Community Preventive Services Task Force

Mental Health: Multi-Tiered Trauma-Informed School Programs to Improve Mental Health Among Youth

Community Preventive Services Task Force
Finding and Rationale Statement
Ratified November 2023

Table of Contents

CPSTF Finding and Rationale Statement

Context

Trauma is a response to an event, series of events, or set of circumstances experienced by an individual as physically or emotionally harmful or life-threatening and can have lasting adverse effects on the individual's mental, physical, and emotional well-being (SAMHSA Concept of Trauma 2014 [https://ncsacw.acf.hhs.gov/userfiles/files/SAMHSA_Trauma.pdf]). Traumatic events in childhood, referred to as adverse childhood experiences, or ACEs, are experienced by more than two-thirds of children by the age of 16 (SAMHSA 2023). Childhood experiences of trauma may lead to learning or behavioral problems or both, such as inability to focus on schoolwork, or intense outbursts of anger (Burke et al 2011). In adolescence and adulthood, ACEs are linked to chronic health problems, poor mental health (e.g., post-traumatic stress disorder [PTSD], feeling sad or hopeless), and risk behaviors (e.g. substance use), as well as socioeconomic challenges in adulthood (CDC 2022). Preventing and reducing underlying trauma in childhood could reduce negative outcomes in adulthood and promote safer communities for children (CDC 2022).

Multi-tiered trauma-informed school programs aim to prevent and reduce the impact of trauma among all students while offering additional help to students who need intensive support (National Child Traumatic Stress Network, Schools Committee 2017). Multitiered programs aim to implement interventions at universal (tier 1), targeted (tier 2), or individualized (tier 3) levels (Fondren et al 2020). These programs may connect students, especially those with a higher likelihood of traumatic exposures (e.g., students from households with low socioeconomic status [SES] or racial or sexual minority groups, students living with disability; NCTSN 2023), to mental health services and academic supports (Chafouleas et al 2016), which may promote health equity.

Intervention Definition

Multi-tiered trauma-informed school programs aim to minimize students' exposure to adversity, strengthen their coping skills, and improve their mental health and well-being. These programs offer universal, targeted, and individualized approaches based on students' exposure to trauma and trauma-related symptoms.

For inclusion in this systematic review, studies must include interventions implemented at each of the three tiers.

- Tier 1 delivers universal interventions designed to create safe environments and support a trauma-informed school community for all students. Interventions must screen students for symptoms to identify those in need of more intense intervention at tiers 2 or 3. They also may offer training and psychoeducation (information on awareness and tools to help students regulate behavior) for teachers, staff, parents, or community partners, or social, emotional, and behavioral learning (self-awareness, self-control, and interpersonal skills) for all students. Interventions may be delivered by appropriate mental health providers or trained school staff.
- Tier 2 identifies and provides early intervention for at-risk students exposed to trauma who show mild symptoms (e.g., problems focusing on schoolwork). Interventions must include one or more of the following: psychoeducation for at-risk students, trauma-specific group therapy, or classroom supports (e.g. play therapy, social stories, schedule cards). Interventions are typically delivered by trained mental health providers. Training may be offered to teachers to help them screen students for symptoms and improve classroom management.
- Tier 3 provides mental health services for students who have experienced trauma and show severe symptoms (e.g., intense outbursts of anger). Trauma-informed counselors or other trained mental health providers deliver

services in school settings or refer students to appropriate mental health services outside of school. Interventions may include trauma-focused cognitive behavioral therapy or wraparound services that integrate support systems around the student, including parents or caregivers, mental health providers, and others to address the student's needs.

CPSTF Finding (November 2023)

The Community Preventive Services Task Force finds insufficient evidence to determine whether multi-tiered trauma-informed school programs reduce symptoms of post-traumatic stress disorder (PTSD) or improve mental health and school-related outcomes including student behaviors, disciplinary actions, and absenteeism. Studies showed reductions in PTSD symptoms but lacked comparison groups, had small sample sizes, and did not evaluate PTSD symptoms for all tiers of the intervention. There were not enough studies to determine intervention effects on other outcomes.

Additional studies are needed to determine the effectiveness of multi-tiered trauma-informed school programs. It is important to address this lack of evidence given the prevalence of childhood trauma and the important role schools play in children's lives.

Rationale

Basis of Finding

The CPSTF finding is based on evidence from 6 studies identified in a published systematic review (Berger et al. 2019; search period through May 2018) and 5 studies identified in an updated search for evidence (search period January 2018 to August 2022).

To assess intervention effectiveness, a team of systematic review methodologists and intervention subject matter experts synthesized outcomes for mental health (i.e., PTSD, student depression, student anxiety) and school-related outcomes (i.e., internalizing and externalizing student behaviors, student-staff relationships, absenteeism, disciplinary actions, quality of life).

Included studies used age-appropriate instruments with demonstrated validity and reliability for this population to assess PTSD symptoms, internalizing and externalizing behaviors, depression, and anxiety. Researchers collected data through surveys completed by students or on behalf of students by teachers, parents, caregivers, or interviewers.

Included studies evaluated multi-tiered trauma-informed school programs that offered a combination of interventions for students and adults (staff, parents, and caregivers) at each tier. Some of the programs also offered programmatic or policy support. Study authors did not always clarify how specific interventions were chosen for each tier.

Studies reported outcomes for students who received interventions at one or more tiers. The systematic review team used the following criteria to interpret assessments:

Tier 1 Assessment: students received tier 1 interventions and possibly tiers 2 or 3.
Tier 2 Assessment: students received tiers 1 and 2 interventions, and possibly tier 3.
Tier 3 Assessment: students received tiers 1 and 3 interventions, and possibly tier 2.

Included studies reported intervention effectiveness on PTSD symptoms, internalizing and externalizing behaviors, combined measures of internalizing and externalizing behaviors, depression, anxiety, student-staff relationships, disciplinary actions, absenteeism, and quality of life. The systematic review team could only calculate a summary effect estimate for PTSD. There were not enough studies reporting results for the other outcomes (Table 1).

Evidence from the included studies showed multi-tiered trauma-informed school programs reduced PTSD symptoms by a median of 34.8% (Interquartile interval [IQI]: -48.6% to -33.1%; 5 studies). CPSTF considered this reduction in PTSD symptoms to be consistent and meaningful (criteria used determine sufficient level of evidence) but downgraded the finding to insufficient evidence based on recurring gaps in study designs and methods (see the Community Guide Methods Manual [https://www.thecommunityguide.org/pages/methods-manual.html] for more information about criteria used to determine strength of evidence). The one study with a comparison group found small, not statistically significant, improvements in PTSD symptoms among younger students and no improvements among older students. The other four studies reported favorable outcomes but used a before-after without comparison design. Without control groups, CPSTF could not assess whether changes resulted from the intervention or the passage of time. Additionally, some of the studies had small sample sizes and only one study measured outcomes at all tiers. Lack of outcome assessment at all tiers prevented assessment of multi-tiered programs in those studies.

Table 1. Summary of Findings for Multi-Tiered Trauma-Informed School Programs

Outcome	Studies (Tiers Assessed) *	Effect	Direction of Effect	CPSTF Assessment
PTSD Symptoms	3 studies (Tier 3) 2 studies (Tier 2) 2 studies (Tier 1)	Relative Percent Change: -34.8% (IQI: -48.6% to -33.1%)	Favors intervention	Insufficient evidence due to recurring gaps in study designs and methods
Externalizing Student Behaviors	3 studies (Tier 3) 1 study (Tier 1)	All favorable, 2 statistically significant	Favors intervention	Too few studies
Internalizing Behaviors	1 study (Tier 3)	Favorable and statistically significant	Favors intervention	Too few studies
Combination of Externalizing and Internalizing Behaviors	1 study (Tier 3) 2 studies (Tier 1)	2 favorable and statistically significant, 1 no change	Mixed	Too few studies
Depression	2 studies (Tier 3) 1 study (Tier 2) 1 study (Tier 1)	Relative Percent Change: -35.9% (IQI: -37.4% to -34.1%)	Favors intervention	Too few studies
Anxiety	1 study (Tier 3)	Relative Percent Change: -34.5%	Favors intervention	Too few studies
Student-Staff Relationships	1 study (Tier 3) 2 studies (Tier 1)	3 favorable, 2 statistically significant; 1 no change	Favors intervention	Too few studies

Outcome	Studies (Tiers Assessed) *	Effect	Direction of Effect	CPSTF Assessment
Disciplinary Actions	1 study (Tier 1)	Favorable and statistically significant	Favors intervention	Too few studies
Absenteeism	1 study (Tier 1)	Favorable and statistically significant	Favors intervention	Too few studies
Quality of Life (QoL)**	2 studies (Tier 3) 1 study (Tier 2) 1 study (Tier 1)	2 Favorable and statistically significant, 1 no change	Mixed	Too few studies

*Tiers which measured outcomes were not mutually exclusive; some studies reported outcomes at more than one tier.
**Proxies for QoL (i.e., adjustment to trauma, impact of behavior on relationships and activities, resource hardships).

Applicability and Generalizability Issues

Applicability was not assessed because CPSTF did not have enough information to determine intervention effectiveness.

Studies were conducted in the United States (10 studies) and Australia (1 study). Studies were implemented in predominately urban settings (9 studies) among populations with increased likelihood of traumatic exposure. Students were from households with low-socioeconomic status (7 studies) or trauma-impacted communities (10 studies). Just over half of the study population was male (54.5% reported in 7 studies). Five studies from the United States that collected information about students' racial or ethnic background reported that a median of 39% of students were black or African American; 15% were Hispanic or Latino; and 3.5% were white. Studies represented all school levels from pre-k through high school. The median student age was 12.5 years old.

Included studies assessed programs reporting the following tiered interventions for students:

Tier 1 (for all students):

- Screening (11 studies)
- Social-emotional learning (7 studies), or
- Psychoeducational interventions (3 studies)

Tier 2 (for at-risk students):

- Additional screening (8 studies)
- Additional psychoeducation (6 studies), or
- Trauma-specific group therapy (3 studies)

Tier 3 (for students in need of intensive intervention):

- Individual trauma-specific therapy (10 studies), or
- Referral to local mental health providers outside of school (5 studies).

Included studies assessed programs reporting the following tiered interventions for adults:

Tiers 1 and 2:

- Training for teachers and staff (10 studies)
- Psychoeducation for parents and caregivers (6 studies).

Tier 3 (for trauma--impacted staff)

- Referrals or crisis support (3 studies)
- Parents or caregivers of trauma-impacted students received family therapy, or individual meetings (3 studies).

All included studies implemented their tier 1 and tier 2 interventions on-site, and most implemented tier 3 interventions on-site. Four studies included referrals or crisis support off-campus.

Data Quality Issues

Findings were limited due to recurring gaps in study designs and methods used in the included studies. Studies included before-after with concurrent comparison (2 studies) and single group before-after (9 studies) designs. For studies reporting PTSD outcomes, the study with comparison groups showed smaller (nonsignificant) effects, unlike the single-group studies. Studies had small sample sizes with a median of 187 (IQI 73.8 to 633.5) students across all studies. Sample sizes were further reduced for tier-specific or age-specific stratifications. While all included studies implemented interventions at all three tiers, most studies only reported measuring outcomes at a single tier. Of the five studies reporting PTSD outcomes, one study measured results at all three tiers with sample sizes of 11 students at tier 1, 8 students at tier 2, and 4 students at tier 3. The remaining four studies reported outcomes at tier 1 (1 study with 155 students), tier 2 (1 study with 17 students), and tier 3 (2 studies with 104 and 149 students, respectively).

All included studies were judged to be of fair quality of execution; nine studies had the least suitability of study design according to Community Guide quality scoring methods [https://www.thecommunityguide.org/pages/effectiveness-review-methods.html#abstract-relevant-information-selected-studies]. The most common study limitations were missing intervention descriptions (e.g., screening process, specific intervention deliverer, intervention delivered), unclear sampling frame or screening criteria for participant eligibility, and issues with data analysis (e.g., not controlling for design effect, differential exposure to interventions at each tier).

Potential Benefits and Harms

CPSTF examined potential additional benefits and harms from exposure to the intervention. Potential benefits noted in the broader literature or included studies were reduced staff turnover (Hales et al 2017), reduced financial and structural barriers to receiving mental health services (Frankland 2021), and sustained support among families who completed the intervention (Perry and Daniels 2016).

None of the included studies reported potential harms. CPSTF noted that culturally insensitive trauma-informed school programs could cause potential harm by invalidating experiences of historically disadvantaged groups. Two studies included culturally sensitive brokers to aid with implementation, and both reported statistically significant favorable results for PTSD, combination of student behaviors or depression (Beehler et al 2012, Ellis et al 2013).

Considerations for Implementation

CPSTF calls for more comprehensive and in-depth evaluations of multi-tiered trauma-informed school programs that address the study design and methodology concerns discussed below.

Evidence from included studies indicates that multi-tiered trauma-informed school programs produced some favorable results (see table 1). This body of evidence was limited, however, by lack of clear intervention descriptions, small sample sizes, lack of comparison groups, and lack of assessment at all tiers of the intervention. It is important that researchers include clear descriptions of all components of the intervention as well as how they were delivered as guidance to implementers. Comparison groups are important when assessing outcomes such as PTSD that may improve over time without intervention (Hiller et al 2016). Evaluating multi-tiered trauma-informed school programs using comparative study designs, such as random controlled trials (RCTs) or observational designs that use comparison groups would be helpful to separate the effect of the intervention from improvements that may happen over time. Too few studies reported student behavior outcomes using comparable measurements, making it difficult to determine the overall effect. Establishing a set of standardized measures for researchers to use could assist intervention evaluation, improve communication between researchers, and increase the possibility of summarizing this body of evidence across studies. Finally, evaluations that assess outcomes from all three tiers may provide useful information about how the tiers work together so that the potential benefits of a multi-tiered approach can be fully assessed.

Interventions implemented at each tier varied between studies and were often not well described, making it difficult to determine which combinations of interventions across the three tiers were most effective. Studies also implemented a mix of evidence-based and practice-based interventions and did not indicate whether they were implemented as intended.

Few studies reported information about funding for their multi-tiered trauma-informed school programs. It is important for researchers and implementers to build in plans that ensure schools will be able to continue providing individual interventions to students once the study ends.

Schools can use the tool below to assess their current mental health programming needs and access resources.

> The School Health Assessment and Performance Evaluation (SHAPE) System | Mental Health Technology Transfer Center (MHTTC) Network (mhttcnetwork.org) [https://mhttcnetwork.org/centers/mhttc-network-coordinating-office/news/school-health-assessment-and-performance-evaluation]
>
> Promoting Mental Health and Well-Being in Schools | CDC [https://www.cdc.gov/healthyyouth/mental-health-action-guide/index.html]

Below are several publicly available resources for more information about addressing trauma and building trauma-informed schools using evidence-based interventions

- The Center for Resiliency, Hope, and Wellness in Schools (traumaawareschools.org) [https://traumaawareschools.org/]
- Taking the First Step to Becoming a Trauma-Informed (TI) School | Comprehensive Center Network (compcenternetwork.org) [https://compcenternetwork.org/resources/resource/6931/taking-first-step-becoming-trauma-informed-ti-school]
- Learn: Continuing Education (nctsn.org) [https://learn.nctsn.org/course/index.php?categoryid=3]

- Understanding Trauma and Its Impact | National Center on Safe Supportive Learning Environments (NCSSLE) (ed.gov) [https://safesupportivelearning.ed.gov/understanding-trauma-and-its-impact]

Evidence Gaps

CPSTF identified several areas that have limited information. Additional research and evaluation could help answer the following questions and determine the effectiveness of multi-tiered trauma-informed school programs.

CPSTF identified the following questions as priorities for research and evaluation:

- Using comparative study designs and consistent outcome measures, are multi-tiered trauma-informed school programs effective in:
  - Reducing mental health symptoms, including PTSD, depression, and anxiety, among students?
  - Improving school-related outcomes, including student behaviors, absenteeism, and academic achievement?
- Does the effectiveness of multi-tiered trauma-informed school programs vary for students who may disproportionately experience trauma, such as students who identify as sexual or gender minorities, and students with disabilities?
- Does program effectiveness vary with different program and study characteristics, such as the specific interventions implemented within each tier, service deliverers, or intervention duration?
- What combinations of interventions across the tiers are most effective?
- What is the impact of multi-tiered trauma-informed school programs implemented after a crisis or mass exposure (e.g., school shooting, natural disaster) in the United States?

References

Baez JC, Renshaw KJ, Bachman LE, et al. Understanding the necessity of trauma-informed care in community schools: a mixed-methods program evaluation. *Children & Schools* 2019;41(2):101–10.

Beehler S, Birman D, Campbell R. The effectiveness of cultural adjustment and trauma services (CATS): generating practice-based evidence on a comprehensive, school-based mental health intervention for immigrant youth. *American Journal of Community Psychology* 2012;50:155–68.

Berger E. Multi-tiered approaches to trauma-informed care in schools: a systematic review. *School Mental Health* 2021;11:650–64.

Brooks JE. Strengthening resilience in children and youth: maximizing opportunities through the schools. *Children & Schools* 2006;28:69–76.

Burke NJ, Hellman JL, Scott BG, et al. The impact of adverse childhood experiences on an urban pediatric population. *Child Abuse & Neglect* 2011;35(6):408–13.

Centers for Disease Control and Prevention. Health Youth at Risk for ACEs. Atlanta (GA); 2022. Available from URL: www.cdc.gov/violenceprevention/aces/help-youth-at-risk.html. Accessed July 12, 2023.

Centers for Disease Control and Prevention. Adverse Childhood Experiences (ACEs). Atlanta (GA): CDC, 2021. Available from URL: www.cdc.gov/vitalsigns/aces/index.html. Accessed July 12, 2023.

Chafouleas SM, Johnson AH, Overstreet S, et al. Toward a blueprint for trauma-informed service delivery in schools. *School Mental Health* 2016;8:144–62.

Dorado JS, Martinez M, McArthur LE, et al. Healthy Environments and Response to Trauma in Schools (HEARTS): a whole-school, multi-level, prevention and intervention program for creating trauma-informed, safe and supportive schools. *School Mental Health* 2016;8:163–76.

Durlak JA, Weissberg RP, Dymnicki AB, et al. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development* 2011;82:405–32.

Ellis BH, Miller AB, Abdi S, et al. Multi-tier mental health program for refugee youth. *Journal of Consulting and Clinical Psychology* 2013;81(1):129 -40.

Fondren K, Lawson M, Speidel R, et al. Buffering the effects of childhood trauma within the school setting: A systematic review of trauma-informed and trauma-responsive interventions among trauma-affected youth. *Children and Youth Services Review* 2020;109:104691.

Frankland M. Meeting students where they are: trauma-informed approaches in rural Schools. *Rural Educator* 2021;42(2):51–71.

Hales TW, Nochajski TH, Green SA, et al. An association between implementing trauma-informed care and staff satisfaction. *Advances in Social Work* 2017;18:300–12.

Hiller RM, Meiser-Stedman R, Fearon P, et al. Research Review: Changes in the prevalence and symptom severity of child post-traumatic stress disorder in the year following trauma – a meta-analytic study. *Journal of Child Psychology and Psychiatry* 2016;57(8):884–98.

National Child Traumatic Stress Network. *Populations at risk*. Rockville (MD): NCTSN, 2023. Available at URL: https://www.nctsn.org/what-is-child-trauma/populations-at-risk. Accessed August 7, 2023.

Perry DL, Daniels ML. Implementing trauma-informed practices in the school setting: a pilot study. *School Mental Health* 2016;8:177–88.

Substance Abuse and Mental Health Services Administration. Understanding Child Trauma. Rockville (MD): SAMHSA, 2023. Available from URL: https://www.samhsa.gov/child-trauma/understanding-child-trauma. Accessed August 7, 2023.

Substance Abuse and Mental Health Services Administration. SAMHSA's Concept of Trauma and Guidance for a Trauma Informed Approach. HHS Publication No. (SMA) 14-4884. Rockville (MD): SAMHSA, 2014. Available at URL: https://ncsacw.acf.hhs.gov/userfiles/files/SAMHSA_Trauma.pdf.

Disclaimer

Document last updated February 15, 2024