BRIEF REPORT

Skills Training for Family Medicine Residents to Attenuate the Impact of Childhood Trauma: A Pilot Study

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ABSTRACT

Background and Objectives: Toxic stress and trauma are prevalent in the pediatric population. The sequela can be significant, leading to disruptive behaviors in early childhood to chronic medical conditions in adulthood. Two factors that can mitigate negative outcomes of developmental traumatic stress include relational health care and healthy parental relationships. Family physicians are poised to play a significant role in both attenuating factors. Therefore, focused pediatric trauma-informed knowledge and skills training for family medicine residents is important.

Methods: One family medicine residency program added a training module for residents, with two objectives: increase in-exam room trauma-informed interaction skills, and increase knowledge and skills for physicians to coach parents on strengthening the parent-child relationship. The training included didactics and skills training. Knowledge and skills were measured pre- and posttraining.

Results: A total of 39 residents participated in the study over 3 years. The knowledge score increased by 4.49 points from pre- to posttraining. The number of trauma-informed interactional skills the residents demonstrated at posttraining had increased significantly. During the pilot, all participants moved from below mastery of skills to full mastery.

Conclusions: After being instructed in best practices in trauma-informed pediatric interactions, residents demonstrated an increased number of behaviors that cultivate pediatric relational health care. Residents demonstrated knowledge and skills gains that denoted their ability to interact with patients and coach parents in evidence-based ways that can mitigate the impact of childhood trauma exposure.

INTRODUCTION

Childhood trauma and toxic stress are present in up to 60% of the population[1,2] and can contribute to sequala in childhood such as disruptive behaviors.[3] Negative early childhood environments also impact health over the life span and are highly correlated with chronic medical conditions in adult years.[1,4–7] Two factors that can mitigate negative outcomes of developmental traumatic stress include relational health care and healthy parental relationships.[4,5] Both of these variables provide opportunities for family physicians to attenuate the impact of toxic childhood stress.

The toxic stress many young children experience can have a bidirectional impact on parent stress and child disruptive behavior.[8–11] Rather than pathologizing the child's behavior, a trauma-informed care (TIC) approach shifts the focus to equipping the parent with skills to improve their relationship and manage difficult behaviors. Operationalizing TIC in pediatric patient interactions includes some approaches discordant with patient-centered communication models taught in medicine. For example, while physicians are taught that asking open-ended questions is central to patient-centered care[12] in interactions with children, the style and frequency of questions qualitatively impact the exchange.[13–15] In TIC, decreasing the frequency of questions while increasing the lead of the child in the relational engagement is preferred. Other operationalized TIC behaviors are listed in Table 1.

We developed and evaluated a training curriculum for first-year family medicine residents that aimed to increase in-exam room interaction skills. The curriculum focused on trust and responsiveness between physician and patient, and physician knowledge and skills to coach parents on strengthening the parent-child relationship.

TABLE 1. TIC Concepts and Care Skills

Concepts taught to address and mitigate childhood toxic stress in primary care
1. Overview of prevalence and neurobiological impact of toxic stress [4,5]
2. American Academy of Pediatrics Clinical Guidelines for detection, assessment and response to trauma and toxic stress [4,5]
3. Healthy parental relationships: The role of the caregiver/parental relationship in ameliorating the effects of cumulative adversities and techniques to coach parents in effective parenting practices that foster a safe, secure, and nurturing relationship with the child. [5,14,16,17]
4. Relational health care: The role of the physician relationship in creating a respectful and emotionally safe space for primary care [5]; enhancement skills to increase this relationship and behaviors to avoid that detract from an emotionally safe relationship. [14,16]
Relationship enhancement skills
1. Praise specific behaviors that are appropriate.
2. Point out behaviors that the child is engaging in that are appropriate.
3. Paraphrase the content a child speaks. All skills are predicated on trauma-informed therapy models and behavioral reinforcement constructs. To meet mastery, the resident must demonstrate five of each skill in a timed role-play.
Detraction behaviors/non-TIC interaction behaviors
1. Asking questions that are not necessary to the focus of the medical exam
2. Taking over the lead of the interaction during the portions that are focused on relationship building or require sensitivity to trauma
3. Criticizing or correcting behaviors (allowable only when a behavior is dangerous) Deferential attention paired with the enhancement skills listed here strengthen the provider/pediatric patient relationship as well as contribute to increased trust and behavioral compliance. To meet mastery, the resident must eliminate or reduce to fewer than three detraction behaviors during a timed role-play.

Abbreviation: TIC, trauma-informed care

METHODS

Curriculum

The curriculum was based on Child-Adult Relationship Enhancement (CARE), an interactional model derived from evidenced-based parent management training models such as Parent-Child Interaction Therapy (PCIT) and the Positive Parenting Program. [16,17] Although CARE has been adapted into team-based primary care settings to be used with parents, [18,19] that model was designed primarily to provide professionals with skills to improve child-adult relationships. [18] CARE has been designated by the National Child Stress and Trauma Network as a TIC approach. [16] The curriculum used in the resident training described here was based on foster parent [20] and psychiatry residents' CARE training, [21] with minor adjustments relevant to family medicine, and was highly informed by parent management training literature, [22–27] the American Academy of Pediatrics practice guidelines for TIC, [4,5] and the literature on the relationship between developmental trauma and externalized behavior disorders. [14,28]

In this pilot, the curriculum was delivered in one 4-hour session and included didactics, skills training, and coaching. After the skills were taught, residents engaged in role-plays with coaching until skill mastery was achieved. Residents then were prompted to use teach-back to explain the behavioral reinforcement skills of CARE as if they were teaching them briefly to a parent. More than half of the instructional period focused on skill development, with *in situ* coaching from the instructor, a certified CARE and PCIT trainer. This module was delivered during 3 consecutive years for each resident cohort. CARE skills were reinforced longitudinally, monitored throughout residency, including during a behavioral health rotation with a clinical psychologist, outpatient pediatric rotations with a behavioral health professional trained in CARE, and episodic video monitoring. The patient-centered communication skills from the module were monitored and plotted by the Clinical Competency Committee according to the Accreditation Council on Graduate Medical Education family medicine milestone Interpersonal and Communication Skills 1: Patient and Family-Centered Communication.

Assessment

Residents completed a multiple-choice knowledge test before and after training. This test has been used to demonstrate a knowledge increase of PCIT principles in a nonparent sample. [29] This measure was used to assess mastery of concepts taught within the module, focusing on the knowledge acquisition of how to increase connection with a child, apply behavior-modification skills, and coach a parent in these skills. [29] The assessment included 17 questions, with 1 point awarded for each correct answer for a possible range of 0 to 17.

Pre- and posttraining skills observations were conducted using the coding system for CARE training. This coding system was developed by PCIT trainers, creators of CARE, based on the Dyadic Parent-Child Interaction Coding System (DPICS). [30] DPICS has sufficient interrater reliability, [31] strong construct validity, [32] and high responsiveness to behavior change [33] and can be adapted effectively to other adult-child skills-training programs. [34,35] The coder in this study was certified in DPICS. Skills acquisition was quantified by coding interactions in a role-play with an adult portraying a 5-year-old. Residents were prompted to demonstrate a 5-minute interaction in which they would engage with a child to establish trust and increase connection. The instructor observed the physician's use of pediatric relationship-enhancement interaction skill. The coder noted how often the physician engaged in interactive behaviors that can detract from a TIC interaction.

Analysis

We summarized demographic characteristics and calculated means for pre- and postknowledge tests and each observation

code. We also calculated paired one-sample mean-comparison *t* tests. This study was exempted by the Baylor University Institutional Review Board.

RESULTS

A total of 39 residents participated in the study (Table 2). The pretraining mean score was 9.77 (57% correct) with a range of 5 to 14. The posttraining mean score was 14.26 (84% correct) with a range of 11 to 16. The mean change represented an improvement of 4.49 points (95% CI 3.79, 5.18; *P*<.001).

TABLE 2. Resident Demographics

Demographics	Residents, n (%)
Age	—
25–29	26 (89)
30–34	6 (18)
35–39	1 (3)
Missing	6
Gender	—
Male	18 (46)
Female	21 (54)
Ethnicity	—
Non-Hispanic	24 (86)
Hispanic	4 (14)
Missing	11
Race	—
White	21 (81)
Black	1 (4)
AAPI	4 (15)
Missing	13

Abbreviation: AAPI, Asian American and Pacific Islander

Regarding the pre- and posttraining coded observations, the number of relational detraction, or non-TIC behaviors, significantly decreased after the training, and the number of skills that facilitate positive physician-child interaction significantly increased after the training (all *P*≤.03). All residents moved from below CARE skill mastery to full mastery posttraining (Table 3).

TABLE 3. Resident Coded Skill Observations

Enhancement skills	Pre (mean)	Post (mean)	Change (mean)	P value
Number of specific praises	1.78	6.53*	−4.75	<.001
Number of behaviors pointed out	0.43	4.57*	−4.13	<.001
Number of paraphrases	2.89	5.77*	−2.89	<.001
Detraction behaviors	**Pre (mean)**	**Post (mean)**	**Change (mean)**	**P value**
Number of questions	17.28	1.56*	15.72	<.001
Number of commands	2.35	0.35*	2.00	<.001
Number of criticisms or corrections	0.87	0*	0.87	.029

*Indicates met mastery based on five or more discrete demonstrations of each enhancement skill and less than three detraction behaviors.

DISCUSSION

The delivery of a half-day module to support TIC in physician practice is feasible, and the demonstration of skills gained reflects the importance of explicitly teaching pediatric interaction skills.[36] At baseline, residents demonstrated an appropriate level of avoidance of negative statements (defined as overly corrective phrases, or misapplied use of "don't"). However, all but one resident exceeded the number of appropriate questions when forming a trust-based relationship with a child. At a rapid-fire pace, 38% of the trainees asked the patient more than six nonexam-related questions per minute. This baseline behavior contradicts the recommendations of trauma-informed practice.[14,16,18] Residents remarked that modifying this behavior was challenging for them because they often had applied the concept of asking questions as a way of gaining relationship.

This pilot evaluation had several limitations. Assessments were completed immediately following the training, demonstrating immediate skill and knowledge gains. Future work should assess long-term gains by applying the same coding system longitudinally rather than aggregating these skills into residents' comprehensive patient-centered communication skills. Because no existing validated instruments to evaluate the knowledge and skills targeted were available, another important limitation was that we adapted a knowledge assessment[29] and coding system from PCIT training.[30] Future psychometric investigation of the measures would be helpful in supporting our conclusions. In this pilot study, a single coder was used, who was not blinded to whether the assessment was pre- or posttraining. To reduce observer bias, future evaluations should include multiple coders who are blinded to training status.

CONCLUSIONS

Residents demonstrated statistically significant knowledge and skill gains after the training, suggesting that their assumed baseline pediatric interaction skills and capacity to coach parents in behavior modification techniques improved. Training in these skills operationalizes several Accreditation Council on Graduate Medical Education recommendations[37,38] and American Academy of Pediatrics practice guidelines and has the potential to contribute to relational pediatric care.[3 5,36,38–41]

Presentations

A Stepped-Care Approach Treating Pediatric Behavior Disorders and Symptoms Is Sustainable Within a Primary Care Setting. Presented at the Collaborative Family Healthcare Association Annual Conference, October 14, 2022.

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