

Training pediatric residents in trauma-informed care in Flint, MI: a pilot study



Gurbaksh Esch, MD, and William Nauam, BS

Public Health Practice
Published December 4, 2023

Abstract

Childhood trauma has significant long-term effects into adulthood, including impacts on growth, development, mental health, and chronic disease. Many children face trauma or traumatic events during their childhood. Significant racial and socioeconomic disparities exist in terms of adverse childhood events. The children and residents of Flint, Michigan, have faced numerous toxic stressors over time. Currently, there is no standardized trauma-informed care curriculum taught in pediatric residencies, including in that of Hurley Children's pediatric residency program in Flint. This pilot curriculum examined the impact of a short training on resident comfort with trauma-informed care topics embedded in a required pediatric residency rotation. Results from this small pilot study were encouraging, including improvement in resident understanding of basic concepts of adverse childhood experiences and trauma, comfort of knowing when to refer, and teaching resilience to parents. However, more research must be done to assess the inclusion of trauma-informed care training in pediatric residencies as a standard requirement.

Background

Trauma can have long-lasting impacts on children, including issues with development, behavior, attachment, disease, and more [1, 2]. Approximately two-thirds of youth experience at least one traumatic event prior to age 16 [3]. Adverse childhood experiences (ACEs) are “potentially traumatic events that occur in childhood” [4]. Non-Hispanic Black children (who face the most number of ACEs on average than other children of races) and children living in households of low socioeconomic status experience ACEs at higher rates than non-Hispanic White children and those living in households with middle and upper socioeconomic status [1, 5, 6]. These disparities have been noted in research since the original 1998 ACEs study [1, 5, 6]. Children in Flint, Michigan, have faced numerous toxic stressors, including the Flint Water Crisis, poverty, racism, housing and food insecurity, decreased access to healthcare, and more. Pediatricians are in a unique position to provide primary, secondary, and tertiary care and prevention regarding ACEs and trauma. Trauma-informed care (TIC) training allows pediatricians to recognize signs and symptoms of trauma, to understand the impact of ACEs and toxic stress on developing children, to promote a safe environment for care, and to provide evidence-based interventions to mitigate the effects of trauma [1, 2].

Objectives

The aim of this study was to assess a feasible curriculum embedded in the pediatric residency program. The program trains residents to recognize signs of trauma and children who are at higher risk, discusses resilience factors with parents, and assesses resident comfort with trauma-informed care delivery in a pediatric visit.

Methods

This educational project was approved by Hurley Medical Center Institutional Review Board and Hurley Pediatric Residency program leadership. The residents that participated were part of the Hurley pediatric and Hurley medicine-pediatric residency programs in Flint, Michigan. The TIC curriculum was embedded into the required pediatric Developmental and Behavioral Pediatrics rotation that residents take during their first year. The TIC curriculum consisted of an hour-and-a-half lecture and an interactive review of case examples with a facilitator. The lecture covered the importance of learning TIC, background on ACEs, existing disparities, stress types, the impact of toxic stress on children's brains and development, factors of resilience, trauma-informed care background, and step-by-step recommendations, including daily clinical use (such as during well visits and sick visits), de-escalation training, and secondary traumatic stress and burnout signs/symptoms and prevention.

Surveys were created through Michigan State University (MSU) Qualtrics to be completed by residents prior to the training. They were randomized by code created using mother’s birthday and first three letters of mother’s maiden name, to allow anonymity and comparison of pre- and post-lecture surveys. Surveys were distributed electronically five days prior to the scheduled training, with a reminder email two days prior. Consent was obtained through completion of survey, as stated in original and reminder emails that were sent with the survey link. After the training, surveys were distributed electronically on the same day of the training with a reminder three days after the training to collect information after the intervention. After the training, residents were provided with a TIC pocket pamphlet for reference created by the authors of this paper.

Results

A total of eleven residents completed the pre-surveys and seven completed the post-surveys. The majority of residents (80%) were in the pediatrics residency program, with the rest in the medicine-pediatrics residency program at Hurley. Demographically, the majority of those who completed the surveys were female (70%), White (40%), and non-Hispanic (100%) (Table 1). The initial questions related to defining trauma, understanding signs/symptoms of trauma, and listing examples of ACEs and diseases linked to ACEs showed improvement in correctness from pre- to post-surveys (Table 2). The second part of the surveys asked residents to rate their comfort level based on the prompt. A paired T-test showed a significant increase in comfort level from pre- to post-training in discussing past traumas with patients/parents if they bring it up, understanding when to refer for more support, teaching parents about resilience and providing a stable relationship for a child, and teaching others about ACEs and positive childhood events (Table 3).

Conclusion

ACEs and toxic stress have a significant impact on childhood development that have long-lasting effects into adulthood. Existing racial and socioeconomic disparities in ACEs and childhood trauma must be addressed. Pediatricians have an important role in fostering resilience, providing a safe environment, and providing preventative services (such as encouragement of caregivers and connection to community) and mitigating measures (such as TIC,

Table 1. Demographics.

Demographic	% of Participants
Age	
20-24	10
25-29	50
30-34	30
35-39	10
Residency Program	
Pediatrics	80
Medicine-Pediatrics	20
Gender	
Male	30
Female	70
Race	
African	20
Black/African	20
American	
White	40
Asian	20
Hispanic	
Yes	0
No	100

therapy, and mindfulness) against the effects of trauma. This pilot curriculum examined the impact of a short training on resident comfort with trauma-informed care topics embedded in a required pediatric residency rotation. After training, there was a noted increase of residents in overall comfort with topics such as resilience, discussing trauma, and teaching others about ACEs. The size of the study is a major limitation, as there is a lack of generalizability beyond the scope of this pilot study. While the findings were encouraging, it is important to continue to do research on the impact of TIC training in pediatric residency programs. The lack of longitudinal follow up is also a limitation, as the post-surveys were completed on the same day or within a few days of the training. Longitudinal follow up would help the researchers understand retention of information, as well as long-term comfort, or lack thereof, in TIC in daily pediatric practice. Finally, the study was performed in an area where residents had some baseline knowledge of toxic stress and childhood trauma due to the location and clinical experience. For generalizability, it is important that future studies are reproduced in a variety of areas, including those with diversity in race, socioeconomic status, and geo-

graphy. This small pilot study serves as a first step in encouraging trauma-informed care training for all pediatric residents in an effort to lessen the impacts of childhood trauma and promote health equity through pediatrician guidance.

Table 2. Pre- and post-intervention knowledge questions.

Survey Question	Pre-Survey % correct	Post-Survey % correct
Define trauma.	100	100
What are the 4 main aspects of TIC, as defined by SAMHSA?	10	100
Which of the following can be considered signs of trauma (acute or prolonged)? Increased activity, lack of sleep/difficulty sleeping, emotional outbursts, difficulty concentrating	80	85
Name 2 ACEs.	80	100
Name 3 conditions (medical/health) ACEs have been linked to in research.	80	100

Author Contact Information

Gurbaksh Esch: shergil3@msu.edu

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Table 3. Comfort rating pre- and post-intervention Paired T Test.
 *Indicates statistically significant <0.05

Comfort Rating Prompt (1 least comfortable to 5 most comfortable)	Pre- Intervention Mean	Post- Intervention Mean	Mean Difference (Paired Samples Test, Post-Pre)	95% Confidence Interval of the Difference (Paired Samples Test)	Sig. (2-Tailed, Paired Samples Test)
				Lower Upper	
Addressing an acute trauma in the office setting.	2.5714	3.4286	0.85714	-0.49669 2.21098	0.172
Discussing past traumas with patients/parents, if they bring it up (ex: history of child abuse, sexual assault).	2.4286	3.4286	1.00000	0.24487 1.75513	0.018*
Referring children to either a behavioral specialist or psychiatrist or therapist if necessary.	3.5714	4.2857	0.71429	-0.31479 1.74336	0.140
Understanding when to refer for more support.	2.8571	4.2857	1.42857	0.52601 – 2.33113	0.008*
Recognizing signs of trauma.	2.8571	3.8571	1.00000	-0.19397 – 2.19397	0.086
Teaching parents about resilience and providing a stable relationship for a child.	2.4286	3.4286	1.00000	0.24487 – 1.75513	0.018*
Discussing resilience and healing with foster parents.	2.1429	3.1429	1.00000	0.07515 – 1.92485	0.038
Teaching others about ACEs and positive childhood events.	2.0000	4.1429	2.14286	0.68753 – 3.59819	0.011*
Handling a de-escalating a situation.	2.7143	3.8571	1.14286	-0.31247 – 2.59819	0.103