Exploring Canadian Educators' Understandings of Trauma-Informed Education

by

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Abstract

The high prevalence of childhood trauma and its association with negative outcomes has been well-documented within the literature. Trauma-Informed Education (TIE) is a teaching approach where educators learn to understand and recognize trauma, create safe spaces, and foster a learning environment which supports children and youth affected by trauma. Much of the research about TIE indicates that educators' trauma-informed knowledge and attitudes play a large role in whether teachers adopt a trauma-informed approach. However, the majority of research about TIE has taken place outside of Canada, meaning there is little known about Canadian teachers' attitudes and knowledge about TIE, as well as the trauma-informed training currently utilized in Canada. Therefore, the current study was conducted to gain a better understanding of these factors. Using responses from 173 teachers across Canada, this study found that 63.6% of the participating educators have experienced formal trauma-informed training, indicating that TIE training is available to educators in Canada, and that many educators are interested in, and receiving, this training. Using Spearman's rank correlations, this study found that educators with greater trauma-informed training experience show higher levels of trauma-informed knowledge, and those with greater years of teaching experience show more positive trauma-informed attitudes. Further, those who are learning about trauma-informed approaches, whether formally or informally, show more positive trauma-informed attitudes, and greater trauma-informed knowledge. The outcomes of this research contribute to the growing information about TIE in Canada and identify ways to increase the use of TIE in Canadian schools.

Keywords: childhood trauma, trauma-informed approaches, Canadian teachers, social emotional learning

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Table of Contents

List of Tables

List of Appendices

Exploring Canadian Educators' Understandings of Trauma-Informed Education

The term Adverse Childhood Experiences (ACEs), coined in 1998 by Felitti et al., refers to a child's early exposure to a traumatic event or events (Felitti et al.,1998). Reports of ACEs are not uncommon, with around half of Americans, and three quarters of Canadians, reporting at least one adverse experience from their childhood (Felitti et al., 1998; Van Ameringen et al., 2008). Early exposure to trauma can potentially lead to acute or long-term post-traumatic stress disorder (PTSD) symptoms and though this is often not the case, almost all children will show serious distress for a period of time following a traumatic event (American Psychological Association [APA], 2008; Bartlett & Sacks, 2019).

Trauma is a difficult term to define as people react to, and are impacted by, events in unique ways. Some researchers suggest that there are different elements of trauma, commonly referred to as the three "Es" of trauma (Lathan et al., 2021). The first "E" relates to traumatic *events*. There are many types of events that may be considered traumatic, however most traumatic events fall into one of two categories: interpersonal trauma or non-interpersonal trauma (Lathan et al., 2021). Interpersonal trauma relates to trauma caused by another person's actions (i.e., parental abuse), whereas non-interpersonal trauma refers to traumas not caused by a person, such as accidents or natural disasters (SAHMSA, 2014). The second "E", *experience*, relates to the ways in which an individual responds to or conceptualizes the trauma they face (Beutel et al., 2017; Brooks et al., 2019). It is both the traumatic events, and the ways individuals experience these events that play into the third and final "E", *effects*, which relates to the symptoms individuals may experience following trauma (Lathan et al., 2021).

In essence, children will have different responses to traumatic events based on the ways they perceive the trauma, making trauma a very complex issue. Hence, trauma may be best

understood by the symptoms following the event, rather than the event itself. For example, Bartlett and Steber (2019) note that, "childhood trauma occurs when a child experiences an actual or threatened negative event, series of events, or set of circumstances that cause emotional pain and overwhelm the child's ability to cope." (Bartlett & Steber, 2019, p.1). This indicates that trauma is a unique experience, and it is not always clear what will or will not be traumatic for a child.

Symptoms of trauma can also appear when trauma is passed down to children through collective experiences of trauma within their family, community, or other groups over generations (Barker et al., 2019; Bombay et al., 204; O'Neill et al., 2018). This is what is known as intergenerational trauma. Given the high Indigenous population in Canada and Canada's long history with residential schools, as well as ongoing systemic racism against Indigenous people, it is important to acknowledge the presence of intergenerational trauma in Canada (Anderson, 2019; Fraser et al., 2021). While the Truth and Reconciliation Calls to Action, published in 2015, has begun to highlight the ways in which Canada has failed Indigenous people, and the steps that must be taken to begin a path toward reconciliation, there is still much work to be done (Truth and Reconciliation Commission of Canada, 2015).

When children experience trauma, whether it be through individual or collective experiences, they can be impacted in a variety of ways. Trauma can lead to a wide range of physical and emotional symptoms immediately following the event. Some common symptoms traumatized children experience include feeling helpless and fearful, as well as physiological reactions such as heart pounding, vomiting, or loss of bladder control (Bartlett & Sacks, 2019). Children may also show temporary sleep disturbances, loss of interest in normal activities, anger or mood swings, and new fears or anxieties after a traumatic event (APA, 2008). Additionally,

early exposure to trauma can also lead to difficulties with relationships, which may make developing friendships and romantic relationships more difficult (Bartlett & Steber, 2019).

Research has shown that early exposure to traumatic experiences may result in physical changes to a young person's brain (De Bellis & Zisk, 2014; Heim et al., 2008). This is assumed to happen as childhood is when the most brain development occurs. The brain develops in a sequential manner with the more automatic and lower functioning areas developing first, and higher functioning areas developing last (Perry, 2008). Brain development is shaped by many factors, such as neurohormones and neurotransmitters, which can become disrupted as a result of early trauma (Herlenius & Lagercrantz, 2004; Perry, 2008). When trauma occurs early on, the function of these neural systems in the lower and more automatic areas of the brain can be affected, causing dysregulation throughout the rest of brain development (Perry, 2008). Additionally, others have suggested that the body's stress response system is also affected by trauma and can become dysregulated, especially when the trauma occurs early in life (De Bellis & Zisk, 2014). Specifically, it seems that the hypothalamic-pituitary-adrenal axis (HPA axis) is greatly affected by early experiences of trauma, resulting in abnormal levels of cortisol, a stress response hormone (Bates, Salsberry, & Ford, 2017; Kuhlman et al., 2015).

Childhood trauma may also impact a child's ability to succeed in school (Blodgett & Lanigan, 2018). Physical and emotional symptoms associated with trauma can lead to learning and attention difficulties, resulting in these children having lower grades, increased rates of absenteeism, and experiencing more disciplinary actions, such as expulsion and suspension (APA, 2008; Bethell et al., 2014; Blodgett & Lanigan, 2018; Burke et al., 2011). Many children who have experienced trauma also have difficulties with externalizing and internalizing behaviours in school, such as showing aggression, breaking rules, and becoming withdrawn

(Greeson et al., 2014). In short, children who have experienced trauma are at a greater risk of struggling in school.

Difficulties in early life due to childhood trauma can also continue into adult life. Research has indicated that adults who were exposed to trauma early on are at increased risk for mental health issues such as depression, anxiety, PTSD and suicidality, as well as substance abuse issues (Bartlett & Steber, 2019; Felitti et al., 1998; Ju et al., 2020). Furthermore, physical health problems later in life have also been reported, with those who experienced trauma early in life being at a greater risk of severe obesity, heart disease, cancer, and lung and liver disease (Felitti et al., 1998; Steine et al., 2017).

With the high prevalence rates of early trauma exposure and possible adversities resulting from trauma, it is clear that childhood trauma is a pervasive and impactful issue (Bartlett & Sacks, 2019; Felitti et al., 1998). Accordingly, new approaches for supporting trauma-affected individuals have begun to arise. Of interest to this study is a trauma-informed approach.

Trauma-Informed Approach

A trauma-informed approach is a type of practice used by many individuals in helping fields and organizations such as health care systems, child welfare systems, and more recently, schools. This type of approach promotes the importance of recognizing and understanding the effects of trauma, working in a strength-based mindset, and minimizing re-traumatization by creating a safe and inclusive environment (Baird, 2018; Lemon, 2020; Wall, 2020). Approaches that are trauma-informed aim to create safe and collaborative environments that support many individuals, trauma-affected or not, and do not rely on an individual to disclose their experiences with trauma to benefit from the approach (Canadian Centre on Substance Abuse, 2014). Consequently, a practice that is trauma-informed is not synonymous with a practice that is

trauma-specific, as a trauma-specific practice is a more individualized treatment approach used with trauma-affected individuals who have disclosed specific experiences with trauma (Sharma-Patel & Brown, 2016). Though individualized treatments and a trauma-informed approach can be complementary to one another, they are distinct.

While individualized treatments for trauma often include one-on-one sessions, trauma-informed approaches follow a more systemic approach (Butler et al., 2011). Those who use a trauma-informed approach adjust their behaviours to better accommodate for, and support those who have experienced trauma, but do not address any specific trauma-related concerns unless referring the individual to trauma-specific care. There are many approaches considered to be trauma-informed such as, Trauma-Informed Care (TIC), Trauma-Informed Practice (TIP), and Trauma-Informed Education (TIE).

While definitions of trauma-informed approaches vary slightly, these methods generally follow a similar set of values. The Substance Abuse and Mental Health Administration (SAHMSA), an American agency, defines the use of a trauma-informed approach with four "Rs" (Bartlett & Steber, 2019). In this, a trauma-informed approach is defined as a practice that requires users to (1) realize the overall impact trauma has on individuals, (2) recognize the indicators of trauma, (3) respond to individuals dealing with trauma in an informed way, and (4) resist causing further traumatization (Bartlett & Steber, 2019). Canadian agencies follow a slightly different set of principles relating to the use of trauma-informed approaches. The Canadian Centre on Substance Abuse (CCSA) lays out the key principles of a trauma-informed approach in a document titled *The Essentials of Trauma-Informed Care* (2014). The principles outlined in the document are very similar to SAHMSA's four "Rs", though the CCSA also suggests that a trauma-informed approach should be strength-based and should encourage

trauma-affected individuals to participate in their experience, indicating that collaboration between service providers and those dealing with trauma is key.

Dr. Bruce Perry, a psychiatrist and well-known child-trauma expert, was one of the first to study the use of trauma-informed approaches with children (Perry, 2008). His Neurosequential Model focuses on the importance of understanding brain development and how it is affected by trauma. Specifically, this model holds that the brain works in a bottom-up fashion, meaning that one must address dysregulation in the lower parts of the brain that control activities such as self-regulation and arousal, before moving upward into the higher functioning areas such as the cortex (Perry, 2009). Perry believes that often, traumatized children become dysregulated when they are upset or feeling threatened, which "turns off" the cortex, meaning that reasoning and higher-function skills are inaccessible to the child in that moment (Mackinnon, 2012). Therefore, an upset child will rely on lower brain regions, which may make the child more reactive and less able to think clearly (Mackinnon, 2012). Hence, Perry emphasizes the importance of helping children regulate when they enter the lower brain states due to dysregulation, rather than punishing children (Portell, 2020). Perry also highlights the importance of relationship building and infers that creating safe and healthy relationships with trauma-affected children may be one of the most powerful healing methods (Perry, 2009; Portell, 2020). Perry's Neurosequential Model has guided much of what is known about working with trauma-affected children.

The method for supporting trauma-affected children that is of specific interest to this study is TIE, sometimes referred to as trauma-informed teaching. TIE, developed for educators, is a teaching approach where educators are taught to understand and recognize trauma, create safe spaces, and foster a learning environment which supports students affected by

trauma (Lemon, 2020; West et al., 2014). Schools that foster this approach are called trauma-informed schools.

Previous studies have looked at the efficacy of using trauma-informed programs in schools to better support students affected by trauma (Dorado et al., 2016; McIntyre et al., 2018; Rishel et al., 2019). However, there is yet to be a "gold standard" practice. Thus, TIE research includes studies about many different programs with little consistency in study procedures. While the lack of consistency across studies is an unfortunate limitation within the literature, many studies have shown preliminary evidence indicating positive changes resulting from the use of a trauma-informed approach in schools (Dorado et. al., 2016; Lemon, 2020; McIntyre et al., 2018; Rishel et al., 2019).

Trauma-Informed Schools.

One preliminary study of the use of a trauma-informed approach in a school was conducted by Dorado et al. (2016). In this study, the researchers created a school-based trauma-informed program titled the Healthy Environments and Response to Trauma in Schools (HEARTS) program (Dorado et al., 2016). The aim of the HEARTS program is to promote awareness about trauma and to create an environment where students spend more time learning and less time being disciplined (UCSF HEARTS, 2020). The program utilizes a tier approach, which allows supports to range from universal to very targeted and individualized (Dorado et al., 2016). Though there has only been one study conducted about the efficacy of the HEARTS program, the results were promising with significant improvements in knowledge about trauma and use of trauma-informed practices. The schools also noted significant decreases in total incidents and in-school suspensions, and the students had significant increases in attendance,

time spent on task, time spent in class, and improvements in adjustment to trauma and other mental health outcomes (Dorado et al., 2016).

Although the HEARTS program showed promising results, a major limitation was the omission of a comparison group. Fortunately, a similar study conducted in 2019 did include a comparison group. This study looked at the efficacy of a new trauma-informed program created for schools called the Trauma-Informed Elementary Schools (TIES) program. The TIES program aims to create a safe and positive school environment, as well as promote the importance of self-regulation and coping skills (Rishel et al., 2019). This program was explored in a two-year longitudinal study that included 11 schools and 51 early years classes. The study included a pre-post examination of improvements in classroom emotional support, classroom organization, and instructional support comparing 39 classrooms that received the TIES program, to 12 classrooms that did not receive the TIES program (Rishel et al., 2019). The results of the study indicated a positive change in classroom organization, as well as emotional and instructional support provided by teachers resulting from the TIES program. Classrooms that received the TIES program showed greater improvements in these domains than classrooms that did not receive the TIES program (Rishel et al., 2019).

Though the research on trauma-informed schools is limited, what research has been done has shown promising results (Roseby & Gascoigne, 2021). Accordingly, it seems that Canadian schools may benefit from trauma-informed approaches. As there has yet to be substantial research about trauma-informed approaches in Canadian schools, it is unclear how much or how little Canadian educators know about trauma-informed approaches. Thus, an important first step in contributing to the growing research about the use of trauma-informed approaches in

Canadian schools is to identify Canadian educators' current understandings of trauma-informed approaches as well as the factors that play into these understandings.

Becoming Trauma-Informed

Becoming trauma-informed is the process by which educators begin to understand the impact of childhood trauma, as well as employ trauma-informed approaches. There are many aspects involved in adopting a trauma-informed approach. However, the literature suggests that attitudes and knowledge about childhood trauma and trauma-informed approaches are a vital part of whether educators adopt a trauma-informed approach (Baker et al., 2016; Sundborg, 2019).

Teachers' knowledge about trauma and trauma-informed education is an important part of becoming trauma-informed. When teachers are knowledgeable about trauma, as well as trauma-informed approaches, they are more likely to behave in a trauma-informed way (Conners-Burrow et al., 2013; Sundborg 2019). Meaning, for teachers to adopt TIE, they must first be aware of the impact of trauma and understand the components involved in a trauma-informed approach. Thus, a crucial component of assisting teachers in becoming trauma-informed is encouraging learning about trauma and trauma-informed approaches. That said, it is almost impossible to effectively support teachers in learning about trauma and trauma-informed approaches without first having information about what teachers already know. Moreover, it is also important to understand what predicts teachers' level of trauma-informed knowledge to further target where trauma-informed training is most necessary. Hence, understanding teachers' level of trauma-informed knowledge and what predicts this level of knowledge is a crucial step in supporting teachers to become trauma-informed.

Relatedly, teacher's attitudes about trauma-informed approaches are also involved in whether teachers adopt a trauma-informed approach (Baker, 2016). In particular, when attitudes

about the use of trauma-informed approaches become more positive, educators are more likely to use trauma-informed approaches (Sundborg, 2019). Therefore, it is important to identify Canadian educators' current attitudes about TIE, as well as the factors that predict whether teachers have attitudes that support TIE.

Taken together, it seems that educators' trauma-informed knowledge and attitudes are highly involved in becoming trauma-informed. What remains unknown is what predicts trauma-informed knowledge and attitudes. While there is limited research about predictors of trauma-informed knowledge and attitudes, some research has indicated a potential role of training experience and teaching experiences contributing to teachers' trauma-informed knowledge and attitudes (Brown et. al., 2012; Browne- Kealey, 2019; Conners-Burrow et al., 2013).

Training Experience. Trauma-informed education training programs, both extensive and brief, have been shown to lead to many positive changes in teacher's perceptions and understandings of childhood trauma and trauma-informed education (Dorado et. al., 2016; Rishel et al., 2019; Rodger et al., 2020). A study done by Alisic et al. (2012) found that training in trauma-informed approaches increases teacher confidence in using a trauma-informed approach. Relatedly, research also indicates that trauma-informed training leads to increases in commitment to using a trauma-informed approach (Sundborg, 2019). Most important to the current study is the finding that effective trauma-informed training results in increases in knowledge about trauma, as well as more positive attitudes about trauma and trauma-informed approaches (Brown et. al., 2012; Conners-Burrow et al., 2013; Loomis & Felt, 2020).

Not all trauma-informed education training programs are effective. Many educators report that current trauma-informed trainings are too clinical, making it difficult to understand (Callands, 2021). Furthermore, while some studies find that training in trauma-informed

approaches results in more positive trauma-informed attitudes (Loomis & Felt, 2020), others find that training results in no change to trauma-informed attitudes (Whitaker et al., 2019). Hence, even if Canadian teachers are receiving trauma-informed education training, it is not guaranteed that this training is having a substantial impact on teachers' knowledge and attitudes, which are necessary factors to becoming trauma-informed. Therefore, understanding what trauma-informed training is currently being utilized in Canada, as well as whether experiences with trauma-informed training predicts educators' trauma-informed knowledge and attitudes, is very important.

Teaching Experience. Educators' years of teaching experience play a substantial role in their knowledge and attitudes. For example, research about students with attention-deficit/hyperactivity disorder (ADHD) has shown that as teachers gain more experience working with students that have ADHD, their knowledge about ADHD increases and they show more favourable behaviours toward teaching students with ADHD (Anderson et al., 2012). Similarly, teachers with greater experience working with students that have autism spectrum disorder (ASD) tend to hold more positive attitudes about the inclusion of students with ASD and are more knowledgeable about the needs of students with ASD (Ballantyne et al., 2019; Cassimos et al., 2015). On top of this, more experienced educators seem to be more aware of common issues in schools, such as bullying (Van Verseveld et al., 2021), and tend to view these issues more seriously than their less experienced counterparts (Van Verseveld et al., 2021). It seems that these differences stem from more experienced educators having a more well-defined understanding of student needs. Teachers learn from classroom experience, and this affects their beliefs and knowledge about a variety of topics (Berger et al., 2018). These findings suggest that

it is possible that teachers' experiences might also be involved in trauma-informed knowledge and attitudes.

Preliminary research indicates that as teachers gain more experience working with traumatized students, their teaching practices also change and become more trauma-sensitive (Brown-Kealey, 2019). However, this finding has not been shown consistently with a similar study finding that years of teaching experience did not have an impact on teachers' trauma-informed attitudes (Waggoner, 2018). Educators' years of teaching experience as a potential predictor of trauma-informed attitudes and knowledge requires further investigation to enable better understanding of this topic.

Moreover, teachers' experiences may also vary depending on the grade level of the students they work with. A teacher working with young children in elementary school will likely have different experiences than a teacher working with teenagers in a high school. For example, research suggests that elementary school teachers tend to utilize different discipline styles than do high school teachers (Tomal, 2001). Furthermore, research has noted differences in communication patterns between students' caregivers and teachers by school level (e.g., elementary school, middle school, or high school). Specifically, teachers and caregivers communicate the most in younger grades, and this communication tapers off as students enter older grades such as high school (Epstein, 2011). As well, class sizes and professional development opportunities often differ depending on the grade level teachers work in (Goldring et al., 2013).

In relation to TIE, there has been very little research looking at the impact of teaching grade level on teachers' trauma-informed attitudes and knowledge. However, what research has been done suggests that secondary teachers report less positive views about whether trauma-

informed approaches would work in their schools than teachers in primary schools (McIntyre et al., 2018). These findings indicate that teachers' understandings of TIE may differ in relation to the grades of the students they work with. That said, there is still much left unknown about the impact of grade level on teachers' trauma-informed knowledge and attitudes. Hence, in addition to years of teaching experience, grade level also seems to be a potentially important factor to consider when examining teachers' trauma-informed attitudes and knowledge.

Trauma-Informed Education in Canada.

Much of the research about TIE has taken place in the United States, meaning research about the use of TIE in Canada is limited. However, a recent study conducted with eight teachers from Ontario, Canada found that Canadian teachers have generally positive attitudes about trauma-informed approaches and are at least somewhat knowledgeable about the impact of trauma on children (Browne-Kealey, 2018). Additionally, within this sample of Canadian teachers, all teachers had some level of understanding and awareness about trauma (Browne-Kealey, 2019). However, of interest is the finding that none of the participants reported having ever experienced any sort of professional training about trauma-informed approaches through the school in which they worked (Browne-Kealey, 2019).

It is possible that Canadian teachers are aware of, or are even using, trauma-informed approaches by learning through more informal sources sought out independently. There are many ways teachers in Canada can learn about TIE on their own. For example, the Canadian Teachers' Federation recently published a resource for teachers titled *Trauma-Informed Teaching and Learning* (Canadian Teachers' Federation, 2020), which is a source of information about TIE available to Canadian educators. Furthermore, many teachers report using online resources as a platform for personalized professional development (Trust et al., 2016; Schroeder

et al., 2019). One website that has been found to be used very often as an online platform for this type of personalized professional development is *Pinterest* (Schroeder et al., 2019). A simple search on Pinterest including terms such as "trauma-informed classroom" or "trauma-informed education" results in a vast array of posters and informational guides providing tips on how to implement trauma-informed approaches in the classroom.

Though the *Trauma-Informed Teaching and Learning* document (Canadian Teachers' Federation, 2020) and *Pinterest* are only two examples of some of the informal ways Canadian educators can learn about TIE, it is likely that there are many other similar resources available to teachers. Hence, while there is little research about formal trauma-informed training programs for educators in Canada, it seems that there are many ways Canadian teachers can learn about TIE on their own. In essence, it is entirely possible that trauma-informed approaches are being used in Canada, but because there is such limited research, the state of TIE in Canada is largely unknown. Thus, there is a clear need for more research about TIE within the context of Canada.

Current Study

The literature clearly indicates that childhood trauma is a pervasive issue that can negatively affect children throughout the entirety of their lives (Brown et al., 2009; Chapman et al., 2004; Felitti et al., 1998; Ju et al., 2020). When educators are not aware of the negative effects that can result from trauma or are ill-prepared to support children affected by trauma, these children can fall through the cracks. While trauma-informed approaches are beginning to enter the field of education, research about TIE within the Canadian context remains limited.

To understand TIE within the context of Canada, it is imperative to first examine Canadian educators' trauma-informed attitudes and knowledge. Moreover, another key aspect in understanding Canadian educators' TIE attitudes and knowledge is examining what predicts TIE

attitudes and knowledge as these predictors will be important factors to consider when supporting Canadian educators to become trauma-informed (Alisic et al., 2012; Conners-Burrow et al., 2013; Sundborg et al., 2019). Additionally, understanding what predicts Canadian educators' current attitudes and knowledge about trauma-informed approaches will provide insight into whether the training available in Canada is effective. While it seems that training experience, years of teaching, and grade level are likely involved in trauma-informed attitudes and knowledge, this has not yet been quantitatively studied in Canada. Therefore, the current study examined Canadian educators' current attitudes and knowledge about TIE, as well as analyzed the potential predictors of trauma-informed attitudes and knowledge.

Furthermore, as outlined in Browne-Kealey's (2019) study, it seems that although some teachers are incorporating trauma-informed practices into their classrooms, it is likely that many teachers have had little to no formal training about how to use a trauma-informed approach. Considering how well-regarded trauma-informed approaches are within the literature (Lemon, 2020; Browne-Kealey, 2019), and how positive the results have been shown to be in preliminary studies (Dorado et al., 2016; McIntyre et al., 2019), it seems that Canadian educational systems may benefit from more research about TIE within the Canadian context. Hence, because there is little is known about the extent to which Canadian teachers have already learned about TIE, this study also further explored any relevant trauma-informed training experiences teachers have had.

Aims

The aim of this research was to contribute to the growing knowledge base about TIE in Canada. The present study had three primary aims:

1. To describe the current state of trauma-informed training in Canada.

2. To identify if trauma-informed training experience, years of teaching experience, and teaching grade level predict Canadian teachers' trauma-informed knowledge.
3. To identify if trauma-informed training experience, years of teaching experience, and teaching grade level predict Canadian teachers' trauma-informed attitudes.

Hypotheses

First, descriptive analyses were conducted to assess the incorporation of trauma-informed training programs in Canadian educational systems. Further, this analysis provided a more in-depth look at the types of training Canadian educators are receiving, as well as how and why they receive this training.

Moreover, it was hypothesized that trauma-informed training, years of teaching experience, and grade level would predict Canadian teachers' trauma-informed knowledge. Specifically, it was predicted that experience with trauma-informed training would be associated with greater levels of trauma-informed knowledge, as suggested by previous research (Dorado et. al., 2016; Rishel et al., 2019; Rodger et al., 2020). Additionally, it was hypothesized that teachers with greater years of experience would show more trauma-informed knowledge. Lastly, because teachers' professional development opportunities tend to differ by grade level (Goldring et al., 2013), grade level was analyzed as a possible predictor of trauma-informed attitudes in an exploratory manner.

Additionally, based on existing literature (Baker et al., 2016; Browne-Kealey, 2019; Loomis & Felt, 2020), it was predicted that trauma-informed training, years of teaching experience, and teaching grade level would also predict Canadian educators' trauma-informed attitudes. Specifically, it was hypothesized that when educators have trauma-informed training experience they will show more positive trauma-informed attitudes. Additionally, as preliminary

research has found that greater levels of experience with trauma-impacted students led to more positive attitudes about trauma-informed approaches (Browne-Kealey, 2019), it was predicted that teachers with more experience would show more positive trauma-informed attitudes. Finally, based on literature indicating potential teacher differences based on the grade level which they work (Epstein, 2011; Tomal, 2001) grade level was analyzed as a possible predictor of trauma-informed attitudes in an exploratory manner.

Method

Research Design

A cross-sectional online study was conducted. The predictor variables were trauma-informed training experience, years of teaching experience, and teaching grade level. The criterion variables were teacher-reported attitudes about trauma-informed approaches and teacher-reported knowledge about trauma-informed approaches. Demographic and personal variables were also used to describe the data.

Participants

Eligibility

Participants were schoolteachers of children and youth ranging from kindergarten to grade twelve, who currently work in Canada. Eligible participants were required to hold a full-time, or part-time position in a Canadian school as well as have a valid Canadian teaching certificate. Substitute teachers were excluded from the study, as was done in similar research (Waggoner, 2018).

Recruitment

Participants were recruited through provincial and municipal teacher groups across Canada. As teachers have been found to report high levels of activity on social media platforms

and online forums such as Facebook, Twitter, and blogs (Trust et al., 2016), recruitment primarily took place through social media platforms such as Facebook and Instagram. Paid advertisements were also shared via Facebook, which included a poster (See Appendix A), as well as a description of the study (See Appendix B). Additionally, as the researcher works within the field of education, personal contacts within this field were recruited via email (See Appendix C). Responses from 173 educators across Canada were included in the study.

Data Collection Procedure

Teachers that chose to participate in the study were provided a link to an online survey. Qualtrics (https://www.qualtrics.com/), an online survey tool, was used to create the survey as well as served as the platform where participants completed the survey. When participants clicked on the link provided, they were led to an informed consent form (See Appendix D). This form stated the intent of the study, as well as the expected time required to complete the survey and other relevant information that allowed participants to make an informed decision as to whether they wanted to continue with the survey. Once the form was digitally signed, the participants were led through a series of measures as described below. When participants finished filling out the survey, they were given the option to provide an email address to be entered into a draw for the chance to win one of three $50 Amazon.ca gift cards, as well as to receive information about the study results. Once the study was completed, those who opted to receive information about the study results were sent an infographic highlighting the primary findings from this research (See Appendix E). Additionally, using a random number generator, three participants were selected to win the draw and were each emailed a $50 Amazon.ca gift card.

Measures

Demographic Questionnaire

This survey asked participants background questions about gender, province of residence, years of teaching experience, and teaching grade level. Participants were also asked multiple questions regarding previous trauma-informed training experience, such as whether they had previously learned about trauma-informed approaches and if the learning occurred through formal training or other sources. Further, questions relating to when they received trauma-informed training and the amount of training they have received were also included. This survey was used to provide descriptive statistics on the sample (See Appendix F).

Attitudes Related to Trauma-Informed Care (ARTIC)

The *Attitudes Related to Trauma-Informed Care* (ARTIC) scale (Baker et al., 2016) was used in this study to measure participants' attitudes about trauma-informed care. This is the first theoretically driven and well-studied quantitative measurement of attitudes related to trauma-informed care. This scale is offered in adjusted forms for human services or education services and is available in English, Spanish, French, and Japanese (Brown, n.d.). The ARTIC-35 Education Version in English was used in this study, as is recommended for education settings that have not yet implemented TIC (Brown, n.d.). The 35-item scale includes five core subscales and provides an overall score as well as scores in each subscale. The five subscales include: (1) underlying causes of problem behaviour and symptoms, (2) responses to problem behaviour and symptoms, (3) on-the-job behaviour, (4) self-efficacy at work, (5) reactions to the work (Baker et al., 2016). This instrument is scored in a 7-point bipolar Likert response format (1 & 7 = *believe very strongly* to 3, 4, & 5 = *believe less strongly*) with higher overall scores indicating more positive attitudes of TIC and lower scores indicating attitudes that are less supportive of TIC (Baker et al., 2016). Reliability measures of the ARTIC-35 show excellent internal consistency

with a Cronbach's α of .91 and strong test-retest reliability with a correlation of .84 at ≤ 120 days and .77 up to 180 days (Baker et al., 2016). The present study confirmed the excellent internal consistency of the ARTIC-35, noting a Cronbach's α of .933.

Trauma-Informed Education Knowledge Survey

To measure Canadian educators' TIE knowledge, teachers were asked to complete a short 13-item survey (See Appendix G). This survey is scored in a 6-point Likert response format (1 = *disagree very much* to 6 = *agree very much*) with higher overall scores indicating more knowledge about trauma and trauma-informed approaches. The contents of this survey are largely centred around the four "Rs" (realize, recognize, respond, resist re-traumatization) of trauma-informed care outlined by Bartlett and Steber (2019), as well as the 4 principles laid out by the CCSA in *The Essentials of Trauma-Informed Care* (2014). This survey was created for this study and as part of a separate project, and using a different sample, the measure was developed and shows moderate internal consistency with a Cronbach's α of .665 (Ilchena et al., in press). The present study found similar internal consistency, noting a Cronbach's α of .590.

Analytic Strategy

Following data collection, all data was entered into the Statistical Package for the Social Sciences (SPSS Version 25.0). Descriptive statistics, such as frequencies, means, and standard deviations, were used to describe the data. Analysis then tested the following assumptions: linearity, normality, homoscedasticity of residuals, no outliers, no range restriction, and no multicollinearity of independent variables. Unfortunately, even with the use of statistical transformations, the data collected in this study did not meet the assumption of normality. Consequently, Spearman's rank correlations were used to better understand the relationships

between of trauma-informed training, years of teaching experience, teaching grade level, and trauma-informed knowledge and attitudes.

Sample Size

Using G*Power 3.1 software (Faul et al., 2007), a power analysis was conducted using an α of .05 and found that this study required a minimum of 77 participants who have experience with trauma-informed training to ensure adequate power (.80) with a medium effect size of 0.15 (f2). To do so, oversampling techniques were used with a total sample of 173 participants, 110 of whom had formal trauma-informed training experience.

Results

A total of 299 responses from Canadian educators were collected for this study. However, 126 responses were removed due to the following reasons: completing less than 99% of the survey (n = 86), taking less than 5 minutes to complete the survey (n = 2), not having a valid teaching certificate (n = 16), not working in a Canadian school (n = 9), and not currently holding a full time or part time position (n = 13). Thus, 173 responses from Canadian educators were included in this study. The sample consisted mostly of woman-identifying individuals (n = 160; 92.5%) of White ethnic background (n = 155; 89.6%). Participants ranged from 24 to 65 years of age (M = 42.13, SD = 9.84), and had been teaching from 1 to 43 years (M = 15.04, SD = 8.74). Most participants identified their place of work to be within an urban setting (N = 104; 60.1%), with the remaining participants identifying their place of work to either be within a Rural setting (n = 29; 16.8%), or a Rural and Small-Town setting (n = 40; 23.1%). Statistics Canada (2001) definitions for Rural settings and Rural and Small-Town settings were used in this study, with Rural being defined as “a population living outside places of 1,000 people or more” or “living outside places with densities of 400 or more people per square kilometer”, and

Small-Town being defined as a "population living in town or municipalities outside the commuting zone of larger urban centres (i.e., outside the commuting zone of centres with population of 10,000 or more)". Of those who identified working in either a Rural or Rural and Small-Town setting, 20 (11.6%) stated that they consider their work setting to be Northern. Finally, most participants indicated that they had informally learned about trauma-informed approaches (n = 143; 82.7%), and 110 (63.6%) participants had experienced formal training in trauma-informed approaches. Of those who had experienced formal training, the hours spent in this training, as estimated by participants, ranged from 1 to 1000 hours. More detailed information about the sample is outlined in Table 1.

Trauma-Informed Training Demographics

To better understand the current context of trauma-informed training in Canadian educational systems, participants were asked a variety of questions pertaining to their trauma-informed training experiences. Information about participants' trauma-informed learning and training experiences are outlined in Table 2.

Trauma-Informed Knowledge: Years of Experience, Grade Level Taught, and Trauma-Informed Training

Spearman's rank correlations were computed to assess the relationship between Canadian educators' trauma-informed knowledge and their years of experience, average grade level taught, and number of hours of trauma-informed training. These results are detailed in Table 3. While there was no significant relationship between Canadian educators' trauma-informed knowledge and their average grade level taught or years of teaching experience, there was a significant positive relationship between Canadian educators' trauma-informed knowledge and trauma-

informed training experience, as measured by one's reported hours of formal trauma-informed training, $r_s(170) = .286$, $p = .003$.

Trauma-Informed Attitudes: Years of Experience, Grade Level Taught, and Trauma-Informed Training

Spearman's rank correlations were also computed to assess the relationship between Canadian educators' trauma-informed attitudes and their years of experience, average grade level taught, and number of hours of trauma-informed training. The results of these analyses are noted in Table 3. While there was no significant relationship between Canadian educators' trauma-informed attitudes and their average grade level taught, or trauma-informed training experience, there was a significant positive relationship between Canadian educators' trauma-informed attitudes and their years of teaching experience $r_s(171) = .199$, $p = .009$.

Post-Hoc Analyses

Following the primary analyses, several post-hoc analyses were conducted. These post-hoc analyses were conducted for two primary reasons. The first being to ensure that the results described above are meaningful, and the second being to explore unexpected patterns within the data.

Trauma-Informed Attitudes and Knowledge.

To ensure that trauma-informed knowledge and attitudes were being measured as separate constructs, Spearman's rank correlations were used to analyze the relationship between Canadian educators' trauma-informed attitudes and trauma-informed knowledge. The Spearman's rank correlation noted a moderate positive correlation between Canadian educators' responses on the Trauma-Informed Education Knowledge survey, and the ARTIC $r_s(170) = .498$, $p < .001$. These results suggest that scores from the ARTIC, which speak to one's trauma-

informed attitudes, are distinct yet related to scores from the Trauma-Informed Education Knowledge survey, which are associated with one's trauma-informed knowledge.

Spearman's rank correlations were also used to examine the relationships between scores on the Trauma-Informed Education Knowledge survey and the ARTIC subscales. Again, the purpose of these analyses was to ensure that the Trauma-Informed Education Knowledge survey was truly measuring trauma-informed knowledge and that the ARTIC was truly measuring attitudes, which are distinct constructs. Interestingly, scores on the Trauma-Informed Education Knowledge survey showed moderate correlations with subscale 1 ("underlying causes of problem behavior and symptoms"), subscale 2 ("responses to problem behavior and symptoms"), and subscale 3 ("on-the-job behaviour") of the ARTIC. The relationship between the Trauma-Informed Education Knowledge survey and subscales 4 ("self-efficacy at work") and 5 ("reactions to the work") were weak. The results of these analyses are noted in Table 4. As subtests 1, 2, and 3 of the ARTIC have been identified as measuring primarily one's understanding of trauma-informed approaches, rather than their attitudes toward trauma-informed approaches (Baker et al., 2016), there is good evidence that the Trauma-Informed Education Knowledge survey truly measures trauma-informed knowledge and not trauma-informed attitudes. This is in-line with the findings outlined in Ilchena et al. (in press).

Informal Trauma-Informed Learning and Formal Trauma-Informed Training.

There are many ways one can learn about trauma-informed approaches, both formally and informally. Because there are so many different ways to learn about TIE, it is important to identify whether differences between formal and informal learning approaches result in differing trauma-informed attitudes and knowledge. This study used reported hours of formal trauma-informed training as the primary measure of one's trauma-informed training experience.

However, this survey also asked participants whether they had informally learned about trauma-informed approaches. While 83% of the sample identified having learned about trauma-informed approaches at some point, 64% identified having experienced formal training about trauma-informed approaches. Formal training was described in this survey as "Training about trauma-informed or trauma-sensitive approaches includes any workshop, class, course, lecture, or other instructor-led experience that primarily focused on childhood trauma or adverse childhood experiences (ACEs) and supporting students affected by trauma. Oftentimes, these trainings include terms such as trauma-informed, trauma-sensitive, trauma reduction, safety-supporting, neurosequential model, or resilience-promoting.".

Post-hoc Mann-Whitney *U* test analyses were used to identify whether trauma-informed attitudes and knowledge are influenced to the same degree by trauma-informed learning and trauma-informed training. The Mann-Whitney *U* test indicated that, educators who had learned about trauma-informed approaches (n = 143, *Mdn* = 5.80) show significantly more favourable trauma-informed attitudes than those who had not learned about trauma-informed approaches (*n* = 30, *Mdn* = 5.26), *z* = - 2.5, *p* = .012. Furthermore, out of the educators who had learned about trauma-informed approaches, those who had also experienced formal training about trauma-informed approaches (*n* = 110, *Mdn* = 5.80) did not have significantly more favourably trauma-informed attitudes than those without formal trauma-informed training (*n* = 33, *Mdn* = 5.77), *z* = - .93, *p* = .355. Of note, the trend identified in this analysis indicates that those who had experienced formal trauma-informed training showed slightly more positive trauma-informed attitudes than those without formal training. This aligns with the hypothesis outlined above, which assumes that greater experiences with trauma-informed training would result in more positive trauma-informed attitudes.

However, it is important to note that as the sample size of those without formal training was quite small, this analysis failed to reach an adequate level of power. A post-hoc power analysis was conducted using G*Power 3.1 software (Faul et al., 2007), which indicated that this Mann-Whitney *U* test reached 14% power, which is much lower than the widely accepted 80% power (Akobeng, 2016). This lack of power greatly increases the risk of committing a type II error (Akobeng, 2016), which occurs when the analysis incorrectly fails to reject the null hypothesis. In simple terms, this analysis may have lacked the power to identify a significant difference between the two groups. Thus, these results simply point toward a need for more research with a larger sample, as it is possible that the results may have looked different had there been more educators included in this research who had only informally learned about TIE.

Moreover, Mann-Whitey *U* tests were also conducted to analyze whether trauma-informed learning or formal trauma-informed training led to differing levels of trauma-informed knowledge. The Mann-Whitney *U* test indicated that, on average, educators who had learned about trauma-informed approaches ($n = 142$, $Mdn = 70.00$) showed significantly higher levels of trauma-informed knowledge than those who had not learned about trauma-informed approaches ($n = 30$, $Mdn = 65.00$), $z = -3.49$, $p < .001$. Furthermore, out of the educators who had learned about trauma-informed approaches, those who had experienced formal training about trauma-informed approaches ($n = 109$, $Mdn = 70.00$) did not show significantly higher levels of trauma-informed knowledge than those who had only informally learned about trauma-informed approaches ($n = 33$, $M = 69.00$), $z = -1.78$, $p = .075$. However, again, due to the small sample size of those who had only informally learned about TIE, this analysis did not reach the widely accepted 80% power (Akobeng, 2016). Using G*Power 3.1 software (Faul et al., 2007), a post-hoc power analysis indicated that this Mann-Whitney *U* test reached 37% power. Thus,

introducing a greater risk of committing a type II error. Nevertheless, this finding came close to significance, and identified a trend in which those with formal trauma-informed training show slightly higher levels of knowledge about TIE than those without formal training. This followed the expected direction as outlined in the above hypothesis, which predicted that those with more trauma-informed training would show higher levels of knowledge about TIE. Overall, these findings suggest that more research is needed to clarify the differences between formal trauma-informed training and informally learning about TIE.

Discussion

This is the first known study to analyze the availability of TIE training across Canada. In response to this study's first aim, the results indicate that many educators across Canada are learning about TIE. In this sample, the majority of educators reported learning about TIE. This learning seems to occur in a variety of ways, with lectures and workshops, and books and online posts being the most commonly cited ways educators learned about TIE. It seems that over half of the educators in the study have also experienced formal training about trauma-informed approaches, with the most common reason for having experienced formal TIE training being personal interest. Moreover, the majority of those with formal training about trauma-informed approaches cited that they first experienced training 2-5 years ago, and last experienced training 0-1 year ago, indicating that TIE training is still a relatively new area of training and that these training opportunities are ongoing for Canadian educators. Hence, it is clear that TIE training is available to educators in Canada, and that many educators are interested in, and receiving, this training.

While it is worth noting that Canadian educators are being trained on, and learning about TIE, what is more important is whether this training is making a positive impact on educators'

knowledge and attitudes about TIE. In response to this study's second aim, a positive relationship between trauma informed training experience, and one's trauma informed knowledge was found. This is in line with this study's original prediction as well as previous research suggesting that increases in trauma-informed knowledge occur following trauma-informed training (Dorado et. al., 2016; Rishel et al., 2019; Rodger et al., 2020). While this study cannot conclusively identify whether more trauma-informed training specifically leads to more trauma informed knowledge, it is clear from the results that educators with more trauma-informed training show greater trauma informed knowledge than those without, or with less, trauma-informed training. This indicates that the trauma-informed training available in Canada is likely making a positive impact on educators' knowledge about TIE.

The second aim of this study predicted that one's years of teaching experience and grade level taught would be related to their trauma-informed knowledge. Interestingly, the results did not follow this prediction and instead showed that neither years of teaching experience nor grade level taught were associated with one's trauma-informed knowledge. It was believed that greater years of teaching experience would result in more knowledge about TIE, as previous research suggests that more experience with students with special needs, such as ADHD and ASD, leads to educators being more knowledgeable about these areas (Anderson et al., 2012; Ballantyne et al., 2019; Cassimos et al., 2015). Additionally, previous research has also found that experience with trauma-affected students leads to more favourable trauma-informed attitudes (Browne-Kealey, 2019), however this has yet to be shown with trauma-informed knowledge. It is possible that teachers with more direct experience with students known to be affected by trauma may have greater knowledge about TIE, however this study measured experience by one's general years of teaching experience, which was not found to be associated with trauma-informed

knowledge. Moreover, while the grade level with which one works in may change the ways a teacher communicates with families and works with students (Epstein, 2011; Goldring et al., 2013), the results from this study suggest that grade level does not influence educators' trauma-informed knowledge.

Similarly, the third aim of this study predicted that trauma-informed attitudes would be associated with years of teaching experience, grade level taught, and trauma-informed training experience. There was no relationship found between grade level taught and one's trauma-informed attitudes, suggesting that the grade level in which one teaches does not influence their trauma-informed attitudes. The results of this study did however note a positive relationship between years of experience and trauma-informed attitudes, indicating that those with greater years of experience working within the educational systems seem to show more positive trauma-informed attitudes. This is in-line with similar findings indicating that greater experience with trauma-affected students leads to more positive trauma-informed attitudes (Browne-Kealey, 2019). While this study cannot conclusively identify whether more teaching experiences lead to more positive trauma-informed attitudes, it is clear that when one's teaching experience is greater, so too is the positivity of their trauma-informed attitudes. This provides strong evidence that teaching experience is related to one's trauma-informed attitudes.

Interestingly, this study did not find a relationship between trauma-informed attitudes and trauma-informed training experience. While it was predicted that trauma-informed training would be associated with trauma-informed attitudes, which some research has found support for (Loomis & Felt, 2020), this is not the first study to find no association between trauma-informed attitudes and training experience (Whitaker et al., 2019). However, because this study measured

trauma-informed training experience specifically by one's hours of formal trauma-informed training, more examination into this relationship is required.

Within this study, educators were asked if they had ever learned about trauma-informed approaches, which includes any formal or informal learning experiences. Educators were also asked specifically if they had ever experienced formal trauma-informed training. As participants reported hours spent in formal trauma-informed training was used to describe one's trauma-informed training experience, it was unclear whether informal learning about trauma-informed approaches would also show no relationship with trauma-informed attitudes.

A post-hoc analysis revealed that teachers who have learned about TIE, whether formally or informally, show more positive attitudes toward trauma-informed approaches and that this difference is significant. Further, this same finding was true when looking at the relationship between trauma-informed training and trauma-informed knowledge, whereby educators who had informally or formally learned about TIE, had significantly greater knowledge about TIE than those who had not experienced this learning. Additionally, it was found that when comparing those who had experienced formal trauma-informed training to those who had only informally learned about trauma-informed approaches, there was no significant difference in their trauma-informed attitudes or knowledge. However, due to small sample sizes leading to inadequate power, it is clear that these results require further examination before any meaningful conclusions can be made.

Strengths

There are many strengths of the present study worth noting. The current study was the first to quantitatively measure educators' attitudes and knowledge about trauma-informed approaches across Canada. Relatedly, this was also the first study to gather information about the

current context of Canadian educators' experiences with trauma-informed training. The results from this study highlight some very important, and novel, information about trauma-informed education within the context of Canada.

Moreover, the sample in the present study included educators from almost all provinces in Canada, indicating a good representation of educators from across Canada. Additionally, this sample included educators with a wide range of experience levels, across both years of experience as well as grade levels taught. Further, this was the first study to use the Trauma-Informed Education Knowledge survey, a new measure of trauma-informed knowledge. The information from this study enhances our understanding of the current state of TIE in Canadian schools and contributes to the limited research available about TIE in Canada.

Finally, the results from this study may also provide further insight into potential approaches to provide culturally appropriate supports for Indigenous students. The Canadian Psychological Association's (CPA) response to the Truth and Reconciliation Commission of Canada's report states that psychologists can work toward reconciliation by advocating for Indigenous mental health (Task Force on Responding to the Truth and Reconciliation Commission of Canada's Report, 2018). As Canadian statistics indicate that individuals who identified as Indigenous report higher levels of child maltreatment than do individuals who do not identify as Indigenous (Burczycka & Conroy, 2015), it seems that Indigenous students may be at a greater risk of experiencing trauma. Therefore, Indigenous students may greatly benefit from educators' use of TIE in Canadian schools. The findings from this study suggest that creating more trauma-informed training opportunities for educators may increase the use of TIE in Canada, which may better support Indigenous students' mental health which may be one actionable step for Truth and Reconciliation.

Limitations and Future Directions

While there are many strengths to the present study, there are also some limitations that should be noted in interpreting the results. Though the sample included representation from most provinces and territories across Canada, the survey was not offered in languages other than English and thus excluded Francophone teachers. This decision was made as the author does not speak French and translating the knowledge measure from English to French was out of the scope of this study. Future research would benefit from including Francophone teachers as Canada's official languages are both English and French, and roughly 41% of all Canadians are French speaking or bilingual (French and English) according to a 2016 Statistics Canada report (Statistics Canada, 2019). Additionally, only 2.9% of the participants in this study identify as Indigenous. With Indigenous people making up 5% of the total population in Canada and Indigenous populations continually rising (The Daily, 2022), future research would also benefit from including more Indigenous educators in trauma-informed research to better understand the state of TIE in Canada through an Indigenous lens.

As there is yet to be a gold-standard measure of trauma-informed knowledge for teachers, another possible limitation of this study is the use of the Trauma-Informed Education Knowledge survey. This measure was created for the purpose of this study and while it has undergone some psychometric testing, showing moderate internal consistency, the current study is the first to use this survey. Hence, while this is a promising measure, it is still in its infancy and may continue to undergo changes in the future (Ilchena, et al., in press).

Furthermore, another possible limitation of this study is that the impact of teachers' previous trauma history was not explored. This may be considered a weakness of this study as a similar study found that teachers with a history of trauma themselves reported more positive

attitudes about trauma-informed approaches (Waggoner, 2018). Questions about previous trauma history were omitted from this study as it was believed that including a screening question about trauma may be unnecessarily harmful for participants and may also limit participant's interest in being involved in this study. However, this is an important area for future research to explore, considering the prevalence of past trauma and the potential effect it may have on one's trauma-informed attitudes and knowledge.

The final limitation of this study is the potentially biased sample. The term "trauma-informed education" was used in the recruitment material, meaning that it is possible many of the teachers who chose to participate in this study, chose to participate out of their own personal interest in trauma-informed approaches. If the majority of participants chose to answer the survey out of a previously formed interest in trauma-informed education, this would likely lead to inflated levels of knowledge and attitudes about TIE that do not reflect those of the broader population of educators across Canada. Hence, the generalizability of the results of this study are unknown. This indicates that more research within this field is still needed. Further, as there is still much to be learned about trauma-informed training within the context of Canada, it is believed that including more qualitative questions about one's knowledge and attitudes in a large-scale study about TIE would provide a wealth of detailed information that quantitative studies cannot achieve. Additionally, it is recommended that future research continue to examine the differences between informal trauma-informed learning and formal trauma-informed training to further analyze the efficacy of the formal trauma-informed training currently available in Canada. This research may help work toward creating more standardized and effective TIE training programs for educators in Canada.

Implications

This research directly contributes to the growing information about TIE in Canada and provides much needed insight into Canadian educators' current understandings of TIE. The present study found that the vast majority of educators are already learning about trauma-informed education. Additionally, it is clear that those who are learning about trauma-informed education show more positive trauma-informed attitudes, and greater trauma-informed knowledge, both of which are related to one's use of trauma-informed approaches (Baker et al., 2016; Conners-Burrow et al., 2013; Sundborg 2019).

The results from this study touch on many potential ways Canadian schools and universities can work toward increasing educators' use of TIE. First, this study clearly noted that educators who had learned about TIE, whether formally or informally, showed greater knowledge about TIE and more positive trauma-informed attitudes than educators who had not learned about TIE. This suggests that increasing opportunities for educators to learn about TIE, even if informally, and thus less expensive and potentially less time-consuming, may very well lead to increases in the use of TIE in Canadian schools.

Similarly, while the results of this study indicate that grade level does not affect educators' trauma-informed knowledge or attitudes, it seems that one's years of experience is related to their trauma-informed attitudes. Hence, these findings, in combination with previous research noting greater knowledge and more positive attitudes about TIE after working with trauma-affected children (Browne-Kealey, 2019), suggests that practicum opportunities for pre-service teachers may play a critical role in increasing the use of TIE in Canada. Specifically, it seems that pre-service teachers may benefit from having more opportunities to work with at-risk students, thus gaining greater experience and practicing using a trauma-informed approach prior to starting their career. Again, while more research is needed to understand fully which

experiences are leading to gains in knowledge about TIE and more positive trauma-informed attitudes, it is clear that experience is important and that perhaps these experiences can be simulated earlier on in an educator's career through practicum opportunities and more diverse hands-on training experiences.

Trauma-informed schools and classrooms have shown great success in previous studies conducted outside of Canada (Dorado et al., 2016; McIntyre et al., 2019; Rishel et al., 2019). With educators playing such a vital role in creating trauma-informed schools, an essential step toward creating trauma-informed schools in Canada is implementing effective trauma-informed training programs for Canadian teachers. The information from this study may assist future researchers and policy developers in adjusting trauma-informed training programs to fit the needs of Canadian educators, thus working toward the overarching goal of creating trauma-informed schools in Canada.

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Table 1

Canadian Educators' Demographic Characteristics

Demographic Characteristics	*N*	%
Gender		
Man	6	3.50
Woman	160	92.50
Non-Binary	7	4.0
Ethnicity		
Asian	6	3.50
Black	1	0.60
Indigenous	5	2.90
White	156	90.70
Other	4	2.30
Location of Work		
Alberta	17	9.80
British Columbia	38	22.00
Manitoba	54	31.20
New Brunswick	3	1.70
Newfoundland and Labrador	3	1.70
Nova Scotia	7	4.00
Ontario	37	21.40
Quebec	3	1.70
Saskatchewan	6	3.50
Northwest Territories	1	0.60
Nunavut	4	2.30
Highest Level of Education		
Diploma/GED	2	1.20
Graduated college or university	50	28.90
Post-baccalaureate diploma	45	26.00
Master's degree	70	40.50
Doctorate (EdD, PhD)	5	2.90
Other	1	0.60
School Level Most Taught		
Elementary school (Kinder – Grade 6)	95	54.90
Middle school (Grade 7 – 8)	31	17.90
High school (Grade 9 – 12+)	40	23.10
Other	7	4.00

Note. $N = 173$.

Table 2

Canadian Educators' Self-Reported Trauma-Informed Training Experience

Trauma-Informed Training Experiences	*N*	%
Informal Trauma-Informed Learning	143	82.70
Learning Type		
Workshop/lecture/course	118	68.20
University class	54	31.20
Book or article	96	55.50
Website/online post	81	46.80
Other	10	5.80
Learning Influence		
Degree requirement	26	15.00
Workplace required	43	24.90
Workplace suggested	52	30.10
Personal interest	116	67.10
Other	3	1.70
Formal Trauma-Informed Training	110	63.60
Perceived Level of Trauma-Informed Training		
Very little training	12	10.90
Some training	61	55.50
A lot of training	37	33.60
First Received Training		
0-1 Years ago	6	5.50
2-5 Years ago	61	55.50
5+ Years ago	43	24.90
Last Received Training		
0-1 Years ago	75	68.20
2-5 Years ago	29	26.40
5+ Years ago	6	5.50

Note. $N = 173$.

Table 3

Spearman's Correlations Between Trauma-Informed Knowledge, Attitudes, and Educator Experiences

Variable	*M*	*SD*	1	2	3	4	5
1. Trauma-Informed Attitudes	5.61	0.76	-				
2. Trauma-Informed Knowledge	68.78	4.70	.498**	-			
3. Trauma-Informed Training Hours	59.25	148.30	.173	.286**	-		
4. Years of Teaching Experience	15.04	8.74	.199**	.149	.275**	-	
5. Average Grade Level Taught	5.51	3.38	.054	.054	.171	.144	-

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

Table 4

Spearman's Correlations Between the Trauma-Informed Knowledge Survey and ARTIC-35

Variable	1	2	3	4	5	6	7
1. TIE Knowledge Survey	-						
2. ARTIC-35 Total	.557**	-					
3. ARTIC-35 Subscale 1	.540**	.815**	-				
4. ARTIC-35 Subscale 2	.581**	.801**	.751**	-			
5. ARTIC-35 Subscale 3	.476**	.835**	.690**	.739**	-		
6. ARTIC-35 Subscale 4	.201*	.758**	.491**	.375**	.481**	-	
7. ARTIC-35 Subscale 5	.261*	.788**	.448**	.483**	.565**	.626**	-

Note. TIE = Trauma-informed education, ARTIC-35 = Attitudes Related to Trauma-Informed Care scale – 35-item Education Version.

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

Appendix A: Recruitment Materials - Poster

Research Opportunity:

Researchers at the University of Manitoba are looking for **Canadian teachers of students in kindergarten to grade 12.**

What is the Study About?

The purpose of this study is to learn about Canadian teachers' experiences and perceptions in terms of **working with students affected by trauma** (i.e. Trauma-Informed Education).

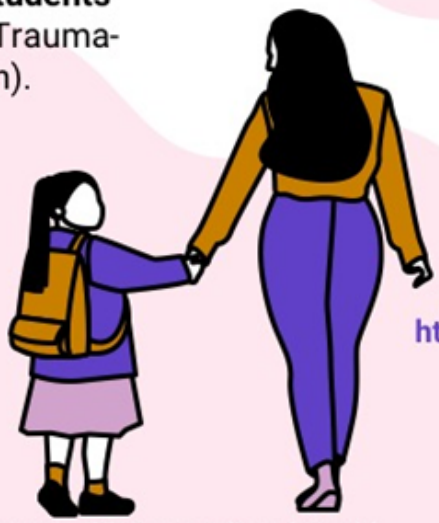
Why Participate?

By taking part in this anonymous survey, your contribution will help researchers understand the state of education for students affected by trauma in Canada. You will also be entered to **win one of three $50 Amazon eGift Cards!**

To Participate in this Study:

Follow the link below. This survey will take approximately 15-25 minutes to complete.

https://fdpl/ca/participate/



This research has been approved by the University of Manitoba Research Ethics Board, Fort Garry campus.

University of Manitoba

If you are interested in participating in this research and would like to learn more, please email Hannah Bartel bartelh@myumanitoba.ca

Please feel free to share this information with anyone else you think might be interested!

fdpl.ca FAMILY AND DEVELOPMENTAL PSYCHOPATHOLOGY LAB

Appendix B: Recruitment Advertisement for Social Media

Researchers at the University of Manitoba are looking for Canadian educators of students in kindergarten to grade twelve who are interested in completing a brief online survey regarding working with students affected by trauma as part of a new and exciting study! For more information about this opportunity, please contact Hannah Bartel bartelh@myumanitoba.ca. You can also visit our website for more information about our past and present research activities at www.fdpl.ca. Feel free to share this notice with others who may be interested!

Appendix C: Recruitment Materials - Email

Dear Participant,

I am recruiting Canadian educators to participate in an online survey. This survey will ask educators to share their experiences and perceptions in terms of working with children affected by trauma and the particular approaches used when working with these children, sometimes referred to as trauma-informed approaches. I am looking for teachers **both with and without** this experience.

Please use the link below to complete the survey by [Due date for completion]. If you agree to participate in this study, you will be asked to complete a survey including questions regarding teaching practices, knowledge about childhood trauma, and demographic information such as years of teaching experience. It is anticipated that the survey will take 15-25 minutes to complete.

Your responses will be anonymous and confidential. As a participant in the survey, you will be eligible to receive a summary of the results. Additionally, you will be able to enter a draw for one of three $50 Amazon.ca eGift Cards.

Thank you for considering participation in this research project. Your assistance and time are greatly appreciated! I am happy to answer any questions you may have about the survey. I may be reached at my contact information below. Feel free to share this notice with others who may be interested.

This research has been approved by the University of Manitoba Research Ethics Board, Fort Garry campus.

[Qualtrics link]

Principal Investigator:
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Appendix D: Consent Disclosure Statement

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This consent form, which you may print for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The **purpose** of this study is to gain insight into the experiences and perceptions of Canadian teachers in terms of working with children affected by trauma and the particular approaches used when working with these children, sometimes referred to as trauma-informed approaches (i.e. trauma-informed education; TIE). Participants include educators who hold a valid Canadian teaching certificate and who currently hold a part-time or full-time teaching position in Canada. This study is being conducted by Hannah Bartel, alongside her advisor, Dr. Jen Theule.

There are several expected **benefits** of this research. It is believed that this research will shed further light on TIE within the context of Canada. Further, these findings may assist future researchers and policy developers in adjusting trauma-informed training programs to fit the needs of Canadian educators, thus working toward the overarching goal of creating trauma-informed schools in Canada. It is also important to be aware of the **risks** involved in this survey. This survey involves themes of childhood trauma, and while you will not be asked about your own experiences with trauma at any point, it is possible that this topic may bring up negative emotions. However, it is believed that the risk of such negative emotions is not greater than what may be encountered in day-to-day life.

If you agree to participate in this study, you will be asked to complete a survey including questions regarding teaching practices, knowledge about childhood trauma, and demographic information such as years of teaching experience, grade levels most often taught, and various training experiences. In addition, some questions will require brief open-ended responses. The entire survey will take approximately 15-25 minutes to complete.

Participation in this study is voluntary. Your responses to this survey will remain anonymous. No individual quantitative results will be reported. You may complete the survey all at once, or save your responses and come back to complete the survey at any time. You do not have to answer any questions that you do not want to answer for any reason. At the end of the survey, you will have the opportunity to decide whether you would like to have your answers withdrawn from the

survey. If you begin the survey and then decide not to finish, you may leave the survey at any time. However, if you want your survey answers withdrawn from the study, you will need to skip to the end of the survey and choose the option to withdraw your survey answers from the study.

As a participant in this study you are eligible to receive a summary of the results, which will be sent out in December of 2022. Upon completion of the survey, a link will be available which will open up a new web browser where you may provide your email address. Additionally, through this link you may choose to be entered in a draw for one of three $50 Amazon.ca eGift Cards. If you decide not to finish this survey, or choose to have your survey answers withdrawn from the study, and still wish to enter the draw to win one of three $50 Amazon.ca eGift Cards, you can still access this link by clicking through to the end of the survey without answering any more survey questions. The draw winners will be contacted in December of 2022.

Email addresses will be not be linked to survey responses, and will be stored in a password protected computer at the University of Manitoba. Once the winners are contacted and participants have received a summary of the results, all participant email addresses will be deleted. Anonymous survey data will be stored in a password protected computer at the University of Manitoba and will be deleted in December 2031. The results of this research study may be disseminated via thesis, poster, conference presentation, and journal articles to academic audiences, and knowledge translation infographics (posted on social media) for the general public.

If you have questions about the survey at any time, you may email Hannah Bartel at bartelh@myumanitoba.ca or Dr. Jen Theule at Jen.Theule@umanitoba.ca.

By clicking “I agree to participate in this research study”, you are indicating that you have understood to your satisfaction the information regarding participation in the research project and are agreeing to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. Should you choose **not** to participate, **do not** click “I agree to participate in this research study” and close the web browser.

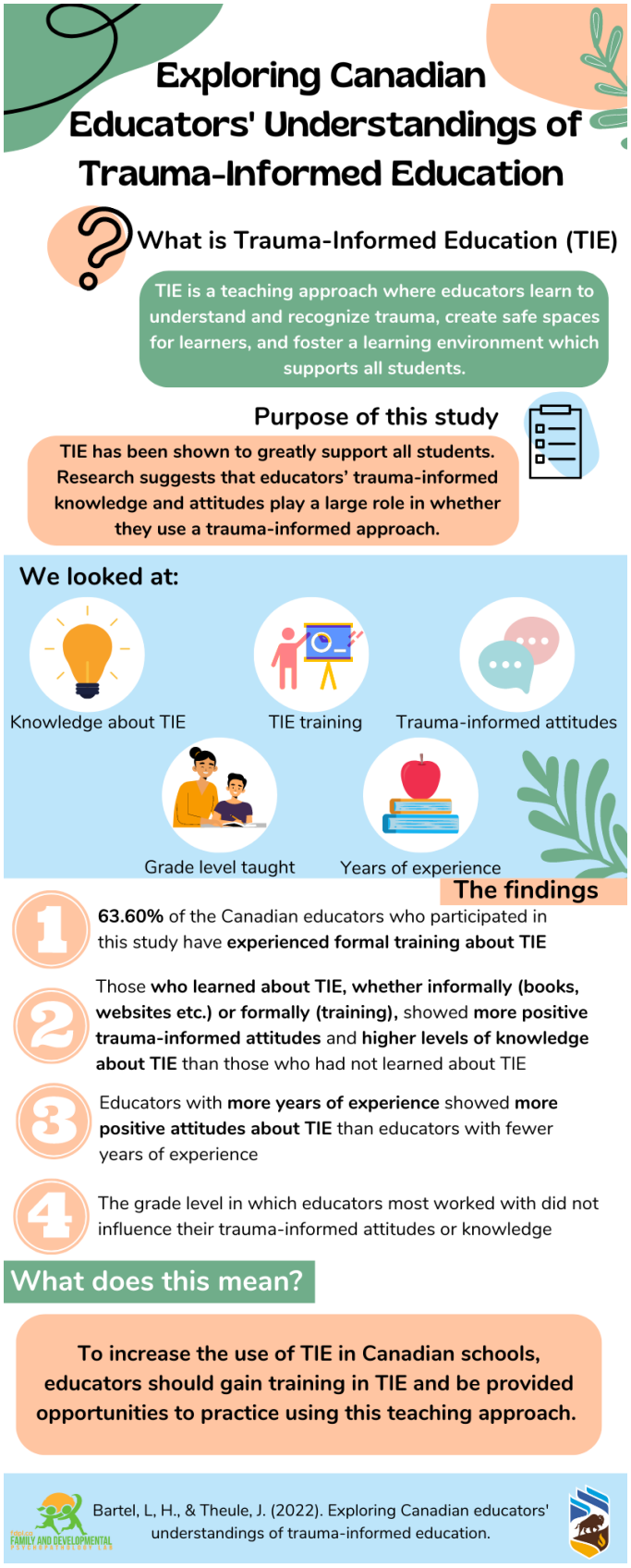
The database containing anonymous study data will be stored for an indefinite period, as the study data may be useful for future analyses.

The University of Manitoba may look at the research records to see that the research is being done in a safe and proper way.

This research has been approved by the University of Manitoba Research Ethics Board. If you have any concerns or complaints about this project, you may contact the Human Ethics Coordinator at 204-474-7122 or by email at humanethics@umanitoba.ca. We encourage you to print a copy of this consent form for your records.

- o I agree to participate in this research study

Appendix E: Infographic



Appendix F: Demographic Questions

Q1 What is your gender?

- Man
- Woman
- Non-binary
- I do not identify with the genders listed above
- Other (please specify) _____

Q2 What is your age? _____

Q3 What ethnicity do you identify with?

- Asian
- Black
- Indigenous
- White
- Other (please specify) _____

Q4 Do you currently hold a valid Canadian teaching certificate?

- Yes
- No
- Other (please specify) _____

Q5 Are you currently working in a Canadian school?

- Yes
- No
- Other (please specify) _____

Q6 What province or territory do you teach in currently?

- British Columbia
- Alberta
- Saskatchewan
- Manitoba
- Ontario
- Quebec
- New Brunswick
- Nova Scotia
- Prince Edward Island
- Newfoundland and Labrador
- Yukon
- Northwest Territories
- Nunavut
- Other (please specify) _____

Q7 What is the highest level of education you have achieved?

- Diploma/GED
- Some college or university
- Graduated college or university
- Post-baccalaureate diploma
- Master's degree
- Doctorate (EdD, PhD)
- Other (please specify) _____

Q8 From the options below, please choose the statement that best describes your current work schedule.

o Full-time

o Part-time

o Substitute

o On leave

o Other (please specify) _____

Q9 In the space below, please enter the grade level or levels you currently work in.

Note: If you work in multiple grade levels, please include all grade levels.

_____

Q10 What school level have you worked in ***most*** throughout your career?

o Elementary School (Kindergarten – Grade 6)

o Middle School (Grade 7 – Grade 8)

o High School (Grade 9 – Grade 12+)

o Other (please specify) _____

Q11 How many years have you been teaching? _____

Q12 Do you primarily teach one subject (i.e., phys-ed, music, math)?

o No

o Yes (please specify which subject) _____

o Other (please specify) _____

Q13 Do you primarily work in a role that would not be considered a classroom teacher? (i.e., student services, resource, teacher-librarian, administration)

o No

o Yes (please specify) _____

o Other (please specify) _____

Q14 Have you ever worked in a program where the majority of the students had disabilities?

o No

o Yes (please specify) _____

Q15 Please estimate the % of your current students that live in poverty.

_____

Q16 Please estimate the % of your current students that are a visible minority.

_____

Q17 Do you work primarily in a rural or urban setting?

Note: Statistics Canada (2001) definitions: Rural: "a population living outside places of 1,000 people or more" OR "living outside places with densities of 400 or more people per square kilometer". Rural and Small Town: "population living in town or municipalities outside the commuting zone of larger urban centres (i.e., outside the commuting zone of centres with population of 10,000 or more)".

o Rural

o Rural and Small Town

o Urban

If Rural or Rural and Small Town, the participants will see the following question

Q18 Would you consider your work setting to be Northern?

o No

o Yes

Training Experience

Q19 Have you ever learned about trauma-informed, or trauma-sensitive approaches?

o Yes

o No

If no, the participants will not see the following questions

Q20 How have you learned about trauma-informed approaches? (check all that apply)

☐ Workshop/lecture/course (in-person or virtual)

☐ University class

☐ Book or article

☐ Website/online post

☐ Other (please specify) _____

Q21 What led you to learn about trauma-informed approaches? (check all that apply)

☐ Degree requirement

☐ Workplace ***required***

☐ Workplace ***suggested***

☐ Personal interest

☐ Other (please specify) _____

Q22 Have you ever received training about trauma-informed, or trauma-sensitive approaches?

Note: Training about trauma-informed or trauma-sensitive approaches includes any workshop, class, course, lecture, or other instructor-led experience that primarily focused on childhood trauma or adverse childhood experiences (ACEs) and supporting students affected by trauma. Oftentimes, these trainings include terms such as trauma-informed, trauma-sensitive, trauma reduction, safety-supporting, neurosequential model, or resilience-promoting.

- Yes

- No

If no, participants will not see the following questions

Q23 If you recall, please share any details about your most recent or memorable training in the space below. For example, the title of the training, where it was offered, or who presented it.

_____

Q24 In the space below, please estimate the total number of hours you have spent learning about trauma-informed, or trauma-sensitive approaches through training sessions.

Note: Training about trauma-informed or trauma-sensitive approaches includes any workshop, class, course, lecture, or other instructor-led experience that primarily focused on childhood trauma or adverse childhood experiences (ACEs) and supporting students affected by trauma. Oftentimes, these trainings include terms such as trauma-informed, trauma-sensitive, trauma reduction, safety-supporting, neurosequential model, or resilience-promoting.

_____

Q25 How would you describe your level of training about trauma-informed approaches? (this includes training programs that are not directly about trauma-informed approaches, but make note of being trauma-informed or mention childhood trauma)

o Very little training about trauma-informed approaches

o Some training about trauma-informed approaches

o A lot of training about trauma-informed approaches

Q26 When did you ***first*** receive training that included information about trauma-informed approaches?

o 0-1 year ago

o 2-5 years ago

- 5+ years ago

Q27 When did you ***last*** receive training that included information about trauma-informed approaches?

- 0-1 year ago
- 2-5 years ago
- 5+ years ago

Appendix G: Trauma-Informed Education Knowledge Survey

	Trauma-Informed Education Knowledge Survey	
	PLEASE SELECT THE ANSWER THAT COMES CLOSEST TO WHAT YOU THINK IS TRUE.	Disagree very much Disagree moderately Disagree slightly Agree slightly Agree moderately Agree very much
1	Trauma affects physical, emotional, and mental well-being.	1 2 3 4 5 6
2	Children who have experienced trauma often have difficulty managing feelings and emotions, which can result in challenging behaviours in the classroom.	1 2 3 4 5 6
3	A trauma-informed approach requires educators to create a safe environment for students.	1 2 3 4 5 6
4	Students who have experienced trauma can become triggered in the classroom.	1 2 3 4 5 6
5	A trauma-informed approach requires educators to know the specific details of a student's history of trauma.*	1 2 3 4 5 6
6	A trauma-informed approach requires educators to focus on students' strengths and positive attributes.	1 2 3 4 5 6
7	Trauma may influence a student's level of engagement in activities and services, interactions with peers and adults, and responsiveness to rules and guidelines.	1 2 3 4 5 6

8	Attention-seeking behaviours exhibited by students who have experienced trauma will stop if ignored by adults.*	1	2	3	4	5	6
9	A trauma-informed approach requires educators to adjust their own behaviours and attitudes when working with trauma-affected students.	1	2	3	4	5	6
10	A trauma-informed approach requires educators to remind students of the consequences of their actions. *	1	2	3	4	5	6
11	Trauma can impact a student's academic achievement.	1	2	3	4	5	6
12	Exposure to trauma is common.	1	2	3	4	5	6
13	A trauma-informed approach requires educators to use disciplinary actions when students misbehave (i.e., sending a student to the hall, keeping a student in for recess).*	1	2	3	4	5	6

*Questions that are reversed scored are marked by **

Higher scores indicate more knowledge about TIE and lower scores indicate less knowledge about TIE.