4-29-2019 3:00 PM

School Success After Trauma: Examining the Parallels Among Trauma, Bullying, and School Disengagement

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Graduate Program in Education
A thesis submitted in partial fulfillment of the requirements for the degree in Master of Arts

Abstract

Research examining the relationships between trauma, bullying, and the combined effect of these experiences on school disengagement is scarce. Due to the plethora of negative outcomes that may result from trauma, bullying, and school disengagement, understanding these relationships is important in supporting children/youth with these histories. To address this gap in the literature, 8589 children/youth (aged 4-18 years) were assessed using the interRAI Child and Youth Mental Health Assessment. A multinomial logistic regression revealed that children/youth who reported interpersonal and non-interpersonal traumas were more likely to be bully-victims. Moreover, the likelihood of being a victim of bullying nearly doubled for those who reported interpersonal trauma, compared to non-interpersonal trauma. A negative binomial regression revealed that children/youth who reported non-interpersonal trauma were at greatest risk of school disengagement. Furthermore, those who were bully-victims were also at the highest risk for school disengagement. Implications for targeted prevention and intervention strategies are discussed.

Keywords: traumatic life events, interpersonal trauma, non-interpersonal trauma, bullying, school disengagement, interRAI

Acknowledgements

I would like to take the opportunity to whole-heartedly thank all of the people who supported and contributed to the successful completion of this thesis.

First, several members of the Faculty of Education at Western University provided guidance and inspiration throughout my graduate experience. Specifically, Dr. Shannon Stewart, you have offered overwhelming encouragement and wisdom over the past two years. This has been instrumental in shaping my graduate experience as I clarified my research ideas to set this project in motion. Your continued consideration for my academic and professional goals is greatly appreciated. Additionally, Dr. Alan Leschied, thank-you for sharing your enthusiasm and passion for research as well as being patient and encouraging when providing exceptional support. Finally, Dr. Natalia Lapshina, thank-you for your encouragement and insight when providing outstanding analytical support.

The importance of having caring adults to support children and youth is discussed in this project. I believe that family is important at every point in life and for that I would like to thank my family for their ongoing support and unconditional love. I am grateful for your advice and unwavering faith in the achievement of my goals. I also believe that teachers play a fundamental role in shaping the lives of the children/youth that they teach and for that, I would like to thank all of my previous teachers who took the time to not only support me academically, but who also served as role models and emotional supporters throughout my elementary and secondary education.

Lastly, I would like to extend thanks to all of the children, youth, and families as well as assessors across the Province of Ontario who dedicated countless hours to assessments used in this study.

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Introduction

Traumatic events are "[…] typically defined as incidents that are perceived as terrifying, shocking, sudden, or that potentially pose a threat to one's life, safety, or personal integrity" (Buffington, Dierkhising, & Marsh, 2010; Cohen, Mannarino, & Deblinger, 2010 as cited by Black, Woodworth, & Tremblay, 2012, p. 192). Such events, once seen as rare occurrences are becoming increasingly evident. As a result, childhood trauma has become a key area of research as it pertains to later outcomes in adulthood. According to the Adverse Childhood Experiences (ACE) Study, approximately 50% of adults have experienced more than one ACE, with approximately 25% of adults having experienced two or more ACEs within their lifetime (Felitti et al., 1998). However, "while the relation between experiences of early trauma or adversity and adult health and behavioural outcomes is now fairly well established (e.g., Caspi et al., 2016; Dube, Felitti, Dong, Giles, & Anda, 2003; Felitti et al., 1998), the impact of early trauma and adverse experiences throughout the course of childhood is less well understood (Perry, 1994)" (Arbeau, Theall, Willoughby, Berman, & Stewart, 2017, p. 2486)**.**

Research shows that trauma can lead to many negative outcomes, including psychological, developmental, and physiological deficits, such as neurobiological changes to the brain, a compromised immune system, increased general physical and mental stress, decreased ability and/or willingness to trust others, attachment difficulties and conflictual relationships, hyperarousal and hypervigilance, and rigid or chaotic behaviour, to name a few (Klinic Community Health Centre, 2013). Furthermore, trauma often leads to mood and behaviour regulation impairments that may subsequently lead to "[…] maturational difficulties, such as an inability to establish effective interpersonal relationships, regulate emotions, and learn from own and others' experiences" (Muskett,

2014, p. 51). As a result, trauma-informed care and trauma-specific services are becoming increasingly commonplace throughout society in fields such as mental health and medicine.

Trauma-informed services are those where trauma histories are considered and sensitivity is given to trauma-related issues that may be present in survivors of trauma who are attempting to access services, whereas trauma-specific services are considered as those that are designed to specifically treat the actual symptoms associated with trauma (Jennings, 2004). Moreover, trauma-informed services simply employ a more sensitive approach in general, and thus are beneficial to all, especially those who may be most vulnerable and at risk for re-traumatization.

Trauma has also been studied in relation to another common phenomenon in school-aged populations, bullying. Although both bullying in schools and trauma during childhood are highly studied fields when examined separately, there is little research linking these two phenomena despite their high prevalence and seeming overlap in symptomology (Nielsen, Tangen, Idsoe, Matthiesen, & Magerøy, 2015; Penning, Bhagwanjee, & Govender, 2010). This lack of a research focus is partially due to the current working definition of trauma within which bullying behaviours are not comprehensively established (Penning et al., 2010).

Bullying in schools is defined as a form of interpersonal aggression wherein an individual is persistently and consistently exposed to negative actions from another individual (Nielsen et al., 2015). The aggression is long lasting and systematic in nature, and the target has difficulty defending oneself. (Nielsen et al., 2015). However, although most school-aged bullying behaviours would not likely be considered as posing an imminent risk, within the developmental trauma framework bullying can be considered a

repetitive stressor that threatens the psychological and physical safety of students at school and is associated with many negative developmental outcomes (Penning et al., 2010).

Many of these negative effects hold the potential to interfere with a student's ability to accommodate the schools expectations and impede an ability to learn. However, there is a paucity of research examining the connection between trauma and school disengagement. Research does show that "the quality of the environment and relationships in a young child's life can either promote or inhibit healthy development of the brain and associated physical and psychological processes" (Harden, Buhler, & Parra, 2016, p. 368). Furthermore, for some children, time spent with teachers exceeds the amount of time spent with parents/caregivers. Therefore, teachers play an exceedingly important role in the lives of children, not only in regard to academic domains, but also in serving as a role models and emotional support (Alisic, Bus, Dulack, Pennings, & Splinter, 2012). Therefore, it is important to ensure that all environments, be it school or home, and all relationships, whether they be with teachers or parents, be nurturing and sensitive to the needs of all children in order to promote healthy development.

The present study addressed these gaps in the literature by examining the relationship between traumatic life events and bullying behaviours as they pertain to being either a victim, a perpetrator, or a bully-victim, in furthering support for the argument that bullying should indeed be considered a traumatic life event. Furthermore, this study examined the relationship between trauma and bullying as separate phenomena related to school disengagement as well as interconnected and related experiences that contribute to a disrupted educational experience.

Traumatic Life Events

Types of trauma. As aforementioned, trauma can occur when one witnesses or experiences any event that is perceived as threatening (Black et al., 2012). Within this definition, there are three different types of trauma: acute trauma, chronic trauma, and complex or developmental trauma (National Child Traumatic Stress Network, 2013). Acute trauma occurs when witnessing a single event, whereas chronic and developmental traumas both involve experiencing multiple, enduring, and/or recurring events (National Child Traumatic Stress Network, 2013). However, chronic and developmental trauma can also be differentiated. Developmental trauma occurs as a result of an invasive and interpersonal trauma that occurs throughout the life course, especially during the early years, that impacts developmental processes, whereas chronic trauma is less pervasive (National Child Traumatic Stress Network, 2013).

As the definition of trauma is conditional on how an individual perceives certain events, and all individuals are unique in their perception of experience, a range of experiences may be considered traumatic depending on personal factors such as resiliency and level of support received from caregivers. Several examples of potentially traumatic experiences include: "[…] serious illness (e.g., hospitalization, painful treatments), accidents (e.g., car accidents, dog bites, near drownings), separation from caregivers (e.g., foster care placement, death of parent), natural or human-caused disasters (e.g., hurricanes, droughts, famine), and poverty-related factors that compromise safety and security (e.g., lack of resources to fulfill basic needs such as hunger)," as well as sexual abuse, physical abuse, intimate partner violence, community violence, and overall child maltreatment or neglect (Harden et al., 2016, p. 367). Furthermore, any combination of such events (i.e., experiencing both serious illness and abuse) greatly increases one's risk

of developing trauma symptomology (Harden et al., 2016).

Interpersonal versus non-interpersonal trauma. Although many experiences may be considered a traumatic event, a distinction can be made between events that are interpersonal versus non-interpersonal in nature (Howard Sharp et al., 2017). For the purposes of this study, interpersonal trauma includes events that are directly "human induced" and "[…] involve a malicious perpetrator, one who consciously intends to harm another human being," such as chronic neglect and sexual, emotional, and physical abuse (Lilly, Valdez, & Graham-Bermann, 2011, p. 2502). Conversely, non-interpersonal trauma lacks a malicious perpetrator (such as natural disasters, car accidents, living in areas of conflict, immigration, and the death of a caregiver), or the effects of a malicious perpetrator indirectly impact the individual (i.e., being the victim of crime, being abandoned by caregivers, or witnessing domestic violence and/or abuse; Lilly et al., 2011). Another key component in this distinction is that non-interpersonal trauma does not typically involve the humiliation component that accompanies interpersonal trauma; rather, non-interpersonal trauma is typically viewed as a misfortune that the individual has experienced (Lilly et al., 2011).

Toxic stress. Experiencing a traumatic event can be stressful as the body reacts to the threat with a stress response. There are three types of stress: positive stress, tolerable stress, and toxic stress (Shonkoff et al., 2012). Positive stress occurs as part of normal daily life and involves mild to moderate physiological stress that is accompanied by the influence of a caring adult to help the child cope with the stressor and return the reaction to baseline after the threat has been abated (Shonkoff et al., 2012). Tolerable stress involves non-normative experiences that involve greater levels of adversity and/or threat. These include death of a family member, a contentious parental divorce, or a natural

disaster (Shonkoff et al., 2012). However, again, a caring adult who helps the child cope, reduce stress, and return to baseline after the threat is gone accompanies tolerable stress (Shonkoff et al., 2012). While positive and tolerable stress are unlikely to lead to chronic outcomes, such as developmental trauma, toxic stress is dangerous and involves the "[…] strong, frequent, or prolonged activation of the body's stress response systems in the absence of the buffering protection of a supportive, adult relationship" (Shonkoff et al., 2012, p. 236). It involves overwhelming environmental stressors that lead to the chronic overactivation of the body's stress response system which can lead to a myriad of psychological and physiological challenges and differences in development when experienced during early childhood (for in-depth reviews of the physiological and psychological impacts of childhood trauma see Harden et al., 2016 and Jaffee & Christian, 2014).

A stress response is initiated when various brain centers determine whether or not the event is considered threatening; if the body determines that the event is indeed threatening, it responds accordingly by initiating the stress response system (i.e., fight, freeze or flight response; Danese & McEwen, 2012). Initially, this response is helpful for escaping danger. However, chronic activation of this system can have deleterious effects on both mental and physical health, especially in light of the rapid development that occurs within these areas during infancy and early childhood (Danese & McEwen, 2012).

Toxic stress during childhood often leads to major life-course and psychological challenges. It has been found to change brain structures, compromise physiological and psychological responses to future stressors, impede cognitive development, increase life-long vulnerability to stress-related illnesses (Harden et al., 2016, p. 366), and can lead to chronic disease in adulthood (Felitti et al., 1998). Toxic stress affects three main systems

within the body: the immune system, the neuroendocrine system, and the central nervous system (Danese & McEwen, 2012). As one can imagine, dysfunction in these systems leads to serious challenges.

How do children experiencing toxic stress respond to emotional stimuli? Children are found to be quicker to recognize angry faces, present with greater activation of the right amygdala in response to angry faces (even outside conscious perception), are more attentive to angry cues, and have difficulty disengaging from angry cues. This suggests that children with toxic stress are hyper-vigilant to threats in the form of angry stimuli, which leads to an increased risk of anxiety and reactive aggression (Jaffee & Christian, 2014). Furthermore, children with exposure to toxic stress are less likely to experience positive emotions and present with dysfunction in dopaminergic systems (reward processing), which can lead to an increased risk of depression (Dillon et al., 2009; Guyer et al., 2006).

Developmental impact. As previously cited, there are many developmental impacts associated with toxic stress and developmental trauma in infants and young children. Specifically, due to various developmentally sensitive periods and high levels of brain plasticity, brain structures can be changed drastically which can alter the way they work. Despite the paucity of research, which can be contradictory, the overall assumption is that "the atypical development of brain areas associated with higher order cognitive and emotional function may lead to subsequent behavioral regulation and cognitive processing issues for maltreated children, which affect their functioning across developmental domains" (Harden et al., 2016, p. 369).

Along with brain changes, there are numerous other neurobiological, physical, socio-emotional functioning, mental health, and cognitive effects, including effects on

language development, that have been found to be associated with developmental trauma. Several examples include: intellectual disabilities, poor problem-solving skills, lower IQs, high rates of developmental delays, delays in receptive and expressive language, attention and memory issues, compromised executive functioning skills, increased impulsivity, attachment issues, difficulty regulating, expressing, and understanding emotions, avoidance, hypervigilance, fearfulness, and an increased risk of developing psychological and behaviour disorders such as depression, anxiety, Post Traumatic Stress Disorder (PTSD), attention-deficit-hyperactivity-disorder (ADHD), oppositional defiant disorder (ODD), and conduct disorder (CD; Arbeau et al., 2017; Becker & McCloskey, 2002; Briscoe-Smith & Hinshaw, 2006; Ford et al., 1999; Ford et al., 2000; Harden et al., 2016; Wozniak et al., 2000). Furthermore, research shows that any one, or combination, of the aforementioned cognitive and language deficits can have detrimental results later in life for traumatized children, specifically in relation to subsequent academic functioning and overall success at school (Harden et al., 2016).

Family and neighbourhood violence. Family violence, as examined through reports of domestic violence (also known as intimate partner violence), conflict within the household, and neighbourhood violence, is one of the most prevalent types of adverse events experienced by children (Briggs-Gowan, Carter, & Ford, 2012). It is also one of the most harmful experiences for children and has been linked to a myriad of negative outcomes including, but not limited to, posttraumatic stress symptoms, emotional problems, and poor social competence (Briggs-Gowan et al., 2012). Additionally, research shows altered immune system functioning is common in adults with histories of maltreatment or who grew up in chaotic families (Taylor, Lehman, Kiefe, & Seeman, 2006). However, how severely a child is effected by violence varies depending on factors

such as whether or not the child directly witnessed or experienced the event, whether the event was actual or vicarious, and whether it was within the family or the neighbourhood (Briggs-Gowan et al., 2012). Furthermore, although compromised parenting can cause damaging levels of stress for children, many studies indicate that supportive caregiving in the midst of adversity can be a significantly strong buffer against the impacts of toxic stress (see Harden et al., 2016 for a detailed summary of the literature regarding the role of supportive caregiving amidst adversity).

Briggs-Gowan et al. (2012) examined how exposure to neighbourhood and familial violence is portrayed through trauma symptomology in young children by longitudinally following children from early childhood to kindergarten/first grade. This study found that both familial and neighbourhood violence were significantly associated with arousal and avoidance for children exposed before 3 years of age. Additionally, exposure to neighbourhood violence before 3 years of age was also significantly associated with re-experiencing and significantly predicted school-age internalizing and externalizing behaviours when trauma symptomology was considered as a mediator. Moreover, lower school-age social competence was significantly predicted by exposure to family and neighbourhood violence, although this effect was, once again, mediated by trauma symptomology. Therefore, clinicians working with school-age children should consider the possibility of a trauma history when working with children presenting with poor social competence and internalizing/externalizing symptoms, despite a known history of trauma.

Bullying

Definition. Bullying is a complex term to define, and as such, is difficult to differentiate from other forms of peer aggression (Cornell & Bandyopadhyay, 2009).

Salmivalli (2010) defines bullying as "[…] a subtype of aggressive behavior, in which an individual or a group of individuals repeatedly attacks, humiliates, and/or excludes a relatively powerless person" (p. 112). According to Olweus (1993), bullying involves three specific elements: intentional harm the victim; repetitive, culminating, interpersonal interactions; and a power imbalance leading the victim to feel a sense of helplessness and powerlessness (Penning et al., 2010). Bullying is a common school-age phenomenon, with many children/youth being involved as either victims, perpetrators, or as both, being bullied themselves and harassing others (also known as being a bully-victim; Salmivalli, 2010). Prevalence rates for bullying behaviours range widely due to the complex definition of the behaviour as well as the influence of children versus adult definitions of such behaviours. As such, prevalence rates range anywhere from approximately 4% to 50% depending on the inclusion criteria used to define bullying in each study (Penning et al., 2010; Salmivalli, 2010; Due & Holstein, 2008; Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Nansel et al., 2001; Menesini & Salmivalli, 2017).

Bullying as a type of trauma. There is strong evidence supporting the connection between childhood trauma and PTSD (see above review), with a small but growing number of studies illustrating that trauma symptomology and PTSD can result from bullying and victimization during childhood (Britton, 2005; Burrill, 2006; Carney, 2008; Kay, 2005; McLaughlin, Laux, & Pescara-Kovach, 2006). However, there continues to be an ongoing debate as to whether or not bullying behaviours constitute traumatic events, or whether they are simply typical experiences of school-aged children and thus are more relevantly defined as "tolerable stressors," and not necessarily posing imminent threats against a child's safety (Penning et al., 2010). However, many studies report a myriad of negative developmental, physical, and psychological outcomes from bullying behaviours

that include self-injury, anxiety, depression, and irritability, among others, that highly resemble PTSD symptoms resulting from trauma exposure (Baiden, Stewart, & Fallon, 2017; Nielsen et al., 2015; Penning et al., 2010; Salmivalli, 2010). Penning et al. (2010), found a significant relationship between being the victim of bullying and PTSD symptoms in adolescent boys in South Africa. Additionally, a meta-analysis conducted by Nielsen et al. (2015), found results suggesting that bullying was significantly associated with PTSD symptoms in both children and adults within all three clusters of trauma symptomology: intrusion, avoidance/numbing, and hyper-arousal. However, the question still remains as to whether or not bullying can be considered a traumatic stressor since it may or may not constitute a life-threatening event (Nielsen et al., 2015). Regardless, bullying in schools is likely to result in symptomology that highly resembles that of trauma and PTSD, which likely impacts academic performance and school performance in general.

School Disengagement

Definition. In Canada, current estimates suggest that approximately 5-9% of students never finish secondary school, and those who exit school prior to graduation are most likely to do so between ninth and tenth grade (Ferguson et al., 2005; Statistics Canada, 2017). Prematurely leaving school places youth at an increased risk for numerous negative outcomes later in life, such as unemployment, poverty, substance abuse, poorer health, and increased involvement with the justice system (Ferguson et al., 2005; Henry, Knight, & Thornberry, 2012).

Research demonstrates that school engagement is a strong predictor of school dropout (Wang, & Eccles, 2012). School engagement is a multidimensional concept comprised of behavioural, cognitive, and emotional components, including factors such

as increased lateness or absenteeism, poor productivity at school, persistent dissatisfaction with school, and poor overall academic performance (Fredricks, Blumenfeld, & Paris, 2004). School disengagement occurs when children/youth do not meaningfully connect to their school experience, with disengagement being accounted for by a number of factors that result in the risk of complete disengagement or dropout.

Impact of trauma on school disengagement. Despite the seemingly obvious connection between trauma and school disengagement, there is a paucity of research in this area. However, some information is known regarding how trauma affects academic and behavioural performance (e.g., Crozier & Barth, 2005; Stahmer et al., 2009). Additionally, due to higher levels of opportunity and vulnerability, maltreatment during infancy and early childhood is extremely common; therefore, it is likely that children have experienced such events even before entering kindergarten (Sheridan & Nelson, 2009; Shonkoff & Phillips, 2000). Thus, before entering school, a child's brain has already been shaped by their experiences, which, for some, includes trauma.

Research demonstrates that the brains of traumatized children are structurally different from their non-traumatized peers, which means that such children will learn differently and react differently to situations occurring in the classroom (Harden et al., 2016; Jaffee & Christian, 2014; Klinic Community Health Centre, 2013). Traumatized children have difficulty with cognition, memory, attention, language, and executive functioning skills, which impacts their ability to be successful in the classroom (Harden et al., 2016; Jaffee & Christian, 2014). Furthermore, trauma symptoms are often confused with ADHD, ODD, and other behaviour disorders, as the outward presentation of trauma symptoms is similar (Arbeau et al., 2017; Becker & McCloskey, 2002; Briscoe-Smith & Hinshaw, 2006; Ford et al., 1999; Ford et al., 2000; Harden et al., 2016; Wozniak et al.,

2000). This may lead to behaviour management strategies being used to address these issues that may not be appropriate for an individual who has been traumatized. Furthermore, traumatized children may react differently, or not at all, to reward systems commonly implemented within classrooms to manage behaviour due to dysfunction in their dopaminergic systems (Jaffee & Christian, 2014). Moreover, trauma and PTSD symptoms are related to increased rates of reactive aggression, meaning that when traumatized children perceive a threat, feel frustrated, or are provoked, they present with angry, defensive responses (Ford, Fraleigh, & Connor, 2010; Jaffee, & Christian, 2014). This can be viewed as outbursts of aggression and can be highly disruptive within a school setting. Consequently, traumatized children often achieve lower academic scores and generally perform poorly on a variety of learning tasks (Crozier & Barth, 2005; Harden et al., 2016; Stahmer et al., 2009).

The teacher's role with trauma in schools. Within the school context, teachers not only impact the children they teach academically, but they also serve as emotional supports, role models, and help in guiding interactions among children as well (Alisic et al., 2012). Although there is a paucity of research in this area, Alisic et al. (2012) suggest that teachers are not well prepared to support children with histories of trauma. In this study, a random sample of teachers in the Netherlands completed questionnaires regarding their overall teaching experience, their experience working with children who had been traumatized, and their participation in trauma-relevant training. Results indicated that although approximately 90% of teachers had experienced working directly with traumatized children, less than 10% had ever received trauma-informed training. This is a significant discrepancy given the considerable impact educators have on the lives of the children they teach.

Impact of bullying on school disengagement. The connection between bullying and school disengagement is not only obvious, as bullying most often occurs at schools, it is also well founded in research (e.g., Due & Holstein, 2008; Fekkes et al., 2005; Nansel et al., 2001, Olweus, 1993). School disengagement has been associated with both being a victim of bullying and externalizing problems within which being a perpetrator of bullying coincides. Unsafe school environments and schools where violence is perpetrated are associated with increased rates of school refusal, a critical factor that influences school disengagement (Egger, Costello, & Angold, 2003; Wilkins, 2008). Furthermore, being a victim of bullying has also been linked to poor academic performance which again, is a factor that contributes to school disengagement (Bakken & Gunter, 2012; Menard & Grotpeter, 2011). Externalizing problems such as displays of aggression and violence, are highly related to those involved in the perpetration of bullying behaviours, and are associated with increased rates of school dropout (Kasen, Cohen, & Brook, 1998; Newcomb et al. 2002). Therefore, previous studies suggest that being a victim, perpetrator, or bully-victim may all contribute to an increased risk of school disengagement.

Current Study

Although it has been well established that trauma and adverse childhood experiences can lead to a myriad of negative outcomes in adulthood, little research has examined the more immediate effects of trauma on educational outcomes specifically. Some preliminary studies show that trauma may lead to poor educational outcomes, poverty, and unemployment (Bateman, Henderson, & Kezelman, 2013). However, few studies exist to further define or support the directionality of such relationships. Furthermore, although trauma and bullying are both common occurrences in school-aged

populations, an ongoing debate remains in the literature as to whether or not bullying can be included within the definition of a traumatic life event (Penning et al., 2010).

This study in examined the effects of trauma on bullying and school disengagement. Schools are important institutions in the lives of children, and school success is related to overall success later in life. As such, this study explored issues relating trauma histories in both interpersonal (i.e., chronic neglect, and physical, sexual, and emotional abuse) and non-interpersonal contexts of trauma (i.e., living in a war zone and witnessing or experiencing a severe accident, disaster, or terrorism, witnessing domestic violence, etc.) to bullying behaviours in school-aged children. As one of the first studies of its kind, this study explored the relationship between childhood traumatic events combined with bullying behaviours and examined the cumulative relationship of these two phenomena in regard to risk of school disengagement.

Hypothesis 1: Children/youth with trauma histories would be significantly more likely to be involved in bullying behaviours, either as the victim, the perpetrator, or a bully-victim, compared to those without histories of trauma.

Hypothesis 2: Children/youth who have experienced interpersonal trauma would be significantly more likely to be involved in bullying behaviours in general, compared to those with experiences of non-interpersonal trauma.

Hypothesis 3: Children/youth who have experienced a traumatic life event would show significantly greater rates of school disengagement when compared to those without a history of trauma.

Hypothesis 4: Children/youth who have been victims, perpetrators, or are bully-victims, would have significantly higher rates of school disengagement when compared to those with no history of bullying.

Hypothesis 5: Children/youth who have experienced both trauma and bullying will be at the greatest risk of school disengagement compared to those without the combination of these two experiences.

Method

Participants

The participants in this study consisted of a clinical convenience sample of 8589 children and youth who completed the interRAI ChYMH assessment while receiving services from over 50 mental health agencies in Ontario. Ages of the participants ranged from 4 to 18 years. Children/youth with developmental disabilities were excluded from this study. There was no direct benefit for participating in this study and the quality of health care received by the participants was unaffected by participation in this study.

Instrument

The interRAI Child and Youth Mental Health (ChYMH) Assessment was administered as part of typical practice to children/youth accessing mental health services from such agencies (Stewart et al., 2015a). The ChYMH is a comprehensive evaluation developed by interRAI that involves clinical interviews as well as information gathered from a variety of other sources to develop a complete overview of a child/youth's mental health profile. With over 400 data elements, the ChYMH is a multidisciplinary tool designed to provide a comprehensive overview of a client through the use of embedded scales designed to assist with outcome measurements and care planning protocols for high-risk areas. Algorithms incorporated throughout the instrument calculate both scales and Collaborative Action Plans (CAPs) that can be used to assist with measuring and monitoring areas of concern as well as assist with care planning by providing evidence-informed guidelines and intervention suggestions, respectively. CAPs are evidence-

informed plans that indicate the presence of imminent risk. They also provide clinicians with recommendations for further clinical review and possible intervention strategies based on the specific items that are included in each CAP.

The interRAI suite of instruments was developed by the collaborative efforts of a diverse network of researchers aiming to promote evidence-informed clinical practices and policy decision-making worldwide. All interRAI instruments and assessments are rigorously researched and tested to ensure stringent psychometric properties suitable for international implementation for both adults (e.g., Burrows, Morris, Simon, Hirdes, & Phillips, 2000; Martin, Hirdes, Fries, & Smith, 2007; Morris, Carpenter, Berg, & Jones, 2000; Perlman & Hirdes, 2008), as well as children and youth (e.g., Stewart, Currie, Arbeau, Leschied, & Kerry, 2015; Stewart & Hamza, 2017; Lau, Stewart, Saklofske, Tremblay, & Hirdes, 2018; Phillips et al., 2012; Phillips & Hawes, 2015).

Several items from the interRAI ChYMH were included in the current study to investigate the relationship between traumatic life events and bullying behaviours (being a victim of bullying, being a perpetrator of bullying, being a bully-victim, and neither), as well as the cumulative effect of experiencing both trauma and bullying on school disengagement (Stewart et al., 2015b).

Demographics. The assessment provided demographic data, such as the child/youth's age and sex, which was used to control for variance in such measures during analysis. Furthermore, sex differences were also examined using this data. Refer to Table 1 for specific statistics.

Traumatic Life Events. Items included in the interRAI ChYMH Traumatic Life Events CAP were combined to create two new variables representing different categories, or types, of traumatic life events. The Traumatic Life Events CAP is designed to flag

those who are at immediate risk and provide safety planning and interventions for children/youth with actual or suspected histories of trauma (Stewart et al., 2015c). This CAP triggers at two levels: Level A is for immediate risk caused by recent traumatic events, whereas Level B is for those who have experienced trauma at some point in their lives, but do not trigger the CAP for immediate safety concerns. Rather than using the CAP as it is outlined in the manual, this study sought to divide trauma into two categories: interpersonal versus non-interpersonal trauma. This was done to explore whether a specific type of trauma (interpersonal or non-interpersonal in nature) might predict whether an individual would be engaged in bullying as either a victim or a perpetrator. Based on the previous definitions of interpersonal and non-interpersonal trauma, the following variables were created. To create a composite variable accounting for interpersonal trauma, the following items from the Stress and Trauma section of the ChYMH instrument were partialled out to include: sexual assault or abuse; physical assault or abuse; emotional abuse; and chronic neglect (represented by the presence of emotional neglect, physical neglect, and neglecting safety needs). To create a composite variable accounting for non-interpersonal trauma, the following items were included: victim of crime; serious accident or physical impairment; death of a caregiver; immigration; lived in a neighbourhood with pervasive violence; lived in a war zone or an area of violent conflict (combatant or civilian); witnessing domestic violence; and witnessing a severe accident, disaster, terrorism, violence, or abuse. Each of these items was scored as 0 = *never,* 1 = *more than 1 year ago,* 2 = *31 days-1 year ago,* 3 = *8-31 days ago,* 4 = *4-7 days ago,* and 5 = *in the last 3 days.* For the purposes of this study, the items were treated dichotomously (0 = *never experienced* and 1 = *experienced at least once during lifetime*). Then, using these two new variables, a third composite variable was

created to account for all traumatic life experiences wherein 1 = *experienced interpersonal trauma only*, 2 = *experienced non-interpersonal trauma only*, 3 = *experienced both interpersonal and non-interpersonal trauma*, and 0 = *never experienced trauma.* This was third and final variable was the only variable included in subsequent analyses to account for trauma.

Bullying. Bullying behaviour was examined using two items from the interRAI ChYMH addressing the perpetration of bullying and being the victim of bullying. The first item was used to determine presence of bullying behaviours towards peers (i.e., child/youth demonstrates a pattern of repeated oppression or victimization of peers; perpetrator). The second item was used to determine whether or not the child/youth had ever been the victim of bullying. Each item was originally coded using the same scheme: 0 = *never,* 1 = *more than 1 year ago,* 2 = *31 days-1 year ago,* 3 = *8-31 days ago,* 4 = *4-7 days ago,* and 5 = *in the last 3 days.* For the purposes of this study, the items were treated dichotomously (0 = *never engaged in bullying behaviour(s)* and 1 = *engaged in bullying behaviour(s))*. Then, a composite variable was created to combine these two items into a single variable that would account for all bullying behaviours, wherein 1 = *perpetrator of bullying only,* 2 = *victim of bullying only,* 3 = *bully-victim*, and 0 = *neither victim nor perpetrator of bullying.*

School Disengagement Scale. School disengagement was identified using the interRAI *School Disengagement Scale,* which measures factors contributing to the child/youth's risk of becoming disengaged from education or having a disrupted schooling experience. Examples of the factors evaluated include an assessment of the child/youth's productivity or disruptiveness at school, satisfaction with school, and overall academic performance. All eight items included in the scale were scored as 1 =

yes and 0 = *no.* A higher score on the interRAI *School Disengagement Scale* indicates greater concern for school disengagement, with the range of possible scores being between 0 and 8.

Procedure

Approval was granted through Western University's ethics board (REB #106415) for the secondary analysis of data collected using the interRAI ChYMH instrument, which was carried out by trained assessors in various agencies throughout the province of Ontario. Data collected through the implementation of the interRAI ChYMH is stored on a secure server (VPN protected) at interRAI Canada at the University of Waterloo. However, this data does not include any personal identifiers and instead includes a randomly generated participant number used only for research purposes. De-identified data is provided to the lead interRAI developer and is stored on three password protected standalone computers (e.g., no access to internet; no usable USB ports) in the primary investigator's locked laboratory at Western University.

Data collected from October 2012 to January 2018 was used in this study. Trained clinicians implemented the interRAI ChYMH as part of typical practice for children and youth seeking mental health services in several agencies across Ontario. All assessors were required to have a degree or diploma in the field of mental health as well as two years of clinically relevant experience. Through a semi-structured interview, either in person or over the phone, assessors gathered information over the course of 60-90 minutes from a variety of sources (i.e., conversations with parents/guardians, the child, and teachers; medical and education records). Only assessments completed at intake were included in this study, although the interRAI ChYMH can also be used as a monitoring assessment and at discharge.

Data Analysis

First, descriptive and frequency statistics were conducted for all variables. Second, chi-square analyses and independent-samples t-tests were conducted to examine any sex differences among the variables used to predict bullying behaviours. Predictor variables included the variable created to account for traumatic life experiences. Then, a multinomial logistic regression was conducted to predict bullying behaviours (victim, perpetrator, bully-victim, or neither) based on traumatic experiences. Next, a negative binary logistic regression was conducted to predict school disengagement from traumatic life events, bullying, and the cumulative effect of these experiences. All analyses were performed using SPSS version 25 software (IBM Corp., Armonk, NY) and the assumptions for all tests were examined to control for threats against statistical conclusions.

Results

Preliminary Analyses & Sample Characteristics

In the present study, of the 8589 children/youth examined: 9.1% had experienced only interpersonal trauma; 19.6% had experienced only non-interpersonal trauma; 30.1% had experienced both types of trauma; and 41.2% had never experienced any form of traumatic life event. Furthermore, 8.0% of the children/youth were classified as perpetrators of bullying, 33.2% were classified as victims of bullying, 12.5% were classified as bully-victims, and 46.3% had never engaged in either form of bullying behaviour. The average score on the interRAI *School Disengagement Scale* was 1.84 (*SD* = 1.84). Table 1 presents the frequency distributions for all variables used in subsequent analyses.

Chi-square analyses revealed that males compared to females, were more likely to have experienced only non-interpersonal trauma, both types of trauma, and neither type of trauma, $\chi^2(3) = 94.19$, $p < .001$. However, females, compared to males, were more likely to have experienced only interpersonal trauma. Further chi-square analyses revealed that males, compared to females, were more likely to be perpetrators of bullying, victims of bullying, bully-victims, and have no bullying history, $\chi^2(3) = 143.65$, $p < .001$. Sex differences are presented in Table 2. An independent samples t-test examining sex differences for the interRAI *School Disengagement Scale* were statistically significant, $t(8476) = 14.088$, $p < .001$. Male children/youth ($M = 2.07$, $SD = 1.88$) scored significantly higher than female children/youth ($M = 1.51$, $SD = 1.72$) on the interRAI *School Disengagement Scale*.

Table 1.

Sample Characteristics (*N* = 8589).

Variables	*Frequency (%)*	*Mean*	*SD*
Age at assessment		12.0	3.58
Biological sex			
Male	5015 (58.4)		
Female	3574 (41.6)		
Bullying behaviour			
Victim	2851 (33.2)		
Perpetrator	686 (8.0)		
Bully-victim	1077 (12.5)		
Neither	3974 (46.3)		
Type of trauma experience			
Interpersonal	782 (9.1)		
Non-interpersonal	1683 (19.6)		
Both	2585 (30.1)		
Neither	3538 (41.2)		
School disengagement		1.84	1.84

Table 2.

Sex Differences (N = 8589).

Variables	*Male*			*Female*		
	Frequency	*Mean*	*SD*	*Frequency*	*Mean*	*SD*
Age at assessment		11.31	3.49		12.97	3.47
Bullying behaviour						
Victim	1450			1401		
Perpetrator	502			184		
Bully-victim	685			392		
Neither	2377			1597		
Type of trauma experience						
Interpersonal	361			421		
Non-interpersonal	1067			616		
Both	1412			1173		
Neither	2174			1264		
School disengagement		2.07	1.88		1.51	1.72

Primary Analyses

A multinomial logistic regression was employed to predict the presence/absence of bullying behaviour (being a perpetrator, victim, bully-victim, or neither) from sex, age, and traumatic life experiences. Results were interpreted with the alpha level set at .001 after generating a Bonferroni correction for sample size. The full model provided a significantly better fit for the data than the intercept-only model, indicating that when the

predictor variables were considered together, the different types of bullying behaviours were reliably distinguished between those who were perpetrators, victims, bully-victim, or neither ($\chi^2(15) = 1228.544$, $p < .001$). Results indicated of the three predictors in the model, age, biologically male sex, and the presence of a history of traumatic life events, all significantly predicted engagement in bullying behaviours, including being a victim, perpetrator, and a bully-victim. Interestingly, the presence of a history of both types of trauma, compared to having no history of trauma, increases the likelihood of being a perpetrator of bullying by 249.3%; of being a victim of bullying by 147.8%; and of being bully-victim by 627.7%, when each type of bullying is compared to having no bullying history. Furthermore, experiencing only interpersonal trauma, compared to having no trauma history, increases the likelihood of being a bully-victim by 284.9%, whereas experiencing only non-interpersonal trauma only increases the likelihood of being a bully-victim by 158%, when comparing each type of bullying behaviour with having no history of bullying behaviour. Also, experiencing only interpersonal trauma, compared to no history of trauma, also increases the likelihood of being only a victim of bullying by 139.2%, whereas experiencing only non-interpersonal trauma only increases the likelihood of being only a victim of bullying by 53.6%, compared to those with no bullying history. Table 3 presents the results for the model, including the regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals.

Table 3.

Multinomial logistic regression analysis predicting bullying behaviour (N = 8589).

Outcome	*Predictor*	β	Wald chi-square	Odds ratio Exp(β)	95% C.I.	*p*-value
Perpetrator	Age	-.060	24.165	.942	.919, .964	<.001*
	Sex – male	.582	37.773	1.790	1.487, 2.155	<.001*
	Trauma – both	1.251	147.964	3.493	2.855, 4.273	<.001*
	Interpersonal	.778	20.478	2.177	1.554, 3.048	<.001*
	Non-interpersonal	.711	40.477	2.037	1.636, 2.536	<.001*
Victim	Age	.115	227.402	1.122	1.106, 1.139	<.001*
	Sex – male	-.119	5.131	.888	.801, .984	.024
	Trauma – both	.907	208.085	2.478	2.191, 2.803	<.001*
	Interpersonal	.872	90.616	2.392	1.999, 2.863	<.001*
	Non-interpersonal	.428	38.470	1.536	1.341, 1.759	<.001*
Bully-victim	Age	.057	28.624	1.058	1.037, 1.080	<.001*
	Sex – male	.369	23.724	1.447	1.247, 1.687	<.001*
	Trauma – both	1.985	465.177	7.277	6.076, 8.716	<.001*
	Interpersonal	1.348	95.887	3.849	2.939, 5.041	<.001*
	Non-interpersonal	.948	76.982	2.581	2.088, 3.190	<.001*

Note: * indicates statistically significant findings.

A negative binomial regression was conducted to predict the likelihood of being at risk for school disengagement from biological sex, age, traumatic life experiences, and

bullying experiences. Again, results were interpreted with the alpha level set at .001. The results for the model, including the regression coefficients, interval rate ratios, significance level, and 95% confidence intervals are presented in Table 4. As presented in Table 4, the Omnibus test result was statistically significant, which suggests that the negative binomial regression model fits the data well and the estimated coefficients are significantly different from zero. Notably, for every one-year increase in age, the incidence rate for the child/youth's score on the interRAI *School Disengagement Scale* increased by 1.4%. Additionally, the incidence rate for the school disengagement score for females was 28.2% less than the incidence rate for males; meaning males were more likely than females to have higher scores on the interRAI *School Disengagement Scale*. Furthermore, compared to those who have no history of trauma, those who experienced trauma had increased incidence rates on the interRAI *School Disengagement Scale*. Specifically, those who experienced only interpersonal trauma had an increased incidence rate of 15.9%, those who experienced only non-interpersonal trauma had an increased incidence rate of 20.5%, and those who experienced both interpersonal and non-interpersonal trauma had an increased incidence rate of 18.7%. These results suggest that those who have experienced only non-interpersonal trauma experience the most challenges in their education, compared to those who have experienced only interpersonal or have experienced both types of trauma. In regard to bullying behaviours, compared to those with no history of bullying behaviours, those who were victims of bullying, perpetrators of bullying, and bully-victims, each had increased incidence rates of 23.8%, 65.4%, and 92.0%, respectively, for their predicted score on the interRAI *School Disengagement Scale*. This suggests that those who are bully-victims are at the highest risk for having a disrupted education. Initially, an interaction between trauma and

bullying was examined, but was subsequently removed from the analysis after it was found to have no statistical improvement on the overall model.

Table 4.

Negative binomial regression result using trauma experiences and bullying behaviour to predict school disengagement (N = 8478).

Variables	β	Exp(β)	*p*-value	95% C.I.
Age	.014	1.014	.001*	1.141, 1.400
Sex – female	-.332	.718	<.001*	.867, .760
Trauma experience				
Interpersonal	.147	1.159	.004	1.048, 1.280
Non-interpersonal	.187	1.205	<.001*	1.120, 1.297
Both	.171	1.187	<.001*	1.110, 1.269
Bullying behaviour				
Victim	.213	1.238	<.001*	1.162, 1.319
Perpetrator	.503	1.654	<.001*	1.147, 1.826
Bully-victim	.652	1.920	<.001*	1.766, 2.088

Deviance statistic = 7339.767, df = 8469, Value/df = .867; Omnibus test statistic: Likelihood Chi-square value = 544.025 (p-value<.001).

Discussion

Engaging students within school settings can be challenging for any demographic of children/youth. However, this challenge is exacerbated for those who have experienced traumatic life events or engage in bullying behaviours (Harden et al., 2016; Salmivalli, 2010). As previously discussed, research shows that experiencing a traumatic life event can lead to a myriad of challenges later in life, such as structural brain changes,

compromised responses to subsequent stressors, limitations in cognitive development, delays in language development, and memory issues (Harden et al., 2016; Arbeau et al., 2017; Becker & McCloskey, 2002; Briscoe-Smith & Hinshaw, 2006; Ford et al., 1999; Ford et al., 2000; Harden et al., 2016; Wozniak et al., 2000). Many of these factors are key components of school functioning and school engagement, which places children/youth with trauma histories at an increased risk of disengaging within school settings. Bullying behaviours also increase a child/youth's likelihood of experiencing a disrupted education by placing such children/youth at an increased risk of having poor peer relationships and decreased school connectedness, resulting in increased risk of school dropout (Orpinas, & Raczynski, 2016). Despite knowing that relationships exist between traumatic life events, bullying, and school disruption, little research currently specifies these relationships or examines the cumulative influence of both traumatic life events and bullying on school disengagement. The present study addressed this gap in the literature by examining what type of traumatic life events (interpersonal versus non-interpersonal) predicted whether an individual would engage in bullying, either as a perpetrator, victim, or bully-victim. Furthermore, this study also examined the cumulative influence of traumatic life events and bullying on risk of school disengagement.

Based on previous literature, biological sex was expected to be an important risk factor for predicting which type of trauma was experienced. Consistent with previous research, females were more likely than males to have only experienced interpersonal trauma, which included experiences of sexual abuse/assault. Males, on the other hand, were more likely to have only experienced non-interpersonal trauma. These findings are consistent with previous research, which indicates that females report experiencing interpersonal violence, especially sexual abuse/assault, far more often than males; males

tend to report far more instances of non-interpersonal violence resulting in PTSD symptomology instead (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005; Arbeau et al., 2017; Collin-Vézina, Coleman, Milne, Sell, & Daigneault, 2011). The study also found that males were more likely to have experienced both types of trauma.

Consistent with previous research, the current study also found that males were more likely to be involved in bullying behaviours in general, as victims, perpetrators, and bully-victims (Menesini & Salmivalli, 2017). Although some previous research indicates that females are more likely to be victims of bullying, whereas males tend to be perpetrators of bullying, this finding was not replicated in the current study (Claes, Luyckx, Baetens, Van de Ven, & Witteman, 2015; Due and Holstein, 2008; Viljoen, O'Neill, & Sidhu, 2005). Males also scored significantly higher in terms of risk of school disengagement, and again, this finding is consistent with previous research (Wang, & Eccles, 2012).

Age was also expected to be a significant predictor of bullying and school disengagement. Consistent with previous research this finding was replicated in the current study. Interestingly, and inconsistent with previous findings, while younger age was associated with being a perpetrator of bullying, older age was associated with being a victim of bullying and a bully-victim (Monks & Smith, 2006). Previous studies have found that younger children report more occurrences of victimization, but that this tends to decrease with age (Monks & Smith, 2006). Some studies suggest that this trend may be due to changing cognitive development that leads to changing definitions and inclusion criteria regarding what behaviours are considered “bullying” (Monks & Smith, 2006). Some studies have suggested that bullying behaviours in general, tend to peak around 12-15 years of age and then subsequently decrease with age (Menesini & Salmivalli, 2017).

One suggestion as to why the current study's findings differed from previous research is that previous studies included only child-reports, whereas the tool used in this study was multifaceted and included input from multiple sources. Older age was also significantly predictive of increased risk of school disengagement, which again, is consistent with previous research (Wang, & Eccles, 2012). Previous studies indicate that older students typically report lower levels of school engagement on several indicators of school engagement (Wang, & Eccles, 2012).

Consistent with previous research, nearly 60% of the children/youth included in this study had experienced some form of traumatic life event at least once in their lifetime (Gallitto, Lyons, Weegar, & Romano, 2017). Although estimates of the prevalence rates of bullying vary greatly amongst current research, the finding that approximately 50% of children/youth in the current study had engaged in bullying as a victim (33%), perpetrator (8%), or victim-bully (13%), seems to be relatively consistent with, or slightly higher than, most other studies (Penning et al., 2010; Salmivalli, 2010; Due & Holstein, 2008; Fekkes et al., 2005; Nansel et al., 2001). One explanation for the slightly elevated rates of bullying found in this study may be due to differences in the overall populations included, as the participants in the current study were seeking mental health services, and mental health issues are related to increases in bullying behaviours (Penning et al., 2010). As predicted, those with trauma histories were more likely to be involved with bullying behaviours, as the victim, the perpetrator, and as a bully-victim, compared to those without histories of trauma. More specifically, it was found that those who had only experienced interpersonal trauma or both interpersonal and non-interpersonal trauma were even more likely to be involved in bullying behaviours in general, compared to those who had only experienced non-interpersonal trauma. This provides further evidence

that traumatic life events, especially those that are interpersonal in nature, are highly related to bullying behaviours. This suggests that traumatic life events and bullying coincide, providing further evidence that bullying should indeed be considered a traumatic life event, as several previous studies have already suggested (Carney, 2008; Penning et al., 2010).

In regards to school disengagement, as predicted, those children/youth who had experienced a traumatic life event were at greater risk of school disengagement, compared to those who had never experienced trauma. However, this finding was restricted to those cases where there was a reporting of non-interpersonal trauma or both types of trauma, but not for those who had only experienced interpersonal trauma. This is likely due to a greater proportion of participants having only experienced non-interpersonal trauma versus only interpersonal trauma. However, the finding that those who had experienced non-interpersonal trauma are at increased risk of disengagement is consistent with previous research suggesting that children/youth exposed to adverse experiences, such as neighbourhood and pervasive violence, are at increased risk of school difficulties and dropout (Borofsky, Kellerman, Baucom, Oliver, & Margolin, 2013; Dorado, Martinez, McArthur, & Leibovitz, 2016). Furthermore, it was found that those who had been victims, perpetrators, or bully-victims were also at an increased risk of school disengagement, compared to those with no history of bullying. Those who were bully-victims were at the highest risk of school disruption, compared to those who were either victims or perpetrators of bullying. This is consistent with previous literature that indicates that students who perceive that their school climate includes high levels of bullying are more likely to disengage from school (Mehta, Cornell, Fan, & Gregory, 2013).

When examining the cumulative impact of experiencing traumatic life events and bullying, the current study found that the interaction between these two variables decreased the model's accuracy and was thereby removed from the analyses. Unfortunately, the study was unable to accurately examine the combined impact of these experiences, and future research of this particular phenomenon is suggested. Ultimately, this study found that children/youth who have experienced only non-interpersonal trauma and those who are bully-victims experience the highest risk of school disengagement. Although this is mostly consistent with previous research, these findings may also be due to the larger proportion of participants in these sub-categories.

Clinical Implications

Keeping children/youth engaged within the school system plays a significantly important role in determining the trajectory of an individual's overall success in life. In the present study, several risk factors for school disengagement, such as which type of trauma experiences and which type of bullying behaviours place children/youth at the greatest risk of disengaging from school were explored to elucidate which areas of concern should inform targeted prevention and intervention strategies aimed at children and youth within the school setting. As such, the school setting is the ideal location to provide prevention and intervention strategies for children/youth, by offering safe and supportive environments that can mitigate the effects of trauma and as the key location wherein bullying most often takes place (Hoover et al., 2018).

Previous studies strongly indicate that traumatized children struggle in school and face severe negative academic outcomes as a result, reflected in higher rates of absenteeism, poorer academic performance, and increased rates of dropout (Hoover et al., 2018). Prior studies also indicate that these are key areas that increase a students'

likelihood of disengaging from school (Fredricks et al., 2004). Therefore, it is important to provide widespread trauma-informed interventions in schools, with the end goal being to create "trauma-informed schools" throughout the United States and Canada (Hoover et al., 2018). Trauma-informed schools would incorporate elements of safety, trust, peer support, collaboration, empowerment, and culture to offer both universal initiatives (i.e., improving school climate) as well as tiered supports for targeted mental health interventions (Hoover et al., 2018).

Many evidence-informed trauma interventions already exist. However, most of these services have only been tested in controlled research environments, and few, if any, are implemented directly within schools. Currently, interventions within schools typically operate within a multi-tiered system consisting of three tiers that increase in intensity at each level. For example, tier one consists of interventions put in place in the classroom, available for all students; tier two involves removing specific students for short periods of time to be provided with more targeted interventions in small-group settings; and tier three involves even more intensive interventions for those students who continue to inadequately respond to the tier two interventions (Denton et al., 2013).

Hoover et al. (2018) implemented their Cognitive Behavioural Intervention for Trauma in Schools (CBITS) across the state of Connecticut in response to this gap in the literature regarding direct implementation of trauma-informed interventions in schools. Not only was there a reduction in the participants' PTSD symptoms and in the severity of their problem behaviours, overall functioning was also improved, indicating that this intervention may also increase school engagement for traumatized children/youth. However, the implementation of this study was at tier two and three and was implemented by trained clinicians, which may not be feasible for widespread

implementation. Another option does exist for integrating trauma-informed practices into school settings and it involves training individuals who work with all children daily: teachers.

Teachers play a fundamental role in the overall development of children/youth, not only as educators, but as role models and emotional supports as well (Alisic et al., 2012). Teachers interact with the children/youth in their classes constantly and are likely aware of any history of trauma they bring with them into the classroom. However, as aforementioned, studies show that teachers are unprepared to deal with the behaviour and symptomology that traumatized children/youth bring with them into the classroom. Yet, although researchers know this, and studies indicate the importance of providing teachers with trauma-informed training, teachers rarely receive this kind of training. According to Chak (2010), professionals with trauma-informed training are better able to support traumatized children/youth during the healing process by more accurately recognizing and understanding trauma behaviours. Furthermore, the first step in creating trauma-sensitive environments within school settings is to increase the educators' awareness of the tenants of trauma-informed care (Mireles, 2010). This can be done at the simplest level by having teachers re-frame their thinking so as to ask "what's happened to the student" rather than "what's wrong with the student" when dealing with adverse behaviours. Providing trauma-informed training to teachers would likely increase student engagement by informing teachers of the warning signs of trauma and providing them with appropriate tools to address these issues in the classroom.

Bullying is also widely recognized as a serious global problem impacting the health and wellbeing of children and youth. It is recognized as the most common form of violence faced by children and youth within school contexts. Bullying is uniquely

problematic for children/youth who differ from their peer group, such as traumatized children. Furthermore, victims of bullying experience higher rates of absenteeism and poorer school achievement, both of which can contribute to school disengagement (Menesini & Salmivalli, 2017). Previous studies also report strong positive correlations between bullying and school climate. School climate is defined as the degree of respect and sense of belonging a student feels toward their school, and is a strong predictor of bullying behaviour (Blitz & Lee, 2015). Additionally, poorer school climate is significantly associated with increased risk of school disengagement (Fredricks et al., 2004). As such, studies on bullying prevention and intervention initiatives are widespread throughout Western societies. Gaffney, Ttofi, and Farrington's (2019) meta-analysis reported that many of the scientifically evaluated programs that currently exist were effective, with reductions of 15 to 20% in terms of both victim and perpetrator behaviours. However, it should be noted that some intervention/prevention programs show no reduction in bullying behaviours whatsoever (Menesini & Salmivalli, 2017). Yet in spite of the knowledge that bullying has serious, negative impacts, and despite the widespread implementation of prevention and intervention programs, bullying continues to be extremely common in schools. For a detailed review of the current atmosphere of bullying in schools, see Menesini and Salmivalli (2017).

Despite being unable to examine the combined influence of both traumatic life events and bullying behaviours on school disruption as deeply as had been anticipated in the current study, strong correlations between these phenomena remain. The current study contributed to the literature supporting the inclusion of bullying within the definition of traumatic life events. As this study, and other studies before it demonstrate, traumatization is linked to bullying behaviours, with children/youth who have histories of

trauma being significantly more likely to be involved in bullying (Blitz & Lee, 2015). Furthermore, previous studies also show a strong relationship between a child/youth's home environment and involvement in bullying at school (Blitz & Lee, 2015). Moreover, as outlined in the literature review, research also shows that toxic stress, whether it stems from exposure to traumatic life events or bullying, in the absence of caring adults, has detrimental impacts on both the development and wellbeing of children/youth (Shonkoff et al., 2012; Blitz & Lee, 2015). Therefore, interventions that target both traumatic experiences and bullying simultaneously, within school settings where children/youth have access to caring adults, such as teachers, would likely provide the greatest success in increasing school engagement for these children/youth.

Currently few studies exist that combine trauma-informed approaches and bullying initiatives. Blitz and Lee (2015) proposed a preliminary model for an intervention method wherein trauma-informed supports for school climate and bullying prevention were examined. First, the program began by providing educators with training in the evidence-based Olweus Bullying Prevention Program (OBPP; Olweus, 1993). OBPP was then implemented in various schools through a trauma-informed lens. A team of social workers worked closely alongside school personnel to provide ongoing trainings on toxic stress and social-emotional learning techniques drawn from Conscious Discipline. This is an approach to classroom management, emotional intelligence, and character education that operates under the assumption that children are motivated by caring, connection, contribution, and feeling empowered, and not through the use of external rewards, but instead, through the promotion of conflict resolution (Blitz & Lee, 2015). This approach may be especially beneficial for traumatized children who may

experience dysfunction in their dopaminergic systems and struggle with reward processing as a result of developmental trauma (Dillon et al., 2009; Guyer et al., 2006).

The program also included trauma-informed and strengths-based assumptions as part of the fundamental elements. More often than not, trauma is ongoing for children/youth and may continue recurring throughout the time of the implementation of an intervention. As such, the team incorporated the assumptions that "[…] all children want to learn and are naturally curious; children want loving and trusting relationships; and parents love their children and want the best for them" (Blitz & Lee, 2015, p. 35). Another assumption that is key, and may be the most important assumption of any trauma-informed practice, is taking on the view that something has happened to the children/youth that is causing their behaviour(s), rather than judging whether something is wrong with them (Blitz & Lee, 2015). As one of the only trauma-informed bullying models this author is aware of, and although this emerging model was cross-sectional in design and has not be rigorously evaluated for reliability and validity as of yet, it is an important step in the right direction in regards to how bullying interventions should be implemented within school settings so as to reduce traumatization and positively impact as many children/youth as possible through the use of a trauma-informed lens.

The interRAI ChYMH is also an incredibly versatile tool that can be used by clinicians and educators alike to guide care planning and the selection of evidence-based interventions. As previously discussed, the interRAI ChYMH includes both scales (as described in the study through the use of the interRAI *School Disengagement Scale*) as well as CAPs (Pearce et al., 2015). CAPs provide evidence-informed guidelines and intervention suggestions that are based on best practices across three continents. The Education CAP can be particularly useful in not only identifying children/youth at risk for

dropping out, but can also assist in re-integrating children/youth into the school setting (Pearce et al., 2015). The Education CAP aims to reduce the many risks associated with dropping out (see detailed review above), enhance school engagement, increase peer support and help the child/youth engage in a social network, and fosters motivation, competency, and autonomy (Pearce et al., 2015). Therefore, CAP is a valuable tool that clinicians and educations can use to assist children/youth who have experienced traumatic life events or bullying, and as a result, may be at increased risk of school disruption.

Limitations

Despite the large sample size and the use of a comprehensive, multi-sourced assessment tool completed by trained clinicians, this study is not without limitations. First, because the assessment was completed as part of standard of care at various mental health agencies across the Province of Ontario, the participants in this study were accessed as a convenience sample, not as a random sample selected to participate in this study. Additionally, due to the cross-sectional nature of this study, directionality cannot be determined. Although it is assumed that the examined experiences of trauma occurred prior to the bullying behaviours, and that the examined bullying behaviours occurred prior to experiencing school disengagement, it is also possible that experiencing school disengagement could increase the presence of traumatic experiences and/or bullying behaviours in the future. Moreover, again due to the cross-sectional nature of this study, age-related findings may not reflect true developmental trends, and may simply indicate cohort effects. The current study did not examine recency, frequency, or severity of trauma or bullying experiences. With the exception of the distinction between interpersonal and non-interpersonal trauma, and whether an individual was the victim, perpetrator, or bully-victim, the extent of the traumatic life events and bullying

experienced is unknown. It is possible that the recency of the trauma and/or bullying, the frequency of these events, and the severity of each event may either differentially or combine to influence the level of risk of school disengagement. Finally, although previous studies indicate that cumulative trauma, that is, experiencing multiple traumatic life events, increases the likelihood of being diagnosed with PSTD and symptom complexity, this was not considered in this study. Due to the nature of the study, the cumulative influence of multiple traumas was too complex and thus not included. However, the impact of multiple traumas is likely influential both in terms of predicting bullying behaviour and risk of school disengagement.

While not necessarily a limitation, it should be noted that the population included in this study was a clinical sample. As such, clinical samples often differ from non-clinical samples in that they typically include a larger number of male participants (as demonstrated in this sample), increased prevalence rates for trauma (although the findings in this study are consistent with other studies), and increased prevalence rates of learning disabilities (which impact school disengagement), to name a few examples. Furthermore, typically, studies regarding traumatic life events include clinical samples, whereas studies relating to bullying often involve school samples of non-clinical populations. Therefore, the prevalence rate found for bullying may have been impacted by the nature of the sample. Additionally, scores of school disengagement may also have been impacted by the nature of the sample. Specifically, given that clinical samples have children who are more likely to struggle with learning issues, parental mental health issues, as well as other related sequelae, such risk factors would likely impact school success and engagement.

Future Directions for Research

Future research should examine the combined experiences of traumatic life events and bullying on school disengagement to determine if the combined influence of these two aversive life experiences increase a child/youth's likelihood of school disengagement. Moreover, all of a child/youth's adverse life experiences should be considered when examining risk factors for school disengagement such that specific interventions can be put in place that effectively target all of the child/youth's risk factors. Moreover, a longitudinal study to examine whether recency, frequency, and/or severity in the occurrence of traumatic life events and bullying behaviours are important predictors of school disengagement is needed. Knowing when these events occurred and how impactful they were may be important in subsequently knowing when targeted interventions need to be implemented in order to achieve the best outcomes in reducing school disengagement. A longitudinal study would also allow for age-related differences to be more reliably measured by eliminating the possibility of cohort effects, thereby allowing trajectories in bullying behaviour and school disengagement to be more accurately evaluated. Furthermore, through the lens of a longitudinal study, cumulative traumas could be examined to explore whether or not experiencing multiple traumatic events increases one's engagement in bullying behaviours and/or increases one's risk of school disengagement.

Conclusions

Traumatic life events and bullying can result in serious negative outcomes for children and youth, placing them at increased risk of school disengagement. Understanding which type of traumatic experiences place children/youth at risk of being either a victim or perpetrator of bullying is important. Furthermore, understanding the

precursors to school disengagement is also important as school disengagement also increases a child/youth's risk for further challenges later in life (Ferguson et al., 2005; Fredricks et al., 2004; Henry et al., 2012; Wang & Eccles, 2012). Therefore, understanding whether a specific type of trauma or bullying behaviour is particularly important in predicting one's risk of school disengagement is imperative, and determining whether there is an increased risk due to the combined effect of these experiences is vital when planning for appropriate interventions. Understanding the profiles of children/youth requiring support assists in providing the correct intervention(s) so that fewer children/youth experience disruptions in their education stemming for experiences beyond their control. All children/youth deserve the right to an education, despite their home life or circumstances that may influence their development and outward behaviour, and knowing their histories means educators, clinicians, and families can seek the appropriate support to target each individual child/youth's unique needs.

References

Alisic, E., Bus, M., Dulack, W., Pennings, L., & Splinter, J. (2012). Teachers' experiences supporting children after traumatic exposure. *Journal of Traumatic Stress, 25*, 98-101.

Arbeau, K., Theall, L., Willoughby, K., Berman, J., & Stewart, S. L. (2017). What happened? Exploring the relation between traumatic stress and provisional mental health diagnoses for children and youth. *Psychology, 8,* 2485-2495. https://doi.org/10.4236/psych.2017.814157

Bakken, Nicholas, W., Whitney, D., & Gunter, W. D. (2012). Self-cutting and suicidal ideation among adolescents: Gender differences in the causes and correlates of self-injury. *Deviant Behavior, 33*, 339–356.

Baiden, P., Stewart, S. L., & Fallon, B. (2017). The mediating effect of depressive symptoms on the relationship between bullying victimization and non-suicidal self-injury among adolescents: Findings from community and inpatient mental health settings in Ontario, Canada. *Psychiatry Research 255*, 238–247. http://dx.doi.org/10.1016/j.psychres.2017.05.018

Bailey, B. A. (2001). Conscious discipline: 7 basic skills for brain smart classroom management. Oviedo, FL: Loving Guidance.

Bateman, J., Henderson, C., & Kezelman, C. (2013). Trauma-informed care and practice: Towards a cultural shift in policy reform across mental health and human services in Australia, a national strategic direction, position paper and recommendations or the national trauma-informed care and practice advisory working group. *Mental Health Coordinating Council*.

Becker, K. B. & McCloskey, L. A. (2002). Attention and Conduct Problems in Children Exposed to Family Violence. *American Journal of Orthopsychiatry, 72*(1), 83-91. doi: 10.1037//0002-9432.72.1.83

Black, P. J., Woodworth, M., & Tremblay, M. (2012). A Review of Trauma-Informed Treatment for Adolescents. *Canadian Psychology, 53*(3), 192–203. doi: 10.1037/a0028441

Blitz, L. V. & Lee, Y. (2015). Trauma-informed methods to enhance school-based bullying prevention initiatives: An emerging model. *Journal of Aggression, Maltreatment & Trauma, 24*(1), 20-40. doi: 10.1080/10926771.2015.982238

Borofsky, L. A., Kellerman, I., Baucom, B. Oliver, P. H., & Margolin, G. (2013). Community violence exposure and adolescents' school engagement and academic achievement over time. *Psycholofy of Violence, 3*(4), 381-395. doi: 10.1037/a0034121

Briggs-Gowan, M., Carter, A., & Ford, J. (2012). Parsing the effects of violence exposure in early childhood: Modeling developmental pathways. *Journal of Pediatric Psychology, 37*, 11–22. doi:10.1093/jpepsy/jsr063

Briscoe-Smith, A. M. & Hinshaw, S. P. (2006). Linkages between child abuse and attention-deficit/hyperactivity disorder in girls: Behavioral and social correlates. *Child Abuse & Neglect 30*, 1239–1255.

Britton, G. (2005). *Development and validation of the student alienation and trauma scale* (Order No. 3178766). Available from ProQuest Dissertations & Theses Global. (305394784). Retrieved from https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-

bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/305394784?accountid=15115

Burrill, K. A. (2006). *Bully victimization, PTSD risk factors and dissociation: A correlational study* (Order No. 3218098). Available from ProQuest Dissertations & Theses Global. (304913614). Retrieved from https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/304913614?accountid=15115

Burrows, A., Morris, J., Simon, S., Hirdes, J., Phillips, C., 2000. Development of a minimum data set-based depression rating scale for use in nursing homes. *Age Ageing 29*(2), 165–172. https://doi.org/10.1093/ageing/29.2.165

Carney, J.V. (2008). Perceptions of bullying and associated trauma during adolescence. *ASCA Professional School Counselling, 11*(3), 179–188. Retrieved from https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/213315289?accountid=15115

Caspi, A., Houts, R. M., Belsky, D. W., Harrington, H., Hogan, S., Ramrakha, S. …, Moffitt, T. E. (2016). Childhood forecasting of a small segment of the population with large economic burden. *Nature Human Behaviour, 1*, 1-29. doi: 10.1038/s41562-016-0005

Chak, A. (2010). Adult response to children's exploratory behaviour: An exploratory study. *Early Child Development and Care, 180*(5), 633–646. doi: 10.1080/03004430802181965

Claes, L., Luyckx, K., Baetens, I., Van de Ven, M., Witteman, C., (2015). Bullying and victimization, depressive mood, and non-suicidal self-injury in adolescents: The moderating role of parental support. *Journal of Child and Family Studies, 24*(11), 3363–3371.

Collin-Vézina, D., Coleman, K., Milne, L. Sell, J., & Daigneault, I. (2011). Trauma experiences, maltreatment-related impairments, and resilience among child welfare youth in residential care. *International Journal of Mental Health and Addiction, 9*(5), 577-589.

Cornell, D., & Bandyopadhyay, S. (2009). The assessment of bullying. In: Jimerson, S.R., Swearer, S.M., Espelage, D.L. (Eds.), The International Handbook of School Bullying. Routledge, New York, pp. 265–276.

Crozier, J. C., & Barth, R. P. (2005). Cognitive and academic functioning in maltreated children. *Children & Schools, 27*(4)*,* 197–206.

Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior, 106,* 29-39. doi:10.1016/j.physbeh.2011.08.019

Denton, C. A., Tolar, T. D., Fletcher, J. M., Barth, A. E., Vaughn, S., & Francis, D. J. (2013). Effects of tier 3 intervention for students with persistent reading difficulties and characteristics of inadequate responders. *Journal of Educational Psychology, 105*(3), 633-648. doi: 10.1037/a0032581.

Dillon, D. G., Holmes, A. J., Birk, J. L., Brooks, N., Lyons-Ruth, K., & Pizzagalli, D. A. (2009). Childhood adversity is associated with left basal ganglia dysfunction during reward anticipation in adulthood. *Biological Psychiatry, 66,* 206-213. doi:10.1086/514415

Dorado, J. S., Martinez, M., McArthur, L. E., & Leibovitz, T. (2016). Healthy environments and response to trauma in schools (HEARTS): A whole-school, multi-level, prevention and intervention program for creating trauma-informed, safe and supportive schools. *School Mental Health, 8*(1), 163-176. https://doi.org/10.1007/s12310-016-9177-0

Dube, S. R., Felitti, V. J., Dong, M., Giles, W. H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventative Medicine, 37*, 268-277. https://doi.org/10.1016/S0091-7435(03)00123-3

Due, P., & Holstein, B.E. (2008). Bullying victimization among 13 to 15 year old school children: Results from two comparative studies in 66 countries and regions. *International Journal of Adolescent Medicine and Health 20*(2), 209–222. doi: https://doi.org/10.1515/IJAMH.2008.20.2.209

Egger, H. L., Costello, J. E. & Angold, A. (2003). School refusal and psychiatric disorders: A community study. *Journal of the American Academy of Child & Adolescent Psychiatry 42*(7), 797-807.

Fekkes, M., Pijpers, F. I., & Verloove-Vanhorick, S. P. (2005). Bullying: who does what, when and where? Involvement of children, teachers and parents in bullying behavior. *Health Education Research, 20*(1), 81–91. https://doi.org/10.1093/her/cyg100

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., … Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245-258.

Ferguson, B., Tilleczek, K., Boydell, K., Rummens, J. A., Cote, D., & Roth-Edney, D. (2005). Early school leavers: Understanding the lived reality of student disengagement from secondary school. Final Report submitted to the Ontario Ministry of Education, May 31, 2005.

Ford, J. D., Racusin, R., Daviss, W. B., Ellis, C. G., Thomas, J., Rogers, K., … & Sengupta, A. (1999). Trauma exposure among children with oppositional defiant disorder and attention deficit–hyperactivity disorder. *Journal of Consulting and Clinical Psychology, 67*(5), 786-789. doi:http://dx.doi.org.proxy1.lib.uwo.ca/10.1037/0022-006X.67.5.786

Ford, J. D., Racusin, R., Ellic, C. G., Daviss, W. B., Reiser, J. Fleischer, J., & Thomas, J. (2000). Child maltreatment, other trauma exposure, and posttraumatic symptomology among children with oppositional defiant and attention deficit hyperactivity disorders. *Child Maltreatment, 5*(3), 205-217.

Ford, J. D., Fraleigh, L. A., & Connor, D. F. (2010). Child abuse and aggression among seriously emotionally disturbed children. *Journal of Clinical Child and Adolescent Psychology (39)*1, 25-34. doi: 10.1080/15374410903401104

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.

Gaffney, H., Ttofi, M. M., & Farrington, D. P. (2019). Evaluating the effectiveness of school-bullying prevention programs: An updated meta-analytical review. *Aggression and Violent Behavior, 45*, 111-133. https://doi.org/10.1016/j.avb.2018.07.001

Gallitto, E., Lyons, J., Weegar, K., & Romano, E. (2017). Trauma-symptom profiles of adolescents in child welfare. Child Abuse & Neglect, 68(Complete), 25-35. doi: 10.1016/j.chiabu.2017.03.011

Guyer, A. E., Kaufman, J., Hodgdon, H. B., Masten, C. L., Jazbec, S., Pine, D. S., & Ernst, M. (2006). Behavioral alterations in reward system function: The role of childhood maltreatment and psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry, 45,* 1059-1067. doi:10.1097/01.chi.0000227882.50404.11

Harden, B. J., Buhler, A., & Parra, L. J. (2016). Maltreatment in infancy: A developmental perspective on prevention and intervention. *Trauma, Violence, & Abuse, 17*(4), 366-386. http://dx.doi.org.proxy1.lib.uwo.ca/10.1177/1524838016658878

Henry, K. L., Knight, K. E., & Thornberry, T. P. (2012). School disengagement as a predictor of dropout, delinquency, and problem substance use during adolescence and early adulthood. *Journal of Youth and Adolescence, 41*, 156–166. doi: 10.1007/s10964-011-9665-3

Hoover, S. A., Nadeem, E., Sapere, H., Lang, J. M., Dean, K. L., & Vona, P. (2018). Statewide implementation of an evidence-based trauma intervention in schools. *School Psychology Quarterly, 33*(1), 44-53. http://dx.doi.org/10.1037/spq0000248

Howard Sharp, K. M., Schwartz, L. E., Barnes, S. E., Jamison, L. E., Miller-Graff, L. E., & Howell, K. H. (2017). Differential influence of social support in emerging adulthood across sources of support and profiles of interpersonal and non-interpersonal potentially traumatic experiences. *Journal of Aggression, Maltreatment & Trauma, 26*(7), 736-755. doi:10.1080/10926771.2017.1289999

IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.

Jaffee, S. R., & Christian, C. W. (2014). The biological embedding of child abuse and neglect: Implications for policy and practice. *Social Policy Report*, *28*(1), 1-19.

Jennings, A. (2004). Models for developing trauma-informed behavioural health systems and trauma specific services. *National Technical Assistance Center for State Mental Health Planning, National Association of State Mental Health Program Directors Under contract with the Center for Mental Health Services, Substance abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.*

Kasen, S., Cohen, P., & Brook, J. (1998). Adolescent school experiences and dropout, adolescent pregnancy, and young adult deviant behavior. *Journal of Adolescent Research, 13*(1), 49–72.

Kay, B. R. (2005). *A cross national study of bullying experienced by British and American schoolchildren: Determining a typology of stressors and symptoms* (Order No. 3203016). Available from ProQuest Dissertations & Theses Global. (305392781). Retrieved from https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/305392781?accountid=15115

Klinic Community Health Centre. The Trauma-Informed Toolkit, Second Edition. (2013).

Lau, C., Stewart, S.L., Saklofske, D.H., Tremblay, P. F., & Hirdes, J. (2018). Psychometric evaluation of the interRAI child and youth mental health disruptive/aggression behaviour scale (DABS) and hyperactive/distraction dcale

(HDS). Child Psychiatry and Human Development, 49(2), 279-289. https://doi-org.proxy1.lib.uwo.ca/10.1007/s10578-017-0751-y

Lilly, M., Valdez, C., & Graham-Bermann, S. (2011). The mediating effect of world assumptions on the relationship between trauma exposure and depression. *Journal of Interpersonal Violence, 26*(12), 2499-2516. doi:10.1177/0886260510383033

Martin, L., Hirdes, J. P., Fries, B. E. & Smith, T. F. (2007). Development and psychometric properties of an assessment for persons with intellectual disability – The interRAI ID. *Journal of Policy and Practice in Intellectual Disabilities, 4*(1), 23-29. doi:10.1111/j.1741-1130.2006.00094.x

McLaughlin, L., Laux, J. M., & Pescara-Kovach, L. (2006). Using multimedia to reduce bullying and victimisation in third-grade urban schools. *Professional School Counselling* 10: 153–160.

Mehta, S. B., Cornell, D., Fan, X., & Gregory, A. (2013). Bullying climate and school engagement in ninth grade students. *Journal of School Health, 83*(1), 45-52. doi:10.1111/j.1746-1561.2012.00746.x

Menard, S., & Grotpeter, J. K. (2011). Peer influence, social bonding, physical and relational aggression: Perpetration and victimization in an elementary school sample. *Victims & Offenders, 6*, 181–206.

Menesini, E. & Salmivalli, C. (2017). Bullying in schools: The state of knowledge and effective interventions. *Psychology, Health & Medicine, 22*(S1), 240-253. doi: 10.1080/13548506.2017.1279740

Mireles, T. M. (2010). *From coping to thriving: Hope and the role of education in trauma recovery* (Order No. 3404451). Available from ProQuest Dissertations & Theses Global: Health & Medicine; ProQuest Dissertations & Theses Global: Social

Sciences. (516240864). Retrieved from https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/docview/516240864?accountid=15115

Monks, C. P., & Smith, P. K. (2006). Definitions of bullying: Age differences in understanding of the term, and the role of experience. *British Journal of Developmental Psychology, 24*(4), 801-821. doi:10.1348/026151005X82352

Morris, J.N., Carpenter, I., Berg, K., & Jones, R.N. (2000). Outcome measure for use with home care clients. *Canadian Journal on Aging 19*(52), 87–105. https://doi.org/10.1017/S071498080001391X

Muskett, C. (2014). Trauma-informed care in inpatient mental health settings: A review of the literature. *International Journal of Mental Health Nursing, 23,* 51-59. doi: 10.1111/inm.12012

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *JAMA, 285*(16), 2094–2100. doi:10.1001/jama.285.16.2094

National Child Traumatic Stress Network. (2013). *Child welfare trauma training toolkit*. Los Angeles, CA: National Center for Child Traumatic Stress. Retrieved from http://www.nctsn.org/ nccts/nav.do?pid1⁄4ctr_cwtool

Newcomb, M. D., Abbott, R. D., Catalano, R. F., Hawkins, J. D., Battin Pearson, S., & Hill, K. (2002). Mediational and deviance theories of late high school failure: Process roles of structural strains, academic competence, and general versus specific problem behavior. *Journal of Counseling Psychology, 49*(2), 172–186.

Nielsen, M. B., Tangen, T., Idsoe, T., Matthiesen, S. B., & Magerøy, N. (2015). Post traumatic stress disorder as a consequence of bullying at work and at school: A literature review and meta-analysis. *Aggression and Violent Behavior, 21*, 17-24. doi:10.1016/j.avb.2015.01.001

Olweus, D. (1993). Bullying at school: What we know and what we can do. Oxford: Blackwell Publishers.

Orpinas, P., & Raczynski, K. (2016). School climate associated with school dropout among tenth graders. *Pensamiento Psicologico*, *14*(1), 9-20. doi: http://dx.doi.org.proxy1.lib.uwo.ca/10.11144/Javerianacali.PPSI14-1.scsd

Pearce, J., Stewart, S. L., Theall, L., Gilpin, M., Kehyayan, V., St. Pierre, J., …, Hirdes, J. P. (2015). Education CAP. In S. L. Stewart, L. A. Theall, J. N. Morris, K. Berg, M. Björkgren, A. Declercq et al. (Eds.), interRAI Child and Youth Mental Health Collaborative Action Plans (CAPs): For Use with the Child and Youth Mental Health Assessment Instrument, Version 9.3 (pp. 53-63). Washington DC: interRAI.

Penning, S. L., Bhagwanjee, A., & Govender, K. (2010). Bullying boys: The traumatic effects of bullying in male adolescent learners. *Journal of Child and Adolescent Mental Health, 22(*2), 131-143. doi: 10.2989/17280583.2010.528580

Perlman, C., & Hirdes, J. (2008). The aggressive behavior scale: A new scale to measure aggression based on the minimum data set. *Journal of the American Geriatric Society, 56*(12), 2298–2303. https://doi.org/10.1111/j.1532-5415.2008.02048.x

Phillips, C.D., Patnaik, A., Moudouni, D.K., Naiser, E., Dyer, J.A., Hawes, … & Elliott, T.R. (2012). Summarizing activity limitations in children with chronic illnesses living in the community: A measurement study of scales using supplemented

interRAI items. *BMC Health Services Research, 12*(19), 1-10. doi:10.1186/1472-6963-12-19

Phillips, C. D. & Hawes, C. (2015). The interRAI pediatric home care (PEDS HC) assessment: Evaluating the long-term community-based service and support needs of children facing special healthcare challenges. *Health Services Insights 2015, 8*, 17-24. doi:10.4137/HSi.S30775.

Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behaviour, 15*, 112–120. doi:10.1016/j.avb.2009.08.007

Sheridan, M., & Nelson, C. (2009). Neurobiology of fetal and infant development: Implications for infant mental health. In C. Zeanah (Ed.), Handbook of infant mental health (3rd ed., pp. 40–58). New York, NY: Guilford.

Shonkoff, J. P., & Phillips, D. A. (2000). From neurons to neighborhoods: The science of early childhood development. Washington, DC: National Academy Press.

Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., . . . & Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232-e246. doi:http://dx.doi.org.proxy1.lib.uwo.ca/10.1542/peds.2011-2663

Statistics Canada. (2017). Young men and women without a high school diploma. Insights on Canadian Society Catalogue no. 75-006-X. Ottawa, ON. July 24. https://www150.statcan.gc.ca/n1/en/pub/75-006-x/2017001/article/14824-eng.pdf?st=H1SSt0Fu (accessed March 30, 2019)

Stahmer, A. C., Hurlburt, M., Horwitz, S. M., Landsverk, J., Zhang, J., & Leslie, L. K. (2009). Associations between intensity of child welfare involvement and child

development among young children in child welfare. *Child Abuse and Neglect, 33*(9), 598–611. doi:10.1016/j.chiabu.2008.07.008

Stewart, S. L., Currie, M., Arbeau, K., Leschied, A., & Kerry, A. (2015). Assessment and planning for community and custodial services: The application of interRAI assessment in the youth justice system. In: Corrado, R., Leschied, A. (Eds.), Serious and Violent Young Offenders and Youth Criminal Justice: A Canadian Perspective.

Stewart, S. L., Hirdes, J. P., Curtin-Telegdi, N., Perlman, C. M., McKnight, M., MacLeod, K., … Carson, S. (2015a). interRAI Child and Youth Mental Health (ChYMH) Assessment Form and User's Manual: For Use with In-Patient and Community-Based Assessments. Version 9.3. Washington DC: interRAI.

Stewart, S. L., Theall, L. A., Morris, J. N., Berg, K., Björkgren, M., Declercq, A., … Hirdes, J. P. (2015b). interRAI Child and Youth Mental Health Collaborative Action Plans (CAPs): For Use with the Child and Youth Mental Health Assessment Instrument, Version 9.3. Washington DC: interRAI.

Stewart, S. L., Theall, L., Perry, B., MacLeod, K., Smith, C., Mathias, K., … Hirdes, J. P. (2015c). Traumatic Life Events CAP. In S. L. Stewart, L. A. Theall, J. N. Morris, K. Berg, M. Björkgren, A. Declercq et al. (Eds.), interRAI Child and Youth Mental Health Collaborative Action Plans (CAPs): For Use with the Child and Youth Mental Health Assessment Instrument, Version 9.3 (pp. 53-63). Washington DC: interRAI.

Stewart, S. L. & Hamza, C. A. (2017). The child and youth mental health assessment (ChYMH): An examination of the psychometric properties of an integrated assessment developed for clinically referred children and youth. BMC Health Services Research, 17(82), 1-10, https://doi.org/10.1186/s12913-016-1970-9

Taylor, S. E., Lehman, B. J., Kiefe, C. I., & Seeman, T. E. (2006). Relationship of early life stress and psychological functioning to adult C-reactive protein in the coronary artery risk development in young adults study. *Biological Psychiatry, 60,* 819-824. doi:10.1016/j.biopsych.2006.03.016

van der Kolk, B. A., Roth, S., Pelcovitz, D., Sunday, S., & Spinazzola, J. (2005). Disorders of extreme stress: The empirical foundation of a complex adaptation to trauma. *Journal of Traumatic Stress, 18*(5), 389-399. doi: 10.1002/jts.20047

Viljoen, J.L., O'Neill, M.L., & Sidhu, A. (2005). Bullying behaviors in female and male adolescent offenders: Prevalence, types, and association with psychosocial adjustment. *Aggressive Behavior, 31*, 521–536.

Wang, M., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. Child Development, 83(3), 877-895. doi:10.1111/j.1467-8624.2012.01745.x

Wilkins, J. (2008). School characteristics that influence student attendance: Experiences of students in a school avoidance program. *The High School Journal*, *91*(3), 12–24.

Wozniak, J., Crawford, M. H., Biederman, J., Faraone, S. V., Spencer T. J., Taylor, A., & Blier, H. (1999). Antecedents and complications of trauma in Boys with ADHD: Findings from a longitudinal study**.** *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(1), 48-55.

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