Improving Trauma-Informed Care for Pediatric Nurses:

A Quality Improvement Project

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This paper is submitted in partial fulfillment of the requirements for the Doctor of Nursing Practice Degree

Abstract

Background: Trauma secondary to abuse and neglect is prevalent among the pediatric population, especially among children younger than 4 years old and those with disabilities. Trauma-Informed Care (TIC) is one way to help mitigate the effects of trauma and prevent further psychological damage, yet many providers are not confident in how to implement TIC.

Aim: To increase TIC knowledge and confidence scores among pediatric providers.

Methods: A TIC provider education session was delivered for nursing staff at a pediatric hospital in the pacific northwest. The education session included TIC considerations, case studies, and TIC verbiage. This education was preceded by a validated TIC provider survey assessing TIC knowledge and confidence in TIC delivery and was repeated after the education session and again 3 months afterwards.

Results: T-test analysis showed decreases in both knowledge and confidence summary scores that were not statistically significant. Barriers to TIC delivery was also assessed and constraints related to time, scope of practice, and lack of TIC training were the top barriers reported. Poor response rate of the surveys limited the clinical significance of the survey results.

Discussion and conclusions: At baseline, the nursing staff stated that they felt confident in delivering TIC yet also reported decreased knowledge of TIC principles and still endorsed lack of training as a significant barrier to TIC delivery. Further QI projects on TIC provider education using a larger number of participants is needed before conclusions can be made about the efficacy of an online TIC education module for pediatric nurses.

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Improving Trauma-Informed Care for Pediatric Nurses: A Quality Improvement Project

Introduction

Problem Description

Trauma Informed Care (TIC) is a care approach that recognizes the impact of and symptoms of trauma (Center for Health Care Strategies, 2021). All children can benefit from TIC, but children who are at risk of suffering trauma and abuse would benefit significantly. According to the Centers for Disease Control and Prevention (CDC), about 1 in 4 girls and 1 in 13 boys in the United States are victims of sexual abuse (Centers for Disease Control and Prevention [CDC], 2022). Among the pediatric population, children with disabilities are also considered a vulnerable subgroup and are at an increased risk for abuse and neglect with some reports stating that they are 4-10 times as likely to be victims of abuse than other children (Baladerian, n.d.; Legano et al., 2021). TIC is delivered through the lens of understanding how adverse childhood experiences (ACE) affects children to create an environment of safety for patients and avoid re-traumatization (Goddard, 2020; Zarnello, 2023). TIC is an intervention that is meant to be delivered universally to all patients because it is not always known which patients have a history of abuse and a systemic approach is the most efficacious (Frederickson, 2019).

In an acute care specialty unit in the Pacific Northwest (PNW), many of the patients are among a vulnerable population subgroup, yet TIC is not fully implemented in patient care. Despite the available research on TIC and its positive effect to prevent re-traumatization, many barriers exist to its implementation including lack of training and education for providers and support staff in TIC practice as well as a lack of confidence in TIC implementation (Marsac et al.,

2016). Additional barriers in this PNW facility exist, including the lack of a Nurse Educator to initiate and carry out TIC training and poor funding as a small institution.

Available Knowledge

The literature shows there is a significant lack of education for providers on both ACEs and TIC (Marsac et al., 2016; Pletcher et al., 2019; Schmitz et al., 2019) and that providers need concrete training/examples of how to incorporate TIC into practice (Agoston et al., 2020). To address this gap, several studies evaluated interventions to help educate providers and pediatric healthcare workers on the importance of TIC and how to practice it in a clinical setting. Schmitz and colleagues (2019) implemented an educational module for pediatric residents which included a pre and post survey assessment. This survey utilized a 5-point likert scale that measured knowledge of TIC, confidence in implementing TIC, and frequency of its implementation (Schmitz et al., 2019). The pre-education survey results showed that residents were not confident in their skills in discussing ACEs with patients or providing TIC in clinical practice. The post-education survey demonstrated a significant increase in TIC knowledge, confidence in TIC implementation, and discussion of these topics (Schmitz et al., 2019).

A review of TIC educational programs showed that providers could identify the signs of trauma with increased ease after receiving educational sessions on TIC (Forkey et al., 2016). Additionally, there was increased confidence in discussing TIC and knowing how to create an environment conducive to TIC implementation (Duweke et al., 2019; Schiff et al., 2017). There are two toolkits available for providers on how to provide TIC. The first is called the DEF protocol which focuses on reducing distress, providing emotional support, and remembering families involved in trauma and was developed by the Center for Pediatric Traumatic Stress (CPTS)

(Marsac et al., 2016). The second toolkit is from the American Academy of Pediatrics (AAP) and is geared towards primary care settings and offers resources for both parents and providers (Marsac et al., 2016).

However, not all educational interventions have demonstrated effectiveness in teaching providers how to carry out TIC in a clinical setting. Pletcher et al., (2019) provided an educational workshop for first-year medical students that consisted of a didactic session on ACEs and case discussions. Although the students found that the group discussions were helpful, the results showed that the medical students wanted more practical advice for how to implement TIC (Pletcher et al., 2019). There are many resources and toolkits for TIC training, yet there are no established guidelines for implementing TIC in medical facilities (Marsac et al., 2016).

The findings from the literature support TIC education programs for providers and other hospital staff who will have contact with children (Forkey et al., 2021; Marsac et al. 2016; Wiener et a., 2021). There are several clearly defined suggestions in the literature for TIC delivery. One of these is explaining what will happen during medical exams before the patient changes into a hospital gown (Wiener et al., 2021), or even giving the patient the option of staying in their own clothes if feasible for the exam (Zarnello, 2023). The importance of giving options whenever possible is stressed to provide a sense of bodily autonomy (Wiener et al., 2021; Zarnello, 2023). Other recommendations are for providers to limit the time that patients are undressed and in a hospital gown, offer a chaperone, inform them that they can do a small action such as raise their hand when they are uncomfortable and would like the exam to stop, and to avoid phrases that may be similar to those used by abusers (Zarnello, 2023). Some of

these phrases to avoid include, “Hold still, don’t move”, “This will only hurt for a little bit”, and “It will be over soon” (loGuidice, 2017; Martin, 2006). Rather, the recommended phrase to use when trying to calm and reassure a patient during a potentially traumatizing exam is to say, “What can I do to help you feel safe in this moment?” (Martin, 2006). There is no question that TIC helps to reduce re-traumatization (Wiener et al., 2021; Zarnello, 2023), stigma (Duffee et al., 2021), and provides a healing environment for anyone with a traumatic history (Marsac et al., 2016).

Rationale

This project will utilize the Institute for Healthcare Improvement (IHI) Model for improvement framework by implementing a “Plan-Do-Study-Act” (PDSA) methodology. The PDSA model will be useful for evaluating the effectiveness of carrying out a change of practice (MN Department of Health, 2022), in this instance, the implementation of TIC principles for pediatric patients in an in-patient setting. Through a cause-and-effect diagram (see Appendix A), it was discovered that there had been a gap of a year in the nurse educator role, and this along with poor funding, and a busy clinical environment were all barriers to TIC education and implementation. While all pediatric providers at this facility would benefit from a TIC training session, nursing staff was the focus of this project.

Previous studies have shown that in-person provider education sessions for TIC have been effective at increasing comfort levels with TIC delivery (McNamara et al., 2021). Therefore, based on the cause-and-effect diagram, the results of the literature review, and the specific barriers at this PNW facility, providing TIC education during mandatory staff meetings for nurses

on TIC was decided as the most effective method in overcoming barriers and in meeting the aim of this project.

Specific Aims

To significantly increase nursing knowledge and confidence of how to implement TIC for pediatric orthopedic in-patients.

Context

The PNW acute specialty care facility includes a 23-bed in-patient unit (IPU), a pre-surgical and post anesthesia care unit, and an outpatient clinic that is only open during the weekdays for appointments and walk-ins. The various departments are staffed by physicians, registered nurses (RNs), advanced practice providers, certified medical assistants (CMAs), and certified nursing assistants (CNAs). The inpatient unit (IPU) alone has 32 RNs. The focus of this intervention will be providing TIC education for RNs and CNAs who staff the IPU.

The pediatric population cared for at this facility includes children with orthopedic conditions as well as special medical needs. On average, this facility sees at least 49,000 patients annually in the clinic and the IPU. This PNW facility started a TIC program approximately five years ago and introduced a special team dedicated to collaborating on TIC interventions, but these were generally basic considerations for children with needle phobias, or medical trauma and did not include specific care considerations for patients who may have a history of abuse. Additionally, until recently, this facility did not have a nurse educator for almost a year to lead the TIC team in implementing interventions and staff education. Nurse-led TIC education session for nursing staff is intended to address the knowledge gap and lead to an improved care, as well as avoiding re-traumatization of pediatric patients who may have a history of abuse.

Interventions

The primary intervention of this project was to provide education on TIC delivery for pediatric nursing staff on the IPU. This education was intended to take place during mandatory staff meetings, however, the staff meetings were unexpectedly canceled. In prior studies, an online educational tool was chosen as the TIC education delivery modality due to its ease of accessibility for providers to access without requiring the presence of an in-person educator (Schmitz et al., 2019). Given the lack of qualified educators available on the PNW facility, and the unexpected cancelling of the IPU staff meeting, an online module was used for this QI project.

The education session was delivered through a recorded PowerPoint presentation that was sent through email to the IPU staff in the Fall of 2023. To address the lack of examples in the literature for pediatric providers on how to deliver TIC, practical examples of delivering TIC were included. Additionally, case studies described TIC for different pediatric populations which demonstrated specific triggers of trauma experiences. To ensure that TIC education is provided to all future nursing staff, education will also be provided during the orientation process at this facility.

Study of the intervention

A validated tool to assess knowledge and confidence levels in TIC delivery was utilized in this QI project (Kassam-Adams et al, 2015; Bruce et al., 2018). The validated survey contained a total of 38 questions and assessed how knowledgeable providers were in TIC, how confident they felt in practicing TIC, barriers to TIC implementation, and how often providers utilized TIC in practice. Pre- and post-education surveys were delivered to assess if there had been

improvements in self-reported knowledge and confidence scores (See Appendix B). The survey was also repeated three months post-education for further assessment and comparison (See Appendix C for project timeline).

Measures

The validated survey was first delivered to nursing staff before the education session to measure nursing staff's baseline knowledge of and confidence in implementing TIC interventions. The outcome measure for this project is nursing staff's self-reported scores on knowledge of TIC and confidence in TIC implementation in clinical practice. Both the knowledge and confidence scores were grouped using summary scores for each measure as stated in the validated survey scoring tool with reverse coding used for questions 2, 3, 7, and 14. The knowledge summary scores were taken from questions 1-13 with a potential range of 13-52 for summary scores, and confidence summary scores were obtained through the summary of questions 21-32 with a potential rage of 0-24. The results from the pre-education survey and both post-education surveys were compared using T tests to assess any increases or decreases in knowledge or confidence scores against a statistical significance of 0.05. Additionally, barriers to TIC delivery was assessed using percentages of staff responses pre- and post-intervention. This project's process measures are the number of completed surveys and the number of nursing staff who attend the staff meetings to receive the training. Balancing measures include the inconvenience of completing the surveys and the possibility of negative staff perceptions regarding TIC.

Analysis

The data from the survey was analyzed using T test analysis to assess changes in scores of self-reported knowledge and confidence scores with TIC delivery. Demographical data is reported using mean and frequencies and included age, job role at the facility, and number of years working in that role.

Ethical Considerations

All nursing staff on the inpatient unit were informed of the project in an email along with the pre-recorded educational video. A disclaimer was stated in the email sent to IPU staff emphasizing the voluntary nature of this project. The participating PNW facility provided their letter of support for the project and no identifiable information on the study participants was gathered for this project. IRB approval from academic institution and the site Research Programs was requested and approved for this project (see Appendix D).

Results

In total, 38 staff members were emailed the survey and 32% (n=12) responded to the pre-TIC education survey, and 13% (n=5) responded in both the immediate follow-up survey and in the 3-month follow-up survey. Additionally, not every participant answered the demographic questions listed on the survey but for those who did, the data showed that the employees' length of employment at the PNW facility ranged from 1 month to 23 years and a mean of 5 years.

The mean value for the pre-survey knowledge score was 3.08 with a 95% confidence interval of 2.59-3.58. The mean value for post-survey knowledge scores was 3.02 with a 95% confidence interval of 2.62-3.43. The P-value for the knowledge summary score analysis was 0.52 which was not statistically significant at >0.05. The mean value for the pre-survey

competence summary score was 2.15 with a 95% confidence interval of 1.73-2.57. This mean value decreased in the post-survey confidence summary score at 2.03 with a 95% confidence interval of 1.71-2.35. However, the P-value for the confidence summary score analysis was also not statistically significant at 0.15 (See Appendix E).

The top barriers reported were scope of practice restraints, time constraints, and lack of training (See Appendix F). Those who stated that concerns about scope of practice was somewhat of a barrier in the pre, post surveys were 80%, 100%. Those who stated that time constraints were somewhat of a barrier, or a significant barrier increased over time from 75% to 100% on both follow-up surveys. The percentage of those who endorsed lack of training as somewhat of a barrier or a significant barrier also increased throughout the 3 survey periods. The results for lack of training in the pre, post, and 3-month follow-up surveys were 75%, 100%, and 100% with 40% of the latter 100% stating that it was a significant barrier and the other 60% as somewhat of a barrier. This is important because it indicates that all the five responding participants endorsed lack of training as a remaining barrier to TIC implementation in both follow-up surveys.

Summary

Some strengths of this survey include its cost-effectiveness and reliability using a validated survey on TIC knowledge and confidence. Overall, the mean values from pre to post surveys in both knowledge and confidence summary scores decreased, however, both p-values for knowledge and confidence was not <0.05 and therefore was not statistically significant.
In addition to the questions pertaining to the aims of this project, another section of the survey assessed potential barriers to TIC delivery which provided important information regarding to

improvement plans based on TIC education and delivery moving forward. For this section, 92% of participants answered that concerns about scope of practice was either somewhat of, or a significant barrier on the pre- intervention survey, which decreased to 60% on the 3-month follow-up survey. Lack of training and time constraints remained as either a significant barrier or somewhat of a barrier to TIC.

Interpretation

Other studies on TIC show that most providers understand the significance of TIC in patient care yet are not very confident in TIC delivery and need more specifics on how to deliver TIC when working with patients. While the validated survey used in this QI project did not directly ask the participants if they understood the significance of TIC, it indirectly assessed how important TIC was in patient care through the questions on the TIC opinions scale. T-test analysis was not conducted on TIC subscale opinions since this was not part of the project's aims. However, when comparing pre and post answers using percentages, the results of this survey indicate that participants overwhelmingly agree that patient care can be changed to be less traumatizing which can be interpreted as in agreement with prior literature studies which endorses that providers understand the importance of TIC in clinical care. Additionally, most of the participants in this project also agreed that they already felt confident in TIC delivery and in engaging with patients and families who have experienced trauma even before the intervention which contrasts with most of the existing research (Bruce et al., 2018; Schmitz et al., 2019). However, a study from Afzal et al. (2020) found that study participants were also moderately confident in TIC delivery at baseline, consistent with the results of this QI project.

Interestingly, there was a decrease seen in the percentage of those able to recognize the signs and symptoms of trauma from 90% pre -to 45% post-intervention. The initial high percentage of participants endorsing a decreased knowledge of TIC principles is consistent with other studies (Ervin et al., 2021). However, other studies have also shown that TIC training improved provider knowledge (Gundaker et al., 2021; Purtle, 2018) which contrasts the results of this project which showed decreased knowledge in the post-education surveys. The decrease in knowledge from 90% to 45% may be seen as not meeting the aim of the project to increase knowledge. However, this result should be taken into context of the extremely small number of responses in the post-intervention surveys which skewed the results. This QI project also showed that time constraints and lack of training continued to be barriers to TIC implementation which is consistent with other studies (Altheimer & Tobey, 2023; Afzal et al., 2022; Huo et al., 2023). This highlights the need for a revision in the TIC education delivered in this PNW facility to be more effective at meeting the aims of this project in increasing provider knowledge and confidence in TIC.

Limitations

There were several limitations in this QI project, the first being a small number of participants. Thirty-eight staff members were sent the survey, but several of these staff members were on-call employees that did not have regular access to their work email and could not complete the survey. Secondly, the survey was launched towards the end of the year when several training modules were due for each staff member, and this could have impacted employee incentive to complete the survey. Additionally, this validated survey was long and time-consuming and was delivered via a electronic format in a pre-recorded session. Another

possible limitation was the online delivery of the TIC training because it does not involve an interactive design for participants, nor allow the ability for participants to ask questions. Any or all these situations could explain the poor staff response seen in both pre- and post-results. The poor staff responses seen greatly decreased the number of participants and ideally, a larger number of participants size would make the results more clinically significant (Andrade, 2020). Another important consideration is the short timeframe between the first follow-up survey and the second survey 3 months later. Previous studies show that short follow-up periods constitute a significant barrier to accurately assessing the effectiveness of TIC trainings for providers and long-term effects of TIC trainings are still unknown (Powers et al., 2023; Purtle, 2020).

The survey used had several questions related to thoughts about witnessing trauma related to death and severe patient outcomes. The PNW facility where this survey was used does not have high acuity patients and therefore rarely sees traumatic patient outcomes take place which may have made the survey questions seem unrelatable to those completing it.

Lastly, future studies should also include recommendations from the Substance Abuse and Mental Health Services Administration (SAMHSA) for effective TIC training. These recommendations include TIC training that is ongoing and not just a one-time educational session, and to include education on the effects of trauma and mitigating self-care strategies for providers as well as patients and to include non-clinical care staff (SAMHSA, 2023).

Conclusions

This QI project showed that pediatric nurses and healthcare staff at a PNW facility have a strong sense of confidence in TIC delivery and endorse positive attitudes towards TIC and in making medical care more TIC friendly. However, there are questionable results about how

strongly they feel about their ability to recognize the signs and symptoms of trauma given the poor response rate of the surveys. Future projects with an increased number of participants are needed to understand if TIC education has a positive effect on teaching the signs and symptoms of trauma or if the education session needs further development to increase efficacy. Time constraints were consistently listed as barriers to implementation which should also be considered for further education interventions on TIC and how it can be delivered effectively without taking a considerable amount of time. Lastly, due to the multi-faceted and complex nature of TIC, it is not possible to make significant or lasting improvements in provider education in only a 15–20-minute presentation. More thorough and interactive TIC training that includes clinical and non-clinical staff is indicated for the most effective intervention in improving TIC education for pediatric nurses.

Funding

No funding was provided for the implementation of this QI project. The only aspect of this project that required money was the cost of printing the TIC verbiage considerations to be aware of when working with pediatrics which was covered by the author of this project.

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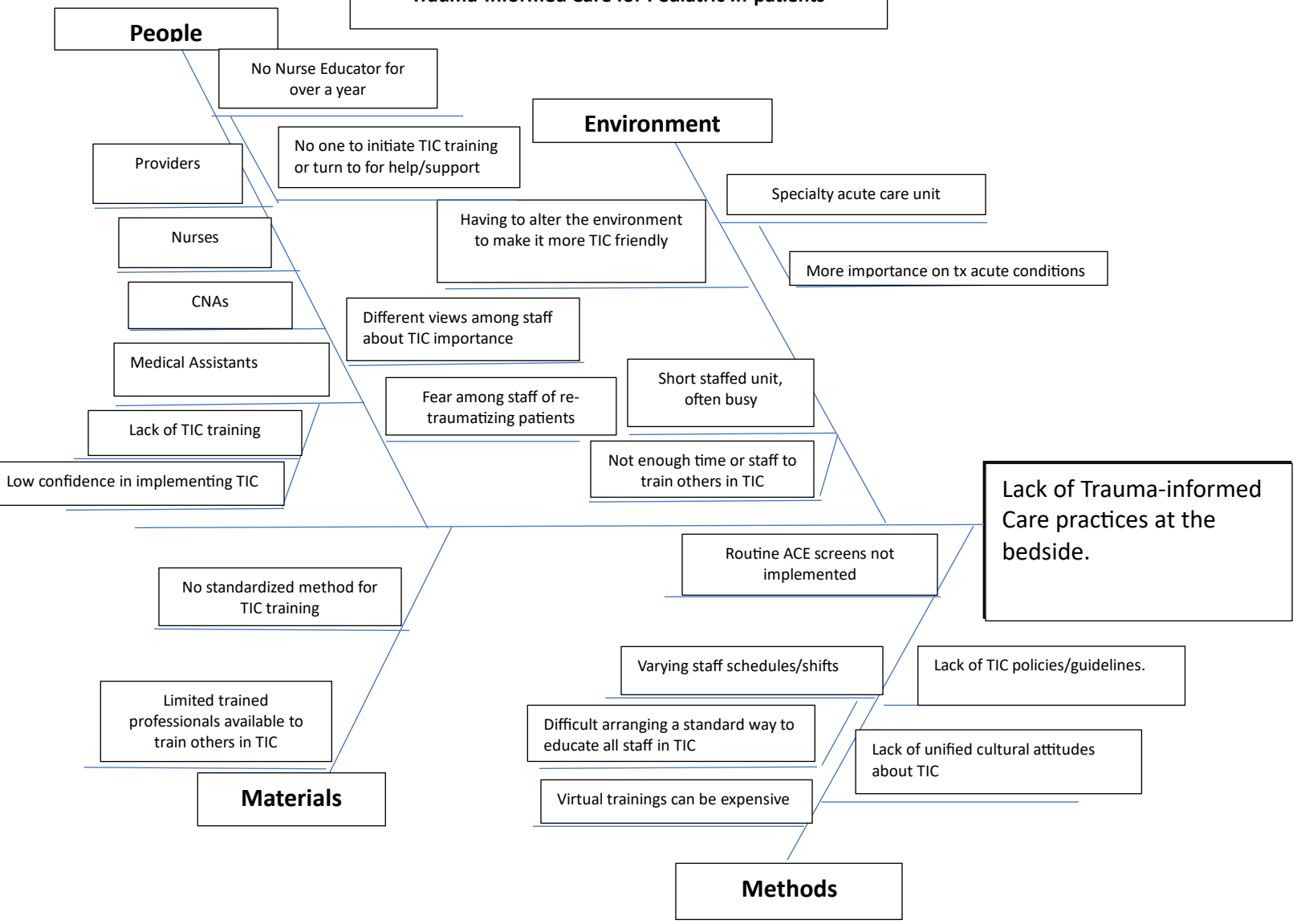
Appendix A
Trauma-Informed Care for Pediatric In-patients



Appendix B

Trauma-Informed Care Provider Survey

TIC Provider Survey v2.0 – pediatric patient version

Based on your understanding and experience, indicate whether you more strongly agree or disagree with the following:	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Almost everyone who is seriously injured or ill has at least one traumatic stress reaction in the immediate aftermath of the event.				
2. It is inevitable that most children and families who experience a life-threatening illness or injury will go on to develop significant posttraumatic stress or PTSD.				
3. Children who are more severely injured or ill generally have more serious traumatic stress reactions than those who are less severely injured or ill.				
4. Children who, at some point during the traumatic event, believe that they might die are at greater risk for posttraumatic stress reactions.				
5. Many children and families cope well on their own after experiencing serious illness or injury.				
6. The psychological effects of an injury or illness often last longer than the physical symptoms.				
7. Children and families with significant posttraumatic stress reactions usually show obvious signs of distress.				
8. I know the common signs and symptoms of traumatic stress in children and families.				
9. Some early traumatic stress reactions in children and families can be part of a healthy emotional recovery process.				
10. There are things that providers can do to help prevent longer-term posttraumatic stress in ill and injured children and families.				
11. There are effective screening measures for assessing traumatic stress that providers can use in practice.				
12. Healthcare staff can themselves experience signs of physical and/or emotional distress related to their work.				
13. The risk for staff distress is strongly influenced by both personal and work-place factors.				

Please indicate whether you more strongly agree or disagree with the following statements:	Strongly Disagree	Disagree	Agree	Strongly Agree
14. Providers should focus on medical care for hospitalized children as opposed to children's mental health.				
15. The way that medical care is provided can be changed to make it less stressful for children and families.				
16. Providers can teach families how to cope with trauma.				
17. Health care professionals should regularly assess for symptoms of traumatic stress.				
18. It is necessary for providers to have mental health information about their pediatric patients in order to provide appropriate medical care.				
19. I have colleagues I can turn to for help with a child or family experiencing significant traumatic stress.				
20. Healthcare organizations should address how working with patients and families impacts staff.				

Appendix B

Trauma-Informed Care Provider Survey

How would you rate your competence and comfort in…	Not Competent	Somewhat Competent	Very Competent
21. Engaging with traumatized children/families so that they feel comfortable talking to you/ comforted by you.			
22. Responding calmly and without judgment to a child's or family's strong emotional distress.			
23. Eliciting details of a traumatic event from a child or family without re-traumatizing them.			
24. Educating children and families about common traumatic stress reactions and symptoms.			
25. Changing or adapting situations within the hospital that a child or family might experience as traumatic.			
26. Responding to a child's (or parent's) question about whether the child will die.			
27. Assessing a child's or family's distress, emotional needs, and support systems soon after a traumatic event.			
28. Providing basic trauma-focused interventions (assessing symptoms, normalizing, providing anticipatory guidance, coping assistance).			
29. Understanding how traumatic stress may present itself differently in younger children, older children, and teens.			
30. Understanding the scientific or empirical basis behind assessment and intervention for traumatic stress.			
31. Responding to colleagues' distress, emotional needs, and need for support.			
32. Managing your own work-related stress or distress.			

Please indicate whether any of the following is a barrier for you in providing basic trauma-informed assessment / intervention:	Not a barrier	Somewhat of a barrier	Significant barrier
33. Time constraints			
34. Scope of practice constraints			
35. Lack of training			
36. Confusing or unclear information on trauma informed care			
37. Worry about further upsetting or traumatizing patients			
38. Lack of organizational support			
39. Level of personal stress/distress			

In the past SIX (6) months, have you done the following basic trauma-informed interventions?	No	Yes
40. Ask a child questions to assess his/her symptoms of distress		
41. Ask parents questions to assess their symptoms of distress		
42. Teach child or parent specific ways to manage pain and anxiety during a procedure		
43. Teach child or parent specific ways to cope with upsetting experiences		
44. Encourage parents to make use of their own social support system (family, friends, etc.)		
45. Teach parents what to say to their child after a difficult/painful/scary experience		
46. Provide information to parents about emotional or behavioral reactions that indicate their child may need help		
47. Assess and care for your personal emotional and physical health		
48. Utilize support for yourself / your team available from your organization		

Appendix C Project Timeline

	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec-Mar
Finalize project design and approach (703A)		X						
Complete IRB determination or approval (703A)			X					
PDSA cycle 1 (703B)					X			
PDSA cycle 2 (703B)								X
Final data analysis (703B)								X
Write sections 13-17 of final paper (703B)								X
Prepare for project dissemination (703B)								X

Appendix D IRB Approval

IRB MEMO

Research Integrity Office
3181 SW Sam Jackson Park Road - L106RI
Portland, OR 97239-3098
(503)494-7887 irb@ohsu.edu

NOT HUMAN RESEARCH

October 9, 2023

Dear Investigator:

On 10/9/2023, the IRB reviewed the following submission:

Title of Study:	Trauma Informed Care for Pediatric In-patients
Investigator:	Sharon Norman
IRB ID:	STUDY00026307
Funding:	None

The IRB determined that the proposed activity is not research involving human subjects. IRB review and approval is not required.

Certain changes to the research plan may affect this determination. Contact the IRB Offi Plot Area oject changes and you have questions regarding the need for IRB oversight.

If this project involves the collection, use, or disclosure of Protected Health Information (PHI), you must comply with all applicable requirements under HIPAA. See the HIPAA and Research website and the Information Privacy and Security website for more information.

Sincerely,

The OHSU IRB Office

Appendix D Shriners Approval

RE: Determination of Research
Title: Trauma Informed Care (TIC) practices and practice guidelines for pediatric nurses
Responsible Party: Kelly Soto (Kelly.soto@shrinenet.org)

The project referenced above has been reviewed by Research Programs to determine if the project meets the threshold of research involving human subjects.

It is the regulatory opinion that the project does not meet the definition of research and as such does not need to be reviewed by a formal IRB. The activities described in the summary submitted are limited to implementing a practice to improve the quality of patient care. This activity do not meet the definition of research under 45 CFR 46.102(d) and therefore, the HHS regulations for the protection of human subjects do not apply to such quality improvement activities.

As this project will not be reviewed by an IRB, it important to understand that any PHI you use and/or disclose will not be covered under a *HIPAA Authorization to Use and Disclose Information Under Research*. This data needs to be collected per SHC clinical policies, limiting the use of PHI according to the *Minimum Necessary* standard and appropriately safeguarding the data. If you have any questions regarding the use and disclosure of PHI in association with this quality improvement, please contact the Corporate Privacy & Security Officer.

If there is intent to publish any work conducted under this project, the following statement should be included in any publication: "*This project was undertaken as a Quality Improvement Initiative at Shriners Hospitals for Children and, as such, was not formally supervised by an Institutional Review Board.*"

Please note that any significant changes to the project may affect the project's determination. If changes are made to the project, you will need to resubmit to HQ prior to implementing any changes.

Thank you,

Shannon Terkoski, RN, MS, CCRP
Corporate Director, Clinical Research
Department of Research Programs

Shriners Children's, International Headquarters
2900 Rocky Point Dr.
Tampa, FL 33607
Office: 813-281-8611
Cell: 813-480-5680
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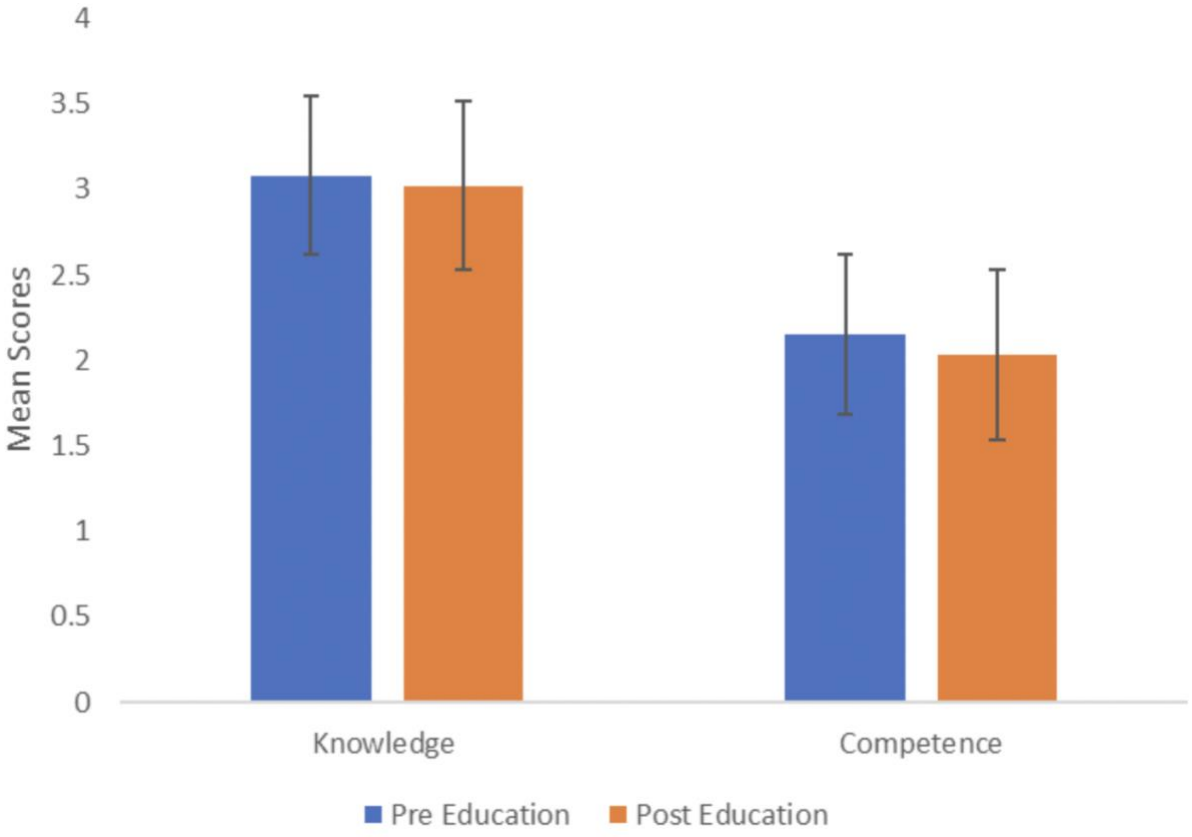
Shriners Children's

Appendix E

Figure 1

TIC Knowledge and Competence Summary Scores



Appendix F Barriers to TIC Graph

Figure 2

Pre-Education Barriers

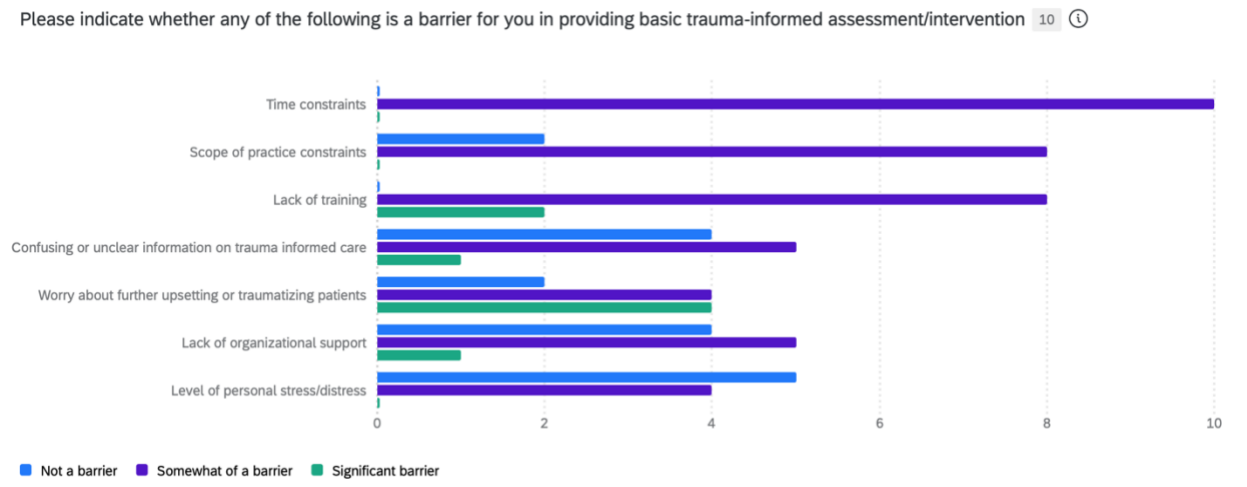


Figure 2

Post-Education Barriers