Validation of Trauma-Informed Care Instruments: Emergency Department Environment and Transitional Secondary Environment

NCPD 2.5 ANCC Contact Hours

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BACKGROUND: Trauma-informed care is a paradigm of care that requires health care practitioners to understand multiple types of traumas and their effects on the trauma survivor and then incorporate that knowledge into practice. However, there are few psychometrically robust instruments to evaluate trauma-informed care, and none have been applied in the trauma patient setting.

OBJECTIVE: The purpose of this article is to validate two trauma-informed care instruments in the trauma patient setting.

METHOD: Exploratory factor analysis and simultaneous pairwise marginal independence testing procedures were conducted on the "Emergency Department Environment" and the "Transitional Secondary Environment" instruments from September 2020 to November 2020. Descriptive statistics were reported for the content experts participating in the instrument validation.

RESULT: Exploratory data analysis results for each trauma-informed care statement in the tools indicate multidimensionality of trauma-informed care core values, with statistically significant ($p < .05$) overlap between two or more trauma-informed care core values. After accounting for item interdependence, the associations between the trauma-informed care core values do not appear to be spurious consequences of response interdependence.

CONCLUSION: The two instruments showed high levels of internal consistency supporting the multidimensional models posited by the trauma-informed care framework. The findings will allow for routine monitoring and early detection of gaps in health care provider behaviors in the individualized care of trauma survivors. This will enable identification of trends in trauma care delivery and inform trauma-informed care education for health care providers, ultimately enhancing the healing of trauma survivors.

KEY WORDS: Advocates, Communication, Environment, Instruments, Nursing, Trauma-informed care, Trauma survivors

In the United States, 70% of adults have suffered some traumatic event (Centers for Disease Control and Prevention, 2019). A traumatic incident in childhood has occurred in the lives of 70% of those seeking alcohol abuse treatment and 60% of those seeking drug abuse

treatment (Moustafa et al., 2021). Trauma disrupts and changes brain chemistry, leading to co-occurring conditions such as depression, suicide, anxiety, and substance abuse (McWey, 2022). Research has shown correlating evidence between histories of trauma and violence to substance use and mental illness (López-Castro et al., 2015; Marcellus, 2014; Sweeney et al., 2018).

Although different health care frameworks are used for the treatment of trauma and addiction, research has shown that an integrated approach is more beneficial to the patient in helping them understand the effects of their trauma and providing them with the tools to overcome their trauma and addiction. When dealing with a traumatic event, the survivor must examine the original impact (the trauma event), the subjective experience of the event, and the secondary repercussions of the event, such as physical, psychological, and emotional consequences (Substance Abuse and Mental Health Services [SAMHSA], 2014). Therefore, health care providers must create an atmosphere that promotes physical and emotional safety, empowers

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KEY POINTS

- Trauma-informed care requires an environment that resists retraumatization.
- This study aimed to validate two trauma-informed care instruments in the trauma setting.
- The two instruments were validated and showed high levels of internal consistency.
- The results support a multidimensional trauma-informed care framework.
- Future studies are needed for organizational instruments evaluating trauma survivor care.

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survivors, and prevents retraumatization of the initial event (Trauma Informed Oregon, 2015).

Direct care providers unaware of a trauma survivor's previous trauma experiences risk giving insufficient or incorrect patient-centered care that can cause retraumatization (Fleishman et al., 2019; Grossman et al., 2021; O'Malley et al., 2022; Reeves, 2015). To ensure that principles of trauma-informed care are understood and carried out, it is imperative to have highly valid and reliable instruments that measure this concept in the context of where trauma care is delivered and that evaluate how this care is being received with consideration to the unique needs of every trauma survivor. The aim of this study was to validate two trauma-informed care instruments.

THEORETICAL FRAMEWORK

Trauma-informed care is a paradigm of care that requires health care practitioners to understand all types of traumas and their effects on the trauma survivor to incorporate that knowledge into practice (Hooper et al., 2010; SAMSHA, 2014). In addition, the framework looks at relationships between childhood events and current issues. Trauma-informed health care practitioners can help traumatized survivors feel protected, recover from trauma, and reclaim developmental paths (SAMHSA, 2014). In addition, this care paradigm helps trauma survivors recognize their strengths and become empowered to build resiliency skills. By assessing client needs through utilizing trauma-informed care principles, health care workers can avoid repeating dismissive or disempowering attitudes in the helping relationship (Fleishman et al., 2019; Reeves, 2015). Through trauma responsive therapies, clinicians can collaborate with patients to foster healing and empowerment (Levenson, 2020).

The SAMHSA (2014) identified six core values of trauma-informed care. These principles were created on the basis of current trauma research and clinician expertise. It is important to note that trauma survivors have not provided feedback on the relevance of these principles to their experiences. Moreover, these principles aim to serve as an outline to adapt to different settings. The translation of these principles in medical settings remains unclear despite trauma survivors being frequent visitors to the emergency department (ED; Raja et al., 2015). The nature of many traumatic events may compromise body integrity and impact physical and mental health, leading trauma survivors to avoid seeking medical care due to the vulnerability of medical procedures and interventions (Purtle, 2020; Raja et al., 2015).

TRAUMA-INFORMED CARE INSTRUMENTS

Various instruments examine trauma-informed care in relation to policy and practice (Thirkle et al., 2021). These instruments examine trauma-informed care from the perspective of facility implementation, health care practitioner attitudes regarding the adoption of trauma-informed care procedures, and patient perception of care.

Facility Implementation

The Attitudes Relating to Trauma-Informed Care [ARTIC] Scale was designed to examine the attitudes of health care providers regarding trauma-informed care procedures (Baker et al., 2016; Baker et al., 2021). This instrument was created on the premise that employee attitudes can either facilitate or impede the implementation of new policies and procedures. This instrument examines various constructs pertinent to trauma-informed care attitudes. The facility can use the results to implement and assess trauma-informed care patient care practices. The TICOMETER instrument examines the facility's needs and its implementation of trauma-informed care over a period of time (Bassuk et al., 2017). This instrument examines five domains: the development of trauma informed care knowledge, the establishment of trust and respect, respecting service users, the promotion of trauma-informed care delivery, and the adaptation of trauma-informed policies and procedures. Although both the ARTIC and TICOMETER instruments evaluate health care providers' attitudes toward trauma-informed care practices, they do not look at the specific actions providers take to individualize care for patients in specific environments, such as the ED.

The National Center for Child Traumatic Stress (2020) developed the Trauma-Informed Organizational Self-Assessment (IOA) assessment. This instrument was created to assess care for children and families who have suffered trauma, and it also assesses an organization's current procedures and the efforts taken to become a trauma-informed facility. This instrument can be completed at any time and contributes to developing a standardized vocabulary for trauma-informed care principles. This instrument identifies policy and

procedure care gaps and provides a road map for organizational transformation. Although this instrument examines health care provider activities linked to trauma-informed treatment concepts, it provides only generalized information about a facility as a whole; it does not provide environment- or patient-specific information to identify care gaps. It is also targeted only to children and their immediate families.

Patient Perception

An instrument developed for a specific population was the Trauma-Informed Practice (TIP) Scales (Goodman et al., 2016). This instrument was developed for domestic violence programs considering the trauma survivors' perspective. The instrument evaluates the adoption of a trauma-informed approach across six domains of practice. These domains include environment, transparency, connection, empowerment, inclusivity, and support. This instrument examines the core trauma-informed care values but from the patient's perspective. It does not provide any information from a health care provider's perspective.

This study refined and validated two trauma-informed care instruments based on survey prompts that originated from a community risk assessment for University Medical Center of El Paso as part of a Victims of Crime Act grant. Health care providers answered questions about how they individualized treatment of patients who were trauma survivors. Questions are designed to reflect which of the six core values of trauma-informed care have been addressed by the health care provider. A health care provider fills out this instrument after every patient encounter, unlike the other instruments described previously that survey health care providers to collect general overviews after training or on a quarterly or yearly basis.

OBJECTIVE

The purpose of this article is to validate two trauma-informed care instruments in the trauma patient setting.

METHODS

Two organizational instruments, originally created for a Level I trauma center, were revised and validated with content experts from September 2020 to November 2020. The two organizational instruments, the Trauma Informed Care: Transitional Secondary Environment (TIC-T; UMC-EP, 2019a) and the Trauma Informed Care: Emergency Department Environment (TIC-ED; UMC-EP, 2019b), were developed to address trauma survivor needs in two trauma care delivery environments (See Supplemental Digital Contents 1 and 2,

available at: http://links.lww.com/JTN/A76 and http://links.lww.com/JTN/A77). Health care providers address different patient needs while in the acute hospital setting, and different disciplines use distinct approaches to help patients recover from traumatic experiences.

The TIC-T instrument was developed for advocates working with trauma survivors after hospital admission or discharge to a tertiary care environment. The patient care in the transitional secondary environment is more focused on the coordination of long-term care and movement to discharge of services. The instrument intended for use in the ED environment, the TIC-ED, addresses care in an emergent or urgent care setting. Although these health care providers are taking care of the same trauma patient, their focus and care are different regarding environment and protocols. Ethical considerations were addressed in this instrument validation study. Institutional review board approval (IRB no.1593875-1) was obtained from both The University of Texas at El Paso and the University Medical Center of El Paso Hospital.

Trauma survivors present with unique needs as they are treated in an ED and subsequently when they move into a transitional secondary environment. The TIC-T and the TIC-ED were designed to evaluate the perspectives of the distinct disciplines that interact with these patients. The TIC-T targets health care providers responsible for supporting trauma and Intimate Partner Violence survivors during admission to a facility or a community-focused agency. They include sexual assault nurse examiner (SANE) nurses, social workers, care management nurses, center against sexual and family violence (CASFV) counselors, and trauma performance improvement nurses.

The content experts who contributed to the instrument to be used in a secondary transitional environment were chosen because of their specific roles in patient care. Social workers, SANE nurses, and case management nurses all take care of trauma patients once they are past the "emergent" stage of care. Counselors at the CASFV facility are involved in patient care once they are discharged from the hospital setting. Trauma performance improvement nurses were also brought in for their content expertise as they have experience addressing concerns that emerge within patient care delivery systems. Their insights regarding the implementation of trauma-informed care core values close the loop of determining the best care for trauma patients as trauma care is core to their work. Although the TIC-T instrument can be applied to law enforcement, they were excluded from the population for validation purposes.

The TIC-ED instrument was designed for use by ED staff. Staff include individuals who take care of trauma and intimate partner violence survivors in an emergent setting. These individuals include paramedics, ED

nurses, technicians, and secretaries (individuals who answer phones, who speak to families). The ED's subject matter experts were selected on the basis of their direct involvement in patient care. The paramedics, ED nurses, and technicians who treat trauma patients are considered frontline workers. Unit secretaries were also selected because they interact with both patients and their families. The quality of interactions with nonclinical employees at health care institutions has been found to affect trauma patients' sense of safety and trustworthiness (Maul, 2017; Schachter & Public Health Agency of Canada, 2009). The aim of both trauma-informed care instruments is to assess health care worker knowledge of trauma-informed care practices and whether trauma-informed care practices are being met when attending to trauma survivors.

Sample

The instruments' final versions were pretested in two locations using content experts in trauma-informed care. Content experts were chosen on the basis of their profession, credentials, experience taking care of trauma patients, and knowledge of trauma-informed care principles. The SANE nurses, trauma performance improvement nurses, social workers, case management nurses, and CASFV counselors tested the TIC-T instrument. Nurses who work in the role of SANE, case management, and performance improvement had received training in trauma-informed care principles. Social workers were chosen because of their experience with trauma-informed care principles and education training.

The TIC-ED instrument was evaluated by the ED nurses, paramedics, ED technicians, and ED secretaries from a Level I trauma center. The participants in the ED were chosen because of their experience and knowledge of trauma-informed care training. A total of 139 content experts completed the instrument validation (TIC-T: $n = 60$; TIC-ED: $n = 79$). Respondents were required to match trauma-informed care values to statements with varying contexts to assess knowledge and practice of trauma-informed care core values. More than one trauma-informed care selection was possible per statement, as trauma-informed care core values are theorized to overlap. If respondents are unable to match any trauma-informed care core value with a statement, the statement will be reassessed by content experts. In addition, each statement requested respondents to indicate how relevant the statement was to the trauma-informed care. Response options were on a 4-point Likert-type scale ranging from "Not relevant" to "Very relevant." As respondents have experience and knowledge of assisting trauma care survivors, this question is meant to provide an additional measure of face validity.

DATA ANALYSIS

Data were analyzed using R, Version 4.1.1 (R Core Team, Vienna, Austria). At the data entry stage, columns for each trauma-informed care instrument were stratified by item and trauma-informed care core value pair (e.g., Item 1 by Safety, Item 1 by Peer Support, etc.) using a wide format. Values indicated whether respondents matched the trauma-informed care core value to the item (0 = No, 1 = Yes). The stratification process at the data entry stage accommodated statistical approaches to separate and manipulate the within-subject dependence among responses.

Multiple-Response Categorical Variables

Respondents were allowed to match more than one trauma-informed care core value per item in both trauma-informed care organizational instruments. Responses arising from these types of items, known as multiple-response categorical variables (MRCV), are likely dependent and can result in spurious associations that affect traditional methods, such as factor analysis (Agresti & Liu, 1999; Bilder & Loughin, 2004; Thomas & Decady, 2004). As an alternative method to determining the validity of the trauma-informed care organizational instruments, associations among MRCV were tested using simultaneous pairwise marginal independence (SPMI) with the MRCV package (Koziol & Bilder, 2014).

RESULTS

Relevance to Trauma-Informed Care Core Values

Regarding the relevance of the instrument statements to the trauma-informed care core values, most respondents indicated that every statement was relevant in the TIC-T (79%–98%) and TIC-ED (94%–100%).

Exploratory Factor Analysis

Trauma-informed care core values for both instruments demonstrated high internal consistency, each yielding Cronbach's α value of 0.90 or higher. Parallel analysis and scree plots recommended multiple factors for each trauma-informed care core value for both trauma-informed care instruments, ranging from two to five factors for the TIC-T and two to seven factors for the TIC-ED. Noticeably, the Collaboration and Mutuality trauma-informed care core value had the most recommended factors, with five factors in the TIC-T and seven in the TIC-ED.

Corresponding multidimensional exploratory factor analysis (EFA) models were conducted using "oblimin" rotation. It is noted that factor loadings between −0.4 and 0.4 were excluded from the tables for improved readability. In the TIC-T, the first two factors

cumulatively explained at least 83% of the variance in the items for (a) Recognition of Cultural, Historical, and Gender Issues and (b) Transparency and Trustworthiness. The first two factors of the remaining trauma-informed care core values cumulatively explained between 50% and 77% of item variability. In the TIC-ED, the first two factors of all trauma-informed care core values explained much less cumulative variance, with a range between 32% and 46% item variability. Results indicate that while all trauma-informed care core values appear to be multidimensional, model complexity increases for the ED environment. A chart of the EFA factor loadings for trauma-informed care core value "Safety" in the TIC-T is shown in Table 1 and for TIC-ED in Table 2.

Simultaneous Pairwise Marginal Independence

Because of the nature of the tools (e.g., select all), SPMI analysis was used to identify whether these correlations were spurious or whether they remained significant after accounting for interdependence. Exploratory data analysis results for each trauma-informed care statement in the tools indicate multidimensionality of trauma-informed care core values, with statistically significant ($p < .05$) overlap between two or more trauma-informed care core values. For the TIC-T, the SPMI test revealed significant associations between all items except between item 1 with items 4, 5, and 8 (Table 3). The SPMI test for the TIC-ED revealed significant associations between all items except for Item 1 with Items 4, 6, 9, 10, 13, 16, and 17. In addition, Item 4 was also not significantly associated with Item 6 (Table 4). After accounting for item interdependence, the associations between the trauma-informed care core values do not appear to be spurious consequences of response interdependence. These results support the multidimensional models posited by the EFA because almost all items were significantly related to one another. The exception for both instruments is Item 1, which was subsequently dropped from the tools.

DISCUSSION

This research aimed to revise two trauma-informed care health care provider instruments and explore the psychometric properties of the core values. According to the study's findings, trauma-informed care core values are multidimensional, with all items being significantly

Table 1. Trauma-Informed Care: Transitional Secondary Environment (TIC-T) Instrument— Exploratory Factor Analysis Factor Loading for Trauma-Informed Care Core Value "Safety"[a]

	Factor 1	Factor 2	Factor 3	Communality
I offered an appropriate interpreter to help address cultural concerns.	0.969			0.974
I reassured the patient that the event was not their fault and reviewed safety measures offered through their "Victim Rights."	0.967			0.984
I explained the information so that the patient could make an informed decision to accept or decline components of the crisis intervention process.	0.930			0.983
There were no barriers to acquiring a sexual assault case number, authorization for the medical forensic examination, and/or evidence collection.	0.787		0.563	0.995
I explained the information so that the patient could make an informed decision to accept or decline available community resources.	0.651	0.599		0.928
The Trauma/SANE staff on duty met with me during my visit and reviewed the patient's needs in a timely manner.	0.573	0.646	0.446	0.944
I asked the patient how they would want to be addressed regarding gender.	0.472	0.536	0.583	0.850
I feel the patient was moved from one treatment area to another in a calm, efficient manner, with little or no additional trauma to the patient.		0.954		0.995
I was provided a private space to talk with the patient.	−0.472	0.768	0.428	0.995
I was provided a private space to talk with the patient's loved ones.		0.672		0.510
I received prompt communication that a sexually assaulted patient arrived at UMC.			0.881	0.846
I was informed about where I could find the patient in a timely manner.			0.833	0.822

	Factor 1	Factor 2	Factor 3
SS loadings	4.691	3.287	2.841
Proportion Var	0.391	0.274	0.237
Cumulative Var	0.391	0.665	0.902

Note. SANE = sexual assault nurse examiner; SS = sum of squared; UMC = University Medical Center.

[a]Cronbach's α = 0.92; *n* = 33.

Table 2. Trauma-Informed Care: Emergency Department Environment (TIC-ED) Instrument—Exploratory Factor Analysis Factor Loading for Trauma-Informed Care Core Value "Safety"[a]

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Communality
Trauma survivors are given the opportunity to provide feedback on their experience at UMC, ensuring anonymity and confidentiality.	0.823					0.922
UMC asks for feedback from staff regarding processes, ensuring anonymity and confidentiality.	0.760					0.990
Staff members talk with patients/visitors about the range of trauma reactions and work to minimize feelings of fear or shame and to increase self-understanding.	0.780					0.786
Transparency/communication and trust among staff and patients are promoted.	0.652					0.718
I asked the patient how they would want to be addressed regarding gender.	0.594			0.746		0.990
I empowered the patient in their option to accept or decline components regarding their plan of care.	0.536	0.598				0.762
Staff members keep patients/visitors fully informed of rules, procedures, activities, and schedules, knowing that trauma survivors may have difficulty processing information.	0.412		0.590		0.440	0.836
There is a system of communication in place with other agencies working with trauma survivors.		0.924				0.990
I consulted with the appropriate advocate regarding community resources (CASFV, Social Workers, Crime Victim Services, Care Management).		0.759				0.841
I understand what Trauma-Informed Care (TIC) is.		0.745	0.490	−0.440		0.990
UMC has identified community providers and referral agencies that deliver evidence-based trauma services.		0.570	0.770			0.878
Ongoing staff trainings help staff develop the knowledge and skills to work sensitively and effectively with trauma survivors.		0.475	0.546			0.714
I offered an appropriate interpreter to help address cultural concerns.		0.459	0.494	0.553		0.932
UMC's mission statement and/or written policies and procedures include a commitment to providing trauma-informed services and supports.			0.750			0.667
UMC communicates its support for implementing a trauma-informed approach.			0.683			0.595
UMC's written policies and procedures include a focus on safety and confidentiality.				0.940		0.990
The physical environment promotes a sense of safety, calming, and de-escalation for clients and staff.					0.990	0.990

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
SS loadings	3.620	3.606	3.222	2.512	1.638
Proportion Var	0.213	0.212	0.190	0.148	0.096
Cumulative Var	0.213	0.425	0.615	0.762	0.859

Note. CASFV = center against sexual and family violence; SS = sum of squared; UMC = University Medical Center.

[a]Cronbach's $\alpha = 0.95$; $n = 61$.

related to one another. The relevance of the two instruments revealed that the majority of respondents thought that the instrument prompts were relevant to trauma-informed care core values. Furthermore, the core values of trauma-informed care demonstrated a high level of internal consistency.

Other trauma-informed care instruments focus on facility policy and procedure (TICOMETER) or on the patient perspective (TIP scales). Trauma-informed care instruments for health care providers may focus on the provider's attitudes (ARTIC) or a broad overview of core values (TIOA). Individualized patient care, which is critical to wellness and healing, is missing. Rather than a snapshot in time or a reflection of previous practice, the TIC-T and the TIC-ED focus on the individual patient and their care during their visit. Looking at the care as an individual allows the facility to have a larger aggregate of data that can be filtered by age, condition, and unit, and reviewed for trends or gaps in care related to trauma-informed care.

By incorporating the TIC-T and TIC-ED instruments into clinical practice, the provider will have a useful guide of essential actions that support the core values of trauma-informed care. For example, the specific prompts that are asked on the instrument will be a guide to provider actions that should be implemented

Table 3. Trauma-Informed Care: Transitional Secondary Environment (TIC-T) Instrument: Simultaneous Pairwise Marginal Independence Significance

	1	2	3	4	5	6	7	8	9	10	11
Item 1											
Item 2	***										
Item 3	**	***									
Item 4	0.333	***	**								
Item 5	0.087	***	***	***							
Item 6	**	***	***	***	***						
Item 7	**	***	***	**	**	**					
Item 8	0.0590	***	***	***	***	***	**				
Item 9	*	***	**	***	***	***	**	***			
Item 10	**	**	***	**	***	***	***	***	***		
Item 11	*	***	***	**	***	***	***	***	***	***	
Item 12	**	*	***	***	***	***	**	***	***	***	***

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

with all patient care. Including these instruments in a patient's chart will promote a trauma-informed care environment and serve as a reminder for staff to resist retraumatization of the patient. These instruments have the potential to provide a dynamic perspective on the use of trauma-informed care core values as part of individualized patient care. When used as part of a quality improvement program, the self-reported health care provider TIC-T and TIC-ED instruments will assist facilities in assessing care provided to trauma survivors and troubleshooting any identified gaps. Furthermore, health care providers will have a visual representation of their care and will be able to self-reflect on their use of trauma-informed care core values. This reflection will guide the provider in providing the trauma survivor with an environment that promotes "felt safety,"

Table 4. Trauma-Informed Care: Emergency Department Environment (TIC-ED) Instrument: Simultaneous Pairwise Marginal Independence Significance

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Item 1																
Item 2	**															
Item 3	**	***														
Item 4	0.184	*	**													
Item 5	***	***	**	***												
Item 6	**	**	*	0.066	**											
Item 7	**	**	*	***	**	***										
Item 8	***	*	*	***	***	***	**									
Item 9	0.260	*	**	*	***	**	**	***								
Item 10	0.183	*	***	**	**	*	*	***	***							
Item 11	**	**	*	*	*	**	*	***	*	***						
Item 12	**	**	**	*	**	***	**	**	***	***	*					
Item 13	0.263	***	**	***	*	***	*	***	***	**	***	***				
Item 14	*	*	*	***	**	*	***	***	**	**	***	***	**			
Item 15	*	*	**	**	**	***	***	**	**	**	**	**	**	***		
Item 16	0.102	*	***	**	***	**	***	***	**	***	**	**	***	***	***	
Item 17	0.237	*	*	**	**	***	***	***	***	***	**	***	**	**	***	***

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

empowering them in their healing choices and preventing them from being retraumatized by those attempting to help them.

Implications for Clinical Practice

The study's findings can potentially improve the quality of trauma care provided to trauma survivors. It is critical to assess interprofessional collaboration in delivering a trauma-informed holistic approach and guiding trauma survivors toward healing. The use of the instruments will promote the continuity of care for trauma survivors from the initial injury and event through recovery, restoration of safety, and empowerment. Furthermore, the self-reported instrument is simple and convenient to administer to health care providers for all trauma patients. Because the instrument is intended to be completed with each trauma survivor, administration will be able to examine care provided over time and ensure that trauma-informed care core values are consistently and appropriately delivered.

The study's findings will help improve the quality of trauma care provided to trauma survivors. The overall nature of the instrument allows for incorporation into all trauma center's policies. As the prompts are geared toward evaluating the core values of trauma-informed care, the instruments are formatted to fit any facility that incorporates the values as part of patient care. Treatment gaps and continuous evaluation of care provided will enable time-sensitive quality improvement interventions to meet the future demands of trauma care. Furthermore, the instruments will provide health care providers with an analysis of their own care for trauma survivors, as well as suggestions for how to better provide trauma-informed care within the instrument prompts. Using a policy-driven trauma-informed care instrument, such as the TICOMETER, in conjunction with the TIC-T and the TIC-ED, will provide a comprehensive analysis of the nature and strength of trauma-informed care in terms of service delivery as well as health care provider–delivered patient care.

Data could be analyzed quarterly to look for gaps in care and trends. For example, data analysis may reveal a decrease in providing a specific trauma-informed care core value during a specific time of shift, which can lead to specific training scenarios and solutions to assist providers in incorporating core values into their clinical practice. Similar to falls, medication errors, and satisfaction scores, in-services or message boards can display positive completion percentages, and trauma-informed care champions roles can be created. Furthermore, by incorporating these trauma-informed care core values into their practice, health care providers will use this approach with their coworkers, reducing retraumatization and burnout concerns.

LIMITATIONS

There are some limitations worth mentioning. First, one Level I trauma center and one transitional secondary care facility were used to validate the instruments. Future research will be needed to validate use of the instrument at the various levels of trauma care and at transitional secondary facilities that provide trauma care to survivors. Second, as environments evolve and patient needs change, the prompts on the TIC-T and the TIC-ED will need to be monitored to ensure continued relevance. It may be necessary to add or revise questions to ensure that data collected reflect effectiveness of the efforts made by health care providers to incorporate every aspect of trauma-informed care to maximize the healing of trauma survivors.

CONCLUSION

When a facility is working to become trauma-informed care certified, it is critical to have a system to monitor health care providers' care for trauma survivors routinely. The TIC-T and the TIC-ED instruments were developed through a community risk assessment analysis, revised by content experts, and then an expert content validity analysis was performed. As a result, these two instruments reflect strong psychometric properties and demonstrate multidimensionality related to the six core values of the trauma-informed care framework. This study's findings will allow for routine monitoring and early detection of gaps in health care provider behaviors in the individualized care of trauma survivors. This will enable identification of trends in trauma care delivery and inform trauma-informed care education for health care providers, ultimately enhancing the healing of trauma survivors.

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