Trauma-Informed Practices in Schools:
A Narrative Literature Review
Pratiques sensibles au traumatisme dans les écoles :
une revue de la littérature narrative

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ABSTRACT

In Canada, the influx of immigrant and refugee children from war-torn countries and the current rate of natural disasters highlight that it is time to examine our preparation within schools to address childhood traumatic events. However, there is a scarcity of empirical knowledge regarding effective trauma-informed practices (TIPs) with children in Canadian schools. The purpose of this narrative literature review is to examine the existing Canadian and international research regarding TIPs in schools. Themes noted in the literature are discussed, including research trends, strengths and gaps, and implications for future research regarding TIPs.

RÉSUMÉ

Au Canada, l'arrivée d'enfants immigrants et réfugiés issus de pays en guerre de même que le nombre actuel de catastrophes naturelles font ressortir la nécessité pour nous d'évaluer notre préparation dans les écoles relativement aux événements traumatisants vécus dans l'enfance. Or, il existe peu de connaissances empiriques sur les pratiques sensibles au traumatisme auprès des enfants dans les écoles canadiennes. Cette revue de la littérature narrative vise à passer en revue les recherches canadiennes et internationales existantes sur les pratiques sensibles au traumatisme dans les écoles. Les thèmes relevés dans la littérature sont analysés, notamment les tendances en recherche, les points forts et les lacunes et les implications pour la recherche future sur les pratiques sensibles au traumatisme.

Statistics indicate that 76.1% of Canadians will experience at least one traumatic event in their lifetime (Van Ameringen, Mancini, Patterson, & Boyle, 2008). Psychological trauma is defined as experiences and reactions to experiences that overwhelm an individual's capacity to cope (Poole & Greaves, 2012; Wright, 2014). Childhood traumatic experiences such as maltreatment, family and community violence, natural disasters, illnesses, and loss can have pervasive psychological, physical, and developmental impacts (Cohen, Mannarino, & Deblinger, 2006; Perry, Pollard, Blakley, Baker, & Vigilante, 1995).

Although there is a lack of knowledge regarding the epidemiology and prevalence rates among Canadian children with posttraumatic stress, the influx of immigrant children from war-torn countries and the current rate of natural and human-caused disasters in our Canadian contexts (e.g., forest fires, floods, school

suicides, school shootings, terrorist attacks abroad) highlight that it is time to examine our preparation within the school system to address possible childhood traumatic events. Previous research has indicated that schools play an important role in supporting students who have experienced trauma, and many authors concur that there is a need for a formalized system of trauma-informed practices (TIPs) in schools (e.g., Day et al., 2015; Dorado, Martinez, McArthur, & Leibovitz, 2016; Mendelson, Tandon, O'Brennan, Leaf, & Ialongo, 2015). However, formalized TIPs are not yet widespread in Canadian schools and the current Canadian empirical literature pertaining to TIPs is limited. The present review involves a comprehensive targeted literature search and narrative examination of the existing Canadian and international research regarding TIPs in schools.

TRAUMA AMONG SCHOOL AGED-CHILDREN

Childhood trauma encompasses a range of experiences and/or stressors that a child may experience throughout their development years. Trauma can involve direct experience of traumatic events or victimization; however, it can also be experienced by witnessing a traumatic event or by learning about trauma happening to another person (a phenomenon known as *vicarious* or *secondary traumatic stress*), particularly if a caregiver and/or important attachment figure is involved (Keats & Buchanan, 2013; Mash & Barkley, 2014). Common traumatic experiences in children may include maltreatment, violence, disaster, war, illness, accidents/injury, animal attacks, bullying, relational aggression, and traumatic loss (Spates, Samaraweera, Plaisier, Souza, & Otsui, 2007).

What is considered a traumatic experience involves both external recognition of the event as a trauma as well as an internal experience of appraising the event to be traumatic (Green, 1990). Taylor and Weems (2009) noted that what a child defines as being a traumatic event often varies with age. The authors researched the developmental differences in trauma across age and found that the type of events children ages 6 to 12 commonly report as being traumatic include (in order of most reported) media or entertainment violence, witnessing violence outside the family, and separation or loss in the family. For children ages 13 to 17, commonly reported traumatic events (in order of most reported) were separation and loss in the family, motor vehicle accidents, and media or entertainment violence. For both groups, a significant number of unclassifiable traumas were also reported, indicating that what one perceives as being traumatic can also vary from person to person (Taylor & Weems, 2009).

TRAUMA IMPACTS

The biopsychosocial impacts of trauma vary greatly from person to person and can undoubtedly permeate a child's educational experiences. In children, common psychological impacts include terror, helplessness, stress, learning difficulties, attention difficulties, and anxiety (Cohen et al., 2006; Wright, 2014). Early

trauma, especially when it involves important attachment figures, can impact brain function, brain development, and emotional regulation. It can also lead to mental health concerns such as anxiety disorders, depressive disorders, substance use disorders, posttraumatic stress disorder (PTSD), and other trauma-related disorders (Cohen et al., 2006; Perry et al., 1995). Social isolation, formation of maladaptive schemas, and pervasive relational-attachment disruptions can also result from trauma (Cohen et al., 2006; Guerra, Huesmann, & Spindler, 2003; Schwartz & Proctor, 2000).

TRAUMA-INFORMED PRACTICES DEFINED

Trauma-informed practices (TIPs) are models of care and support provision that consider the prevalence of childhood trauma and its subsequent impacts on development, learning, and well-being (Morgan, Pendergast, Brown, & Heck, 2015). TIPs strive to engage in all aspects of counselling and education with an understanding of trauma and traumatic impacts and have the goal of creating an environment that prioritizes safety, choice, control, and empowerment (Poole & Greaves, 2012). It is an alternative to traditional behaviour-based approaches to understanding and intervening with student challenges, mental health concerns, and problem behaviours (Dorado et al., 2016). TIPs can include general trauma-informed approaches to providing support (that do not necessarily require a disclosure of trauma), as well as trauma-specific services such as trauma assessment, psychoeducational programs, and/or trauma-focused interventions (Poole & Greaves, 2012; Woodbridge et al., 2016). Furthermore, TIPs often include a focus on educating and empowering students, families, and/or school personnel by advocating for system-wide safety, support, and wellness (Perry & Daniels, 2016). TIPs can mediate and/or address the psychological and developmental impacts of trauma such as attachment disruptions, PTSD, mental health concerns, and learning difficulties (Cohen et al., 2006; Woodbridge et al., 2016; Wright, 2014). Furthermore, TIPs can play an important role in the social-emotional development, well-being, and overall educational successes of students (Crosby, 2015; Phifer & Hull, 2016).

A NARRATIVE REVIEW OF THE LITERATURE

In preparation for conducting the present literature review, a preliminary basic literature search was conducted to inform the review procedures and questions of interest. From this preliminary search, it was established that practice-based and empirical articles have highlighted the value and benefit of TIPs for school stakeholders including students, educators, counsellors, and parents (e.g., Dorado et al., 2016; Jaycox et al., 2009). Furthermore, one meta-analysis related to TIPs indicated that school-based interventions designed for students suffering from PTSD have medium to large effect sizes for reduction of PTSD symptoms (Rolfsnes & Idsoe, 2011). However, no previous literature reviews were found that specifically explored the broader scope of research that falls under the cat-

egory of TIPs, including intervention studies, system-wide implementation, assessment, and stakeholders' experiences. Thus, the present study aims to explore current TIPs using a narrative literature review methodology.

Based on the aims of the present study, the following research questions were formulated to guide the literature review process and exploration:

1. What are the research trends in recent empirical TIPs literature in terms of:
   a. geographical location of the research?
   b. populations being investigated?
   c. models of TIPs?
   d. methodologies being utilized?
   e. research findings?
2. What are the strengths and limitations in the TIPs literature?

METHOD

Narrative review is an approach to literature review that aims to identify and summarize themes across a body of literature pertaining to a specific subject area and/or research question of interest (Ferrari, 2015). The narrative review method was selected because it allows for a rigorous and comprehensive overview and consolidation of the existing literature to address our research questions of interest (Green, Johnson, & Adams, 2006). We aimed to integrate literature that examined different approaches to TIPs (e.g., interventions, assessment, school-based programs), various school stakeholders (e.g., teachers, counsellors, parents, students), and research across methodological approaches. Narrative methodology facilitates the synthesis of a diverse range of research to provide a broad perspective regarding the "story" that the literature base tells us about current TIPs in schools (Baumeister & Leary, 1997; Green et al., 2006). Current themes in the literature can also speak to the strengths, gaps, and suggested directions for future research in the area (Green et al., 2006).

Guides to literature reviews in the social sciences authored by Baumeister and Leary (1997) and Green et al. (2006) were consulted for methodological guidelines. Accordingly, the present review involved the following steps: (a) engaging in a guided keyword search of peer-reviewed journals utilizing computerized databases; (b) searching reference lists of articles obtained through the computerized database search; and (c) examining the literature set for relevance, duplication, and for satisfaction of inclusion/exclusion criteria.

Procedures

Guided computerized database search. The academic databases searched in the present literature review included UBC Library, Google Scholar, Academic Search Complete, Education Source, PsychARTICLES, PsychINFO, ERIC, Teacher Reference Center, and the Wiley Online Library. Keywords utilized for the targeted literature search involved combinations of trauma key words and various populations and settings including "trauma," "trauma-informed,"

"trauma-informed practice," "counselling," "school counselling," "schools," "children," "youth," and "education."

Reference list search. The reference lists and literature reviews of the articles obtained through the literature search were scanned for cited articles that were relevant to the present literature review and domains of knowledge on TIPs in school settings. The articles were then obtained through searching the references in computerized databases including EBSCO databases and Google Scholar.

Literature set examination. The literature set was first examined for basic relevance by reading the article description for matches with TIPs keywords and by checking that journals were established peer-reviewed journals. Duplicates were also removed. After meeting these basic criteria, the articles were then thoroughly examined using inclusion and exclusion criteria. Inclusion/exclusive criteria were set in such a way that they would identify a wide-ranging empirical literature set of school-based research concerned specifically with the construct of TIPs—specifically, that the research advocates for approaches that school-based professionals can use to recognize, support, and/or provide intervention to trauma-impacted students.

Inclusion criteria for the present literature included studies that (a) were empirical investigations that utilized clearly stated methodology; (b) were primarily conducted in a school setting; (c) specifically stated that they investigated TIPs or clearly investigated aspects of TIPs such as trauma intervention, assessment, and prevention programs; (d) were published in peer-reviewed journals; and (e) were published in the English language. Exclusion criteria for the present literature included studies that were (a) nonempirical practice-based and theoretical articles, (b) conducted outside of school settings (e.g., hospitals or group homes), (c) not explicitly focused on models or components TIPs, and (d) not written or translated into English.

<div align="center">RESULTS</div>

After removing duplicates, 51 records were obtained from the literature. Seventeen nonempirical articles and 1 doctoral dissertation were excluded. Furthermore, 6 empirical studies were excluded due to (a) being conducted outside of a school-based setting or (b) not exploring TIPs-related variables with school-related populations. The remaining 27 articles were examined for themes based on the research questions of interest.

The dates of publication for the literature ranged from 2000 to 2016, with most of the articles (n = 18) published between 2011 and 2016. The articles were published in a range of peer-reviewed journals across the fields of education, psychology, counselling, medicine, psychiatry, trauma studies, and child development (see Table 1). Table 2 includes descriptive information for the 27 articles included in this review. To present the findings of this narrative literature review, the research trends pertaining to Research Question #1 will first be detailed, including geographical location of the research, populations investigated, models of TIPs, methodologies, and research findings. Then, the strengths and limita-

tions of the current empirical literature regarding TIPs in schools pertaining to Research Question #2 will be detailed in the discussion section below.

Table 1
Title of Journal and Number of Articles Found

Journal	Number of Articles
Children and Services Review	1
Clinical Child Psychology and Psychiatry	2
Exceptionality Education International	1
International Journal of Inclusive Education	1
Journal of Adolescence	1
Journal of Adolescent Health	2
Journal of Aggression, Maltreatment & Trauma	1
Journal of Behavior Therapy and Experimental Psychiatry	1
Journal of Behavioral Health Services & Research	1
Journal of Child Psychology and Psychiatry	2
Journal of Consulting and Clinical Psychology	1
Journal of the American Academy of Child & Adolescent Psychiatry	2
Journal of the American Medical Association	1
Journal of Traumatic Stress	4
School Mental Health	5
School Psychology Review	1

Table 2
Article Summaries

	Article	Country	Sample	Methodology	Highlights of Findings
1	Alisic, E. (2012)	Nether-lands	21 elementary school teachers	Qualitative	Key themes – importance of supportive atmosphere, role definition, wanting knowledge and skills, emotional burden of work.
2	Alisic, E., Bus, M., Dulack, W., Pennings, L., & Splinter, J. (2012)	Nether-lands	765 grade 8-12 teachers	Quantitative	Mean difficulty score 29.8. Total score dependent on experience, training, knowledge and skills, and role clarity.
3	Berger, R., Gelkopf, M., & Heineberg, Y. (2012)	Israel	154 war-exposed grade 7 and 8 students	Quantitative	Statistically significant reduction in treatment group compared to control group on all outcome measures.

	Article	Country	Sample	Methodology	Highlights of Findings
4	Berger, R., Pat-Horenczyk, R., & Gelkopf, M. (2007)	Israel	142 grade 2-6 students.	Quantitative	Significant improvement in PTSD symptomatology, somatic complaints, and generalized and separation anxiety.
5	Day, A. G., Somers, C. L., Baroni, B. A., West, S. D., Sanders, L., & Peterson, C. D. (2015)	USA	70 female students.	Quantitative	Significant reduction in PTSD symptoms, steadily higher self-esteem scores, decrease in survival score on Student Needs Survey.
6	Dods, J. J. (2015)	Canada	3 students from south-eastern Ontario	Qualitative	Key themes: importance of supportive, teacher driven relationships school-level focus on student well-being, protective function of school connectedness.
7	Dorado, J. S., Martinez, M., McArthur, L. E., & Leibovitz, T. (2016)	USA	4 schools (1243 students). Subsamples: school personnel, therapy clients	Quantitative	Significant changes in: staff personnel knowledge, student engagement, disciplinary incidents (decrease), decrease trauma symptoms in therapy clients.
8	Ehntholt, K. A., Smith, P. A., & Yule, W. (2005)	UK	26 students ages 11-15	Quantitative	Significant improvement in post-traumatic stress symptoms, behavioural difficulties, emotional symptoms. Gains not maintained at 2-month follow-up.
9	Gelkopf, M., & Berger, R. (2009)	Israel	114 grade 7 and 8 students in all-male religious public school	Quantitative	Significant reduction in PTSD severity, functional problems, somatic complaints, depression compared to control group three months post-intervention.
10	Gonzalez, A., Monzon, N., Solis, D., Jaycox, L., & Langley, A. K. (2015)	USA	402 elementary school children grades 1-5 from 4 elementary school	Quantitative	34% of students endorsed one more more traumatic events and 75.4% endorsed moderate or above levels of post-traumatic stress symptoms.
11	Jaycox, L. H., Langley, A. K., Stein, B. D., Wong, M., Sharma, P., Scott, M., & Schonlau, M. (2009)	USA	76 students grade 6 and 7 students	Quantitative	Small reductions in PTSD and depression scores. Preliminary support for successful implementation of intervention.

	Article	Country	Sample	Methodology	Highlights of Findings
12	Kataoka, S. H., Stein, B. D., Jaycox, L. H., Wong, M., Escudero, P., Tu, W., ... & Fink, A. (2003)	USA	198 students grade 3-8	Quantitative	Students in intervention group demonstrated moderate improvement in PTSD and depressive symptoms compared with waitlist at 3-month follow-up.
13	Langley, A. K., Gonzalez, A., Sugar, C. A., Solis, D., & Jaycox, L. (2015)	USA	74 children and their primary caregiver.	Qualitative	Significant improvement in parent and child-reported PTSS and child-reported anxiety symptoms in immediate and delayed group. Results maintained or gained over time at 2 and 6 months.
14	Langley, A., Santiago, C. D., Rodríguez, A., & Zelaya, J. (2013)	USA	23 educators in 4 focus groups and 16 parents in 2 focus groups.	Quantitative	Key themes: engagement of parents and educators, collaboration and communication in stakeholder relationships, addressing logistical concern
15	Mendelson, T., Tandon, S. D., O'Brennan, L., Leaf, P. J., & Ialongo, N. S. (2015)	USA	49 grades 7 and 8 public school students.	Quantitative	Improved teacher-rated emotional regulation, social and academic competence, classroom behaviour, and discipline in intervention group.
16	Morgan, A., Pendergast, D., Brown, R., & Heck, D. (2015)	Australia	Five Australian flexi schools	Qualitative	Key themes: relationships, re-engagement, holding complexity, structure and boundaries, listening to young people, strengths-based practice, connection, time, changing perspectives.
17	Morsette, A., Swaney, G., Stolle, D., Schuldberg, D., van den Pol, R., & Young, M. (2009)	USA	7 students ages 11-12 from two schools	Quantitative	PTSD and depressive symptoms decreased for 3 of the 4 students who completed the treatment.
18	Nadeem, E., Jaycox, L.H., Kataoka, S.H., Langley, A.K. and Stein, B.D., (2011)	USA	2 public schools	Qualitative	Key activities for implementation: pre-implementation work, ongoing clinical and logistical support, promotion of fidelity, monitoring outcomes, and fitting CBITS intervention to the local setting.

	Article	Country	Sample	Methodology	Highlights of Findings
19	O'Shea, B., Hodes, M., Down, G., & Bramley, J. (2000)	UK	14 refugee students	Quantitative	Reduction in mean Strengths and Difficulties Questionnaire score.
20	Perry, D. L., & Daniels, M. L. (2016)	USA	1 pilot school. Sub-samples – professional development, care coordination, clinical services	Mixed-Methods	97% satisfaction rate with professional development. 19 families serviced by care coordination. Reduction in PTSD symptoms from 100% to 17% in clinical service group.
21	Rolfsnes, E. S., & Idsoe, T. (2011)	Norway	19 studies from 9 different countries	Meta-Analysis	School-based intervention programs show medium-large effect for reduction of PTSD symptoms.
22	Stein, B. D., Jaycox, L. H., Kataoka, S. H., Wong, M., Tu, W., Elliott, M. N., & Fink, A. (2003)	USA	126 grade 6 students from 2 middle schools	Quantitative	Compared to waitlist-delayed, early intervention group had significantly lower scores on symptoms of PTSD, depression and psychosocial dysfunction. No significant difference at six months.
23	West, S. D., Day, A. G. Somers, C. L. & Baroni, B. A. (2014)	USA	39 female public charter school students ages 14-18	Qualitative	16 total behaviours identified by students, 23 causes for behaviours, and 20 recommendations for improving policies and practices in schools provided. 11 themes related to general school culture also noted.
24	Wolmer, L., Hamiel, D., & Laor, N. (2011)	Israel	1488 grade 4 and 5 students	Quantitative	Intervention group displayed significantly lower symptoms of post trauma and stress/mood symptoms than control group. Males, older children, and higher SES children had fewer overall symptoms.
25	Wolmer, L., Hamiel, D., Barchas, J. D., Slone, M., & Laor, N. (2011)	Israel	983 grades 3-6 students from 19 schools	Quantitative	Significant symptoms of stress/mood and PTSD. Decreases further pronounced after program completion and then at 3-month follow-up.
26	Wolmer, L., Laor, N., Dedeoglu, C., Siev, J., & Yazgan, Y. (2005)	Turkey	287 children ages 9-17 from 3 schools	Quantitative	Significant decreases in PTSS, grief, and dissociation. Teacher ratings higher on measure of adaptive functioning.

	Article	Country	Sample	Methodology	Highlights of Findings
27	Woodbridge, M. W., Sumi, W. C., Thornton, S. P., Fabrikant, N., Rouspil, K. M., Langley, A. K., & Kataoka, S. H. (2016)	USA	4076 grade 6 students from 12 high schools	Quantitative	Students report an average of 3.62 trauma events. Males reported more trauma and PTS symptoms than female. Differences seen for racial/ ethnicity groups for number of trauma events reported but not for symptoms.

Research Trends

GEOGRAPHICAL LOCATION OF RESEARCH

A large proportion of the studies reviewed in the present study were conducted in the United States (*n* = 14). The second most frequent country of research was Israel (*n* = 5). Additional countries of research included the Netherlands (*n* = 2), the United Kingdom (*n* = 2), Australia (*n* = 1), Norway (*n* = 1), Turkey (*n* = 1), and Canada (*n* = 1).

POPULATIONS INVESTIGATED

The reviewed studies of interest investigated a range of stakeholders for TIPs in schools, ranging from the individual level to the systemic level. Most studies (*n* = 23) investigated programs and/or interventions in some capacity. The samples ranged from case studies and small groups (e.g., Dods, 2015; Morsette et al., 2009) to the intervention or assessment of thousands of students across multiple high schools (e.g., Dorado et al., 2016; Woodbridge et al., 2016). Furthermore, investigations were conducted with students across gender, age, socioeconomic status (SES), and ethnic background (e.g., Day et al., 2015; Langley, Gonzalez, Sugar, Solis, & Jaycox, 2015; Mendelson et al., 2015; Morsette et al., 2009; Whitson, Bernard, & Kaufman, 2015). Finally, select studies investigated particular subpopulations of students that may have been exposed to or vulnerable to traumatic events such as refugee students, court-involved females, and students from locations that had been exposed to war, violence, or terror including war-affected students (Berger, Gelkopf, & Heineberg, 2012; Berger, Pat-Horenczyk, & Gelkopf, 2007; Gelkopf & Berger, 2009; Wolmer, Hamiel, & Laor, 2011), refugees (Ehntholt, Smith, & Yule, 2005; O'Shea, Hodes, Down, & Bramley, 2000), and court-involved students (Day et al., 2015; West, Day, Somers, & Baroni, 2014).

Other stakeholders, including parents and school staff, were also investigated, often in conjunction with samples of students (e.g., Dorado et al., 2016; Langley et al., 2015). Three studies investigated educators alone (Alisic, 2012; Alisic, Bus, Dulack, Pennings, & Splinter, 2012; Morgan et al., 2015). One study (Langley, Santiago, Rodríguez, & Zelaya, 2013) investigated educators

and parents only without including students. Finally, two studies investigated entire schools, including the various stakeholders (Dorado et al., 2016; Perry & Daniels, 2016).

MODELS OF TIPS

The studies in the present review investigated the development and implementation of various TIPs models, including assessment, intervention, and system-wide programs. The studies were coded using the following thematic categories: Trauma Assessment, Trauma Support, Program Implementation, and Trauma Interventions.

Trauma assessment. Two assessment studies were reviewed that explored the instances and impacts of trauma across groups of elementary-aged students (Gonzalez, Monzon, Solis, Jaycox, & Langley, 2015; Woodbridge et al., 2016). A study by Gonzalez et al. (2015) screened 402 elementary school children in Grades 1 to 5 for trauma exposure using the Modified Events Screening Inventory for Children – Brief Form (TESI-C; Daviss et al., 2000) and for PTSD symptoms with the UCLA PTSD Reaction Index for DSM-IV (PTSD-RI; Rodriguez, Steinberg, & Pynoos, 1998). A further study, by Woodbridge et al. (2016), screened 4,076 Grade 6 students with the Traumatic Events Screening Inventory – Child Report Form (TESI-CRF-R; Ippen et al., 2002) and the Trauma Symptom Checklist Child Version – posttraumatic stress subscale (TSCC-PTS; Briere, 1996).

Trauma support. Three qualitative studies (Alisic, 2012; Alisic et al., 2012; Dods, 2015) investigated the experiences of teachers and students to gain perspective regarding the needs of students impacted by trauma and the teachers that support them in the classroom and on the school campus. For teachers, the research suggests that supporting children who have experienced trauma can be challenging and that factors such as having a supportive school environment, role clarity, and gaining trauma-focused skills and knowledge can potentially mediate these challenges (Alisic, 2012; Alisic et al., 2012). From the students' perspective, school connectedness and building caring, safe, and supportive relationships with school-based supports (particularly teachers) can increase engagement and reduce at-risk behaviours and emotional distress (Dods, 2015).

Program implementation/evaluation. Two studies examined school-level implementation of TIPs. Dorado and colleagues (2016) investigated the Healthy Environments and Response to Trauma in Schools (HEARTS) Program, and Perry and Daniels (2016) investigated a program of school-based trauma services piloted by the New Haven Trauma Coalition. Both studies involved early-stage systemic intervention/prevention programs and involved multiple groups of school stakeholders including school professionals such as teachers and administrators, parents, and students (Dorado et al., 2016; Perry & Daniels, 2016). Both studies demonstrated the importance of having a multilayered approach in TIPs by offering training to school professionals, multidisciplinary support for

students and families, and specific trauma interventions for students suffering from posttraumatic stress symptoms. Finally, as few studies exist that explore system-wide program implementation, these studies highlight the need for further research that comprehensively investigates these programs across schools and over time.

Trauma interventions. Most of the studies (n = 15) in the present literature review were intervention studies aimed at supporting a targeted group or classroom of students within a larger school population. Frequently, the interventions were standardized and/or manualized approaches including Cognitive Behavioral Intervention for Trauma in Schools (CBITS; Jaycox et al., 2009; Morsette et al., 2009; Nadeem, Jaycox, Kataoka, Langley, & Stein, 2011; Stein et al., 2003); Bounce Back (Langley et al., 2013; Langley et al., 2015); Enhancing Resiliency Amongst Students Experiencing Stress (ERASE-Stress; Berger et al., 2012; Gelkopf & Berger, 2009); Overshadowing the Threat of Terrorism (Berger et al., 2007); Children and War: Teaching Recovery Techniques (Ehntholt et al., 2005); Heart of Teaching and Learning (HTL; Day et al., 2015); Mental Health for Immigrants Program (Kataoka et al., 2003); Stress-Inoculation Training (Wolmer, Hamiel, & Laor, 2011); the School Reactivation Program (Wolmer, Laor, Dedeoglu, Siev, & Yazgan, 2005); and the RAP Club (Mendelson et al., 2015). Numerous interventions were designed for implementation by teachers or non-mental health professionals (n = 8). Other studies (n = 5) investigated interventions implemented by school and/or community-based mental health professions including community mental health clinicians, school counsellors, school social workers, and/or school psychologists. The most investigated intervention was CBITS, which was used in its original iteration (e.g., Jaycox et al., 2009; Morsette et al., 2009) and as part of adapted or integrated models (e.g., Langley et al., 2015; Perry & Daniels, 2016).

METHODOLOGIES

A clear majority of articles located in this review used quantitative methodologies (n = 20). Rigorous methodological designs including randomized control studies or quasi-randomized control designs were well-represented in reviewed research studies (e.g., Berger et al., 2012; Jaycox et al., 2009; Stein et al., 2003). Additionally, pre-post-test analyses were commonly utilized across experimental and quasi-experimental designs to assess the efficacy of the interventions. Finally, meta-analytic design was utilized for one study to examine the efficacy of school-based PTSD interventions (Rolfsnes & Idsoe, 2011), and a mixed-methods design examined a pilot test of a school system-level program (Perry & Daniels, 2016).

Qualitative methodological designs were utilized for six studies in the present literature set. Two of the studies were case studies (Dods, 2015; Nadeem et al., 2011). Additional qualitative approaches included thematic content analyses, thematic network analyses, summative analyses, and phenomenology (Alisic, 2012; Langley et al., 2013; Morgan et al., 2015; West et al., 2014).

RESEARCH FINDINGS

Several key areas of findings pertaining to TIPs were noted in the present review including trauma prevalence, systemic factors, and trauma intervention. The key themes of the findings are summarized below. For further details regarding the findings for each of the studies reviewed, see Table 2.

Trauma prevalence. The trauma assessment studies examined in the present study indicated that a significant number of school-aged children have been impacted by trauma (Gonzalez et al., 2015; Woodbridge et al., 2016). Gonzalez et al. (2015) found that 34% of children in Grades 1 to 5 reported experiencing one or more traumatic events and 75.4% of these children endorsed moderate or higher levels of posttraumatic stress symptoms. Woodbridge et al. (2016) found that Grade 6 students report an average of 3.62 traumatic events and that exposure to trauma was associated with elevated distress and/or posttraumatic stress symptoms in 13.5% of the sample. Gonzalez and colleagues (2015) found no differences for gender, whereas Woodbridge and colleagues (2016) found that males reported more trauma events and posttraumatic stress symptoms than females. Furthermore, Woodbridge et al. (2016) found differences in the number of trauma events reported across racial and ethnic groups but not in reported posttraumatic stress symptoms.

Systematic factors. Factors such as school environment, school-related trauma triggers, and training for school staff have been highlighted as important systemic components of TIPs. School environment is indicated to play a key role in the experiences of students who have experienced trauma (Dods, 2015; West et al., 2014). Students reported that multiple factors in the classroom triggered trauma-related symptoms and responses, including sights, sounds, words, and interactions in the classroom (West et al., 2014). On the other hand, a supportive, respectful, caring environment, school connectedness, and trauma-informed resources can play an important role in school-level support for children and adolescents who have experienced trauma (Dods, 2015; West et al., 2014). For school staff, findings indicated that many teachers encountered challenges supporting students who had experienced trauma due to reported lack of knowledge and skills, lack of experience, and lack of role clarity (Alisic, 2012; Alisic et al., 2012). However, when trauma-informed training is offered, it can lead to reported increases in staff personnel knowledge, relational engagement, role clarity and definition, and satisfaction with an implemented TIPs (Dorado et al., 2016; Langley et al., 2013; Morgan et al., 2015; Perry & Daniels, 2016).

Trauma intervention. In studies exploring specific trauma interventions, a common theme in the findings was that the interventions were associated with significant improvements in posttraumatic symptoms, anxiety-related symptoms, somatic complaints, depression, and/or functional impairments (e.g., Berger et al., 2012; Gelkopf & Berger, 2009; Gonzalez et al., 2015; Stein et al., 2003). Control or waitlist studies found that the pre- to post-test improvements were generally greatest for the treatment conditions (e.g., Gelkopf & Berger,

2009; Kataoka et al., 2003; Langley et al., 2015). The results for improvements over time were mixed. Ehntholt et al. (2005) found that gains were not maintained over time, whereas Langley et al. (2015) found that results were maintained or gained over time.

DISCUSSION

The present narrative review was designed to consolidate and describe the story that the current literature base tells us about TIPs in schools. Overall, the themes that emerged in the empirical research seem to support trauma-informed principles, which state that schools are indeed valuable environments to provide support to children who have experienced trauma and that school-based intervention can be efficacious for treating posttraumatic stress symptoms and other trauma impacts (Jaycox et al., 2009; Rivera, 2012). However, research investigating TIPs in school seems to be an emerging area of research, with many apparent strengths but also opportunities for growth as it becomes increasingly established. We discuss below the strengths and limitations of the research that became apparent through this narrative review as well as suggested directions for future empirical research and links to clinical practice.

Strengths and Limitations of the Literature

STRENGTHS

There are many apparent strengths within the current literature base with regards to scope of the research, the research findings, and the diversity noted in the research. Overall, the research reviewed is recent; all studies reviewed were published after 2000. Trauma-informed research also seems to be steadily increasing, as most of the studies were published in the last five years. Furthermore, TIPs seem to be garnering the interest of professionals from a variety of fields including education, medicine, psychology, counselling, traumatic stress studies, and child development. This indicates that TIPs in schools has multidisciplinary support. However, despite the diversity of fields researching TIPs, all the studies in the present literature review were conducted in school-based settings and engaged school-based stakeholders such as parents, educators, and students.

With regards to the efficacy factors, a general strength of the literature is that most studies seem to demonstrate that TIPs have the potential for significant benefit and value for students, school personnel, and/or families. Methodologically rigorous means of investigating TIPs were used, including experimental or quasi-experimental designs. These designs were seen primarily in studies that investigated cognitive-behavioural-therapy-based interventions, which is an approach to therapy that has strong empirical support. Furthermore, the inclusion of qualitative designs in a handful of the studies allowed for greater depth to the understanding of personal experiences and the needs of the stakeholders impacted by TIPs.

Another strength of the trauma-informed literature reviewed is that many studies seem to emphasize the importance of participation and collaboration among clinical, teaching, administrative staff, parents, and/or students. This highlights the value of systems-level involvement, support, and intervention. Furthermore, many of the programs and interventions are designed to be delivered by teachers and other school staff. By training and using in-house professionals, these interventions capitalize on school-based resources and relationships and help to increase the trauma-informed knowledge and skills of these professionals.

A final strength of the literature reviewed is the range and diversity of the sample. The samples involved in the present review ranged from case studies to large-sample assessment studies. Sample diversity was also noted in terms of ethnic and cultural background, SES, geographic location of schools, and traumatic experiences reported and investigated.

Limitations. Upon examination of the literature pertaining to TIPs in schools, several limitations were identified. These limitations include the facilitation of the programs and interventions, a heavy focus on quantitative study design, limited therapeutic approaches, and lack of research in a Canadian empirical context.

Trauma interventions often use school-based personnel—primarily teachers—for delivery and support of the interventions. Although this can be valuable (as stated above), we believe that intervention may benefit from additional support or co-facilitation by school professionals who are extensively trained in mental health and trauma support, such as school counsellors, school psychologists, or school-based social workers. In the studies reviewed, TIPs offered by school-based mental health professionals, such as school counsellors or school psychologists specifically, were limited. Rather, when a mental-health professional was involved, it was often a community-based clinician or research clinician, who may not be as familiar with a school's culture and milieu as a school-based professional would be.

Multiple limitations were noted in the methodological approaches of the reviewed studies. The literature base reviewed primarily uses quantitative study designs, which can be valuable in studying outcomes but is often limited in obtaining in-depth information regarding the experiences and contextual conditions of TIPs. Within the quantitative research, intervention studies largely relied on self-report measures rather than clinical observation or interview data, which may limit knowledge regarding conditions that facilitate successful implementation. Furthermore, intervention studies often excluded students who had experienced certain types of trauma such as sexual abuse trauma, which may limit the generalizability of the results. Finally, while qualitative methodologies provide important information regarding the experiences of students, educators, and parents, the findings are often limited due to small sample sizes and cannot be generalized to other geographical locations and/or school settings.

With regards to the intervention studies specifically, a limitation we noted is the overrepresentation of cognitive behavioural therapeutic (CBT) approaches. While CBT has considerable empirical support both in general and as a school-based intervention, it would be valuable to have representation from other potentially efficacious trauma therapies or integrated models as a comparison and to add greater support for linking research to school-based practice. Examples of therapies beyond CBT-based approaches with emerging evidence for supporting children who have experienced trauma include eye-movement desensitization and reprocessing (EMDR), cue-centred treatment, and art therapy (Black, Woodworth, Tremblay, & Carpenter, 2012; Leenarts, Diehle, Doreleijers, Jansma, & Lindauer, 2013). Furthermore, while CBT shows some value for use cross-culturally and with diverse populations (Kataoka et al., 2003; Langley et al., 2015), it may be that underresearched approaches such as narrative therapy or art-based approaches have equal or even greater cultural sensitivity and applicability.

A final significant limitation in the literature is the total number of Canadian studies located. In the present review, only one Canadian TIPs-specific study was identified (Dods, 2015). This is in stark contrast to the significant number of studies being conducted in the United States or overseas. While many of the findings of international studies may have select generalizability to Canada, there are limitations in terms of applicability to the Canadian education system and school districts specifically as the policy, procedures, and approaches may differ amongst countries or districts.

CONCLUSIONS AND FUTURE DIRECTIONS

Based on the present narrative literature review, research evidence indicates that schools are a valuable setting for TIPs. TIPs such as trauma intervention, assessment, and prevention programs are often beneficial in supporting the needs of students, educators, and parents (e.g., Wolmer et al., 2005; Rolfsnes & Idsoe, 2011). However, the present review indicates that there is much room for growth and diversification in terms of both practice and research regarding TIPs.

The present literature review offers multiple implications for further research and exploration of TIPs. Randomized control and replication studies examining specific programs and interventions would be beneficial in increasing the empirical knowledge base regarding TIPs. Qualitative studies would also be beneficial in investigating students', educators', and counselling professionals' experiences of TIPs in schools. A further area of investigation is to expand the investigation of specific interventions and programs to include a range of empirically supported therapeutic approaches such as emotionally focused therapy, sensorimotor therapy, play therapy, and EMDR. Finally, further Canadian research regarding TIPs would provide valuable information to help support and inform school stakeholders in Canada.

Future practice-based implications of the present research highlight the need for and importance of training, resources, and formalized programs to help recognize and assess signs of traumatic stress and subsequently to provide both general support and specific intervention for any concerns that may emerge in school (e.g., Alisic et al., 2012; Gonzalez et al., 2015; Langley et al., 2013). Furthermore, integrating TIPs into school systems offers an important paradigm shift in the way that education is approached and has the potential to inform school policy and educational approaches (Day et al., 2015). Finally, further assessment of the needs of students from culturally and ethnically diverse backgrounds would further expand the sensitivity and applicability of TIPs.

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