

Research Article

Start Early: Providing Trauma-Informed, Systems-Focused Professional Development in Early Childhood Development and Learning Contexts

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Abstract

Adverse and traumatic childhood experiences can have profound negative health and mental health consequences across the lifespan. Prevention and early intervention strategies to mitigate such impacts and foster resilience are essential, yet extant approaches often do not consider the systemic nature of trauma exposure, particularly among communities most impacted by the COVID-19 pandemic and historic disinvestment. Addressing the impacts of trauma early in life is critical in order to mitigate their long-term effects on child development. The current project worked with a community Head Start/Early Head Start partner to adapt, deliver, and conduct a formative evaluation of Trauma-Informed Programs and Practices in Schools-Early Childhood (TIPPS-EC), a systems-focused professional development approach to creating and maintaining trauma-informed early childhood development and learning contexts serving children ages 0-5 years and their families. Training materials were designed to highlight community and systemic sources of trauma exposures; acknowledge teacher



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stress and burnout; and present research-based information on trauma exposure, how effects may manifest, and the impacts of trauma exposures on very young children and the adults in their lives. Data were collected to evaluate participants' responses to TIPPS-EC and solicit their input regarding implementing systems-focused, trauma-informed approaches in EC settings (n = 56 Head Start/Early Head Start professionals). Participants were satisfied with TIPPS-EC and endorsed greater knowledge of trauma-informed approaches and systemic trauma after the professional development sessions. Participants made multiple suggestions for next steps for implementing systemic approaches in EC settings. TIPPS-EC presents a framework for understanding systemic trauma exposures as they manifest in EC contexts, and for identifying systems-level strategies that can support EC professionals to help mitigate the impacts of trauma on the children and families they serve. Implications for addressing stress, burnout, and trauma impacts specifically in EC educational settings are discussed.

Keywords

Trauma-informed; systems; early childhood; education; teachers

1. Introduction

Exposure to chronic stress and trauma during early childhood (0-5 years of age) can dramatically alter how a child's developing brain, body, and behavior respond to stress [1]. If not addressed, such changes can create long-term risks for health and well-being for that child [2] and even transmit effects of chronic stress and trauma exposure across generations [1]. Thus, it is critical to intervene early in the lifespan to prevent and mitigate exposures to chronic stress and trauma.

Prior to the COVID-19 pandemic, young children and families in historically marginalized, under-served and under-resourced communities had faced years of chronic exposure to stress and trauma. Even very young children living in neighborhoods characterized by such factors have been found to experience increased stress and trauma symptoms, including racial trauma related to marginalization, racism, and discrimination [3, 4]. The grief and loss, reduced resources, and systemic ruptures in the social fabric experienced during the pandemic unfortunately compounded systemic trauma exposures [5], with documented and ongoing negative impacts on early learning, mental health and wellness outcomes among young children [6, 7] and their caregivers [8].

1.1 Potential for EC Professionals to Help Mitigate Impacts of Trauma Exposure on Children

Early childhood (EC) settings play a vital role in shaping health, well-being, and learning outcomes for young children. EC educators and other EC professionals can be essential partners in mitigating the negative impacts of exposure(s) to chronic stress and trauma on early childhood development [9-11]. Supportive relationships with EC professionals can serve a buffering function for children who exhibit challenging behaviors, as can occur in the case of trauma exposure [1, 9-15]. It has been shown that preschool expulsion rates were lower when educators had a more positive understanding of trauma, suggesting that when educators understood trauma as a possible root cause of challenging behaviors, they were more likely to see beyond the behavior and develop closer relationships, particularly with more impulsive children [15, 16]. Trusting relationships with caring

adults who can provide co-regulation during times of stress are critical for (re)building a sense of safety that can allow a child who has experienced trauma to start healing [1, 9-11].

In the context of healthy relationships, EC professionals can support high-quality activities that facilitate development of child social-emotional learning and coping skills that can help mitigate the impacts of trauma exposures [13, 17, 18]. EC professionals can also serve as an instrumental resource for families of children who have faced trauma, providing critical information regarding developmental needs during the first years of life [1, 3, 19]. Finally, EC professionals can act as trusted brokers to connect families to other services, such as developmental screening, mental health care, or social programs to meet material needs [6, 13].

1.2 Need for a Systems-Approach to Trauma-Informed Programs and Practices in EC Settings

Unfortunately, EC professionals are often overburdened and not able to effectively engage in activities to support young children who have experienced trauma. As well, research has shown that EC professionals do not receive sufficient professional development regarding how trauma can impact children during the early years of life [10, 20-24]. Thus, EC educators may feel overwhelmed or unprepared to address the impacts of trauma in young children [25-28]. This is a significant gap, as understanding both the importance of and methods to address the impacts of early trauma exposure can help EC professionals change the trajectories for young children [10, 16, 20, 21].

A systems-focused approach is needed to support EC professionals. This is important because systemic trauma can impact not only children and families, but also EC educators and staff [13, 20, 27, 28]. Even prior to the pandemic, EC professionals were at risk for secondary trauma and/or re-experiencing early traumas that can surface when caring for young children [26, 29]. Such experiences can be more likely if EC professionals come from the communities they serve, particularly if those communities are historically marginalized and underserved [18, 30]. EC educators working with young children in communities that have experienced systemic trauma have been identified as needing additional support in order to reduce their own risk for burnout, compassion fatigue, and secondary traumatic stress [13, 18, 26]. These risks increased during the pandemic [30-33].

Trauma-informed workforce development is recommended as a strategy to support EC professionals and to reduce impacts of trauma exposure on young children. Yet, limited efforts have embraced systems-focused approaches or evaluated the acceptability of such approaches in trauma-informed training activities in EC settings [18, 22, 26, 28, 34]. Instead, across K12 and EC settings, training opportunities often focus on specific practices or programs for educators to implement in the classroom, rather than taking a broader perspective on how to change systems to support educators, administrators, and other staff [14, 18, 20, 26, 29, 35, 36]. Research has shown that teachers are more likely to endorse trauma-informed approaches when they receive support from school administrators [16, 20, 22, 36]. Thus, it is important to consider how well trauma-informed approaches are integrated into the curricula and overall school climate of EC programs.

Trauma-informed trainings for EC professionals also do not always address systemic sources of trauma, such as collective historical trauma or the impacts of racial discrimination and marginalization in a community [28]. Understanding how such systemic factors impact development is essential for educators serving children and families living in communities that were disproportionately impacted by the pandemic [3, 17, 37]. In sum, there is a need for trauma-

informed EC professional development opportunities that address systemic and historical trauma exposure content as well as systemic supports for EC professionals themselves.

1.3 Theoretical Framework: Trauma-Informed Programs and Practices in Schools (TIPPS)

Trauma-Informed Programs and Practices in Schools (TIPPS) is a systems-focused approach to creating trauma-informed schools that are environments where all students, especially those with trauma histories, feel safe, nurtured, and included. TIPPS was developed in collaboration with K-12 educators and school mental health professionals [38]. The program has been vetted by school professionals throughout the state, and is grounded in an implementation model that supports ongoing quality improvement and evaluation. TIPPS takes a systems approach to understanding trauma and to creating and maintaining a safe and supportive environment for children by introducing 10 core pillars, which include ensuring safe communities, increasing awareness of trauma and implicit biases, building communities and developing positive relationships, and avoiding punitive discipline practices, among others [38]. The TIPPS approach and training materials are designed to introduce these foundational principles across all school-based staff and encourage schools to select which areas they wish to focus on first, with the goal of being responsive to individual school needs and presenting a model to create systemic change in a school community over time. TIPPS is consistent with the 4 “R”s described by Substance Abuse and Mental Health Services Administration (SAMHSA) and the National Child Traumatic Stress Network [39, 40], which are: Realizing the impact of trauma on children and adults; Recognizing trauma symptoms and signs; Responding by integrating knowledge about trauma; and resisting Re-traumatization of individuals who have experienced trauma by reducing triggers.

1.4 Current Study

The goal of the current study was to use the TIPPS framework to begin to address the research gap in systems-focused approaches to trauma-informed professional development for EC settings. Working with a community partner that administers Head Start and Early Head Start programs, we adapted the framework for the EC context. We drew on theory covering the science of early development, toxic stress, and relational health [1], life course health development theory [2], public health frameworks on collective and community trauma [37], and systems approaches to infuse trauma-informed practices at a population level [41] to adapt the TIPPS framework for EC professional development sessions. The current report describes results from our formative evaluation assessing how TIPPS-Early Childhood (TIPPS-EC) was received by EC professionals. Specific goals were to 1) assess EC professionals' response to TIPPS-EC content and presentation; 2) assess EC professionals' knowledge about trauma in young children, systems-informed perspectives on trauma and practice, and behavioral intentions to engage in trauma-informed practice; and 3) gather open-ended feedback regarding participants' perceptions of need for and considerations for implementation of trauma-informed practice in their setting.

2. Materials and Methods

2.1 Study Design

The study used a cross-sectional design and multi-method approach to conduct a formative evaluation of TIPPS-EC materials with EC professionals. We gathered both quantitative and qualitative data. Quantitative data assessing trauma-related knowledge were gathered using a retrospective pre-post design, which is a way to assess change in individuals who may not be familiar with a given topic or terms at the start of an intervention [42]. Qualitative data were collected to better understand EC professionals' experiences with trauma and their needs for support around implementation. Gathering process data and initial formative evaluation data (e.g., knowledge, behavioral intentions), as well as qualitative feedback, as we do here, are each important in informing future work to improve TIPPS-EC content and delivery.

2.2 Study Population

The study population consisted of EC professionals, including educators, other program staff, and administrators in a Head Start/Early Head Start program in Detroit, Michigan.

2.3 TIPPS-EC Adaptation

We drew on developmental, social work, and educational expertise to adapt TIPPS materials for early childhood audiences. Experts included a developmental psychologist with expertise in early childhood mental health and public health; a clinical social worker with decades of experience in infant mental health and early childhood education as a consultant; a PhD-trained social worker with experience in community engagement and systems-level trauma practices; and the original developer of TIPPS, a social worker and trauma expert. Community partners from Head Start/Early Head Start also reviewed TIPPS-EC materials and content. The process for adapting materials included reviewing emerging literature on trauma-informed care in early childhood systems, considering the relevance of each TIPP for early childhood, and discussing with the team. Next, training materials were edited to make them pertinent for EC audiences (e.g., the formative nature of early caregiving relationships, what signs of trauma look like in very young children; discussion and examples of how young children can be exposed to community-level traumas) and creating additional materials to illustrate that content. The TIPPS-EC content included information specific to racism, community violence, and resilience-promotion to align with needs that had been identified by our community-based EC partners.

2.4 Procedure

2.4.1 TIPPS-EC Program Delivery

TIPPS-EC was delivered in professional development sessions at Head Start/Early Head Start. Sessions were designed to be interactive and (1) provide background information on trauma, including systems-level trauma, (2) discuss processes that could mitigate the impacts of traumatic exposures and systems-level strategies to promote trauma-informed practices when working with young children, and (3) gather EC professionals' perspectives regarding how trauma has impacted

their work and on the need and considerations for implementing trauma-informed approaches throughout their setting. TIPPS-EC was delivered by a PhD-level social worker. Sessions included an expert panel that facilitated semi-structured conversations and open discussions, asking questions of participants, fielding questions, and presenting strategies for working with children and families who had experienced trauma. Panel experts were experienced social workers trained in infant mental health and EC consultation and a developmental psychologist with expertise in early childhood mental health.

2.4.2 Data Collection

Two sessions were conducted, one for Early Head Start teachers and staff (who work with 0-3 year-old children and pregnant people) and one for Head Start teachers and staff (who work with 3-5 year-old children and their families). After each session, the brief anonymous survey (described below) was collected. Each session lasted approximately 1.5 hours.

2.5 Measures

We collected data to characterize the sample as well as quantitative and qualitative process and formative evaluation data to assess response to TIPPS-EC programming. All measures were based on prior work and adapted as needed to reflect the content covered in TIPPS-EC.

2.5.1 Sample Characteristics

Data were collected to assess the number of EC professionals present and their roles in the program.

2.5.2 Process Measures: Familiarity, Satisfaction, Suggestions for Improvement

Participants rated how familiar they had been with the content, prior to participating, on a scale of 1-5 (1 = not at all familiar to 5 = extremely familiar). To assess satisfaction with TIPPS-EC, participants rated 3 items on a 1-5 point scale (1 = strongly agree, 5 = strongly disagree) regarding whether the content “was easy to follow”, “feels inclusive”, and “was relevant”. Participants also completed a single overall satisfaction rating, “on a scale of 0 = poor to 10 = excellent, how would you rate this workshop?” and a single item regarding whether their expectations for the workshop were met (yes/no/unsure). These items were based on process evaluation assessments used in prior work [43]. Participants also completed a free response option and shared opportunities for improvement.

2.5.3 Formative Evaluation Measures: Trauma-Related Knowledge and Behavioral Intentions

Trauma-Related Knowledge. Trauma-related knowledge was assessed by having participants indicate how prepared they felt to characterize different aspects of trauma and systems-informed approaches both before and after the session. Items were based on extant trauma measures used with educators of older children [44] and adapted to reflect developmental aspects of early childhood and cover systems-focused content. Specifically, participants rated “I feel prepared to” for the following 5 items before participating in the workshop and after participating in the

workshop: “describe adverse childhood experiences”, “describe effects of trauma and toxic stress on young children”, “recognize what trauma looks like in young children”, “describe resilience”, and “describe a systems-approach to building resilience” (1 = strongly agree to 5 = strongly disagree).

Behavioral Intentions. Behavioral intentions to change were assessed following the theory of planned behavior, which has been recommended by others to assess teachers' experiences during professional development sessions [45, 46]. In a single item based on prior work [47], participants indicated whether they intended to change any aspect of their practice after participating in the workshop (yes/no/unsure) and if so, how (open-ended/free response).

2.5.4 Qualitative Feedback Measures

Participants' views on implementing trauma-informed approaches in their setting were solicited during semi-structured, open discussions of concepts introduced in TIPPS-EC. Discussion prompts were developed to engage all participants, including classroom teachers and those in other program roles (e.g., office staff; food preparation). Examples of behaviors that may indicate trauma exposures and some practical strategies to address them were discussed. Reflecting a systems approach, both in-class (e.g., helping a child use physical calming strategies such as a self-hug) and out-of-class examples were used (e.g., reflecting on what may have happened in a parent's life or community in an effort to be more patient when parents are late for pick-up). Discussion prompts were also used to solicit participant feedback related to the presentation (e.g., recognizing trauma, how to build resilience). These included questions like, Do you see the impacts of trauma exposures in your classrooms? If so, what do these look like? What strategies do you use in these situations? What challenges do teachers face in the classroom? What about other staff at Head Start/Early Head Start? In your role, what support would you need in place to engage in trauma-informed practices? What challenges do you see to establishing systems-approaches to trauma-informed practices in your setting? Notes were collected to be analyzed for key themes raised by participants.

2.6 Analysis Plan

2.6.1 Quantitative Data

Descriptive statistics were calculated to assess participant roles and process data including satisfaction ratings and whether expectations were met. Frequencies were generated for each category of response for behavioral intentions. Formative evaluation data on trauma-related knowledge were analyzed using paired t-tests to assess change from pre- to post-session. All items were reverse-scored such that a higher score indicated greater agreement with the statement.

2.6.2 Qualitative Data

Participant responses based on session notes and written feedback were summarized by the team and member-checked with the Head Start/Early Head Start partner for accuracy. We used the constant comparative method [48] wherein responses were reviewed to indicate emergent themes. New themes were identified and reviewed by the research team until saturation of themes was reached.

Data reported focuses on process and formative evaluation data, and themes generated from qualitative data from the open discussions. IRB approval was not needed. All participants in the workshops were over the age of 18 years.

3. Results

3.1 Participants

A total of 56 participants completed TIPPS-EC sessions. Most (64%) participants were teachers, with administrators (7%), family service workers (5%), and others in the organization (e.g., nutrition specialist, mental health consultant, food aide) also attending (7%). Participants endorsed a moderate level of familiarity with the content (M = 3.2, SD 1.0) prior to the content being presented.

3.2 Process Evaluation

Participants reported generally high satisfaction, with a mean rating of 1.5 (SD 0.01), or between “strongly agree” and “agree” for items assessing content being easy to follow, inclusive, and relevant. The majority of participants noted that expectations were met for the workshop (77%). Mean overall satisfaction rating was 9.1 (SD 1.0) out of 10. Open-ended comments were generally very positive, with multiple participants noting it was a “great workshop” and that the information was “very well received”. One participant stated appreciation for the workshop providing space to discuss relationships between administration and staff in the agency. Other participants asked for more interactive components, including a workbook with practice activities and getting access to materials beforehand so they could write notes.

3.3 Formative Evaluation

Table 1 presents paired t-test results for the retrospective post-test measures of trauma-related knowledge. Participants endorsed greater readiness to recognize signs of trauma and preparedness to engage in trauma-informed approaches at retrospective post-test compared to pretest (all p's < 0.001). For behavioral intentions, most (61%) participants noted that they would change their practice after participating in the workshop. Of those who stated they did not intend to change (11%), most noted that it was because they felt they already engaged in these practices.

Table 1 Paired T-tests: Pre-Post Retrospective Evaluation.

Item: “I feel prepared to...”	Pre-test M (SD)	Post-test M (SD)	Paired t (df)
Describe adverse childhood experiences	2.85 (0.52)	3.42 (0.40)	5.17 (52) ***
Describe effects of trauma and toxic stress on young children	2.87 (0.58)	3.42 (0.40)	4.71 (52) ***
Recognize what trauma looks like in young children	2.94 (0.47)	3.41 (0.40)	4.60 (53) ***
Describe resilience	2.85 (0.45)	3.35 (0.42)	4.96 (51) ***
Describe a systems-approach	2.40 (0.78)	3.19 (0.50)	6.52 (52) ***

to building resilience

Note. Higher scores indicate greater agreement with the item. *** $p < 0.001$.

3.4 Participant Reflections

Themes that emerged during open discussion highlighted interest in systemic approaches to implementation of trauma-informed approaches in EC settings. Themes illustrated some gaps in trauma-informed approaches in work with young children. Teachers reflected on their roles as educators when discussing implementation of systems-level trauma-informed approaches, and made specific recommendations regarding implementation of such approaches in EC settings.

3.4.1 Need for Trauma-Informed Approaches: Impacts of Trauma and Opportunities for Resilience

Systemic Approach. Participants described a strong interest in learning about trauma using a systems-level approach. Although many of the providers had already participated in trainings focused on trauma-informed approaches, they reported that these were focused on experiences at the individual level rather than a systems level. Although they could see the value of training to work with individuals, they noted the need to take a broader view that included systemic sources of trauma exposures.

Signs and Impacts of Trauma. Recognizing how signs of trauma exposure can manifest in young children was identified as a training gap. Participants listed examples of behaviors they had seen when children encounter classroom challenges, including physical aggression and “shutting down”. Participants were encouraged to re-interpret such behaviors (i.e., fight, flight, or freeze) as automatic responses that can occur when children have experienced trauma and to consider possible trauma exposure as precipitating the behaviors they observe. In addition, participants learned that signs of trauma may not always emerge right away, and that seeking to understand the “why” behind child behaviors can make it easier to connect with children whose behaviors may be difficult to manage in the classroom.

Adults' Experiences. In addition to impacts on children, participants identified signs of potential trauma responses they observed in themselves, colleagues, and children's caregivers. Teachers reflected that, just like the children, if they do not feel safe or equipped to handle experiences that arise, they cannot do a good job teaching. By relating TIPPS-EC content to their own experiences, participants came to appreciate the need for a more complete understanding of how trauma can shape adult as well as child behaviors. Participants shared that this knowledge would help them work more effectively with parents and have a deeper appreciation for what they are going through.

Building Resilience. The concepts of rupture and repair were used to illustrate and discuss how to identify and act on small but meaningful opportunities to build resilience in the classroom. Conflict and distress were described as “ruptures” in a relationship that must be acknowledged, but then can be “repaired” so that the relationship can continue. Participants suggested creative ways to signal repair after a relationship disruption, for example using concrete symbols like a Band-Aid to signal that a repair has been made. Simple actions like this can be used to reinforce to children that relationships can be challenged (ruptured), but then strengthened (repaired), thereby increasing children's trust in relationships as a source of resilience. Other practical strategies

discussed included establishing clear expectations for children's behavior, offering children specific but limited choices, and establishing a clear place for children to calm down and recover from distress. It was noted that when practiced consistently, such behaviors can promote autonomy and enhance feelings of safety in the classroom setting and build children's capacity for resilience to overcome future challenges.

3.4.2 Considerations for Implementing Systems-Level Trauma-Informed Approaches in EC Settings

Patience. EC educators recognized that patience and taking a long-term view were important when working with children who had experienced systemic trauma. One teacher stated, "You're doing the work [to promote resilience], but you can't always see it, so that can be frustrating." When others agreed that it was difficult not being able to witness how what they do now will impact a child later, it prompted a discussion of the parallel idea of "the body keeps the score" - that is, exposure to early trauma can have long term physiological impacts that are not immediately seen. Participants reflected that the systems orientation of TIPPS-EC helped remind them that although they cannot see the building of resilience in the moment, their work with young children was important because it could lay the groundwork for resilience over time.

Developmental Considerations and COVID-19. Early Head Start providers noted that almost all of the children in their program (0-2 year-olds during fall 2022) had been born during or just prior to the COVID-19 pandemic. Experienced teachers reported that, compared to prior years, many children appeared delayed in key skills that are fundamental for social-emotional development, including communication and emotion regulation. For example, some teachers noted that children had difficulty with language comprehension, perhaps due to the masking requirements that had been in place while language skills were developing. Even the 3-5 year-old children attending Head Start were seen as more delayed than prior cohorts. As such, teachers noted that they were finding it difficult to rely on their prior teaching strategies to promote social-emotional development and child capacity to cope with stress (e.g., encouraging children to "use their words" to express emotions), despite the increased need for precisely these skills, given the systemic traumas experienced during the COVID-19 pandemic.

Importance of (All) Relationships. Participants noted that relationships - with children, teaching teams, parents, and administrators - were all important and can affect trauma work at the systems-level. They also reflected that these relationships take time to build. Participants noted that, even for adults, early-life trauma can shape how we act in our other relationships, and it is important to remember that when interacting with adults in the EC environment.

Specific Implementation Considerations for EC Settings. Participants noted staffing shortages as a key barrier to implementing systems-level change, as it reduced their capacity to serve families. Staffing turnover meant that classrooms were operating with teachers who had fewer years of experience and sometimes limited early childhood expertise and/or special needs training. Furthermore, children coming into the classroom had often missed out on development-enhancing activities (e.g., reading, routines) given limited parent availability and challenges at home, so needed additional support compared to prior years. Staffing challenges made working with the children who needed extra support more difficult and created tension in the classroom as children were getting

used to new teachers. In sum, teachers reflected that they were managing children who were traumatized and lacked the skills to manage temporary stressors, and that teachers themselves were experiencing historically unprecedented levels of stress due to the pandemic. Staff shortages were seen to amplify all of these problems because teachers had limited respite and could not engage in self-care, reflection or planning activities that are important in order to mitigate the impacts of (multiple) trauma exposures for themselves and the children that they care for.

Another implementation consideration included the need for administrative awareness of systemic exposures to trauma, including among the staff, that could make it difficult to do their work. Participants noted that providing additional open forums for discussion of these issues would be helpful. Finally, teachers requested tools to provide information for parents to learn about systemic trauma, as they felt this type of understanding could help parents learn to support their children in ways that were different from what parents had experienced.

4. Discussion

The current study generated formative evaluation data regarding content and delivery of professional development sessions addressing systems approaches to inform trauma-informed programming and practices in early childhood (EC) settings. Goals were to gather process data on EC professionals' responses to the sessions; assess their trauma-related knowledge and intent to engage in trauma-informed practice; and gather feedback on participants' perspectives on implementing systems-focused trauma-informed practices in EC settings. Results indicated high acceptance and engagement and increased trauma-informed knowledge among EC professionals. Themes emerging from qualitative data indicated that EC professionals were able to identify signs of trauma exposure in children, but also gaps in their training regarding systems perspectives, such as understanding how adults' trauma experiences may impact their work. Overall, participants identified a need for systems-focused approaches both to identify sources of trauma in their communities and to implement trauma-informed programs and practices in EC settings. A more explicit focus on 1) the systemic nature of trauma exposures and 2) how to build systemic supports in EC settings to help mitigate the impact of exposure is important when considering how to support EC professionals. Implications for future research and practitioners are discussed.

4.1 Why a Systems Focus is Critical for Trauma-Informed Programs and Practices in EC Settings

There is great potential for EC professionals to help mitigate the impact of trauma exposures on child development by establishing supportive, trusting caregiver relationships and by promoting emotion regulation skills that can help build individual child resilience [9-11, 13, 15]. For example, EC educators can foster social-emotional development by teaching young children how to express emotions, develop relationships, take others' perspectives, and use strategies to resolve conflicts [9, 49, 50]. Yet, this potential is often not realized as teachers are overburdened and stressed [26, 31-33, 51, 52]. There remains limited focus on how teachers' own trauma exposures, stress responses and burnout can affect classroom processes [16, 24, 26]. In addition, individual trauma-informed interventions that focus primarily on classroom behavior are likely not sufficient to meet the complex needs of children and families that have been exposed to structural, intergenerational, and environmental traumas [18, 20, 22, 28, 34, 35]. Classroom teachers and other EC professionals may not feel prepared to address these concerns [23, 25, 27].

The COVID-19 pandemic compounded traumatic exposures for children, parents, teachers, and communities [5, 6, 8, 30-32, 52, 53]. The pandemic also disrupted systems for mitigating these traumas and reduced opportunities for child participation in developmentally promotive activities in EC and home contexts, resulting in documented learning losses [7] and adverse determinants of health outcomes [6]. At the same time, EC educators and staff experienced high rates of turnover nationwide [24, 54, 55]. As noted by our participants, this created a “perfect storm” such that children had urgent needs for the help that EC settings could provide, yet EC professionals did not have the capacity to meet them. An important way to mitigate the impacts of trauma on a young child is to establish stable relationships through consistent interactions with a caring adult [1]. In a busy classroom with high levels of child trauma exposure and high staff turnover this is difficult because educators must react to behavioral emergencies, rather than taking time to build relationships with children in a more intentional manner. Developing a systems-informed understanding of how the effects of trauma exposure can manifest in children as well as the adults who care for them is critical in supporting both children and EC professionals. Results from the current study, particularly the qualitative data, thus add to the extant literature on addressing trauma in EC settings by highlighting professionals' perceived needs for a systems-informed approach [13, 20, 28, 34].

Outside of the classroom, young children are nested in families, and families and EC settings are nested in communities. EC settings in communities with median household income levels at or below the poverty level could benefit from policies and practices that take a systemic approach to identifying and mitigating the impacts of community trauma exposures [56, 57]. Even prior to the pandemic, many communities in historically marginalized areas had experienced community level traumas, the impacts of which can be far-reaching and not easily addressed without systemic solutions. Thus, a next direction for research in EC settings could be to establish and evaluate systems-oriented strategies to help families. These could include social needs screening and support for EC programs to partner with community agencies where they can refer families for help meeting material needs [58]. Establishing trusted connections across different systems that families encounter may help practitioners in EC contexts address the complex needs of the children and families in their program, beyond the boundaries of the classroom.

4.2 Systems-Focused Professional Development: A First Step toward Improving Trauma-Informed Programs and Practices in EC Settings

Providing a systems-oriented exploration of types of trauma and how it can present may benefit classroom teachers as well as other EC program staff [21, 26, 34]. Yet, most staff in EC settings do not receive any trauma-informed training [18, 22, 26, 28]. Study findings highlight the value of integrating systems-focused approaches into professional development for practitioners in different roles. Although most TIPPS-EC participants were classroom teachers, a range of roles were represented including nutrition, mental health, and administration. Participants also noted that providing systems-focused trauma education to parents and other stakeholders would be helpful. Professional development is a key first step toward behavior change in education settings [45, 46], and teachers are more likely to endorse trauma-informed approaches when they perceive school-level support for such approaches [16, 20, 22, 36]. Thus, it may be critical for professional development efforts to include a systems perspective both in understanding the nature of trauma

exposures (e.g., community-level traumas) and in identifying systemic program supports for EC professionals to help mitigate their impacts (e.g., policies that relieve front-line staff in different roles; acknowledge the potential for trauma and secondary trauma for adults [26]).

Current research on the long-term health and well-being effects on children experiencing adversity during crucial stages of development is not typically identified as essential knowledge for caregivers and/or educators [10, 20, 21]. Although EC teachers could identify some signs of trauma and strategies to assist individual children, most noted opportunities for improvement. For EC professionals to help reduce the impacts of trauma on child development, they need to know not only about individual child trauma exposures, but also how systemic collective traumas like racism can manifest in complex ways [3, 9, 17, 34]. The TIPPS-EC focus on community trauma was seen as important by participants and something they had not previously experienced in professional development sessions. Participants reflected on how their classroom experiences might have been affected by the systemic trauma exposures that they and the children they serve experienced during the COVID-19 pandemic. They described that using a systems approach to inform their understanding of how trauma can impact them, their co-workers, and children's parents could be helpful in remembering the necessity of engaging in this work, even if immediate gains are not seen. These perspectives may be particularly helpful to highlight in professional development opportunities for EC programs.

4.3 Considerations for Implementing Systems Approaches in EC Settings

Building on these observations, a key takeaway from the current study is that to support EC professionals in their mission to help children who have experienced trauma, we must also acknowledge factors in the broader child-serving ecosystem that impact children, and how to begin to address them at a systems level, including within EC settings [58]. External factors that systemically impacted EC settings include the high rates of turnover and vacancies experienced since COVID-19 [54, 55], which were noted by participants to increase stress and lead to inconsistent staffing, exacerbating classroom challenges [24]. Calls for policy changes to address child care shortages may start to address this issue, but more remains to be done [54]. An implication for implementing systems approaches to trauma-informed practices includes thinking about how processes within EC programs could be designed to support staff. For example, offering professional development opportunities [24] and transparent policies around wages and benefits [55] are systems-level changes that have been associated with reduced turnover in EC settings. To build program-wide awareness of trauma, participants noted that providing spaces for open discussion of how systemic exposures to trauma can manifest for adults as well as children would be helpful, which may be beneficial for program administrators to consider for all staff. Overall, collaborative approaches to addressing the impacts of systemic trauma exposures and systematically preventing exposure to additional adversities for children, families, and EC professionals are urgently needed to support the healthy development of this generation.

4.4 Limitations

As with all studies, this work had limitations. Findings should not be generalized beyond the population - in this case, EC professionals employed by Head Start/Early Head Start in an area (Detroit) disproportionately impacted by the COVID-19 pandemic. The study was conducted in 2022,

so there could be cohort effects. We adapted novel measures to reflect our content and did not measure implementation of TIPPS-EC strategies or child outcomes, as this research was at a formative evaluation stage. These are certainly goals for future work. Results from the current study can be used to inform ongoing research to enhance TIPPS-EC, provide feedback for practitioners, and help others who seek to conduct similar work in EC settings.

5. Conclusions and Future Directions

Trauma-informed programs and practices have the potential to mitigate the long-term effects of adversities experienced by children. Yet, trauma-informed interventions that do not focus solely on the individual child are critical. A systemic approach that includes the child, family, care providers, and builds connections to community stakeholders may be a way to buffer the individual and environmental traumatic experiences that children are exposed to while resisting re-traumatization of children and families. Emerging data highlighting the impact of early-life trauma exposure on child development has led to expanding current offerings of professional development for early childhood educators, including Head Start and Early Head Start. Yet, professional development opportunities are not as accessible to EC professionals who are not a part of larger educational settings and limited knowledge is available on systemic approaches.

In terms of future directions, formative data gathered in this study is being used to develop training modules focused on systems approaches to address early life trauma, which will be delivered and tested on a broader scale. We are also providing consultation and assistance to other EC practitioner partners to build capacity in this area. More broadly, early childhood policies and procedures must be rewritten to address ongoing challenges associated with the COVID-19 pandemic [56, 57], including the compounding effects of acute and systemic traumas and higher teacher burnout. Supporting systemic approaches to developing EC environments that use trauma informed programs and practices effectively will require the full engagement and commitment of multiple stakeholders, including those in leadership and policy-making roles.

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Author Contributions

DP helped design program and evaluation, delivered program, drafted and edited manuscript, approved final draft as submitted, and obtained funding. YR helped design program and evaluation, drafted and edited manuscript, and approved final draft as submitted. HR helped design program and evaluation, drafted and edited manuscript, and approved final draft as submitted. JR helped design program, delivered program, drafted and edited manuscript, and approved final draft as submitted. CG drafted and edited manuscript, and approved final draft as submitted. TIH helped design program, drafted and edited manuscript, approved final draft as submitted, and obtained funding. ALM helped design program and evaluation, analyzed data, drafted and edited manuscript, approved final draft as submitted, and obtained funding.

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Competing Interests

The authors have declared that no competing interests exist.

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