

Trauma-Informed Classrooms after Natural Disasters: A Literature Review

ALEXANDRA PAJAK
Tulane University School of Social Work

With the continuing COVID-19 pandemic combined with natural disasters due to climate change, teachers' ability to identify and address trauma is increasingly important to maximize academic and socioemotional outcomes. Trauma-informed classroom interventions in response to natural disasters are relatively unexamined. The objective of this literature review is to examine the following research questions is examined: 1) What trauma-informed-classroom strategies have been implemented secondary to a natural disaster? and 2) Over time, how has the use of curriculum modification to mitigate student trauma symptoms evolved? This narrative review examined peer-reviewed articles published since 2000 that examined trauma-informed classroom strategies with P-12 students following a natural disaster. Research indicated that trauma-informed classroom strategies fall in one of two categories: curriculum and instructional modifications and teacher-led interventions. The implementation of all strategies indicates improved psychosocial functioning in students. Research indicates that the perspective of teacher-led trauma-informed strategies have evolved in from a questionable practice in the early 2000s to a necessity in the time of COVID-19.

Résumé : Avec la pandémie qui persiste et combinée aux catastrophes naturelles dues au changement climatique, la capacité des enseignants à identifier et à traiter les traumatismes est de plus en plus importante pour maximiser les résultats scolaires et socio-émotionnels de leurs étudiants. Les interventions en classe tenant compte des traumatismes en réponse aux catastrophes naturelles sont relativement peu étudiées. L'objectif de cette recension des écrits est d'examiner les questions de recherche suivantes : 1) Quelles stratégies de classe tenant compte des traumatismes ont été mises en pratique à la suite d'une catastrophe naturelle ? et 2) Au fil du temps, comment le recours à des modifications des programmes d'études pour atténuer les symptômes de traumatisme des élèves ont-ils évolué ? Cette

recension a mis l'accent sur les articles évalués par des pairs publiés depuis 2000. Ceux-ci examinaient les stratégies de classe tenant compte des traumatismes avec des élèves de P-12 à la suite d'une catastrophe naturelle. La recherche a indiqué que les stratégies de classe tenant compte des traumatismes appartiennent à l'une des deux catégories suivantes : les modifications du programme et de l'enseignement et les interventions dirigées par l'enseignant. La mise en œuvre de toutes les stratégies indique une amélioration du fonctionnement psychosocial des élèves. La recherche indique que la perspective de stratégies tenant compte des traumatismes dirigées par les enseignants est passée d'une pratique discutable au début des années 2000 à une nécessité à l'époque de la COVID-19.

Introduction

Trauma is defined here as “an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social emotional, or spiritual well-being” (SAMHSA 2014, p.7). Trauma can be a single event, such as a car accident, sexual assault, physical assault, witnessing an act of violence, or experiencing a natural disaster. Trauma can also develop as a result of more insidious, subtle and long-term stressors including housing instability, lack of access to healthcare, and nutritional disparities linked to racism and socioeconomic status (Centers for Disease Control, 2021; Ports et al., 2016; Masonbrick & Hurley, 2020; Metzger et al., 2020).

Many youth experience at least one traumatic event during childhood, which impacts academic, social and behavioral outcomes in school (Gilles, 2016; Porche et al., 2016; Perfect et al., 2016). Trauma can take the form of assault, sexual assault, and institutionalized trauma including institutionalized racism. Institutionalized racism is defined here both violent racist acts as well as “traumatic racist incidents that are nonphysical and/or covert” (Bryant-Davis & Ocampo, 2005). Trauma is processed in different ways depending on an individual’s temperament, cognitive functioning, daily structural routine, and their family and community influence (Saleem et al., 2019; Kilmer et al., 2013). While some youth exhibit remarkable resilience in the face of trauma, long-term effects of trauma in youth can include social problems, emotional impairment, cognitive impairment, disrupted neurodevelopment (Hamoudi et al., 2015; Ports et al., 2016; The

National Child Traumatic Stress Network, 2020) and an exacerbation of preexisting mental health challenges (Shaprio et al., 2006).

Complex trauma, the experience of being exposed to multiple traumas over time, can lead to significant negative long-term developmental challenges (Herman, 1992; Cook et al., 2003; van der Kolk, 2003; Rajmil et al., 2014; Briere & Scott, 2015; The National Child Traumatic Stress Network, 2020). Complex trauma can take the form of lack of access to housing, lack of nutritious meals, over placement in special education (Courtois & Ford, 2012; Knowles et al., 2016). Educator awareness of trauma's effects on youth development and addressing of trauma within a classroom setting has received increasing attention and awareness (Perfect et al., 2016; Porche et al., 2016; Sibinga et al., 2016; Turner et al., 2017; Woodbridge et al., 2016).

In 2014, the Substance Abuse and Mental Health Services Administration published SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach, prepared by SAMHSA's Trauma and Justice Strategic Initiative (SAMHSA NCTIC, 2014). Guidance in this document describes the nature of trauma and trauma-informed strategies to address trauma within organizational and community settings. The publication lists six key principles of trauma-informed approaches: Safety, Trustworthiness and Transparency, Peer Support, Collaboration and Mutuality, Empowerment, Voice and Choice, and Cultural, Historical, and Gender Issues. These SAMHSA guidance trauma-informed strategies were first adapted and applied to pediatric health, the juvenile justice system and child welfare agencies (Ko et al., 2008; Marsac et al., 2016; Kramer et al., 2013; Donisch et al., 2016).

The SAMHSA 2014 publication was the "driver" of the movement toward trauma-informed strategies in school settings (Overstreet & Chafouleas, 2016). The foundation of trauma-informed strategies within school settings is therefore based upon the already established trauma-informed strategies applied in other contexts (Cohen & Mannarino, 2011; Walkley & Cox, 2013; Willis & Nagel, 2015; Overstreet & Chafouleas, 2016; Wiest-Stevenson & Lee, 2016). Trauma-informed practice in schools has developed with "no standard, formally agreed upon terms or framework when it comes to implementing trauma-informed practices in districts and schools specifically" (Thomas et al., 2019) and empirically-supported trauma-informed strategies specifically for natural

disasters are even less examined (Cohen & Baron, 2021; Thomas et al., 2019; Maynard et al., 2019).

Trauma-Informed Teacher-Led Strategies in Classrooms following Natural Disasters

Research supports the efficacy of the application of SAMHSA's six principles within school settings, including an improvement in attendance, academic outcomes, and student engagement in learning (Fu & Underwood, 2015; Phifer & Hull, 2016; Price et al., 2012; Rolfsnes & Idsoe, 2011; Weist et al., 2018; Giboney & Wall, 2020; Goss et al. 2017). Acute Childhood Experiences (ACEs) related to natural disasters have received increased attention over the last several years (Osofsky & Osofsky, 2018; Osofsky et al., 2018; Marquez & Aponte, 2020; Cnat & Dalexis, 2020; Collin-Vezina et al., 2020).

There has long been debate whether teachers should function in a therapist-like role (Petty & Nazro, 1995; Wright, 1996; Wolmer et al., 2003; Dahlke, 2022). Assuming this role, however, may provide positive academic and socioemotional outcomes among students.

To identify the most commonly recommended practices to schools to apply trauma-informed school practices following natural disasters, a literature review was conducted of peer-reviewed research that examined teacher-led trauma-informed classroom responses following a natural disaster. The term "disaster" can be difficult to define, and no universal definition of "disaster" exists (Shaluf, 2007). A natural disaster is defined here as natural forces that lead to adverse effects and can include earthquakes, tornadoes, floods, hurricanes, wildfires, and pandemics (Rutherford, 1983; de Boer et al., 1989; Lechat, 1993; Noji, 1997; Oliver-Smith, 2005; Seddighi, 2020).

Objectives of Review

The rationale for the review is the relatively unexamined topic of trauma-informed teacher-led classroom strategies in response to a natural disaster. In a larger societal context, the review is a critical step toward understanding how teachers can address student trauma symptomology in response to the future disasters. The review questions/objectives lend themselves to a literature review approach as the number of studies examining trauma-informed strategies in response to natural disasters are relatively few. The

examination of these studies and exploration of gaps in literature are imperative to inform teaching.

The objective of this review is to explore the nature of research examining trauma-informed strategies in response to a natural disaster, characteristics of those strategies, and how this informs teaching. The questions being asked are: 1) What trauma-informed-classroom strategies have been implemented secondary to a natural disaster? and 2) Over time, how has the use of curriculum modification to mitigate student trauma symptoms evolved?

Methods

For this narrative review (Ferrari, 2015), a comprehensive search was conducted using a variety of databases. The research databases searched were PubMed, EBSCOhost, PsycINFO (Proquest), PAIS (ProQuest), ERIC and the Web of Science Core Collection with 2000-2022 as the date range. The date of the most recent search was executed: September 28, 2022.

The comprehensive search was conducted using the following key word concepts: “natural disaster trauma-informed practice” OR “natural disaster curricular modification” OR “natural disaster instructional modification” OR “natural disaster classroom” and variations on these key word concepts. Pubmed: 19; ERIC: 59; PsychINFO 72; Web of Science: 53, and PAIS 205. After removing duplicates, a total of ten articles fit the selection criteria of our study.

Sources of evidence used as inclusion criteria have the following characteristics: (a) peer-reviewed; (b) published in any language; (c) addresses students age P-12; and (d) published between the timeframe of 2000-2022. The rationale for this inclusion criteria was to identify a wide span of time in which natural disasters have occurred, include sources world-wide and to review sources of sound academic research approaches. The wide range of year, 2000-2022, were considered due to the relative paucity of studies examining trauma-informed classroom interventions following a natural disaster. Ineligibility criteria included works published prior to 2000 and articles not peer-reviewed. This review identified ten articles that met the aforementioned inclusion criteria.

Data Charting Process

Information about the studies were organized by descriptive coding for categorizing (Miles et al., 2014) and further organized in a spreadsheet including the following: (a) year of publication; (b)

outlet; (c) discipline; (d) methodology; (e) research design; (f) research questions/hypotheses/purpose; (g) participant population; (h) participant demographics; (i) school context, geography, or other mitigating characteristics; (j) grade level or age of participants; (k) data sources; (l) type of natural disaster; (m) intervention; (n) findings; and (o) implications for teaching practice.

Ten articles met the requirements. The articles were published across ten journals. Information about the studies were organized by descriptive coding for categorizing (Miles et al., 2014), organized by (a) year of publication; (b) authors (c) discipline; (d) location; (e) natural disaster; (f) methodology; (g) participant population; (h) findings; (i) SAMHSA's principles adopted by the study; and (j) implications for changing teaching practice; (k) intervention duration.

Findings

Here we first make general observations about the nature of the reviewed studies. The ten articles, identified through this review, published between 2002-2022, represent several disciplines, disasters, methodologies. Disciplines examining teacher-led trauma-informed strategies in response to natural disasters included education (Zevenbergen et al., 2002; Alvarez, 2010; Mulholland & O'Toole, 2021), child psychiatry (Wolmer et al., 2003; Wolmer et al., 2005), trauma studies (Baum et al., 2009), sociology (Fothergill & Peek, 2006), public health (Peek & Richardson, 2011), and educational psychology (Ducy & Stough, 2011). Each study examined teacher-led strategies following a specific natural disaster. The natural disasters included the 1997 Red River Valley Flood in Grand Forks, North Dakota (Zevenbergen et al., 2002), the 1999 Marmara Turkey Earthquake (Wolmer et al., 2003; Wolmer et al., 2005), Hurricane Katrina (Fothergill & Peek, 2006; Baum et al., 2009; Alvarez, 2010; Peek & Richardson, 2011; Baum et al., 2014), Hurricane Ike (Ducy & Stough, 2011), and the COVID-19 pandemic (Mulholland & O'Toole, 2021). The locations of the schools and the composition of the student population varied. Locations included North Dakota (Zevenbergen et al., 2002), Turkey (Wolmer et al., 2003; Wolmer et al., 2005), Louisiana (Alvarez, 2010), Mississippi (Baum et al., 2014), Colorado (Peek & Richardson), Texas (Ducy & Stough, 2011), and rural Northern Ireland (Mulholland & O'Toole, 2021).

All studies indicated some success of a teacher-led trauma-informed strategy implemented with the goal of improving academic

and/or social emotional functioning. Positive outcomes were measured in various ways including standardized test scores (Zevenbergen et al., 2002), trauma symptomology surveys (Wolmer et al., 2003; Wolmer et al., 2005), ethnographic methods (Fothergill & Peek, 2006; Alvarez, 2010), questionnaires (Baum et al., 2009), grounded theory (Ducy & Stough, 2011), semi-structured interviews (Peek & Richardson, 2011), and evaluative discussions (Mulholland & O'Toole, 2021).

Each study utilized at least one of SAMHSA's guidelines for providing trauma-informed care. Interestingly, this included the eight studies published before SAMHSA's guidelines were published. SAMHSA guidelines utilized include all five: Safety (Zevenbergen et al., 2002; Wolmer et al., 2003; Wolmer et al., 2005; Fothergill & Peek, 2006; Ducy & Stough, 2011), Trustworthiness and Transparency (Baum et al., 2009), Peer Support (Peek & Richardson, 2011), Collaboration and Mutuality (Alvarez, 2010; Mulholland & O'Toole, 2021), Empowerment, Voice and Choice (Zevenbergen et al., 2002), and Cultural, Historical, and Gender Issues (Fothergill & Peek, 2006; Peek & Richardson, 2011).

In regard to the SAMHSA recommendation addressing cultural factors, only two of the studies specifically took into account cultural relevance in relation to design and implementation of the strategies. Peek and Richardson (2011) emphasize the importance of cultural competency when working with students following a natural disaster. Fothergill and Peek (2006) evaluated trauma symptomology among 40 black students displaced from post-Katrina Louisiana to Colorado. Teachers in Colorado took into account cultural backgrounds of the students in their support (Fothergill & Peek, 2006).

Discussion

In terms of the first research question—What trauma-informed-classroom strategies have been implemented secondary to a natural disaster?—two strategies consistently emerge in natural disaster-specific recommendations: 1) curriculum and instructional modifications (Zevenbergern et al., 2002; Alvarez, 2010; Peek & Richardson, 2011) and 2) teachers leading a teacher-based intervention (Wolmer et al., 2003; Wolmer et al., 2005; Fothergill & Peek, 2006; Baum et al., 2009; Ducy & Stough, 2011; Peek & Richardson, 2011; Mulholland & O'Toole, 2021). Curriculum and instructional modifications are consistently defined by the above cited sources as the integration of the natural disaster as a topic

within the classroom, both in subject and classroom activity. Teacher-led interventions in the selected literature refers to teachers providing clinical support to students following staff training from mental health professionals.

The disaster as a topic within the curricula included integration of information about the disaster within the classroom (Zevenbergen et al., 2000; Alvarez, 2010), discussion of the disaster (Zevenbergen et al., 2000; Alvarez, 2010), reading stories on similar disasters (Zevenbergen et al., 2000), drawing pictures of the disaster (Zevenbergen et al., 2000; Peek & Richardson, 2010), and writing essays on topics relating to the type of disaster (Zevenbergen et al., 2000; Peek & Richardson, 2011).

Teacher-led counseling roles were either conducted following training by mental health professionals or conducted by teachers assuming a counselor-like role without formal training. Studies in which teachers received formal training from mental health professionals included Wolmer et al. (2003), Wolmer et al. (2006), and Ducey and Stough (2011). In some studies, teachers assumed a counselor-like role of listening to student social emotional concerns but without formal training (Fothergill & Peek, 2006; Baum et al., 2009; Mulholland and O'Toole, 2021).

In terms of the second research question—Over time, how has the use of curriculum modification to mitigate student trauma symptoms evolved?—research indicates curriculum modification in response to natural disasters has evolved from a questionable practice to a necessity. Early research questions if teachers addressing trauma symptoms through curriculum is appropriate (Zevenbergen et al., 2000) or even possible to be efficacious (Wolmer et al., 2003). In the time of COVID-19, arguments have been made that teachers addressing student trauma is not only appropriate and effective, but a necessity (Crosby et al., 2020).

The extent to which these interventions can be applied to other student populations, natural disasters, and settings is unknown. There are several limitations pertaining to the current research on curricular and instruction modifications and teacher-led counseling roles. They strategies outside of SAMHSA strategies, and there is very limited research on their use. The interdisciplinary nature of the identified literature shows the ways in which trauma affects many aspects of society—public health, psychiatry, and education.

Future research would ideally involve studies from a variety of research perspectives, including neuroscience, education,

psychiatry, and others to better inform the body of research. As cultural and gender competency are a part of SAMHSA's guidelines, research directly addressing cultural and gender factors will be an important area of future research.

This review considered only published literature. Research in gray literature may exist that did not meet the inclusion criteria of this study. Future research should include larger-scale, rigorous studies that examination more diverse populations and larger samples conducted by independent researchers. Though the research is limited, the preliminary evidence indicates that these techniques warrant further empirical investigation.

Conclusion

In summary, this review outlined the existing research on teacher-led strategies to address student trauma following natural disasters. Each study incorporated at least one SAMHSA guideline. The findings of these studies lend tentative support for the use of curriculum and instructional modifications and teacher-led counseling roles in addressing student trauma following a natural disaster. The utilization of curriculum modifications to mitigate student trauma symptoms is evolving as a controversial technique to a more accepted intervention. Future research would ideally be conducted from a variety of disciplines with special attention to gender and culture as factors within the context of a classroom following a natural disaster.

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Author and Affiliation

Ms. Alexandra Pajak

Graduate Student

Tulane University

Email: apajak@tulane.edu

ORCID: <https://orcid.org/0000-0002-8610-071X>