Trauma Informed Care Training Using the Adverse Childhood Experiences Framework:

Effects on Workplace and Care Environments in the Emergency Department

By

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Effects on Workplace and Care Environments in the Emergency Department

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Abstract

Problem: Despite the high likelihood of caring for patients with a history of trauma and the volume of research to support implementation of trauma informed care (TIC), there is currently no TIC training in place for emergency department (ED) health care professionals at a Midwest Level I Trauma Center.

Project Aim: This quality improvement project aims to examine the impact of a TIC training program that integrates concepts of adverse childhood experiences on health care workers' implicit bias and workplace civility scores, as well as patient satisfaction scores, in the ED setting.

Project Method: Pre- and post-survey design using a convenience sample of ED staff in an urban Level I Trauma Center is employed. Measures of central tendency, independent-samples *t*-test scores, and other descriptive statistics are analyzed.

Project Results: Results indicate that implicit bias improved, workplace civility declined and patient satisfaction scores did not change. Statistical significance could not be calculated for any measures due to small sample size.

Conclusion: Practitioners in all settings can benefit from utilizing a TIC approach by, at a minimum, embracing the application of "universal precautions" and the paradigm shift from asking, "What is wrong with this person" and asking instead, "What happened to this person?" Future research would benefit from a mixed-method or randomized control design with larger sample sizes.

Keywords: trauma informed care, adverse childhood experiences, health care worker, implicit attitudes, workplace civility, patient satisfaction

Acknowledgements

There is a saying that goes, "the years are short but the days are long." Through these long days and five short years of doctoral pursuit, I have been blessed with the love and support of family, friends, and colleagues. If only I could fill a book with your names; I am forever grateful for each of you and the encouragement you shared with me.

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I thank the emergency department leaders at Research Medical Center for your encouragement and enthusiasm in implementing this project. Your collective expertise and insight into clinical practice and staff nuances alike were invaluable. Your dedication to your staff and patient care are exemplary; we are all fortunate to benefit from your steadfastness.

Dedication

For my sons, Edmond and Everett, who have ridden this journey with me from their infancy and on. For my husband, Philip, whose unwavering support and devotion have grounded and sustained me. For my mother, Debra, who introduced me to the challenging and rewarding profession of nursing. And for the strong and bold women and men who have blazed this trail so that others might succeed.

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Trauma Informed Care Training Using the Adverse Childhood Experiences Framework:

Effects on Workplace and Care Environments in the Emergency Department

Studies over the past three decades have consistently shown individuals and communities with lower socioeconomic status have higher rates of morbidity and mortality (Mehta, House, & Elliott, 2015). Over time, this inequality and the effect it has on health outcomes for individuals and groups has come to be known as social disparities of health. These disparities encompass a broad range of categories including, but not limited to, gender, race/ethnicity, education, income, geographic location, and sexual orientation (Asada, Yoshida, & Whipp, 2013). Furthermore, there is a link between those with higher levels of social disparities of health and those that experience chronic disease, adverse childhood experiences, and trauma (Felitti, V.J., 2009; Oral et al., 2016; Purkey, Patel, Beckett, & Mathieu, 2018).

The Substance Abuse and Mental Health Services Administration (SAMHSA) defines individual trauma as the result of "an event, series of events, or set of circumstances that is experienced…and has lasting adverse effects on the individual's functioning and mental, physical…well-being" (SAMHSA, 2014, p. 11). People that have experienced trauma often have unique health care needs, but these individualized requirements may not be visible or easily known to health care practitioners (Purkey et al., 2018). Trauma-informed care (TIC) is an approach that, at a minimum, attempts to do no further harm to patients that have experienced trauma in their past (Bruce et al., 2019). Specifically, it incorporates four key assumptions (realization, recognition, response, resistance to re-traumatization) and six principles (safety; trustworthiness and transparency; peer support; collaboration and mutuality; empowerment, voice and choice; and cultural, historical, and gender issues) in order to optimize patient care with regards to trauma (SAMHSA, 2014). There is an evolving impetus to implement TIC

training for healthcare providers, and it has now been implemented across a variety of settings, populations, and methodologies (Bruce et al., 2019; Damian, Gallo, Leaf, & Mendelson, 2017; Strait & Bolman, 2017). Additionally, there is a growing body of evidence that practitioners and organizations that utilize a trauma-informed approach have better patient care and workplace outcomes (Damian et al., 2017; Purkey et al., 2018; Strait & Bolman, 2017).

Statement of the Problem

An academic health center in the Kansas City Metropolitan area is a Level I Trauma Center that also maintains accreditation for the care of stroke, cardiac, and sepsis patients. Located in Jackson County, Missouri, it serves much of the surrounding community with approximately 75% of patients arriving as walk-in (S. Smith, personal communication, July 10, 2019). County Health Rankings (2017), a program supported by the Robert Wood Johnson Foundation that measures vital health factors, reported that 18% of the Jackson County, Missouri population was in poor or fair health, 15% were uninsured, 19% of children lived in poverty, and the incidence of violent crime was 823 per 100,000 residents. Comparatively, the Federal Bureau of Investigation (FBI) reports the national average for violent crime in 2017 was 382.9 per 100,000 (FBI, 2017). It is suspected that, given these statistics and the high acuity and volume of trauma patients seen, many of these patients will have experienced varying degrees of physical or psychological trauma and adverse childhood experiences.

Despite the high likelihood of caring for patients with this history of lived experience and the research to support implementation of TIC, there is currently no TIC training in place for emergency department (ED) health care professionals at this academic health center. Through an informal needs assessment performed by nursing leadership, staff expressed the desire to learn more about TIC and wish to have a greater knowledge and resource base from which to

understand, empathize, and prevent escalation during challenging interactions when they arise. Additionally, the staff expressed feelings of compassion fatigue and burnout and demonstrated low levels of engagement on a recent employee engagement survey (S. Smith, personal communication, June 18, 2019).

While three decades of research show strong links between traumatic stress and adverse childhood experiences (Oral et al., 2016) there is still much to be learned.   In a review of the literature, it is evident that research surrounding TIC and the long-term effects of ACEs has been conducted in the ED setting, with adult patients, and with regards to patient-centered or healthcare worker-focused outcomes. Yet to this author's knowledge, there have not been any published studies that incorporate all these variables.

Background and Significance

Trauma can result from a wide array of experiences such as loss, abuse, neglect, violence, war, or emotional harm. As SAMHSA (2014, p.2) identifies, it has "no boundaries with regard to age, gender, socioeconomic status, race, ethnicity, geography or sexual orientation." Bruce et al. (2019) report that trauma, particularly when psychological in nature, can have deleterious long-term effects including posttraumatic stress disorder (PTSD) and depression. In fact, one study found that more than 20% of survivors of traumatic injury develop symptoms that suggest PTSD within one year after discharge from inpatient hospitalizations (Bruce et al., 2019). While trauma-informed care has its roots in juvenile justice and behavioral health, it is increasingly being recognized as a public health phenomenon with a need for model implementation in a variety of practice settings (SAMHSA, 2014). Encouraging data suggests that knowledge and implementation of TIC frameworks among health care workers improves practitioner competence, organizational culture and professional quality of life, improved patient health
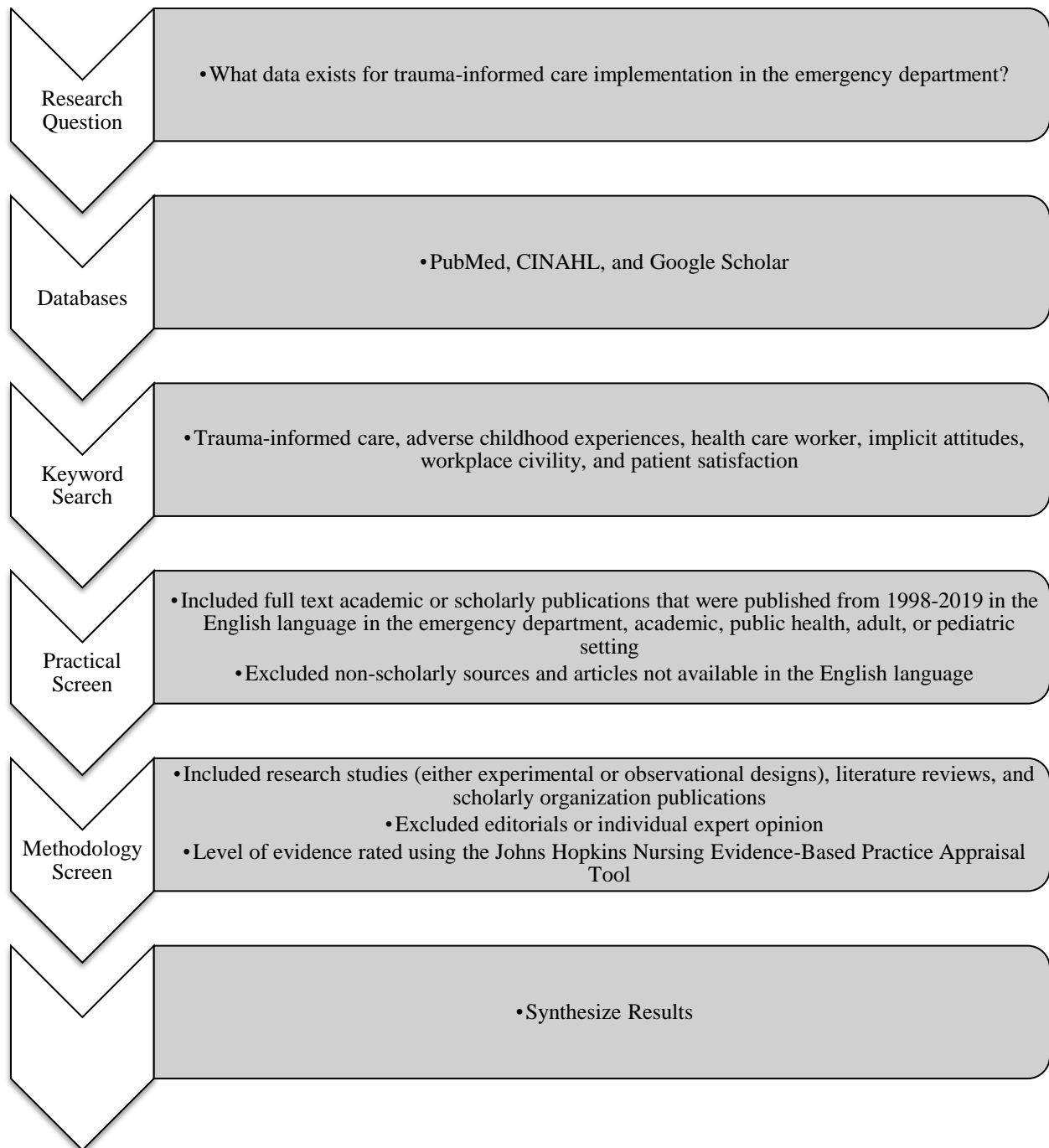
outcomes, and increased patient satisfaction (Bruce et al., 2019; Corbin et al., 2019; Damian et al., 2019; Purkey et al., 2018; strait & Bolman, 2017).

As noted by Oral et al. (2016), the impetus for TIC stems from a growing acknowledgement that the institutions that serve children are often not aware of the trauma those children have experienced. A symbiotic parallel can be drawn between concepts of TIC and the Adverse Childhood Experiences (ACEs) Study. In fact, SAMHSA and the research community include the identification and treatment of children with adverse experiences as an essential component of TIC (Oral et al., 2016; SAMHSA, 2014). There have been recommendations to further evaluate the impact of ACEs and TIC training, including in the adult population, among health care and civil servant workers, and in the emergency department setting (Bruce et al., 2019; Corbin et al., 2013; Damian et al., 2017; Purkey et al., 2018).

Although the application of TIC is recommended in a variety of settings, there is great heterogeneity in the implementation methods (Damian et al., 2017; Strait & Bolman, 2017). The web-based training toolkit on adverse childhood experiences that was created by Centers for Disease Control and Prevention (CDC) is one way to introduce TIC concepts to novices. The modules incorporate the trauma-informed framework, are relatively simple to disseminate, and act as a primer for participants to promote violence prevention among individuals and communities (CDC, 2018).

Literature Review

A literature search in PubMed, CINAHL, and Google Scholar databases was performed using keywords including trauma-informed care, adverse childhood experiences, health care worker, implicit attitudes, workplace civility, and patient satisfaction. Figure 1 is a visual representation of the literature review decision trail.

Figure 1

Literature Review Decision Trail

Research Question	• What data exists for trauma-informed care implementation in the emergency department?
Databases	• PubMed, CINAHL, and Google Scholar
Keyword Search	• Trauma-informed care, adverse childhood experiences, health care worker, implicit attitudes, workplace civility, and patient satisfaction
Practical Screen	• Included full text academic or scholarly publications that were published from 1998-2019 in the English language in the emergency department, academic, public health, adult, or pediatric setting • Excluded non-scholarly sources and articles not available in the English language
Methodology Screen	• Included research studies (either experimental or observational designs), literature reviews, and scholarly organization publications • Excluded editorials or individual expert opinion • Level of evidence rated using the Johns Hopkins Nursing Evidence-Based Practice Appraisal Tool
	• Synthesize Results

Summary

Several articles reference the individual or paired keywords, yet this author was not able to identify any that include all. The central themes of TIC and ACEs were highly supported in the literature, including a vast number of ideas for implementation (Bruce et al., 2018; Corbin et al., 2013; Damian et al., 2017; Strait & Bolman, 2017), violence prevention (Corbin et al., 2013), organizational culture (Damian et al., 2017), and the patient care environment (Purkey et al., 2018; Strait & Bolman, 2017). Several sources also place emphasis on the importance for practitioners to be self-aware, to use self-care and reflection practices, and to foster further personal and professional growth (Damian et al., 2017; FitzGerald & Hurst, 2017; Strait & Bolman, 2017). Yet, none of these synthesize these various concepts, particularly in the emergency department setting. The following discussion will review these key themes in more detail.

Trauma-informed Care

Organized by SAMHSA, a strategic initiative for trauma and justice developed and published a framework for using a trauma-informed approach (SAMHSA, 2014). Now a key reference for many, this document aimed to articulate the concept of TIC and provide a common language for the multiple sectors that provide services for those who have experienced trauma, including federal, state, and local systems; child welfare; education; criminal and juvenile justice; primary health care; and the military (SAMHSA, 2014). At that time, there was a growing body of evidence that recognized the importance of TIC. Since then, there has continued to be an ever-expanding discussion of TIC among a variety of populations and in a variety of settings, including among trauma providers (Bruce et al., 2019), urban hospitals and public health sectors (Corbin et al., 2013; Damian et al., 2017), primary care (Purkey et al., 2018;

Raja, Hasnain, Hoersch, Gove-Yin, & Rajagopalan, 2015), and graduate medical education

(Strait & Bolman, 2017). According to Raja et al. (2015) in a synthesis of the literature, the two

major domains of TIC are universal precautions and trauma-specific care, which are then further

divided into several categories each.

Adverse Childhood Experiences

In 1998, a groundbreaking study that examined the relationship of childhood abuse and

household dysfunction and many of the chronic diseases of adulthood was published (Felitti et

al., 1998). The authors examined seven categories of adverse childhood experiences, including

"psychological, physical, or sexual abuse; violence against mother; or living with household

members who were substance abusers, mentally ill or suicidal, or ever imprisoned" (Felitti et al.,

1998). The Centers for Disease Control and Prevention (CDC) provides a questionnaire using 10

categories and questions, which are scored dichotomously (yes/no), whereby any 'yes' response

scores a value of one. The total is added, resulting in a range of 0 to 10, and a score greater than

4 places the individual at significant risk for chronic disease later in life (Corbin et al., 2013;

Felitti et al., 1998; Purkey et al., 2018). It was furthermore concluded that there exists a strong

dose-response relationship in this phenomenon, whereby the higher the ACE score the more

likely an individual is to experience chronic disease in adulthood (Felitti et al., 1998). Since that

time dozens more studies have been conducted to expound on these findings, with consistent

test-retest reliability (Corbin et al., 2013; Dube et al., 2004).

Heterogeneity in Implementation

While the primary elements of a trauma-informed approach are defined by SAMHSA

(2014), how organizations have implemented this has quite a bit of variability (Bruce et al.,

2018; Raja et al., 2015). As SAMHSA (2014) identifies, these protocols and practices must

attempt to do no further harm. The notion of an organization adopting a "universal precautions" approach in which health care workers are all aware of TIC and implement it in their care for patients is noted by various authors (Bruce et al., 2018; Purkey et al., 2018; SAMHSA, 2014). Other protocols, platforms, or general curriculum that are notable include the "DEF protocol" in pediatric settings (Bruce et al., 2018); coaching and feedback sessions (Damian et al., 2017); lecture from subject matter experts, either in-person or on video (Strait & Bolman, 2016); proctor-mediated collaborative group work and role play (Strait & Bolman, 2016); and including foundational TIC education in undergraduate nursing programs, hospital employee orientations, and general medical education (Bruce et al., 2018; Purkey et al., 2018; Strait & Bolman, 2016). Many of these interventions have been successful, and SAMHSA suggests that each organization implement TIC training that aligns with its mission, vision, goals, and resources available while still attending to the ten implementation domains that are identified (governance and leadership, policy, physical environment, engagement and involvement, cross sector collaboration, screening assessment and treatment services, training and workforce development, progress monitoring and quality assurance, financing, and evaluation) (SAMHSA, 2014, p. 12).

Violence Prevention

Utilizing a trauma-informed approach has been shown to have positive effects on preventing violence, both at the hospital (Corbin et al., 2013) and community (Damian et al., 2017) levels. Additionally, multiple federal health agencies utilize concepts from TIC and ACEs for violence prevention training and interventions in a variety of manners (Agency for Healthcare Research and Quality [AHRQ], 2015; CDC, 2019).

Organizational Culture

The American Association of Critical-Care Nurses (AACN) offers a framework for healthy work environments with standards to which organizations are encouraged to adopt (Pinkerton, 2005). In order to cultivate communication, collaboration, patient safety, and staff satisfaction there are six standards that the AACN recommends: skilled communication, true collaboration, effective decision making, appropriate staffing, meaningful recognition, and authentic leadership (Pinkerton, 2005). Additionally, a study done in a large east-coast city among public sector workers showed that implementation of a TIC training program improved organizational factors such as safety climate and morale, teamwork climate and collaboration, and individual compassion satisfaction and burnout levels (Damian et al., 2017).

Underlying and encompassing the AACN standards, as well as the positive impact TIC can have on organizational culture, is the concept of civility. Civility in the workplace is essential to a healthy organizational culture and work environment; it is defined as "authentic respect for others requiring time, presence, engagement, and an intention to seek common ground" (Clark, 2013). In alignment with this is the concept of implicit associations or biases; that is, unconscious or uncontrollable judgments that result in bias (FitzGerald & Hurst, 2017). The values, experiences, feelings, and opinions of an individual health care professional informs behavior and actions and can both positively and negatively affect interactions with patients (FitzGerald & Hurst, 2015; Strait & Bolman, 2016). Therefore, self-reflection and transparent, constructive feedback from a trusted mentor or colleague can be useful as practitioners work towards improving awareness of his or her own civility and can help identify strengths and opportunities on which to work (Clark, 2013).

Patient Care Environment

Not only are benefits seen for organizations and practitioners when a trauma-informed approach is used, but most importantly there are reports of increased trust, rapport, and satisfaction among patients (Purkey et al., 2018; Raja et al., 2015; Strait & Bolman, 2017). Women in primary care settings noted that, despite providers believing the patient could be re-traumatized when talking about past trauma and therefore did not do so, they appreciated discussing their history of trauma and did not feel it re-triggered events (Purkey et al., 2018). Patients in a variety of settings can be approached using small, general changes known as "universal trauma precautions" but do not necessarily need to be screened for trauma; this also builds trust and makes patients feel more at ease (Raja et al., 2015).

Definitions

There are several definitions that are beneficial for the reader to understand, both at conceptual and operational levels. The following is a discussion of four key concepts or terms as they relate to this project: trauma-informed care, adverse childhood experiences, civility in the workplace, and patient satisfaction.

Trauma-Informed Care

Conceptually, trauma-informed care is based on integrating the recognition of trauma into the care environment (Purkey, Patel, Beckett, & Mathieu, 2018). In other words, it is caring for the whole person through the lens of trauma. Operationally, it is a healthcare delivery model that emphasizes a strong organizational foundation, a sensitive care environment, screening, and response to trauma (Bruce et al., 2018; SAMHSA, 2014; Thompson-Lastad et al., 2017).

Adverse Childhood Experiences

Conceptually, adverse childhood experiences (ACEs) are a constellation of negative events that occur to an individual in childhood that impact health and wellness into adulthood. The ACEs Study focused on the ten most common adverse events experienced by children in the United States, including abuse (physical, emotional, or sexual), neglect (emotional or physical), and household dysfunction (domestic violence, substance abuse, mental illness or criminal activity, or parental absence) (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, …& Marks, 1998; Oral et al., 2016). Operationally, the clinician's astute recognition of a person that has been impacted by adversity in childhood can inform the best possible care plan with an individualized approach to care, and possibly prevent re-traumatization (Oral et al., 2016).

Civility in the Workplace

Conceptually, incivility can be defined as "a range of lower intensity acts of aggression…that may result in psychological of physiological distress for the individuals involved" (Clark et al., 2018). In the healthcare setting, a lack of civility can have overwhelming and long-term negative effects on individuals, teams, organizations, and patient safety (Clark et al., 2018). Operationally, civility in the workplace is demonstrated in competent, self-aware, highly communicative, conflict-savvy, and collaborative individuals and teams that result in positive, safe patient outcomes (Clark et al., 2016; Clark et al., 2018).

Patient Satisfaction

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was created in the early 2000's by the Centers for Medicare and Medicaid (CMS) with the goals to collect standardized national data on patients' perspectives of care that could be

publicly reported in order to improve accountability and quality of hospital care (CMS, 2017).

The survey is sent to discharged patients and consists of 27 questions; 18 of these are core

questions regarding the patient experience (i.e. communication with and responsiveness of staff,

cleanliness, pain management, and overall rating) (CMS, 2017). Notably, just as Wolf et al.

(2014) identify in a synthesis of the literature, it is important to remember that patient experience

should not be narrowly evaluated through survey results, but rather should include aspects such

as individualized care, patient expectations and goals, and moving beyond clinical outcomes or

health status (Wolf et al., 2014). With this acknowledgement in mind, the scope of this DNP

project is unfortunately limited to utilizing HCAHPS survey results. Therefore, the operational

definition used for patient satisfaction herein aligns with HCAHPS standards and reflects the

content of the 18 core questions that address patient experience.

Theoretical Framework

Both the Iowa Model and Krieger's Eco-social Theory provided a construct for this

project. The Iowa Model presented a structure for the planning and implementation, while Eco-

social Theory offered insight into inequalities in disease distribution and social disparities of

health.

The Iowa Model has been utilized as a process for introducing evidence-based practice

since the 1990's (Doody & Doody, 2011). It is an evidence-based model with a stepwise design

and can be applied to both quantitative as well as qualitative research. The seven steps of the

Iowa Model are: topic selection, engage stakeholders, retrieve evidence, grade evidence, plan,

implement, and evaluate (Doody & Doody, 2011). In this way, the Iowa Model served as a

useful resource by which to organize this quality improvement project.

Eco-social Theory focuses on the interplay between human biology, societal and ecological exposures, and susceptibility and resistance (Krieger, 2012). The Centers for Disease Control and Prevention (CDC) use an adapted four-level (individual, relationship, community, and societal) social-ecological model for understanding and preventing violence (CDC, 2010). The model acknowledges four levels of prevention that are broad and yet intricately tied together (See Figure 2).

Figure 2

Visual Representation of Youth Violence Prevention Strategies at the Four Levels of Prevention
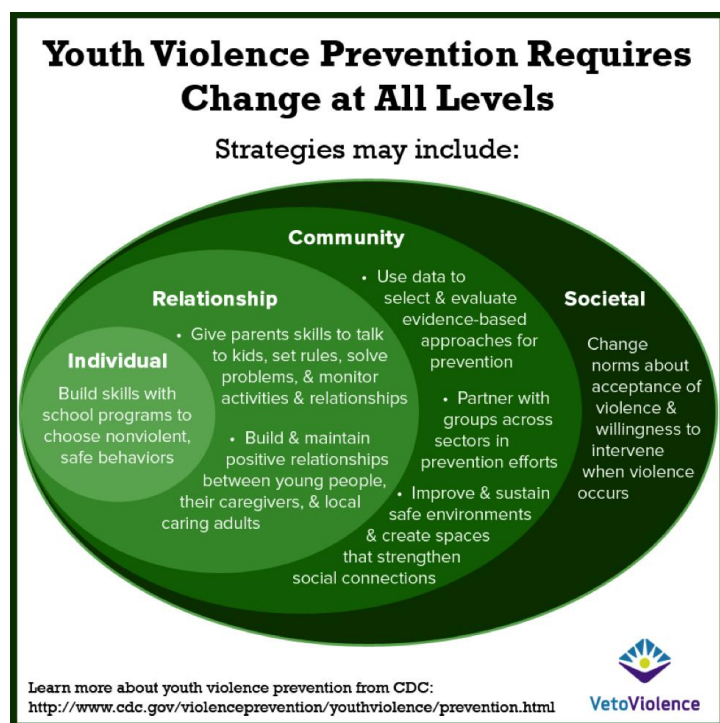
Note. Adapted from Social-Ecological Model by the Centers for Disease Control and Prevention, 2010, retrieved from https://vetoviolence.cdc.gov/violence-prevention-basics-social-ecological-model. CC-BY-SA 3.0

Because trauma of any type involves acts of aggression and violence, theory regarding the interplay and prevention of violence is applicable to this discussion. Emergency department

workers are in a unique position to prevent violence through the patient and family education, community connections, and influence they have. Given the meso- and macro-level themes contained in this project, Eco-social Theory served as a useful high-level framework.

Methods

The goal of this Doctor of Nursing Practice (DNP) project was to improve workplace culture, as well as patient satisfaction, through increasing health care workers' awareness or perception of these phenomena: trauma-informed care, adverse childhood experiences, implicit bias, and civility in the workplace. A trauma-informed training program for emergency department staff (physicians, advanced practice providers, nurses, paramedics, emergency technicians, and secretaries) was implemented over a 3-month period. Primary outcomes assessed staff members' individual awareness of implicit bias and civility in the workplace, and a secondary outcome was a measure of patient satisfaction. The questions the author sought to answer were:

1. Does implementation of an educational program on TIC effect healthcare workers' personal awareness of individual factors that may influence them and the care they provide?

2. How does participation in an educational program on TIC effect emergency department healthcare worker perception of civility in the workplace?

3. How does implementation of an educational program on TIC effect emergency department Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores over a 2-month period?

Design

A quality improvement project with surveys before and after a trauma-informed care training program was implemented. Health care workers (physicians, advanced practice

providers, nurses, paramedics, technicians, secretaries) working in the emergency department were recruited to participate. Participants were assigned a non-identifiable code to ensure individual information was protected and not linked to participants. The dependent variables included civility in the workplace, implicit bias, and patient satisfaction scores; independent variables are participation in a TIC training program, individual staff demographics, and ACE scores. Health care workers' personal exposure to adverse childhood experiences were considered using the validated 10-item ACE survey; implicit bias was measured using the validated Implicit Association Test (IAT); health of the workplace was assessed using the valid and reliable Clark Workplace Civility Index© (author permission granted); and patient satisfaction was monitored via HCAHPS scores. Hourly wage employees were compensated for the time required to complete the training program.

Ethics

While no physical threats were anticipated for participants, there were potential psychological risks such as secondary exposure to trauma via recall of traumatic events from personal or work-related experiences. Additionally, the creators of the Implicit Association Test (IAT) note that taking the test can sometimes bring to light disconcerting aspects of human nature (Project Implicit: Ethical considerations, n.d.). Therefore, when conducting the IAT the importance of using it as a tool to prompt self-reflection and constructive dialogue rather than labeling or making further assumptions based on the results was emphasized. In order to protect participants, informed consent was obtained from all participants and Internal Review Board (IRB) approval was obtained from the University of Kansas Medical Center prior to implementation. All participants were permitted to discontinue participation at any time, for any reason. As previously noted, a non-identifiable code was created by all participants to protect

individual information. If untoward psychological reactions were experienced, the individual(s) would be referred to mental health professionals using the employee assistance program or other preferred qualified resources.

Additionally, the approval of this Doctor of Nursing Practice project followed protocols and requirements as outlined by the University of Kansas School of Nursing. The author worked closely with the project chairs to ensure the highest degree of academic rigor and scholarship in research was upheld. Practice setting approval was obtained in writing from the medical and nursing directors of the emergency department. The proposal abstract was approved after proposal defense in September 2019.

Setting

This quality improvement project was performed at an academic health center located in the urban core of Kansas City, Missouri. It is a Level 1 Trauma Center that serves a diverse, ethnic minority and underserved patient population across the lifespan. Within the limits of the zip code of the hospital, 81.7% of people are Black or African American, the median age is 31.5 years, and 33.8% of the population lives below the poverty line (U.S. Census Bureau, 2017). The ED maintains 38 fixed head wall beds and can expand to accommodate up to 74 patients. In addition to private patient rooms there is also a "fast track," or sub-acute urgent care area, and a locked mental and behavioral health section.

Participants and Recruitment

All staff members that are employed to treat patients and their families in the ED were recruited to participate in this project including full-time and part-time physicians, advanced practice providers, nurses, paramedics, technicians, and secretaries. Limitations on years of

experience by the individual employee, which shift the employee works, or other demographic criteria were not set. Staff members on leaves of absence were excluded.

Data Collection

Participants completed a demographic form that included gender, age, role, years of experience, and race (See Table 1). Three surveys were distributed to participants before and after implementation of a TIC training program: the Race Attitudes Implicit Association Test (IAT) (See Appendix A), the ACEs Questionnaire (See Appendix B), and the Clark Workplace Civility Index© (See Appendix C).

Table 1

Staff Demographics to be Included with Survey and Data Collection

Age	18-22	23-28	29-35	36-40	41-50	51-60	61+
Gender	Male	Female	Non-binary	Prefer not to answer			
Role	MD or DO	NP or PA	RN	Advanced Paramedic	ECT or Safety Coordinator	Secretary	
Years of Experience	<1	1-5	6-10	11-15	16-20	21+	
Race/ Ethnicity	Asian	Black/ African	Caucasian	Hispanic/ Latinx	Native American	Pacific Islander	Prefer not to answer

Instruments

While the test-retest reliability and predictive validity of the IAT is controversial based on mixed results in the research (Blanton, Klick, Mitchell, Jaccard, Mellers, & Tetlock, 2009; Nosek, Greenwald, & Banaji, 2005), it is widely used in psychological cognition and development research worldwide (Rae & Olson, 2017). The IAT is designed to measure implicit attitudes, or actions or judgments that are based on a subconscious automatic evaluation, and serves as a tool to generate thought, discussion, and reflection (Greenwald, McGhee, & Schwartz, 1998).

The ACE survey has been shown to have good reliability and evaluates exposure to adverse childhood experiences including emotional, physical, or sexual abuse and household dysfunction such as substance abuse, mental illness, and violent treatment of a mother (Dube, Williamson, Thompson, Felitti, & Anda, 2004). An ACE score of four or more indicates a significantly higher risk of chronic health conditions later in life (Felitti et al., 1998).

The Clark Workplace Civility Index© is an evidence-based questionnaire that can be utilized as a tool to "assess civility, increase awareness, generate discussion, and identify ways to enhance civility acumen" (Clark, 2013). It is a reliable, psychometrically sound 20-item questionnaire that measures perceptions of civility in the workplace and can be administered to individuals or members of a group (Clark, Sattler, & Barbosa-Leiker, 2018).

The HCAHPS data collected by Press Ganey on behalf of the hospital was used to measure overall patient satisfaction and subcategories involving patient experience were examined. The "top box" scores, or percentage of the most satisfied patients, were used for the following four questions taken from the survey: nurse courtesy, doctor courtesy, staff cared about you as a person, and overall rating ER care. Of the 15 total questions, these were deemed to be most closely aligned with the intent of this project in capturing how patient perception of care may be impacted.

Timeline

This project was conducted over a nine-month period in three phases. Phase one encompassed design and planning. Phase two consisted of data collection which included staff training on TIC. Phase three has been dedicated for data analysis and dissemination.

Results

Data analysis was performed using IBM SPSS (version 26) software. Calculations are reported utilizing a 95% confidence interval (CI). Due to a low sample size for pre-survey ($n = 22$) and post-survey ($n = 16$) participants, statistical significance cannot be calculated for any variables. Additionally, only three participants completed both surveys and attended the trauma-informed care educational program. Therefore, again due to low sample size, paired t-test and chi-squared coefficients cannot be calculated as was the original intent at the outset of this project. The project questions that sought to evaluate change (i.e. how a TIC program impacted personal awareness/implicit bias and perception of workplace civility) are especially impacted by this. The results conveyed here will primarily utilize measures of central tendency and other descriptive statistics. Additionally, patient satisfaction scores had enough response rates ($n > 30$) to calculate an independent-sample *t*-test and are analyzed as such. Because statistical significance could not be calculated the following results are inferential and should be considered with caution.

Participants

The first phase of implementation involved distribution of the pre-survey. There was a total of 50 pretest surveys submitted, but only twenty-two ($n = 22$) of these were completed in full. Participants' ages ranged from 23-60 years with the largest cohort ($n = 7$, 31.8%) falling in the age category of 29-35 years. Participants identified as male or female, and nearly 74% ($n = 17$) responded as female. All roles were represented by at least one participant; most participants were nurses ($n = 14$, 63.6%). Nearly half (45.5%) of participants reported between one and five years of experience in their current role, and all but one (95.5%) participant identified as Caucasian (one participant selected "prefer not to answer").

The second phase of implementation entailed distribution of the post-survey. There was a total of 27 surveys submitted, but only sixteen ($n = 16$) were fully completed. Participants again ranged in age from 23-60 years with the largest cohort ($n = 7$, 43.8%) falling in the age category of 29-35 years. Participants identified as male or female, and 62.5% ($n = 10$) responded as female. All roles were again represented and approximately half were nurses ($n = 9$). Just over half (56%) of participants reported between one and five years of experience in their current role, and all but one (94%) participant identified as Caucasian (one participant selected "Black or African").

The pre- and post-survey results suggest homogeneity between the two sample groups (See Table 2). This is estimated to reflect general staff demographics in all categories except for age where approximately 20% of staff is between 29-35 years (S. Smith, personal communication, February 27, 2020) (See Table 2).

Table 2

Comparison of Demographic Results

|	Pre-Survey	Post-Survey	Total population (est.)
n	22	16	117
Age	29-35 (31.8%)	29-35 (43.8%)	22%
Gender	Female (74%)	Female (62.5%)	70%
Role	Registered Nurse (63.6%)	Registered Nurse (56.3%)	52%
Time in current role	1-5 years (45.5%)	1-5 years (56%)	39%
Race/ethnicity	Caucasian (95.5%)	Caucasian (94%)	92%

Concepts

To reiterate, the survey content was divided into four key concepts that focused on staff member implicit bias, adverse childhood experiences, perceptions of workplace civility, and patient satisfaction.

Implicit Association Test

To test distribution normality, pre- and post-survey Implicit Association Test (IAT) data were used for the Shapiro-Wilk test and to calculate ratios of skewness to standard error (SE) and kurtosis. The Shapiro-Wilk test reflects a non-normal distribution for the pre-survey ($p = .004$) and post-survey ($p = .003$). The ratio of skewness to SE was 0.21 and the ratio of kurtosis to SE was 1.47. Post-survey IAT ratio of skewness to SE was 1.56 and ratio of kurtosis to SE was 1.091. Calculating the ratio of skewness and kurtosis to the standard error of each indicates a normal distribution for both the pre-and post-survey. While the Shapiro-Wilk and ratio test values conflict, the distribution appears normal or nearly normal on a Q-Q plot (See Figure 2).

Figure 2

Q-Q Plots of IAT Scores

Pre-Survey   Post-Survey
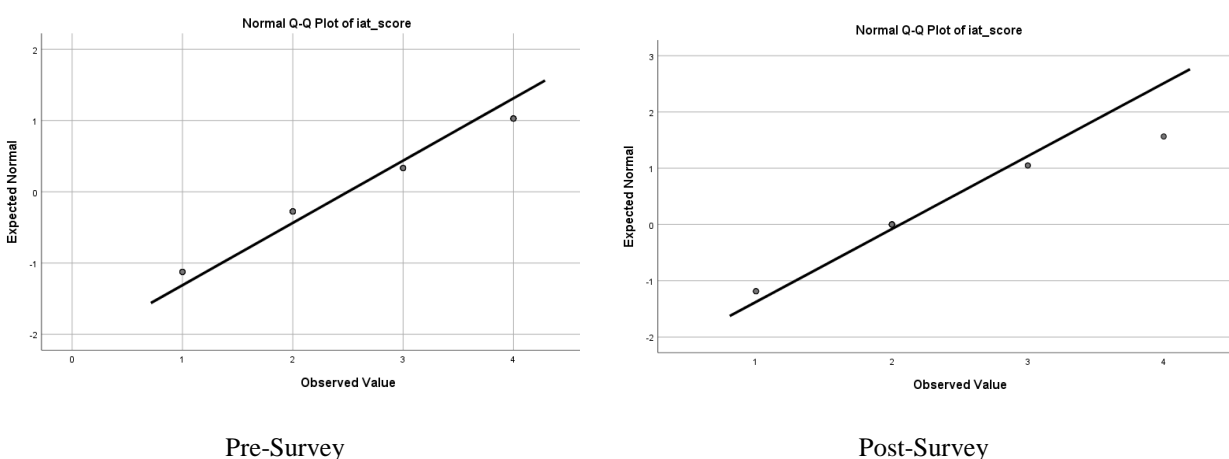
Prior to implementation of a trauma-informed care (TIC) educational program, pre-survey participants scored a mean of 2.50, *SD* = 1.14, 95% CI [1.99, 3.01] on the IAT. This

indicates a moderate to strong "automatic preference for European Americans over African Americans" (Project Implicit, n.d.). After implementation of the educational session, post-survey participants scored a mean of 2.06, *SD* = 0.77, 95% CI [1.65, 2.47] which indicates a moderate preference (See Table 3).

Table 3

Comparison of Central Tendencies

Variable	Pre-survey			Post-survey		
	M	*SD*	95% CI	*M*	*SD*	95% CI
Implicit association test	2.5	1.14	1.99, 3.01	2.06	0.77	1.65, 2.47
Adverse childhood experience	1.73	2.27	0.72, 2.73	1.75	1.95	0.71, 2.79
Civility in the workplace	86.36	7.69	82.95, 89.77	84.19	6.37	80.79, 87.58

This may suggest a slight decrease in overall bias scores and could support the current body of literature that indicates TIC training that encourages self-awareness and reflection for individuals decreases unconscious bias.

Adverse Childhood Experiences

Evaluating for a normal distribution, pre-survey adverse childhood experiences (ACE) scores were used in the Shapiro-Wilk test and to calculate ratios of skewness and kurtosis to standard error (SE). The Shapiro-Wilk test indicates a non-normal distribution on both the pre-survey ($p < .001$) and the post-survey ($p = 0.002$). The ratio of skewness to SE was 3.27 and the ratio of kurtosis to SE was 2.10. Post-survey ACE score ratios of skewness to SE was 2.68 and kurtosis to SE was 2.01. Calculating the ratio of skewness and kurtosis to the standard error of each confirms a non-normal distribution for both the pre-and post-survey. Indeed, a boxplot identifies outliers in both samples (See Figure 3). When data is adjusted for these outliers, a non-normal distribution is still displayed for the pre-survey (Shapiro-Wilk test [$p = .001$], ratios

of skewness and kurtosis to SE [1.35, -0.83], respectively]) and post-survey (Shapiro-Wilk test

[*p* = .003], ratio of skewness and kurtosis to SE ([1.64, -0.33], respectively).

Figure 3

Boxplot of ACEs Scores with Outliers on Pre- and Post-surveys

Pre-survey   Post-survey
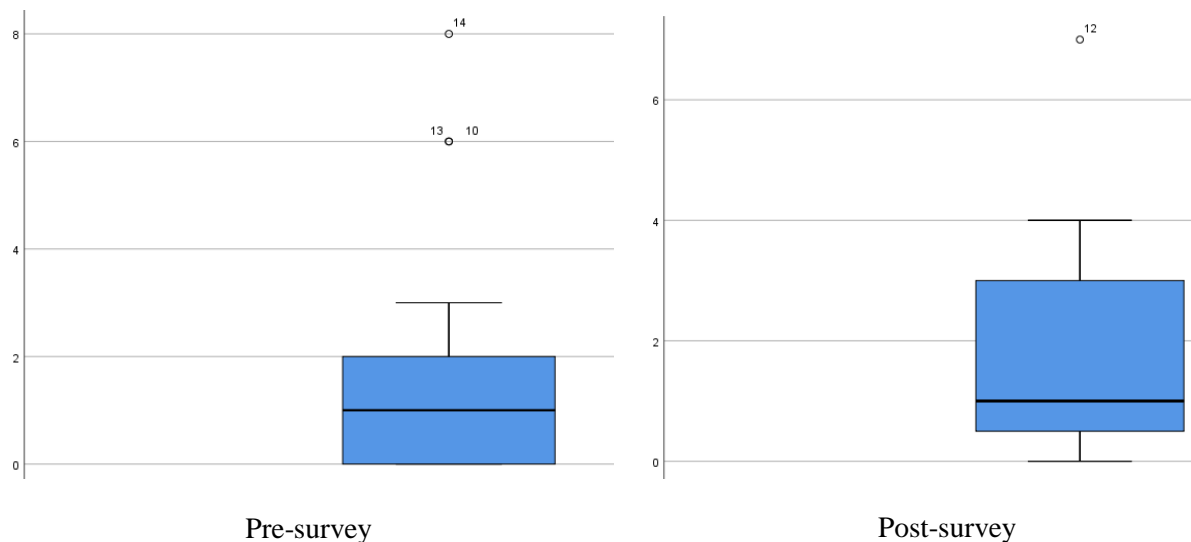
Individual ACE scores for pre-survey participants indicated a mean of 1.73, *SD* = 2.27,

95% CI [0.72, 2.73]. For post-survey participants, ACE scores resulted a mean of 1.75, *SD* =

1.95, 95% CI [0.71, 2.79] (See Table 3). Adjusted for outliers, the pre-survey mean score was

0.95, *SD* = 1.08, 95% CI [0.43, 1.47] and the post-survey mean score was 1.40, *SD* = 1.40, 95%

CI [0.62, 2.18). The literature identifies that adults that score 4 or higher on the ACE

questionnaire are at statistically significant increased risk of chronic disease and there is a dose-

response relationship. Therefore, these means scores indicate that this sample group is not at high

risk as a whole. However, there were individuals that scored greater than four on both surveys

(three on the pre-survey and one on the post-survey). This reveals a high risk for chronic

diseases in these individuals in both physical and mental health domains.

There is very little variability between the pre- and post-survey results for the ACE

scores, which is in keeping with what is expected as this is a fixed value for adults. Like the

demographic data discussed above, this finding also indicates homogeneity between the pre- and

post-survey groups.

Workplace Civility

Pre-survey Clark Workplace of Civility Index© ratios of skewness to standard error (SE)

was 0.07 and kurtosis to SE was 1, 18; post-survey IAT ratios of skewness to SE was 1.32 and

kurtosis to SE was 0.79. Calculating the ratio of skewness and kurtosis to the standard error of

each indicates a normal distribution for both survey groups.

As measured by the Clark Workplace Civility Index©, participants scored civility in the

workplace with a mean of 86.36, *SD* = 7.69, 95% CI [82.95, 89.77] on the pre-survey. After a

TIC training session, post-survey participants scored civility with a mean of 84.19, *SD* = 6.37,

95% CI [80.79, 87.58] (See Table 3).

While both mean scores fall solidly in the "civil" category (80-89) on the index, this

indicates no change or may even imply a slight decrease in workplace civility. This data

conflicts with current evidence in the literature that suggests civility in the workplace would

improve with TIC training for staff.

Patient Satisfaction

An independent-samples *t*-test was conducted to compare patient satisfaction before and

after a TIC training program was implemented for emergency department health care workers.

Data from two months prior to the program's implementation is compared with the data from

two months after. It should be noted that survey data collection is still open for the post-

implementation phase because Press Ganey standards allow patients to respond for up to six

weeks beyond the time of this paper's publication (Press Ganey Associates, 2019). However, there is still an adequate sample size ($n > 30$) to calculate this independent-samples t-test.

There was not a significant difference in patient satisfaction scores for any of the four questions that were analyzed, including in overall rating of ER care for the time period before ($M = 62.65$, $SD = 5.69$) and after ($M = 60.64$, SD = 7.52); $t(1.862) = 0.301$, $p = 0.794$ (See Table 4). In other words, the TIC education did not significantly change patient satisfaction scores in these four categories as the probability level as greater than 0.05 ($p > 0.05$). In terms of directionality, a higher level of satisfaction was associated with the TIC program relative to nurse and doctor courtesy while a lower level of satisfaction was seen relative to caring and overall care categories. Lastly, in terms of magnitude by utilizing conventional effect size interpretations, the Cohen's d indicated that the TIC program produced a medium effect upon the dependent variables regarding nurse and doctor courtesy (d = -0.54, -0.53, respectively). Simultaneously, the Cohen's d revealed a small effect upon the dependent variables associated with caring and overall ER care ($d = 0.22$, 0.30, respectively) (See Table 4).

Table 4

Independent-Samples T-Test

	M		SD		t	df	Sig. (2-tailed)	Cohen's d
	Before	After	Before	After				
Q1	68.40	71.18	4.80	5.41	-0.544	1.972	0.642	-0.54
Q2	61.62	62.53	1.54	1.85	-0.532	1.939	0.649	-0.53
Q3	63.95	62.33	8.94	5.13	0.222	1.595	0.849	0.22
Q4	62.65	60.64	5.69	7.52	0.301	1.862	0.794	0.30

Note. The questions used on the Press Ganey survey have been renamed "Q1, Q2" and so on. Q1

= nurse courtesy, Q2 = doctor courtesy, Q3 = staff cared about you as a person, and Q4 = overall rating ER care.

These results conflict with the current body of literature that recommends utilization of a trauma-informed care approach will increase patient satisfaction with care, even if this somewhat limited measure of patient satisfaction is an indirect measure of the TIC program itself.

Staff Response

Aside from this quantitative data, the author anecdotally had many emergency department professionals express their excitement, connection, and appreciation for the QI project. All three domains (content, methods, and overall satisfaction) in a secondary survey that was included for participants of the trauma-informed care training session were rated as *Excellent* or *Good* on a 4-point Likert scale. One participant shared,

> "…I did find it informative and thought-provoking. The phrase that stuck with me was the question: what happened to you, versus what's wrong with you? I struggle daily with this approach, simply because asking what happened requires such a huge time investment that I often do not have. But I have tried to let my care be guided by the 'what happened' approach as much as possible" (Anonymous, personal communication, December 29, 2019).

Another staff member responded, "I had never heard of ACEs before but it put a number to what it was like growing up in a tough environment. It means a lot to know that I'm not alone among our team" (Anonymous, personal communication, November 12, 2019). Several staff members approached the author with personal stories of their own childhood experiences, encounters with patients, and general statements about civility in the workplace and at large. While most of the testimonials were positive, there were a couple of individuals who made

negative statements such as, "I don't know why we really need this, our team does just fine already" (Anonymous, personal communication, December 29, 2019). Finally, after a human resources (HR) professional happened upon the training, that individual collaborated with the author to have a separate training session for HR staff within the organization.

Overall themes from these qualitative responses include positive individual connection with the concepts and an appreciation of a language or framework for the lived experience(s) associated with them.

Discussion

Emergency department health care workers are in a unique position to impact the lives of patients who have experienced trauma. However, before ED staff members can provide excellent care for patients, an adequate level of self-awareness must first be established. The findings from this QI project suggest that a training program on trauma-informed care using the ACEs framework may be beneficial, particularly with consideration for unconscious bias among individuals. However, this QI project has conflicting evidence that workplace civility may have been negatively affected. There are a variety of factors to consider with respect to these findings. A few such considerations include possible cognitive dissonance for individuals undergoing personal growth and change; turnover and changes in the staffing grid; and confounding factors such as time of year, variability in workload, changes in organization and department processes, and other training activities, surveys, and communications not related to this project regarding patient experience.

While the quantitative data is of great value in analysis of this QI project, the anecdotal and qualitative information must not be overlooked. A central underlying premise for the success of this project was the importance of individuals participating in self-awareness and

reflection exercises. The anecdotal evidence indicates that emergency department and HR professionals alike embraced this concept and challenged themselves to do so. This cumulative positive and enthusiastic feedback validates the practice gap and need for foundational training that had been identified in the infancy of this project.

If building on this groundwork continues, this ED will be able to further optimize the quality care provided to patients. While there were several limitations identified in this QI project, it is also clear that important initial steps were taken towards fostering healthier work and care environments.

Limitations

This QI project does incorporate several limitations. Most notably, the sample size was small. This is likely a reflection of the convenience sampling methodology but other factors such as survey burden on participants, lack of longevity, or subpar employee engagement may all be confounders. An additional limitation may have been the survey itself. While much thought and attention were given to the creation of the survey, anecdotal feedback from participants suggest that it was confusing and the technology was not as user-friendly as originally anticipated. Finally, recent constraints imposed on the education budget reduced the resources available for training staff.

Considerations for Future Research, Education, and Practice

Future research would benefit from a mixed-method or randomized control design with larger sample sizes over a longer period. These modifications would add qualitative data capturing participants' viewpoints and a more scientific, longitudinal, and quantitative approach. Additional studies done with ED staff participants in the emergency department setting utilizing

the key concepts of trauma-informed care and adverse childhood experiences would also enhance the body of scholarly literature.

Conclusions

Through the undertaking of this QI project, the author has learned a tremendous amount about TIC, ACEs, and civility in the workplace. Foremost, these lessons include application of the TIC "universal precautions" (SAMHSA, 2014, p10) and the paradigm shift from asking the question, "What is wrong with this person" and asking instead, "What happened to this person" (Strait & Bolman, 2017)? Practitioners in all settings, including the ED, can benefit from utilizing this approach as it can be implemented at the individual, team, or organizational levels and is free of financial cost. In reality, however, it can be difficult to adopt fully as it takes diligence and substantial self-awareness. On a personal note, this aspect was interesting to observe and wrestle with at the individual level. Despite a solid foundation in TIC principles, it still took notable patience and self-regulation during times of extreme stress to evoke and adhere to these concepts.

As Purkey et al. (2018) identify, in order to successfully honor patients' autonomy and lived experiences individuals, teams, and organizations alike must be educated on these concepts and the impact they can make upon workplace and patient outcomes. As the author embarks on a career as a Family Nurse Practitioner, it is of personal significance to reflect upon these lessons learned and to bring them forth in practice. It is this author's aim to embody the spirit of a careful and attentive gardener and remember, "When a flower doesn't bloom you fix the environment in which it grows, not the flower" (den Heijer, 2016).

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Appendix A

Race Attitudes Implicit Association Test

The sentinel study on Implicit Association Test (IAT) was published in 1998 and was aimed at

creating an instrument that measures individual differences in implicit cognition (Greenwald et

al., 1998). The authors created a web-based interface that presents two concepts in a binary

choice task (i.e. flower or insect), and the attribute in a second task (i.e. good or bad). The

participant is given instructions to use dedicated response keys based on associated groupings,

and the study found that participant response is faster when with highly associated groupings (i.e.

flower + good) than with less associated groupings (i.e. insect + bad). Since the initial study,

which focused on racial attitudes, over a dozen additional implicit association tests have been

created including those based on age, religion, disability, weight, and gender-career (Project

Implicit, n.d.). The IAT can be accessed at https://implicit.harvard.edu/implicit/takeatest.html.

Figure A

Screenshot of the Initial Instructions for Part One of the Race Implicit Association Test

Note. There are different, but similar, instructions as the test continues for a total of seven parts.

Adapted from Project Implicit, n.d., https://implicit.harvard.edu/implicit/Study?tid=-1.

Appendix B

Adverse Childhood Experiences

Table B		
Adverse Childhood Experiences Questionnaire: Finding your ACE Score		
While you were growing up, during your first 18 years of life:		
Did a parent or other adult in the household **often**... Swear at you, insult you, put you down, or humiliate you? **Or** Act in a way that made you afraid that you might physically be hurt?	Yes No	If yes enter 1 _____
Did a parent or other adult in the household **often**… Push, grab, slap, or throw something at you? **Or** **Ever** hit you so hard that you had marks or were injured?	Yes No	If yes enter 1 _____
Did an adult or person at least 5 years older than you **ever**… Touch or fondle you or have you touch their body in a sexual way? **Or** Try to or actually have oral, anal, or vaginal sex with you?	Yes No	If yes enter 1 _____
Did you **often** feel that… No one in your family loved you or thought you were important or special? **Or** Your family didn't look out for each other, feel close to each other, or support each other?	Yes No	If yes enter 1 _____
Did you **often** feel that… You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? **Or** Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?	Yes No	If yes enter 1 _____
Were your parents **ever** separated or divorced?	Yes No	If yes enter 1 _____
Was your mother or stepmother: **Often** pushed, grabbed, slapped, or had something thrown at her? **Or** **Sometimes of often** kicked, bitten, hit with a fist, or hit with something hard? **Or** **Ever** repeatedly hit over at least a few minutes or	Yes No	If yes enter 1 _____

threatened with a gun or knife?		
Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	Yes No	If yes enter 1 _____
Was a household member depressed or mentally ill or did a household member attempt suicide?	Yes No	If yes enter 1 _____
Did a household member go to prison?	Yes No	If yes enter 1 _____
Now add up your "Yes" answers: _____ This is your ACE Score		

Appendix C

Clark Workplace Civility Index©

Completing the Clark Workplace Civility Index:
Carefully consider the behaviors below. Respond as truthfully and as candidly as possible by answering 1) never, 2) rarely, 3) sometimes, 4) usually, or 5) always regarding the perceived frequency of each behavior. Circle a response for each behavior, and then add up the number of 1-5 responses to determine the overall civility score. Scores range from 20-100.

Ask yourself, how often do I:
(1) Never (2) Rarely (3) Sometimes (4) Usually (5) Always

1. Assume goodwill and think the best of others	1 2 3 4 5
2. Include and welcome new and current colleagues	1 2 3 4 5
3. Communicate respectfully (by e-mail, telephone, face-to-face) and really listen—	1 2 3 4 5
4. Avoid gossip and spreading rumors	1 2 3 4 5
5. Keep confidences and respect others' privacy	1 2 3 4 5
6. Encourage, support, and mentor others	1 2 3 4 5
7. Avoid abusing my position or authority	1 2 3 4 5
8. Use respectful language (no racial, ethnic, sexual, age, or religiously biased terms)	1 2 3 4 5
9. Attend meetings, arrive on time, participate, volunteer, and do my share	1 2 3 4 5
10. Avoid distracting others (misusing media, side conversations) during meetings	1 2 3 4 5
11. Avoid taking credit for another individual's or team's contributions	1 2 3 4 5
12. Acknowledge others and praise their work/contributions	1 2 3 4 5
13. Take personal responsibility and stand accountable for my actions	1 2 3 4 5
14. Speak directly to the person with whom I have an issue	1 2 3 4 5
15. Share pertinent or important information with others	1 2 3 4 5
16. Uphold the vision, mission, and values of my organization	1 2 3 4 5
17. Seek and encourage constructive feedback from others	1 2 3 4 5
18. Demonstrate approachability, flexibility, and openness to other points of view	1 2 3 4 5
19. Bring my 'A' Game and a strong work ethic to my workplace	1 2 3 4 5
20. Apologize and mean it when the situation calls for it	1 2 3 4 5

Scoring the Civility Index:
Add up the number of 1-5 responses to determine your 'civility' score
90-100—Very civil
80-89—Civil
70-79—Moderately civil
60-69—Minimally civil
50-59—Uncivil
Less than 50—Very uncivil