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REVIEW PAPER

Facilitators and Barriers in the Implementation of Trauma-Informed Approaches in Schools: A Scoping Review

R. Wassink - de Stigter[1,6] · R. Kooijmans[2,3] · M. W. Asselman[4] · E. C. P. Offerman[4] · W. Nelen[5] · P. Helmond[6]

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Abstract

The impact of trauma on the development and educational performance of school children and the benefits of trauma-informed practices have become more evident to both scientists and educators. Creating an effective and sustainable trauma-informed approach in schools, however, proves to be a challenging, time-consuming and complex process. This scoping review examined facilitators and barriers in the implementation of school-wide trauma-informed approaches and school-based trauma-specific interventions by carrying out a thematic analysis and framework synthesis based on 57 sources. The NIRN implementation drivers framework was used to guide the discussion of the findings. Five main themes were established: professional development (competency driver), implementation planning (organizational driver), leadership support, engaging stakeholders (leadership driver) and buy-in. A synthesis of these five themes helps guide the implementation process of trauma-informed approaches in schools. Findings of this review stress the need for identification and concrete operationalization of key elements and activities of trauma-informed educational approaches. Related to this, more empirical research is needed on how and to what extent implementation factors affect implementation success and effectiveness of trauma-informed educational approaches, taking into account implementation fidelity.

Keywords Trauma-informed · Trauma-sensitive · School · Education · Implementation · Review

Introduction

Adverse childhood experiences, or ACEs, are potentially traumatic experiences that can occur in childhood (0–18 years). Many children are exposed to ACEs, such as child abuse, neglect and domestic violence. A recent review showed that 41% to 79% of children and youth experience at least one ACE during childhood (Carlson et al., 2019). Some ACEs can be considered as a traumatic event in accordance with the DSM-5 criterion 1 (e.g., sexual or physical abuse) while others cannot (e.g., divorce, incarcerated family member), because there is no (in)direct exposure to actual or threatened death, serious injury or sexual violence (American Psychiatric Association, 2013). Despite the fact that not all ACEs meet the criteria of traumatic events, experiencing ACEs can cause toxic stress and the stress response system to become overactive and thereby negatively impacting body and brain (Center on the Developing Child Harvard University, n.d.).

Moreover, ACEs can have negative effects on the development of children into adulthood, such as an increased risk of physical, educational, behavioral and mental health problems (Perfect et al., 2016). Aside from the potential detrimental effects of ACEs on personal well-being and quality of life of many children and adults, ACEs contribute to high societal and economic costs (Anda et al., 2006). Educators have to deal with the negative impact of ACEs on a daily basis as they are confronted with suboptimal school achievements, behavioral incidents and dropout (Bethell et al., 2014; Hunt et al., 2017; Perfect et al., 2016; Van der Kolk, 2016). Because of the high prevalence and the potential negative impact of ACEs on children, it is critical that school staff are aware of the impact of ACEs on students' behavior,

✉ R. Wassink - de Stigter
rstigter@pluryn.nl

1 Amsterdam UMC, Amsterdam, The Netherlands
2 Koraal Centre of Expertise, Oisterwijk, The Netherlands
3 University of Amsterdam, Amsterdam, The Netherlands
4 Stichting Orion, Amsterdam, The Netherlands
5 Praktikon, Nijmegen, The Netherlands
6 Pluryn, Research and Development, Nijmegen, The Netherlands

well-being and academic achievement (Goodwin-Glick, 2017). A trauma-informed approach provides an educational environment that is responsive to the needs of ACE exposed students with an overreactive stress response system (Brunzell et al., 2016; Chafouleas et al., 2016). In addition, it is expected that a trauma-informed approach is beneficial to all students directly by helping them to regulate stress and indirectly by an improved class climate. Two recent review papers on the effects of trauma-informed school approaches emphasize that it is crucial to examine how successful implementation of trauma-informed approaches in schools comes about (Chafoueleas et al., 2021; Maynard et al., 2019). Without successful implementation of an innovation, no effectiveness of an innovation can be expected (Bertram et al., 2015; Durlak & DuPre, 2008; Fixsen et al., 2005, 2019). Currently a systematic overview of factors influencing the implementation of trauma-informed educational approaches is missing while such a systematic review can be helpful in facilitating successful and effective implementation of trauma-informed approaches in schools. Therefore, in the present study we conduct a scoping review into barriers and facilitators in the implementation of trauma-informed educational approaches.

Trauma-Informed Education

A trauma-informed or -sensitive educational approach can refer to both a broad array of integrated school-wide trauma-informed approaches (school-wide approaches) and trauma-specific school-based intervention programs (Berger, 2019; Maynard et al., 2019). School-wide approaches are based on a set of (partially) overlapping trauma-informed principles. These trauma-informed principles guide the development of school staff in becoming aware of and acknowledging the impact of trauma, recognizing symptoms of trauma, responding by integrating knowledge about trauma into policies and practices and preventing retraumatization. These principles focus on safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, voice and choice, and cultural, historical and gender issues (Carter & Blanch, 2019; Maynard et al., 2019; SAMHSA, 2014).

School-wide approaches are often based on the aforementioned principles. Attempts to comprehensively describe school-wide approaches can be found in the Berry Street Education Model (Stokes & Turnbull, 2016) and the Missouri Model (Carter & Blanch, 2019). However, these approaches consist of general guidelines that are to be operationalized by schools within their specific organizational and cultural context. There is no specific set of prescribed practices or interventions that are sufficiently concrete to guide the successful implementation of trauma-informed practices. What is essential to a trauma-informed school approach has not yet been clearly operationalized at the organizational and operational level (Baker et al., 2015; Maynard et al., 2019). This makes it difficult to pinpoint what changes need to be made in schools to become a trauma-informed school (Carter & Blanch, 2019).

Trauma-specific school-based intervention programs (trauma programs) focus on reducing symptoms of post-traumatic stress disorder (PTSD), depression and behavioral problems using individual or group-based interventions at school. Examples of trauma programs are Cognitive Behavior Intervention for Trauma in Schools (CBITS; Jaycox et al., 2009) and Bounce Back (Langley et al., 2013). Research has shown that these trauma programs are effective in reducing symptoms of depression and PTSD among students (Berger, 2019; Jaycox et al., 2009). However, these trauma programs alone are not expected to create a school-wide trauma-informed climate to help reduce the impact of trauma and avoid retraumatization. Recovery of trauma also takes place in daily interactions with school staff members, as traumatized students are in need of a safe and nurturing environment that provides consistency (Swick et al., 2013). In addition, traumatic experiences do not only affect children, but can also affect school staff members, as staff may suffer from secondary traumatization, compassion fatigue, and feelings of incompetence (Albaek et al., 2018).

In order to obtain a trauma-informed school climate, it is necessary to integrate trauma programs within school-wide approaches incorporating interventions at the professional, organizational and practical level within the school (Hanson & Lang, 2016; Maynard et al., 2019). Such an integration is proposed in a multitiered trauma-informed framework in which three levels of trauma-informed practices are combined to achieve optimal response to traumatized students (Chafouleas et al., 2016). The three levels in this framework consist of a first universal level with practices designed to build positive adaptive skills for all students, whereas the second and third levels are targeted strategies and interventions for at-risk students and high-risk students with trauma symptoms and recovery needs.

Implementation of Trauma-Informed Approaches

Although the need for an integrated trauma-informed school approach has been established, actually implementing and creating a trauma-informed climate in schools is challenging. Implementation refers to a process in which a set of activities is executed to put an innovation into daily practice (Fixsen et al., 2005, 2019). Educators often face difficulties in the implementation of trauma-informed school approaches (Carter & Blanch, 2019), such as a lack of resources, leadership support and stakeholder collaboration (e.g., Axelsen, 2017; Langley et al., 2010; Rossen & Hull, 2018).

Moreover, translating information from training on trauma-informed education to daily practice and behavioral change remains a struggle for many (educational) professionals (Wittich et al., 2020). Partly, this may be due to the unclear operationalization of trauma-informed approaches (Baker et al., 2015; Carter & Blanch, 2019; Maynard et al., 2019). Among other factors, a successful implementation of an innovation depends on the characteristics of the innovation itself, such as a clear overview of what changes need to be implemented regarding policy, practice, and the professional to establish a trauma-informed school climate (Fleuren et al., 2014).

Furthermore, the predominant implementation strategy by training staff on how to respond to students impacted by ACEs is not sufficient for schools to create system change and establish a trauma-informed climate (Chafouleas et al., 2021; McEwan & Gergerson, 2019). Chafouleas et al. (2021) argue that there is a gap in the trauma-informed literature and a need for research on factors involved in adoption and implementation, to understand how system change is established and how work to create a trauma-informed school climate is aligned across policy, practice and professionals (Chafoueleas et al., 2021).

In addition, implementation is often a time-consuming and lengthy process. Carter and Blanch (2019) describe a continuum of four stages that schools come across on their journey toward a trauma-informed climate: moving from trauma-aware, to trauma-sensitive, to trauma-responsive, toward trauma-informed. Each stage comes with its own major tasks, organizational processes and indicators that the school has reached a specific stage. Schools may reach different developmental stages in different domains and move back and forth between the stages in time. Hence, creating a trauma-informed school can be seen as an innovation that requires careful and deliberate implementation. An overview of factors, facilitators and barriers, influencing implementation of trauma-informed approaches could help with careful and deliberate implementation.

To guide our understanding of factors influencing the implementation of trauma-informed approaches, we turn to implementation science. Implementation science provides a framework for discussing organizational change and aims to bridge the gap between implementation knowledge in research and implementation practice in the field (Eagle et al., 2015). The use of implementation science may enhance the implementation success and the effectiveness of trauma-informed practices in schools by establishing the theoretical basis or background of successful strategies (Bauer & Kirchner, 2020; Nilsen, 2015). To map facilitators and barriers in the implementation of trauma-informed approaches in the present study, we turn to the framework of implementation drivers (Fixsen et al., 2005, 2019), derived from implementation science and research carried out within

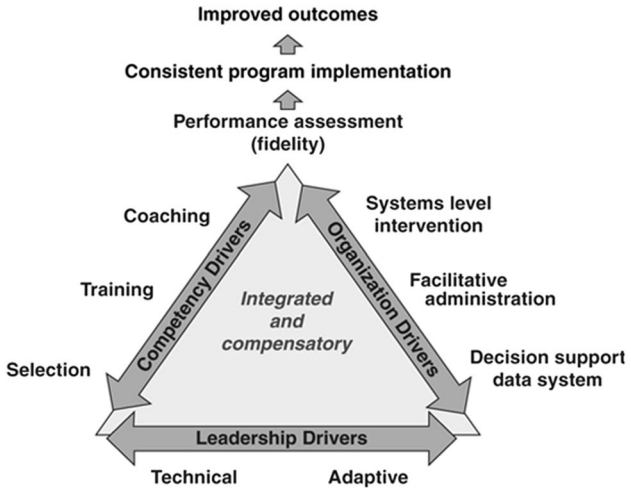

Fig. 1 Framework of implementation drivers (Fixsen et al., 2005), reprinted with permission of National Implementation Research Network

the National Implementation Research Network (NIRN; 2020). The framework of implementation drivers (Fig. 1; Bertram et al., 2015; Fixsen et al., 2005, 2019) consists of three interacting, integrated and compensatory implementation drivers, namely the competency driver, organizational driver and leadership driver. The implementation drivers are based on common features from successfully implemented interventions and practices (see Bertram et al., 2015 for a clear explanation of the elements of the framework of implementation drivers).

Together these implementation drivers form the infrastructure needed to develop and sustain the implementation of a trauma-informed educational approaches. NIRN defines these drivers as "common features of successful supports needed to make full and effective use of innovations that benefits students and their families" (NIRN, 2020, para. 2). Hence, the model of implementation drivers provides a useful framework to synthesize and discuss results on factors influencing implementation of trauma-informed approaches in schools.

The Present Study

Previous reviews focused on the limited research on the effectiveness of trauma-informed educational approaches (e.g., Maynard et al., 2019; Berger, 2019; Cohen & Barron, 2021); however, the effectiveness of innovations depends on the implementation (Durlak & DuPre, 2008). Factors promoting or hindering successful implementation are therefore essential to be taken into account and acted upon (Fixsen et al., 2005, 2019). In the present study we carried out a scoping review to answer our research question: What are facilitators and barriers in the implementation of

school-wide trauma-informed approaches and school-based trauma-specific interventions? An initial orienting search revealed that peer-reviewed empirical studies on the impact of trauma-informed practices rarely reflect on implementation factors. Grey literature sources, such as dissertations and non-peer-reviewed manuscripts aimed at informing policy makers in education, appeared to offer many sources of complementary information. We therefore deemed it appropriate to conduct a scoping review to accommodate a broader range of literature sources, designs and opinions on this topic (Munn et al., 2018). We included studies focusing on school-wide approaches as well as trauma programs. Both types were included, because both are important in creating a trauma-informed school. In addition, an orienting literature search indicated that some sources could not be clearly classified as a school-wide approach or a trauma program. In our final inclusion over 25% could not be classified. As a consequence, we are unable to determine which implementation factors are common and which are specific to school-wide or trauma programs. The framework of implementation drivers was used to guide our discussion of facilitators and barriers (Fixsen et al., 2005).

Method

Protocol and Registration

This qualitative scoping review consisted of the following steps: (1) literature search, (2) extraction of findings, (3) analysis of findings and (4) synthesis of the findings. The protocol to the review was preregistered in PROSPERO (CRD42019122434). For conducting and reporting the review, we have followed the guidelines for scoping reviews from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses, Extension for Scoping Reviews (PRISMA-ScR; Tricco et al., 2018).

Literature Search

A systematic literature search was performed using the following databases: PsycINFO, ERIC, Web of Science and Google Scholar. Search keywords were related to the trauma-informed approach ("trauma-sensitive," "trauma-informed" and "trauma-responsive") and school, ages four to 18 (e.g., "school," "class," "elementary" and "K-12"). In addition, backward citation was used to track relevant references in articles that were screened full text. The specific search strategy is available upon request from the corresponding author. All sources were independently screened by the first and last author, based on title and abstract, using Rayyan (Ouzzani et al., 2016). All sources that did not describe trauma-informed educational approaches in the title or abstract were excluded. All remaining sources were screened full text by the first and last author to check whether they met the eligibility criteria for inclusion. Discrepancies regarding inclusion or exclusion were discussed and resolved.

Eligibility Criteria

We considered both conceptual and empirical research articles with a specific focus on the implementation of trauma-informed approaches or programs in schools. All academic and grey literature sources published in English, such as books, professional literature and unpublished doctoral dissertations, were eligible for inclusion. Sources had to discuss a trauma-informed approach in a school setting, with the population being between four and 18 years old to be eligible for inclusion. For books, only chapters relevant to the research question were included. No restrictions were made regarding the publication period.

Extraction of Findings

A data charting form to guide the extraction of data was put up by the first and last author. They performed the extraction process of five sources conjointly, to test the applicability of the data charting form and to observe whether there were any discrepancies in extraction of findings between them. This resulted in minor adjustments to the form. For remaining sources, all data were extracted by the first author with the following information being retrieved: (1) bibliographical information (e.g., publication year, author, type of publication, peer-reviewed), (2) aims and methods (e.g., design, data collection and analysis, name of trauma-informed approach or intervention), (3) findings from primary (e.g., copied information on facilitators and barriers) and secondary (e.g., cited information) sources.

Analysis of Findings

We used inductive coding without a priori codes for the initial thematic analysis of findings (Thomas & Harden, 2008), using the ATLAS.ti software (version 8.4; Scientific Software Development, 1997). First, all text from the sources gathered in the data charting forms was uploaded into the ATLAS.ti software. Second, we assigned codes to parts of the text to label them. In this process of open coding, we stayed close to the original text. Open coding is an analytic process which is used to break down the text into selected parts and create "codes" to label them. Second, we merged codes that were similar into one code. In total, 14 sources (25%) were open coded by the first and last author, after which codes were compared and a preliminary code-tree was decided upon. A code-tree provides a

visual overview of the codes and how these are hierarchically ordered. Third, the data extracted from the remaining sources were open coded by the first author. Fourth, codes were grouped hierarchically into themes. Themes are higher order codes used to summarize the underlying codes. The first and last author discussed the themes. Fifth, we organized the codes into barriers and facilitators and codes were counted by their frequency using ATLAS.ti software. Sixth, after the first and last author agreed upon the code-tree, it was discussed with the full project team consisting of nine members and a final code-tree was agreed upon.

Synthesis of the Findings

After extracting and coding the data, we further analyzed the findings using a framework synthesis approach (Dixon-Woods, 2011). In framework synthesis, the researchers choose a preexisting conceptual model that is likely to be suitable for the question of the review. The findings from the earlier coding process are mapped against this a priori framework. The framework is subsequently adapted based on the results of the coding process.

The summary of barriers and facilitators identified through the inductive coding process was mapped against the implementation drivers framework (Fixsen et al., 2019). This model was chosen as a framework of reference, as it was deemed a scientifically robust model for the implementation of innovations in an educational setting. The process of carefully comparing the perceived barriers and facilitators from our data with implementation drivers identified by Fixsen et al. (2019) was carried out by the first and last author. A revised framework was discussed within the full project team and a final revised model was ratified. A figure of the model can be found in the supplemental materials (S3). In Table 1 one can find the themes and the underlying codes split up into facilitators and barriers ordered into implementation drivers. In the supplemental materials (S2) one can find Table 1 including the source numbers.

Results

Study Selection

The initial search yielded a total of 839 results. After deduplication, a total of 583 results were left for closer examination. The screening process resulted in 97 publications to be assessed full text. Backward citation searches in the reference lists of these 97 publications yielded additional 10 sources. Full text screening resulted in the final inclusion of 57 sources. The flowchart including reasons for exclusion is reported in Fig. 2.

Study Characteristics

An overview of the included sources regarding trauma-informed approaches, study objectives, samples and study designs is available in the supplemental materials (S1). All of the selected sources were published in 2009 or later. Of the 57 included sources, 31 sources (54%) were peer-reviewed (one review on trauma-informed approaches, 17 empirical research articles, and 13 conceptual research articles). The remaining 26 sources were not peer-reviewed (14 doctoral dissertations, seven books, two research reports, two articles from professional literature, and one conceptual article discussing trauma-informed approaches).

Regarding empirical evidence, 16 sources (28%) studied (a small part of) implementation empirically. Of these sources, one consisted of a quantitative research design, one of a mixed-method research design and 14 sources of a qualitative research design, for example assessing teacher perspectives on implementation challenges. Nine of the 16 sources were not peer-reviewed, consisting of dissertations and an unpublished research reports.

Regarding the scope of the publication, 33 sources were on school-wide trauma-informed approaches with varying intensity, such as the Trauma and Learning Policy Initiative (TLPI) and the Healthy Environments and Response to Trauma in Schools (HEARTS). Nine sources consisted of trauma programs, such as the Cognitive Behavior Intervention for Trauma in Schools (CBITS) or adapted versions. The remaining 15 sources discussed trauma-informed school approaches, but could not be classified as a school-wide approach or a trauma program.

Findings

We found that most often, factors emerged as facilitators when present and emerged as barriers when the facilitating factor was absent. For example, the presence of leadership support was found to be a facilitator, whereas the absence thereof was mentioned as a barrier in the implementation. Hence, facilitators and barriers will be presented integrated as factors affecting implementation, to avoid repetition. Five factors emerged in the literature affecting the implementation process of trauma-informed approaches and will be discussed using the framework of implementation drivers. All themes, codes and the percentage of sources are presented in Table 1.

Table 1 Themes and factors operating as facilitators and barriers including source numbers

Driver	Theme	Facilitator	Barrier
Competency driver	Professional development	Professional development 26% ($n=15$) Basic training to increase trauma awareness and knowledge 54% ($n=31$) Practical training in classroom strategies on coping, regulation, stress reduction and de-escalation 30% ($n=17$) Training in combination with coaching 25% ($n=14$) Ongoing training 18% ($n=10$) Peer consultation meetings 7% ($n=4$)	
Organization driver	Implementation planning	Integration trauma-informed approach into existing programs, interventions and school improvement plans 40% ($n=23$) Creation of a multitiered approach 9% ($n=5$) Screening 21% ($n=12$) Strategic implementation planning 28% ($n=16$) Monitoring outcome data 28% ($n=16$) Evaluation 21% ($n=12$) Implementation support 16% ($n=9$) Implementation team 14% ($n=8$) Flexibility timing implementation 11% ($n=6$) Advocates 5% ($n=3$) Needs assessment ($n=0$)[a] Sufficient resources 33% ($n=19$) Reviewing current policies and procedures 25% ($n=14$) Fit of approach with school 19% ($n=11$) Urgency and motivation 16% ($n=9$) Perceived facilitators and barriers 12% ($n=7$) Training needs 11% ($n=6$) Culture sensitive 9% ($n=5$)	Lack of strategic implementation planning Lack of implementation knowledge 4% ($n=2$) Fragmentation of intervention programs 2% ($n=1$)
Leadership driver	Leadership support	Leadership support 49% ($n=28$) Adaptive leadership support 25% ($n=14$) Technical leadership support 18% ($n=10$) Recording trauma-informed approach in policy and procedure 33% ($n=19$) Trauma-sensitive staff policy and workforce development 5% ($n=3$)	Lack of leadership support 14% ($n=8$) Lack of resources 30% ($n=17$)
	Engaging stakeholders	Engaging stakeholders 25% ($n=14$) Community stakeholders 37% ($n=21$) Universities 16% ($n=9$) Mental health professionals 16% ($n=9$) Caregivers 30% ($n=17$) Create access to resources and services 25% ($n=14$) Engaging stakeholders in professional development 9% ($n=5$)	Lack of engaging stakeholders ($n=0$)[a] Lack of caregiver involvement 12% ($n=7$) Lack of collaboration between stakeholders and school staff 9% ($n=5$) Lack of access to clinical support 12% ($n=7$) Confidentiality concerns regarding students and families 11% ($n=6$)
No driver	Buy-in	Buy-in 47% ($n=27$) Engaging school staff in implementation decision-making and participative training 28% ($n=16$) Presenting outcome data 25% ($n=14$) Collaboration school staff 18% ($n=10$) Collaboration teachers and mental health support staff 11% ($n=6$) Open communication 12% ($n=7$) Celebrating successes 4% ($n=2$) Incentivizing staff participation 2% ($n=1$)	Lack of buy-in 16% ($n=9$) Conflict of socio-emotional and academic needs 19% ($n=11$) Lack of trauma awareness 16% ($n=9$) Impact of teachers 11% ($n=6$) School climate: stress, lack of organizational consistency and workforce stability 4% ($n=8$) Teacher attitudes and beliefs ($n=0$)[a] General resistance to change 7% ($n=4$) Punitive discipline 12% ($n=7$)

The table including the sources for the codes can be found in the supplemental materials. [a]Some themes were created in the process of organizing codes hierarchically and have therefore no number of sources indicated between brackets

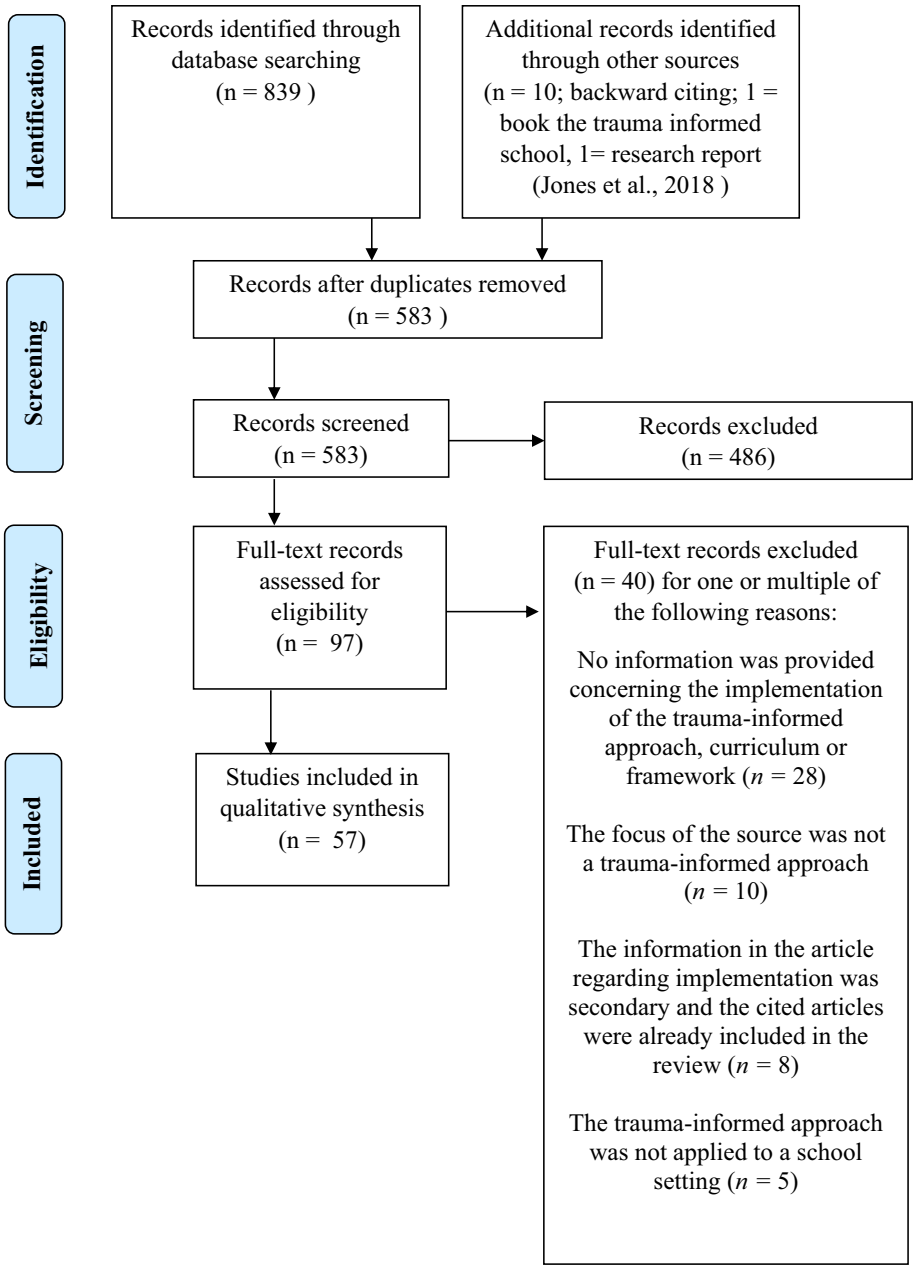

Fig. 2 Prisma 2009 flow diagram

Competency Drivers

Professional Development Professional development concerns the development of trauma knowledge and trauma-informed skills and competencies (e.g., Goodwin-Glick, 2017). To increase trauma awareness and knowledge, *basic training* aimed at increasing awareness of trauma and its potential impact is needed for staff, as well as more *practical training* in classroom competencies on coping, self-regulation, stress reduction and de-escalation (e.g., Allen, 2018).

Several sources (e.g., Axelsen, 2017) underline the importance of *ongoing* training to sustain the learning process, to infuse trauma-informed language into daily conversations about learning and behavior and to take employee turnover into account. In addition, *coaching* helps staff applying trauma-informed skills and strategies into the hectic day-to-day reality of the classroom. Furthermore, regular *peer consultation* in groups provides the opportunity for staff to discuss, plan and practice trauma-informed strategies in the classroom, celebrate successes and request support from colleagues (e.g., Barnett et al., 2018). Peer consultation also promotes collaboration between staff and reflection on professional behavior.

Organization Drivers

Implementation Planning As part of the organization drivers that promote the integration of trauma-informed approaches into the organizational processes in the school context, *strategic implementation planning* was identified as a factor affecting implementation (e.g., Jones et al., 2018). Strategic implementation planning concerns the process of defining the strategy and defining a plan by which the school will accomplish the goal of establishing a trauma-informed school climate. Hence, it may help educators to carry out their priorities in the implementation of trauma-informed approaches.

Conducting a *needs assessment* is deemed to be necessary to develop a good implementation plan (e.g., Axelsen, 2017). It can provide insight into staff's urgency and motivation for a trauma-informed approach, the alignment of current policies and practices with a trauma-informed approach, the available resources for a trauma-informed approach and the potential facilitators and barriers in the implementation of a trauma-informed approach (e.g., Baweja et al., 2015; Dorado et al., 2016). More specifically, it may be imperative to assess the *fit* to the cultural background of the school population and the *integration* of the trauma-informed approach into existing interventions and school improvement plans (e.g., Nadeem et al., 2011).

Integration of a trauma-informed approach into existing interventions and improvement plans could enhance implementation by making trauma-informed practices part of the school's daily operations and infrastructure. In contrast, fragmentation might contribute to school staff's perception that they constantly have to adopt new innovations (e.g., Romero et al., 2018). Integration can be accomplished by the *creation of a multitiered approach* by screening and assessments of students to see which trauma-informed strategies are needed—next to the universal strategies—to support the socio-emotional needs of at-risk and high-risk students (e.g., DeCarlo Santiago et al., 2018). For example, positive behavioral interventions support (PBIS) provides a multitiered framework in which the school can incorporate trauma-informed practices.

Implementation planning also concerns appointing *advocates within school* and establishing *implementation teams* promoting the vision and implementation of trauma-informed approaches (e.g., Costa, 2017). *Implementation support* through an external advisory board could help schools continue moving forward, when facing challenges and competing priorities (e.g., Jones et al., 2018).

Monitoring outcome data and *evaluation meetings* as part of implementation planning entail having a regular cycle of setting priorities, formulating action plans and evaluation thereof (e.g., Von der Embse et al., 2018). This is recommended to determine the results and progress of the implementation process and to adjust the implementation plan or priorities accordingly. It is recommended that strategic implementation planning is *flexible in timing* of implementation (e.g., Jones et al., 2018). Teachers generally perceive a high workload and struggle with time constraints. Hence, it may be necessary to accommodate the time path of the implementation of a trauma-informed approach to perceived challenges.

Leadership Drivers

Leadership Support School administrators can help facilitate the implementation process by providing *adaptive leadership support* (e.g., Gomez-Lee, 2017). School leaders do this by disseminating and modeling the vision of a trauma-informed school. In addition, school leaders provide *technical leadership support*, by supplying sufficient time and resources within the school to support implementation, such as time for professional development and establishing an implementation team (e.g., Vanderwegen, 2013). A lack of resources such as a lack of time to learn and practice trauma-informed skills and knowledge or a lack of funding may hinder the implementation process. Part of the facilitation becomes visible in the development of *workforce development* (e.g., Goodwin-Glick, 2017). Applying trauma-informed practices, experiencing a safe environment in the classroom and school team, as well as dealing with stress could be regular features of job interviews and performance appraisals. In addition, school leaders can facilitate the implementation of trauma-informed education by including *trauma-informed strategies in policy and procedure* (e.g., Axelsen, 2017).

Engaging Stakeholders Organizing and stimulating the engagement of stakeholders is perceived to be an important task for school leaders (e.g., Chafouleas et al., 2016). Engaging stakeholders is attracting and involving individuals, groups and organizations that are affected by or may affect the implementation of trauma-informed approach. Children and schools are involved in several systems; therefore, it is strongly advised for schools to develop engagement strategies across multiple stakeholders. *Community stakeholders* are relevant local agencies, such as day care centers and other schools within the region. These agencies can help build expertise and develop an integral approach by mutual ownership of the implementation of trauma-informed approaches and obtaining necessary funding for implementation (e.g., Kataoka et al., 2018).

More specifically, *mental health professionals* and *universities* are important collaboration partners as they can help with training and coaching (e.g., Anderson et al., 2015). Mental health professionals can provide knowledge

on trauma screening. In addition, the presence of mental health professionals at school can create access to sources and services for traumatized students and staff. Moreover, collaboration between school staff and mental health professionals in trauma programs facilitates the implementation of a school-wide trauma-informed climate. Collaboration between school staff and mental health professionals can make it easier to target students dealing with the impact of trauma and may result in offering optimal support and treatment in the school, class and intervention setting. However, confidentiality concerns regarding students and their privacy may hinder collaboration between school staff and mental health professionals (e.g., Baweja et al., 2015).

Caregivers were also mentioned as important stakeholders for the implementation of trauma-informed approaches (e.g., Romero et al., 2018). Educators have to take into account that students come from different family settings. Caregivers can have different roles concerning traumatized children, such as being the biological parent, (network) foster care parents or professional caretaker. Some caregivers may be trauma survivors themselves. Involving caregivers is a struggle for educators, partly due to the stigma on mental health problems in general and trauma specifically. Many families of traumatized students also face challenges such as single-parenting, health issues, substance abuse and lack of resources. These issues can be obstacles for caregivers to take part in school activities and parent–teacher meetings. Providing students and caregivers with a safe school environment and building trusting relationships with both is important to be able to address (intergenerational) trauma. A trusting relationship with caregivers also helps linking caregivers to and providing them with adequate information and referral to trauma support, sources and services. Thus, schools can help prevent further traumatization and reduce the negative impact of trauma, both part of the principles of a trauma-informed approach.

In addition, engaging stakeholders in the community and caregivers in professional development is observed to enhance implementation (e.g., Goodwin-Glick, 2017). Providing psychoeducation on the impact of trauma ensures consistent implementation across all systems involved with the child and promotes support and open communication between the school and stakeholders.

Buy-In of School Staff

Buy-in refers to school staff's support for the implementation of trauma-informed approaches and is an important factor in the successful implementation trauma-informed approaches (e.g., Jones et al., 2018). The aforementioned competency, organizational and leadership drivers contribute to the process of gaining buy-in within the school. Buy-in may be hindered through *teacher attitudes and beliefs,* possibly resulting from a *lack of trauma awareness* (e.g., Pfenninger Saint Gilles, 2016). Some school staff members are not aware of the prevalence and impact of trauma among the school population. Hence, they do not see the need for a trauma-informed approach. Furthermore, a hindering belief can be that the *impact of teachers* on student stress is small as trauma and healing from trauma is a home and not a school issue (e.g., Allen, 2018). The competency driver helps to create trauma awareness and trauma-informed knowledge, attitudes and skills in school staff. Sometimes staff members uphold the belief that *punitive discipline* is needed to diminish disruptive behavior and that working trauma-informed is equal to being "soft" (e.g., Goodwin-Glick, 2017). Finally, resistance from school staff is sometimes reflected in a *general resistance to change* (e.g., Axelsen, 2017).

Buy-in can be promoted by components of implementation planning, part of the organization driver. *Monitoring and evaluating* the progress of the implementation of trauma-informed approaches yields information on the progress and revenues of the trauma-informed approach (e.g., Axelsen, 2017). It makes staff aware of the benefits of the trauma-informed approach and allows for timely intervention if momentum in implementation is lost or adaptation is needed due to emerging barriers hampering the process of gaining buy-in. Such a barrier may be the *conflict of meeting academic and socio-emotional needs* that some school staff members experience (e.g., Anderson et al., 2015). Monitoring and evaluation is found to be important to be able to find a balance between meeting the socio-emotional needs of students and a demanding academic curriculum.

Monitoring also gives the opportunity to *present concrete outcome data* to school staff, for example on ACE prevalence, socio-emotional functioning, school absence or academic improvement, which can contribute to a sense of urgency and motivate staff to participate (Barnett et al., 2018). Related to the presentation of outcome data is the *celebration of successes* of small and large steps in the implementation of the trauma-informed approach within the school team. Celebrating success builds confidence and motivation among staff (e.g., Jones et al., 2018).

The engagement of stakeholders, part of the leadership driver, also contributes to the process of gaining buy-in among school staff. *Shared decision-making* and engaging school staff in training helps building buy-in among school staff, as they experience feelings of empowerment and feel responsible for the development of the trauma-informed approach (e.g., Judge, 2018). To maintain buy-in, *collaboration* and open *communication* between school staff, leaders and the implementation team are thought to be necessary to establish a shared responsibility for implementation within the school team (Ijadi-Maghsoodi et al., 2017).

Facilitating implementation by technical and adaptive leadership support also promotes buy-in. *Incentivizing staff*

participation, for example by rewarding staff with a pay raise for training participation, may increase motivation of staff to take part in the trauma-informed approach (Barnett et al., 2018). In addition, school leaders contribute to the process of gaining buy-in among school staff by adapting policy and procedure to create room for the implementation of trauma-informed approaches (e.g., Gomez-Lee, 2017). School leaders are also important in sustaining and keeping the vision of the trauma-informed school alive, thereby promoting staff buy-in.

Synthesis of Findings

Based on our analysis of the literature we found that professional development, implementation planning, leadership support, engaging stakeholders and buy-in are important factors that contribute to the success of the implementation process of trauma-informed educational approaches. These factors are integrated into the framework of implementation drivers. Our results indicate that all drivers directly and indirectly, through buy-in, affect the implementation success of trauma-informed approaches.

First, regarding competency drivers, we found the theme "professional development." Professional development contributes to implementation through development of trauma-informed knowledge and competencies by ongoing training, coaching and peer consultation. Second, concerning the organizational driver we established the theme "implementation planning." Implementation planning contributes to implementation through the development of a needs-based implementation plan (with priorities and actions) which is fitted and integrated into the school using a multitiered approach. The implementation (plan) is promoted by advocates and an implementation team within the school. The implementation (plan) is monitored, evaluated, adapted and acted upon accordingly. Third, with regard to leadership divers, "leadership support" as well as "engaging stakeholders" was identified in the literature. Leadership support comprises of both adaptive leadership and technical leadership which contributes to implementation by embracing and modeling the trauma-informed approach and practical facilitation of the trauma-informed approach by providing sufficient resources and integrating it into policy and practices. School leaders are advised to engage relevant stakeholders, such as local agencies and mental health care, to collaborate in preventing trauma and reducing the negative impact of trauma using a joint trauma-informed approach. Engaging stakeholders is also part of the organization driver, especially as system level intervention, leadership or school staff facilitates implementation by collaborating with stakeholders. Finally, apart from directly stimulating implementation, the implementation drivers together also affect "buy-in." Buy-in can be promoted by creating trauma awareness through professional development, incentivizing staff participation, presenting concrete outcome, celebration of successes, engaging school staff in decision-making and internal and external collaboration and communication. A figure synthesizing the implementation factors can be found in the supplemental materials (S3).

Discussion

This scoping review identified and synthesized barriers and facilitators in the implementation of trauma-informed approaches across 57 sources. We integrated the findings, thereby providing an overview of factors influencing successful implementation of trauma-informed approaches identified in the literature. Five themes were extracted from the literature, suggesting that professional development (i.e., competency driver), implementation planning (i.e., organization driver), leadership support and engaging stakeholders (i.e., leadership driver), and buy-in from school staff are interacting factors hindering or facilitating the implementation of trauma-informed approaches in schools. Furthermore, this review established that only 16 of the 57 sources (28%) studied (aspects of) implementation of trauma-informed approaches empirically. Most of these sources used a qualitative design and majority of these sources were not peer-reviewed. Hence, empirical evidence is scarce, and our findings are mostly based on (expert) opinions, ideas and practice-based experiences with implementing trauma-informed educational approaches.

The findings of our review show similarities to results from a recent empirical survey on barriers and facilitators in the implementation of trauma-informed schools in which 508 school staff members participated (Wittich et al., 2020). According to this study, key factors in implementation are access to knowledge information (i.e., training, coaching and having advocates), available resources (i.e., sufficient staff, time, and space and integrating the approach into the existing structures and culture of the school), implementation climate (i.e., shared commitment) and leadership engagement (i.e., commitment, involvement and accountability of school leaders). These factors are also present in the current review and are in accordance with the framework of implementation drivers, used to guide the results.

In comparison with the original drivers framework (Fixsen et al., 2019; Fig. 1), *staff selection* was not reported among the sources of this review. Staff selection refers to required characteristics of staff beyond academic qualifications or experience factors, critical to the trauma-informed approach. More specifically, characteristics that

are difficult to teach in training sessions (Jackson et al., 2018), such as empathy. Staff selection is important, because it may accelerate implementation by attracting staff with trauma-informed attitudes, knowledge and skills. The absence of staff selection being reported as an implementation factor in the literature reviewed, could be due to unclarity among schools concerning the specific trauma-informed characteristics staff require, or a lack of awareness with regard to integrating the trauma-informed vision into recruitment and selection procedures. The ARTIC is an example of a screening tool which can be used to assess whether staff would be likely to adopt the trauma-informed approach (Baker et al., 2015).

Apart from accelerating implementation, staff selection can also help to select staff equipped to deal with the impact of trauma, such as the mental health needs of traumatized students, and being able to handle the intensity of feelings and the emotional burden that can come with working with traumatized students (Alisic, 2012; Pataky et al., 2019). Apart from staff selection, dealing with the impact and emotional burden of working with traumatized students requires continued attention in the form of self-care and care for staff, often a core component of school-wide trauma-informed approaches.

In addition, also the factor *performance assessment* (fidelity) was not mentioned in the sources of this review, this might be related to the characteristics of trauma-informed education as an innovation. Trauma-informed approaches often exist of (partly) overlapping general foundational principles, but not a concrete set of prescribed practices or interventions (Baker et al., 2015; Maynard et al., 2019). Implementation science emphasizes that it is crucial for any innovation to have a rationale for key elements, activities, phases and their theory bases to enhance implementation (Bertram et al., 2015; NIRN, 2020).

Our findings indicate that all of the drivers together, competency, organization and leadership, affect buy-in for the implementation of trauma-informed approaches. The concept of "buy-in," however, is not included in the original implementation drivers framework, as it is more of a contextual implementation factor than a component of the innovation itself (Fixsen et al., 2005). The NIRN (2020) connects buy-in with readiness for change and stresses the role of implementation teams in creating buy-in among staff, among other through commitment of leaders and model-pertinent training (Bertram et al., 2015; NIRN, 2020). Based on our findings we suggest that buy-in is an important factor fostering implementation success, affected by the implementation drivers. The key role of buy-in in the successful implementation of innovations is also emphasized in several overviews (Fleuren et al., 2014; Flottorp et al., 2013). Determinants fostering buy-in are intention and motivation of staff (Flottorp et al., 2013), insight into personal benefits/drawbacks of innovations, outcome expectations and relevance to professional and client (Fleuren et al., 2014). In addition, the empirical study by Wittich et al. (2020) pointed out the key role of training (i.e., professional development) to build consensus for and commitment to trauma-informed schools.

Strengths and Limitations

We encourage readers to consider several limitations when interpreting the results of the present study. For the selection of sources in this review, we did not apply a criterium regarding including only peer-reviewed empirical sources. This is also in line with the scoping review PRISMA guidelines (Tricco et al., 2018). Therefore, no formal quality appraisal was conducted as relevance and contribution of each source was most important and formal quality appraisal tools often focus on methodological correctness and cannot be applied to non-empirical sources, such as book chapters. Hence, quality of sources included in this review may differ.

Furthermore, most sources (72%) included in this review did not empirically examine barriers and facilitators in the implementation of trauma-informed approaches. Therefore, this review mainly gives an overview of factors affecting successful implementation that are reported as important by school staff, school leaders, researchers and other professionals in the field of trauma-informed approaches. Empirical evidence for these factors is lacking and it remains unclear which of these factors are most important and how factors are interrelated.

In addition, factors affecting implementation were mentioned in the sources in different frequency, some more frequently others. This raises the question which factors can be considered (most) important to implementation of trauma-informed school approaches. Broader coverage usually provides a better description and examples of factors affecting implementation, but one cannot draw conclusions with regard to the importance of factors based on coverage alone, as high coverage can be due to other factors, such as research trends (Van Wesel et al., 2012). Therefore, despite its relevance, the present scoping review cannot determine relative importance of these mainly opinion-based factors.

Furthermore, in our review we presented implementation drivers from both school-wide approaches and trauma programs (i.e., often targeted interventions). There might be differences in the presence or importance of implementation factors between school-wide approaches and trauma programs, as trauma programs are often focused on treatment of a targeted group of at-risk students within school and school-wide approaches are aimed at changing the

school climate as a whole. Nonetheless, the overview of implementation factors across both school-wide approaches and trauma programs may be an impetus for establishing system change and an integration of trauma programs and school-wide trauma-informed approaches into a multitiered framework with the alignment of trauma-informed policy, trauma-informed practice and trauma-informed educational professionals (Chafouleas et al., 2021).

Implications and Future Research

Integration of all findings into a practical model of factors driving the implementation of trauma-informed approaches is valuable for scientific and practical purposes. Schools can utilize this model for monitoring and evaluating the implementation process and for adjusting action plans. In addition, the model can be incorporated in the design of trauma-informed approaches and models. However, more practical translation of factors driving the implementation of trauma-informed education is needed, extending beyond basic principles of implementation by informing research and practice on the *what* and *how* of implementation.

In order for trauma-informed educational to be effectively implemented it seems crucial that general guidelines are more concretely operationalized into practices. This helps schools to pinpoint what changes need to be made in schools to become a trauma-informed school (Carter & Blanch, 2019). This prevents schools from reinventing the wheel and helps moving forward to a successful and sustainable implementation of a trauma-informed school climate. Schools will be able to move from "what is a trauma-informed approach and what needs to be implemented" toward "how can we effectively implement the trauma-informed approach while sustaining program integrity."

To make a start with this translation, we suggest the following order of steps based on the stages of implementation (exploration, installation, initial and full implementation; Fixsen et al., 2019) and NIRN's active implementation hub (2020). A school could start the implementation process by finding advocates for the approach within the school in synergy with adaptive and technical leadership. Adaptive and technical leadership support facilitates the installation of an implementation team. Second, the implementation team could conduct a needs assessment, to assess organizational readiness, the urgency for and the fit between the school and the trauma-informed approach. Subsequently, a comprehensive implementation plan including actions and priorities for implementation needs to be developed, while engaging staff in the decision-making involving in the implementation planning. Based on the needs assessment, a school could start acquiring resources, preparing staff through professional development, deciding on a school-wide approach or trauma programs and related needs for screening and assessment.

Next, to integrate the approach within the school, current policies and procedures can be reviewed and the school can decide on the development of new programs and services. Next, a school could start with creating structures of ongoing professional development, coaching and peer consultancy to sustain the learning process. Subsequently, important stakeholders can be engaged to involve the larger community. Finally, a school can set up structures for monitoring and evaluating, to allow for timely adjustment of implementation planning, monitoring of the implementation drivers and keeping momentum in the implementation process.

To bring the implementation and effectiveness of trauma-informed educational approaches a step forward, it is critical for the field to identify and establish key elements and activities of trauma-informed educational approaches and to create a measurement tool to assess the fidelity of trauma-informed educational approaches. Many (online) networks and implementation tools have been developed sharing practical information on the implementation of trauma-informed approaches (ACEs Connection, 2020; National Child Traumatic Stress Network, 2020; Pataky et al., 2019; The Trauma and Learning Policy Initiative, 2020). For example, the TRS-IA is a recently developed self-assessment tool for quality improvement in trauma-informed schools (National Center for School Mental Health, 2020). The website provides many useful resources for the implementation, aligning with the implementation drivers, such as a needs assessment survey. In addition, the findings of this review together with practical experiences of Dutch schools with implementing trauma-informed education have been used in the creation of a practical implementation handbook (Authors, 2019). Findings of this review are helpful in the further development and improvement in these networks and tools.

As mentioned before empirical evidence on factors affecting implementation is lacking. Research should not only focus on staff's perceived facilitators and barriers affecting implementation (e.g., Wittich et al., 2020), but also assess the fidelity of implementation using a measurement tool, establish how factors affect implementation success and subsequently effectiveness of trauma-informed approaches. In future research it is important to empirically assess factors influencing the implementation and outcomes of trauma-informed approaches to help accomplish successful and effective trauma-informed approaches (Williams & Beidas, 2018).

Conclusion

This scoping review adds to the scarce body of literature that identifies factors affecting implementation of trauma-informed approaches in schools. Paying attention to professional development (i.e., competency driver), thorough implementation planning (i.e., organization driver), leadership support and engaging stakeholders (i.e., leadership driver) directly stimulates implementation and indirectly stimulates implementation through cultivation of buy-in among school staff for implementation of trauma-informed approaches. Given the increasing recognition of the benefits of trauma-informed approaches and expanding interest in school-wide delivery (Chafouleas et al., 2016), the findings of this review provide useful guidance to school leaders, school staff, policy makers and researchers in the design and successful sustainable implementation of trauma-informed approaches.

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Declarations

Conflict of interest The authors have no relevant financial or non-financial interests to disclose.

Data availability Data and material (i.e., literature sources) are available upon request from the corresponding author. Atlas.ti coding is available upon request from the corresponding author.

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*References marked with an asterisk indicate studies included in the review. A full list of references included in the review is available in the supplementary materials (S4).

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