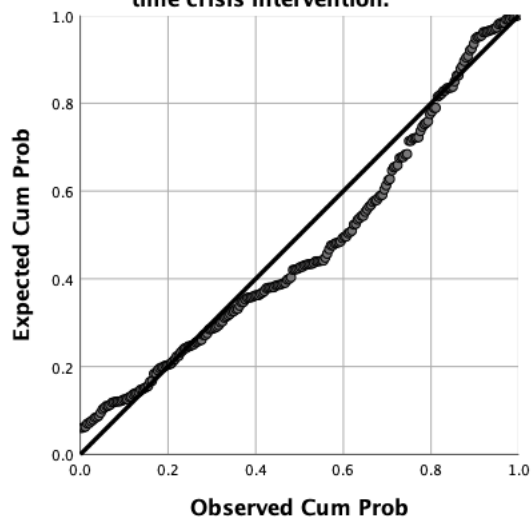
Variable: Knowledge

Histogram

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

Mean = 1.28E−16
Std. Dev. = 0.989
N = 230

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

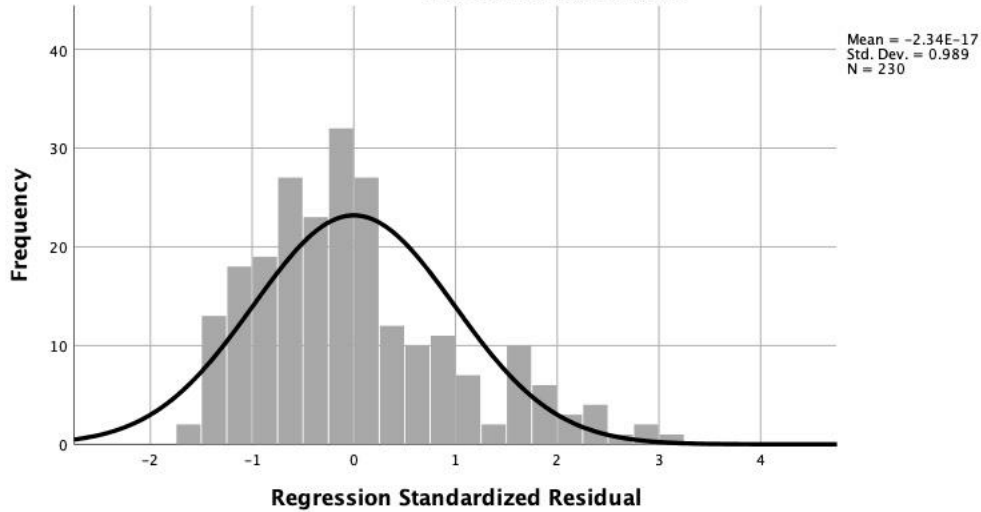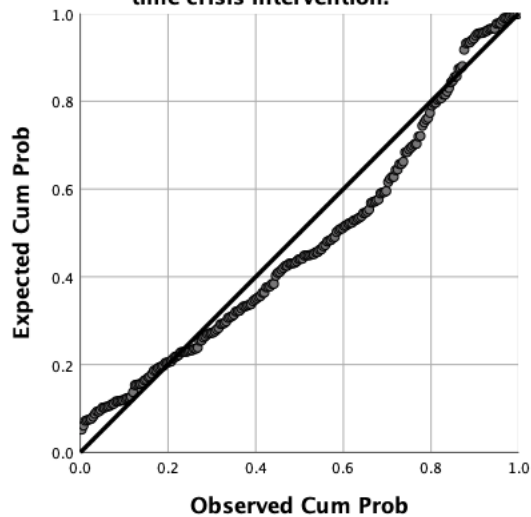Variable: Perceived Competence

Histogram

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

Mean = -2.34E-17
Std. Dev. = 0.989
N = 230

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.
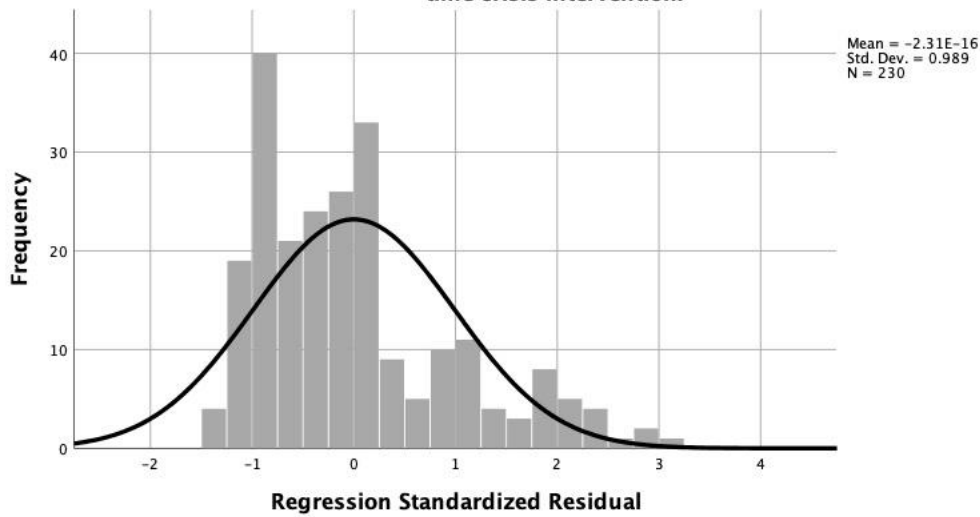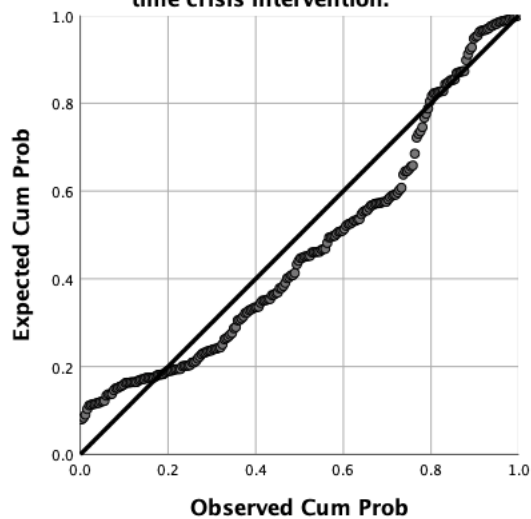
Variable: Beliefs

Histogram

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

Mean = -2.31E-16
Std. Dev. = 0.989
N = 230

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: 4. To the best of your knowledge, when a child was referred for concerns related to a traumatic event or history of trauma, how many cases did you provide a trauma-focused intervention? Intervention refers to a multi-week structured group or individual intervention, not one time crisis intervention.

AMANDA HANRAHAN

EDUCATION:

University of Wisconsin-Milwaukee   Expected Graduation: August, 2020
Doctorate of Philosophy
     Educational Psychology: Specializing in School Psychology
     APA accredited and NASP approved

University of Wisconsin-Milwaukee   December, 2016
Masters of Science
     Educational Psychology: Specializing in School Psychology
     APA accredited and NASP approved

West Virginia University
Bachelor of Science – Magna Cum Laude   May, 2013
     Forensic & Investigative Sciences
     Psychology (with honors)

LICENSE

School Psychologist (#7062)   Expires: June 30, 2022
Wisconsin- Department of Public Instruction
P001- Pupil Services: Provisional License
License #: 3001022302

PSYCHOLOGY EXPERIENCE:

Richmond School District (4K-8) – School Psychologist
July 2019 to Present
     Serve as the Response to Intervention (RtI) program coordinator and oversee five interventionists and ensure interventions are implemented with fidelity. Provide individual, group, and parental counseling/therapeutic services for a school related concerns (i.e. social skill building, school related anxiety, frustration tolerance/management, crisis intervention, emotion regulation). Consult with teachers, counselors, and administrators to best support students, families, and education. Co-coordinate Positive Behavioral Interventions and Supports (PBIS) program and lead related staff professional development. Richmond School District Section 504 coordinator, which entails conducting initial evaluations, facilitating initial 504 meetings, and collaborating with counselors, parents, and staff to ensure Section 504 plans are implemented effectively. Conduct special education evaluations, run initial special education evaluation meetings, operate as the Local Educational Agency (LEA) representative at annual special education meetings, and support special education students as needed or written in the Individual Education Program.

PSYCHOLOGY INTERNSHIP EXPERIENCE:

Sarah A. Reed Children's Center: Residential Treatment Facility - Doctoral Psychology Intern
(Primary supervisors: Eric Schwartz, Psy.D. & Laura Amoscato, Ph.D.)
APA Accredited
August, 2018 to July, 2019

> Provide individual, family, an group therapeutic services in a residential treatment setting to clients who present with a variety of psychological disorders (i.e. Bipolar Disorder, Reactive Attachment Disorder, Encopresis, Conduct Disorder, Generalized Anxiety), family dynamics, and trauma histories. Additionally, complete Best Practice Medical Necessity Evaluations for behavioral health service eligibility and provide psychological testing for diagnostic clarification. Other responsibilities include case management, school consultation, unit consultation, and supervision of a school psychology practicum student.

PSYCHOLOGY PRACTICUM EXPERIENCES:

Children's Hospital of Wisconsin: Psychiatry and Behavioral Medicine Clinic (inpatient focus)- Psychology Practicum Student (Supervisor: Elizabeth Fischer, Ph.D.)
September, 2017 to May, 2018

> Engaged in consultative and liaison services throughout the children's hospital. Clients presented with a number of medical problems (i.e. Cystic Fibrosis, Chrohn's Disease, Traumatic Brain Injury, Bezoar removal) where a psychological disorder (i.e. anxiety, depression) contributed negatively to their medical condition, or behavioral intervention/training was be necessary to prevent relapse. Other responsibilities included providing mental health assessment and consultation to patients and their families in the Disorders of Sex Differences Clinic.

Children's Hospital of Wisconsin: Psychiatry and Behavioral Medicine Clinic (outpatient focus)- Psychology Practicum Student (Supervisor: Amy Ridley-Meyers, Ph.D.)
September, 2017 to May, 2018

> Provided therapeutic services in an outpatient setting. Clients were identified as needing services to help with anxiety, depression, behavioral concerns, peer issues, school problems, gender identify concerns, identity adjustment issues with target ages from early to late adolescence. Bimonthly support groups were conducted for transgender adolescents and their parents.

Froedtert Pediatric Neuropsychology Clinic- Psychology Practicum Student (Supervisor: Jennifer Koop, Ph.D.)
July, 2017 to May, 2018

> Conducted cognitive, academic, language, motor, visual, neurological, and attention abilities through administration of a variety of norm-referenced assessments and measures. Most frequently used assessments include the WISC-5, WIAT, NEPSY, DKEFS, CPT, VMI, Grooved Pegs, CELF-5, and WRAML- 2. Engaged in regular consultation with providers and fellows in order to conceptualize the case and alter the testing list as necessary. After assessment, assisted in writing clinical reports and feedback to provide to the family.

Project S.T.A.Y. (Milwaukee Public Schools) – School Psychology Practicum Student
(Supervisor: David Winters, M.S., LPC & Jeffrey Molter, Ph.D.)
September, 2016 to June, 2017

Provided therapeutic intervention for 16-21 year old females who were enrolled in an alternative school for students who are parents or previous dropouts. Interventions include supportive relationships, Trauma-Focused Cognitive Behavioral Therapy, Cognitive Behavioral Therapy, relaxation skill building, self-care guidance, and mindfulness.

St. Charles (Milwaukee Public Schools Contract Site) – School Psychology Practicum Student (Supervisors: Amanda Haley, M.S. & Jeffrey Molter, Ph.D.)
October, 2016 to June, 2017

Provided skill-building interventions to students who had Individualized Education Plans and were removed from a traditional education setting due to violence, theft, or other severe incidents within the school building. Skill building interventions included relaxation techniques, career planning, utilizing supports, anger management, and emotion regulation.

Marshall High School (Milwaukee Public Schools) – School Psychology Practicum Student (Supervisor: Jeffrey Molter, Ph.D.)
February, 2017 to May, 2017

Provided skill-building interventions to students who had Individualized Education Plans in the areas of Emotional Behavioral Disorder, Other Health Impairment, Intellectual Disability, and Autism Spectrum Disorder. Skill building included career planning, support system building, friendship development, school involvement, and emotion regulation.

Goodrich Elementary School (Milwaukee Public Schools) – School Psychology Practicum Student (Supervisor: Nechama Sklar Ed.S.)
January, 2015 to June, 2016

Worked alongside a practicing School Psychologist to carry out social-emotional small group and whole classroom interventions, consultation with teacher in regards to functional behavioral assessments, tutoring students in reading and phonics development, attending problem solving-team meetings, and completing academic or cognitive testing, rating scales, and observations necessary for evaluations for special education or 504 evaluations.

Wedgewood Park IB School (Milwaukee Public Schools) – School Psychology Practicum Student (Supervisor: Jennifer Snedic, Ed.S.)
January, 2016 to June, 2016

Worked under the supervision of a practicing School Psychologist to implement classroom intervention with the CBU (comprehensive behavioral unit) classroom, completion of academic and cognitive testing for the purpose of placement or dismissal from special education, small group intervention for self-esteem and friendship, and individual therapy cases.

TEACHING EXPERIENCES

Rocketship Education: Southside Community Prep – Science Enrichment Coordinator
July, 2013 to June, 2014

Developed and implemented lessons to incorporate state and national science standards for grades K4-4. Utilized classroom management techniques and real world experiences to enhance the students' general education.

West Virginia University: Chemistry Department - Teaching/Lab Assistant
August, 2009 to May, 2010

> Supervised undergraduate students throughout chemistry lab experiments and supported the lead teacher by answering questions and by grading laboratory reports.

RESEARCH EXPERIENCE

University of Wisconsin-Milwaukee: Department of Educational Psychology - Research Assistant
September 2014 to May, 2018 – Advisor: Kyongboon Kwon

> Participated in data collection, data analysis, present research results at national conferences, and assisted with writing research results for publication.

UW-Milwaukee Department of Curriculum and Instruction – Graduate Assistant
October, 2014- May, 2018 – Advisor: Nancy File

> Collected classroom observation data, compiled early childhood research literature, tracked families for randomized control trial study, administered ITERS, data management for Preparing Tomorrow's Teacher Grant, analyzed data utilizing ATLAS.ti qualitative statistical software, completed general research project tasks, and edited/contributed to a book to help educators interpret and effectively utilized published research.

University of Wisconsin-Milwaukee: Department of Educational Psychology - Research Assistant
September 2016 to May, 2018 – Advisor: David Klingbeil

> Participated in administration of CBM probes (Math COMP, Math CAP) and scored CBM probes for middle school students. Progress monitored NWF and ORF, implemented fluency intervention with 1st graders at a local charter school.

West Virginia University: Psychology Department's Adolescent Development Lab - Research Assistant
August, 2010 to May, 2013 - Advisor: Aaron Metzger

> Assisted professors and graduate students with participant recruitment, coding of observational data, and data collection/entry with various psychological research projects.

PUBLICATIONS

Kwon, K., Willenbrink, J. B., & **Hanrahan, A.** (2017). Peer-Assessed Emotional Expressivity: Unique Association with Status in the Peer Group. *The Journal of Early Adolescence*.

Kwon, K., **Hanrahan, A**., & Kupzyk, K. A. (2017). Emotional Expressivity and Emotion Regulation: Relation to Academic Functioning Among Elementary School Children. *School Psychology Quarterly, 32*, 75-88.

Klingbeil, D.A., Maurice, S.A., Van Norman, E.R., Nelson, P.M., Birr, C., **Hanrahan, A.R**., … Lopez, A.L. (in press). Improving Mathematics Screening in Middle School. *School Psychology Review.*

DISSERTATION

Hanrahan, A. (In Progress). *Examination of School Psychologists' Beliefs, Perceived Competence, Knowledge, Social Norms/Expectations, and Implementation of School-Based Trauma-Focused Interventions.* Doctoral Dissertation. University of Wisconsin-Milwaukee.

THESES

Hanrahan, A. (Unpublished). *Teacher, Peer, and Self-Report of Emotion as Related to Peer Report of Social Status.* Master's Paper. University of Wisconsin-Milwaukee.

Hanrahan, A., Yale, E., & Metzger, A. (Unpublished). *Adolescent Work: Associations between Type, Hours, and Delinquency*. Undergraduate honor's thesis. West Virginia University.

PRESENTATIONS

Schramm, A., Hanrahan, A., Willenbrink, J., & Ellis, A. (2018, February). *Word Construction Intervention for English Language Learners*. Paper presented at National Association School Psychology 2018 annual convention: Chicago, IL.

Maurice, S., Schramm, A., Hanrahan, A., & Calewarts, C. (2018, February). *Balancing Accuracy and Efficiency: Incremental Validity of Math Screening Measures.* Paper presented at National Association School Psychology 2018 annual convention: Chicago, IL.

Kwon, K., Hanrahan, A., Benton, A., & Teer, J. (2018, February). *Long-term Stability and Predictability of Peer Nominations of Emotionality*. Poster presented at National Association School Psychology 2018 annual convention: Chicago, IL.

Hanrahan, A. & Kwon, K. (2017, April). *Social Withdrawal and Aggression: Similarities and Differences in Emotions and Peer Relationships.* Poster presented at the Society for Research in Child Development 2017 Biennial Meeting: Austin, TX.

Hanrahan, A. & Kwon, K. (2016, February). *Emotional Displays and Popularity.* Poster presented at the National Association for School Psychologists 2016 annual convention: New Orleans, LA.

Kwon, K., Hanrahan, A., Olson, S., & Stancato, C. (2016, February). *Cross-Informant Agreement of Emotions and Predictability of Social Behavior.* Poster Presented at the National Associations for School Psychologists 2016 annual convention: New Orleans, LA.

Hanrahan, A. & Kwon, K. (2015, May). *Associations between Peer-Nominated Displays of Emotion and Social Interaction Behaviors*. Poster presented at UW-Milwaukee's School of Education Research Gala: Milwaukee, WI.

Hanrahan, A., Yale, E., & Metzger, A. (2013, April). *Adolescent Work: Associations between Type, Hours, and Delinquency*. Honors Thesis presented at the 2013 Tri-State Conference: Charleston, WV.

Yale, E., Metzger, A, & **Hanrahan, A.** (2013, April). *Associations Between Parental Internet Monitoring, Adolescent Disclosure, and Adolescent Risky Internet Behaviors.* Poster presented at the Society for Research in Child Development 2013 Biennial Meeting: Seattle, WA.

Hanrahan, A., Yale, E., & Metzger, A. (2013, March). *Associations between adolescents' alcohol-related secrecy and disclosure with alcohol consumption.* Poster Presented at the Eastern Psychological Association 2013 Annual Meeting: New York City, NY.

Hanrahan, A., Yale, E., & Metzger, A. (2013, February). *Associations between adolescents' alcohol-related secrecy and disclosure with alcohol consumption.* Poster presented at the 2013 Undergraduate Research Day at the Capitol: Charleston, WV.

Hanrahan, A., Yale, E., & Metzger, A. (2012, July). *Associations between adolescents' alcohol-related secrecy and disclosure and both alcohol consumption and risky alcohol behavior.* Poster Presented at 2012 Summer Undergraduate Research Experience Poster Symposium: Morgantown, WV.

Hanrahan, A., Majestro, R., Perrotta, A., Ferris, K., & Metzger, A. (2012, March) *Part-time work of rural adolescents and the association with substance use.* Poster presented at the Eastern Psychological Association 2012 Annual Meeting: Pittsburgh, PA.

Majestro, R., **Hanrahan, A.,** Perrotta, A., Ferris, K., & Metzger, A. (2012, January) *Part-time work of rural adolescents and the association with substance use.* Poster presented at the 2012 Undergraduate Research Day at the Capitol: Charleston, WV.

Hanrahan, A., Majestro, R., Ramirez, B., Chaplin, B., Ferris, K., & Metzger, A. (2011, October) *Participation in religious activity and its associations with community beliefs.* Poster presented at the West Virginia Psychological Association Fall 2011 Conference: Morgantown, WV.

OTHER PSYCHOLOGY RELATED EXPERIENCES:
Next Door Foundation & Educare- Classroom Evaluator
May, 2015- June, 2017
> Observed birth-3 year old classrooms using the ITERS (Infant Toddler Environment Rating Scale) in the Milwaukee community and wrote report summaries to communicate status of classrooms. Conducted meetings with teachers and program coordinators to explain results and find ways to improve the child care center.

Impact 211- Community Resource Specialist
July, 2013-June, 2014
> Assessed callers for basic needs or crisis situations. Documented details of all situations to ensure accuracy of referrals. Referred callers to appropriate community resources upon completion of assessment callers.

Fremouw-Sigley Psychological Associates, PLLC - Psychometrician

May, 2012 to May, 2013
> Administered assessment batteries for clients ages 8-70 for evaluations that were court ordered, parent referred, or used to determine eligibility for social security.

Victim Witness Assistance Program - Intern
January, 2012 to May, 2012 (108+ hours)
> Assisted mental health professionals in a judiciary setting, and advocated for victims of violent crimes and property offenses by contacting government agencies, such as Child Protective Services and Crime Compensation Fund.

McNaughton Correction Center: Social Services Department - Intern
May, 2011 to August, 2011 (480 hours)
> Created lesson plans based on Wisconsin Department of Corrections standards and taught inmate reintegration courses including education, wellness, family communication, and other life skills. Assisted mental health professionals in a prison setting by contributing to parole hearings, interview and consult inmates, and giving opinions on inmate re-classification meetings.

TRAININGS/CERTIFICATES

CPR Certified, The American Heart Association – August 13, 2018
Trauma Focused Cognitive Behavioral Therapy Web 2.0- August 31, 2018 (11 CEUs)
> The Medical University of South Carolina

LEADERSHIP EXPERIENCES:

American Psychological Association – Division 16
> Division 16 Executive Board Member: Communications 2017 to 2019
> Division 16 Chapter Representative (UW-Milwaukee) 2016 to 2018

UWM School Psychology Student Association
> Treasurer December, 2014 to December, 2015

Educational Psychology Student Association
> Vice President September, 2016 to September, 2017

WVU Psi Chi
> WVU Chapter President May, 2012 to May, 2013
> WVU Chapter Fundraising Chair December, 2011 to May, 2012

PROFESSIONAL MEMBERSHIP:

American Psychological Association September, 2016 to Present
> Division 16 Student Affiliate September, 2016 to Present

UWM School Psychology Student Association Fall, 2014 to Present
UWM Educational Psychology Student Association Fall, 2014 to Present
National Association for School Psychologists Fall, 2014 to Present
Society for Research in Child Development Spring, 2012 to Present
Wisconsin School Psychology Association Fall, 2014 to Present
Psi Chi Fall, 2011 to Present
Eastern Psychological Association Fall, 2011 to Fall, 2013

ACADEMIC EXPERIENCES:

Conference Submission Reviewer

National Association of School Psychologists Annual Convention
Summer, 2017, Summer, 2018
American Psychological Association
Winter, 2017

COMMUNITY EXPERIENCES:

Projects Abroad: Costa Rica- Volunteer
March 15-21, 2015 (30 hours)
> Tutored at-risk 7-12 year old students in Costa Rica in English, Mathematics, Handwriting, and Science in Spanish. Also, helped with meals, recess, and preparing students for school.

Next Door: Read With Me!- Volunteer
October, 2014 to May, 2015
> Read books and ask comprehension questions to at-risk 3-5 year olds in a low-income community.

Ruby Memorial Hospital: Morgue- Volunteer
June, 2010 to August, 2010
> Observed and assisted with both Forensic and Hospital autopsies by prepping for autopsy, fingerprinting the bodies, assisting the technicians, and cleaning up post-autopsy.

Ruby Memorial Hospital: Surgical Intensive Care Unit Receptionist Desk– Volunteer
January, 2010 to July, 2010
> Directed families and friends to the patient room, acted as the liaison between doctors and patients' families, and comforted families when needed.

HONORS & AWARDS:

UW-Milwaukee: Exemplary Leadership Award Nominee	May, 2017
Chester A. and Mildred H. Raasch Scholarship	August, 2018 to May, 2019
Kuehnsiesen TNE Scholarship	August, 2016 to May, 2018
Singer School Psychology Scholarship	August, 2015 to May, 2016
West Virginia University: Dean's List (3.5 GPA)	Fall, 2008 to Spring, 2013 (6 semesters)
West Virginia University: President's List (4.0 GPA)	Spring, 2012 to Fall, 2012
West Virginia University: Honor's College	Fall, 2008 to May, 2013
Presidential Volunteer Service Award	May, 2013
WVU- Dept. of Psychology: Quinn Curtis Award	April, 2013
WVU-Eberly College: Certificate of Achievement for Academic Excellence	February, 2011