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EFFECTIVENESS OF STAFF TRAINING ON TRAUMA-INFORMED CARE

Brandy Tramel Williams
University of Southern Mississippi

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by

Brandy Tramel Williams

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Committee:

Dr. Carolyn Coleman, Committee Chair
Dr. Anita Greer

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ABSTRACT

The connection between experiencing trauma and the development of substance use disorder is widely recognized. Although trauma is more prevalent among individuals with substance use disorders, healthcare professionals have limited access to training focused on trauma informed care. It is crucial for those working in addiction treatment to receive training and education on trauma informed care to understand the impact of trauma and its association with substance use disorders.

This DNP project's objective was to develop and evaluate an educational presentation for staff emphasizing the importance of trauma-informed care in the context of addiction. The effectiveness of this intervention was assessed using a pre-/post-intervention approach. Twelve employees at an inpatient substance use treatment facility participated in this project. The results revealed that participant knowledge and familiarity with trauma and trauma informed care increased after engaging with the material.

An educational intervention effectively increased staff knowledge and familiarity with trauma-informed care. By increasing staff awareness on the impact of trauma and trauma-informed care the education may result in improved patient outcomes in addiction treatment. Additionally, a staff that is well-versed in trauma-informed care may create a more supportive and empowering environment for patients, leading to increased engagement in treatment and better overall satisfaction with the care they receive.

ACKNOWLEDGMENTS

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ACEs	Adverse Childhood Experiences
CDC	Centers for Disease Control
PTSD	Post-traumatic stress disorder
SUD	Substance use disorder
TIC	Trauma-informed care
USM	The University of Southern Mississippi

CHAPTER I – INTRODUCTION

The impact of trauma on a person's well-being can be significant and long lasting. However there seems to be a lack of awareness and sensitivity among healthcare professionals in understanding how trauma affects individuals dealing with substance use disorder. To address this issue the focus of this DNP project is on implementing and evaluating an intervention for staff members that promotes trauma informed care. The goal is to mitigate the effects of trauma and promote resilience among both service providers and patients (Baker et al., 2018).

Background

Trauma is the result of a psychological reaction, to a distressing or life-threatening event according to the American Psychological Association (APA, 2022). The definition of trauma can vary from person to person due to its subjective nature. Trauma can have a lasting impact on a person's psychological and physical well-being. Experiencing trauma is common, with long-term and widespread consequences. Examples of experiences include abuse, emotional abuse, sexual abuse, natural disasters, accidents or witnessing violence.

Adverse childhood experiences (ACEs) are incidents that occur before the age of 18 and have the potential to be traumatizing as defined by the Centers for Disease Control (CDC, 2019). These experiences encompass forms of adversity such as abuse, emotional abuse, sexual abuse, neglect, household dysfunction or exposure to violence. ACEs can exert lifelong consequences on an individual's physical, emotional, and psychological well-being. ACEs can increase an individual's likelihood of developing

chronic illnesses, mental health conditions, and addiction. Heart disease, cancer, diabetes, lung disease, depression, anxiety, and post-traumatic stress disorder (PTSD) are conditions that have been linked to ACEs (Centers for Disease Control [CDC], 2019; Hughes et al., 2017; Merrick et al., 2019).

ACEs and trauma are prevalent. According to the National Council for Mental Well-Being (2022), a large majority, specifically 70%, of individuals within the general population reported experiencing at least one traumatic event in their lifetime. Trauma can profoundly impact an individual, which may lead to the use of substances such as drugs or alcohol as a means of coping. The lead researcher of the original Adverse Childhood Experiences study concluded, “Our findings indicate that the major factor underlying addiction is adverse childhood experiences that have not healed with time and that are overwhelmingly concealed from awareness by shame, secrecy, and social taboo” (Felitti, 2003, p. 8).

Trauma-informed care is an approach that acknowledges the pervasive effects of trauma on people's lives (Substance abuse and Mental Health Services Administration [SAMHSA], 2014). This approach involves adopting a trauma-informed lens that recognizes the impact of trauma on the individual's physical, emotional, and social well-being. Trauma-informed care can potentially mitigate the consequences of trauma and promote resilience among service providers and patients (Baker et al., 2018).

Significance

A wealth of evidence exists regarding the relationship between addiction and trauma, to the extent that the American Society of Addiction Medicine felt compelled to revise its definition of addiction in 2019. The new definition reads: “Addiction is a

treatable, chronic medical disease involving complex interactions among brain circuits, genetics, the environment, and an individual's life experiences" (American Society of Addiction Medicine [ASAM], 2019, p. 2). Recognizing the significance of this connection is essential to developing efficacious care and treatment strategies that holistically address the co-occurring nature of both phenomena. Traditional approaches to treating addictions frequently lack integration of the link between addiction and trauma, leading to incomplete recovery and a greater chance of relapse. By examining how trauma and addiction are related, healthcare professionals can propose better treatment plans that consider both aspects at once.

Trauma-informed care represents a shift in the approach to health care from "what's wrong with you?" to "what happened to you?" (Sweeney et al., 2018, p. 319). Trauma-informed care recognizes the serious repercussions of traumatic incidents on an individual's mental, emotional, and physical health (Holmes et al., 2023). Trauma-informed care further acknowledges how trauma can shape an individual's life. This approach aims to create a safe and supportive environment for those who have experienced trauma by understanding their history and sensitively responding to their needs. Healthcare professionals should stress respect when engaging with patients to uphold their self-determination (Kwame & Petrucka, 2021).

Implementing trauma informed care training can make a difference for healthcare providers themselves. By deepening their understanding and knowledge of trauma, medical professionals can sensitively respond when working with survivors. This training helps them build trust, offer care, and cater to the requirements of individuals dealing with substance use disorders. Moreover, trauma informed care training has been shown to

enhance emotional regulation, empathy, and mindfulness among healthcare providers. By investing in the development of trauma informed care skills for healthcare professionals, organizations can foster an empowering work environment that benefits not patients but also promotes the well-being of their medical staff.

Informed professionals are more likely to notice trauma and respond with empathy and sensitivity, reducing the danger of re-traumatization during treatment (Sweeney et al., 2018). Patients feel noticed and understood, generating a sense of safety essential to healing. This sense of safety improves patient engagement, treatment adherence, and recovery outcomes. Trauma-informed care is beneficial to the organization, the care providers, and the clients (Hales et al., 2018). However, there is often a void between concepts and implementation into practice. In order for this bridge to be crossed, training must occur specifically targeting health personnel to ensure they are adequately equipped with the skills needed to address the needs of the population (Baker et al., 2018; Purtle, 2018).

Problem Statement

There is a universal lack of understanding and sensitivity among healthcare workers when dealing with patients receiving treatment for substance use disorder. Healthcare workers' knowledge and empathy are key to trauma-informed care. Healthcare providers can better connect with patients when they understand trauma and addiction (Grossman et al., 2021). The clinical question that guided this project was "Among staff at an inpatient substance use treatment facility (P), will trauma-informed care training (I) increase knowledge, confidence, and familiarity (C) of trauma-informed care principles(O) within 14 days of implementation (T)".

Needs Assessment

Substance use continues to be a growing public health concern, with 46.3 million people having substance use disorder in 2021 (SAMHSA, 2022). This problem must be addressed systematically to enact change and improve outcomes. From 2019 to 2020 opioid overdose deaths in Mississippi increased by 49% (Stavena et al., 2022). ACEs and trauma are the primary risk factors for the development of substance use disorders. Seventeen percent (17.2%) of Mississippi children (age 0-17) experienced at least two ACEs (United Health Foundation, 2022). As substance use and ACEs continue to be a growing threat to public health, organizations must ensure that they adequately train staff to address these needs.

The chosen DNP project site is a substance abuse treatment facility in North Mississippi that provides substance abuse treatment services to adults. The project site is part of a larger corporation of addiction treatment organizations in California, New Jersey, Nevada, Florida, Texas, Rhode Island, and Massachusetts. This nationwide network allows the facility to serve patients from across the country and the surrounding areas.

Synthesis of Evidence

This literature review explored the current research on trauma-informed care training and its impact on the treatment of substance abuse and addiction. The purpose of the review was to identify trends, gaps in knowledge, and evidence-based approaches to trauma-informed care. A comprehensive literature search was conducted using The University of Southern Mississippi's online library system. PubMed, CINHAL, APA PsychInfo, MEDLINE, and The Cochrane Library were searched using the keywords:

trauma-informed care, adverse childhood experiences, substance abuse OR *addiction, substance abuse treatment, mental health nurses, healthcare professionals* OR *healthcare workers, staff training* OR *employee training* OR *education.*

Except the original ACE study, inclusion criteria included peer-reviewed articles published between 2018 and 2023 and focused on trauma-informed care training, particularly for healthcare professionals. The exclusion criteria for the literature review were sources not published in English, articles that were not peer-reviewed, did not provide full-text access, were published prior to the year 2018, and focused on professions other than health care. The abstracts for all articles were screened for relevance and the inclusion and exclusion criteria were applied.

The Original Adverse Childhood Experiences Study

During the mid-1990's, the Centers for Disease Control partnered with Kaiser Permanente to examine how childhood adversity affect adult outcomes. The influential Adverse Childhood Experiences (ACE) study surveyed over 17,000 individuals regarding their health history and specific childhood experiences. The adverse childhood experiences included in the survey were physical, emotional, or sexual abuse; physical or emotional neglect; and family dysfunction including domestic violence, substance misuse, mental illness, and parental absences due to divorce, separation, or incarceration (CDC, 2019). The results showed a direct "dose-response relationship" exists between ACEs and negative adult outcomes (Felitti et al., 1998).

The Impact of ACEs

Since the original ACE study, research has repeatedly demonstrated that the burden of ACEs can be far reaching and cumulative. ACEs can significantly affect an

individual's physical and mental health as well as their social functioning (Copeland et al., 2018). ACEs are associated with numerous health conditions including heart disease, lung disease, diabetes, and cancer (Merrick et al., 2019; Oh et al., 2018). Additionally, ACEs increase the likelihood of depression, anxiety, addiction, and post-traumatic stress disorder (PTSD) (Oh et al., 2018). Also of note, ACEs are associated with increased engagement in high risk behaviors such as smoking, drug and alcohol use, and becoming sexually active at a young age (Bellis et al., 2019; Copeland et al., 2018; Oh et al., 2018).

ACEs and Substance Use Disorder

The relationship between ACEs and substance use disorders (SUD) has been extensively documented (Bryant et al., 2020, Chang et al., 2019; Felitti et al., 1998; Leza et al., 2021). The interconnection of ACEs and SUD has been attributed to maladaptive coping strategies, poorly regulated stress response, and comorbid mental illness (Chang et al, 2019). These mechanisms increase a person's vulnerability for substance misuse as a means to cope (Racine et al., 2021).

Bryant et al., (2020) found parental substance use to be the most predictive ACE for the development of substance use disorder Higher ACE scores are associated with early onset of use (Felitti et al., 1998), poorer treatment outcomes (Bryant et al., 2020), and higher rates of relapse (Derefinko et al., 2019). Additionally, 85-100% of individuals receiving treatment for addiction report at least one ACE (Chandler et al., 2018; Leza et al., 2021).

Trauma-Informed Care for Addiction

The correlation between trauma and addiction indicates the need for a trauma-informed approach in the treatment of substance use (Bartholow & Huffman, 2021).

Trauma-informed care emphasizes empathy and understanding throughout the organization. This approach requires systematic organizational change that prioritizes trauma-informed practices (Bailey et al., 2018; Bunting et al., 2019). Implementing trauma-informed care in the treatment of addiction can lead to increased retention rates (Hales et al.,2019) and improved relationships between providers and clients (Maguire & Taylor, 2019). The goal of trauma-informed care is create a supportive environment which is sensitive to the unique needs of the clients as well as the staff (Purtle, 2018).

Trauma-Informed Care Training

Staff training is an essential aspect in implementing trauma-informed care. Training programs should focus on increasing staff knowledge and understanding of trauma, its impact on individuals, and trauma-informed practices. According to Purtle (2018), training should address recognizing trauma symptoms, understanding the principles of trauma-informed care, and developing skills to sensitively respond to trauma survivors. To assess the effectiveness and impact of the training, continuous evaluation and monitoring are necessary. Ongoing evaluation includes collecting data on client outcomes, staff satisfaction, and organizational changes to improve and refine trauma-informed care practices (Marchand et al., 2019; Meyer et al., 2019).

No standard curriculum for trauma-informed care education is available. Trauma-informed care training should be tailored to specific populations and settings. Different populations may have unique needs which require specialized training. Training programs should consider cultural sensitivity, diversity, and the specific challenges different populations encounter (Hoysted et al., 2019; Pletcher et al., 2019).

Effectiveness of Trauma-Informed Care Training

Studies have shown that healthcare professionals often report a lack of competence in applying trauma-informed into practice (Lotzin et al., 2019; Stevens et al., 2019). It is important to consider the specific context and needs of the target population when designing and implementing trauma-informed care training programs. A systematic review by Purtle (2018) found that trauma-informed care training programs led to significant improvements in staff knowledge, attitudes, and behaviors related to trauma-informed practice. A study by Hales et al., (2019), found positive changes in workplace satisfaction, climate, procedures, client satisfaction, and the number of planned discharges after implementing trauma-informed care. Training programs on trauma-informed care have been found to enhance the relational capacities of healthcare providers, such as empathy, emotion regulation, and dispositional mindfulness (Fleishman et al., 2019; Hales et al., 2018).

Previous studies have provided training and education through virtual and face-to-face instruction (Purtle, 2018). The length of the training programs has varied widely from study to study, ranging from brief educational sessions to multi-day intensive workshops. Regardless of the duration and delivery format of training, participants report positive benefits and increased knowledge (Hoysted et al., 2019; Maguire & Taylor, 2019; Palfrey et al., 2019; Schmitz et al., 2019).

Rationale

The Substance Abuse and Mental Health Services Administration's (SAMHSA, 2014) Trauma-Informed Approach was developed to establish a common understanding of the concept of trauma that is applicable across various settings and populations. The

trauma-informed approach provides a framework for organizations and systems to effectively address the needs of individuals who have experienced trauma. The framework outlines four assumptions and six principles for trauma-informed care. The assumptions, referred to as the four “R's”, are realize, recognize, respond, and resist re-traumatization. These assumptions are applied to all levels and individuals within an organization, system, or program.

- *Realize* trauma’s widespread prevalence and impact and understand its role in mental health and substance use disorders.
- *Recognize* the signs of trauma through practices such as screening, assessment, and workforce development.
- *Respond* by integrating trauma-informed care principles into policies, procedures, and practices.
- *Resist re-traumatization* of clients and staff by avoiding practices that may inadvertently trigger or exacerbate trauma symptoms.

SAMHSA's (2014) trauma-informed approach adheres to six fundamental principles: safety, trustworthiness and transparency, peer support, collaboration and mutuality, empowerment and choice, and cultural, historical, and gender issues. This approach involves creating a safe, supportive environment free of judgment, stigma, and discrimination. Trauma-informed care acknowledges that culture, history, and gender can shape an individual's experience of trauma and seeks to address these issues in a sensitive and culturally responsive manner. The trauma-informed approach centers on building a relationship of trust, support, and empowerment between the care provider and the individual in need. Trauma-informed care does not solely focus on treating the symptoms

of trauma but prioritizes creating an environment that fosters resilience and promotes recovery.

Implementing SAMHSA's trauma-informed approach involves training healthcare providers and staff to enhance their understanding of trauma and its impact. Trauma-informed care emphasizes the importance of creating a culture of safety, trust, and empowerment in healthcare settings. The approach also recognizes the need for ongoing education, skill development, and support for staff to effectively implement trauma-informed practices.

SAMHSA's trauma-informed approach is supported by evidence of its effectiveness (Purtle, 2018). Studies have shown that trauma-informed care training programs can improve staff knowledge, attitudes, and behaviors related to trauma-informed practice. Trauma-informed care has been associated with improvements in mental health, trauma symptoms, and reductions in substance use and high-risk behaviors among individuals with trauma histories.

Specific Aims

The primary purpose of this project was to increase staff members' knowledge and understanding of the impacts of trauma and trauma-informed care. To fulfill this purpose, the project’s objectives included:

- Develop an educational intervention focusing on the impact and prevalence of trauma on health outcomes, the development of substance use disorders, and the importance of trauma-informed care in the treatment of addiction.
- Evaluate participant pre/post-intervention survey responses.

DNP Essentials

The DNP Essentials are guidelines established by the American Association of Colleges of Nursing (AACN) which define the competencies necessary for Doctor of Nursing Practice (DNP) graduates (2006). Essential I: Scientific Underpinnings for Practice was met by developing the intervention based on evidence obtained in the literature review, using SAMHSA's trauma-informed care approach to guide the project, and through data analysis to evaluate the effectiveness of the intervention. Essential II: Organizational and Systems Leadership for Quality Improvement was achieved by assessing the needs of the project site and designing an intervention that specifically addresses the needs of the site's patient population. Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice was demonstrated through designing an evidence-based educational intervention that promotes safe, patient-centered care. Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care was met by utilizing online databases to conduct the literature review and by using technology for the development, delivery, and analysis of intervention. Essential V: Health Care Policy and Advocacy in Health Care was achieved by developing and implementing a staff education intervention that advocates for improved patient outcomes in the treatment of substance use disorder. Essential VI: Inter-professional Collaboration for Improving Patient and Population Health Outcomes was demonstrated through effective collaboration with project site stakeholders through the development and implementation of the DNP project. Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health was met by analysis of substance use population data and implementing education to address

gaps in care for the treatment of addiction. Finally, Essential VIII: Advanced Nursing Practice was achieved by demonstrating advanced systems thinking in the development and evaluation of an evidenced-based educational intervention that can improve patient outcomes.

Summary

Healthcare professionals should understand how trauma impacts people and learn how to discuss these topics duly while being gentle and proficient at the same time. The literature supports the need for increased training and education on trauma-informed care in healthcare settings. Overall, evidence-based practice for trauma-informed care training involves comprehensive staff training, organizational commitment, interdisciplinary collaboration, ongoing evaluation, and tailoring the training to specific populations and settings. By implementing these practices, healthcare providers can enhance their ability to provide compassionate and effective care to trauma survivors.

CHAPTER II – METHODOLOGY

The purpose of this chapter was to describe the methodology of this DNP project, which evaluated the effectiveness of an educational intervention delivered to staff at an inpatient substance use treatment facility. A facility needs assessment revealed an absence of employee training and education on trauma-informed care principles. The intervention was developed to provide foundational knowledge on the impact of adverse childhood experiences and trauma on an individual's health, the development of substance use, and the importance of implementing trauma-informed care in addiction medicine.

Population and Setting

The population of interest included employees at an inpatient substance abuse treatment facility that provided direct patient care. Disciplines invited to participate included RNs, LPNs, APRNs, therapists, case managers, and treatment advocates. Participants were included if they were at least 21 years old, and employed as a nurse practitioner, registered nurse, licensed practical nurse, treatment advocate, therapist, or case manager. Exclusion criteria included employees less than 21 years old and those who did not provide direct patient care. The Principal Investigator (PI) for this DNP project was responsible for obtaining the contact list for included employees at the study site. This project used a voluntary convenience sampling method. 114 employees were invited to participate.

Intervention

The educational content presented during the training was determined by the DNP student based on evidence obtained during the literature review. The presentation

included an overview of trauma and its impact, ACEs and toxic stress, substance use disorder, SAMHSA's trauma-informed approach, and the benefits of implementing trauma-informed care. The content explained the connection between trauma, adversity, and substance use disorder. A multimodal PowerPoint presentation was developed by the DNP student and saved as a 27-minute video.

Recruitment and Consent

Qualtrics® was used to develop and distribute the surveys. Recruitment for the project was conducted through the use of email invitations. The recruitment emails contained a link to complete the consent form and the demographic and pre-curriculum surveys. Invitations to participate, including an introduction to the project, were sent to facility staff on day one of implementation. The invitation to participate was available for seven days and a reminder email was sent on day six. Before completing the demographic and pre-intervention survey, participants read the consent form and check a box to indicate their consent to participate in the study or to opt-out. After consenting they were directed to complete the demographic survey and pre-curriculum survey.

On day eight of implementation, participants who consented to participate received an email with links to view the video presentation and the post-intervention survey. Participants had seven days to watch the video and complete the post-curriculum survey. A reminder email was sent on day thirteen and data collection concluded on day fourteen.

Study of the Intervention

This DNP project used a single group pre-/post design using electronic surveys distributed before and immediately after the educational intervention. The surveys

assessed the participant's knowledge, familiarity, and confidence in trauma-informed care principles. Subjective feedback regarding the effectiveness of the training was also collected. A mixed methods approach was used to evaluate the impact of the intervention.

Measures

To measure the outcomes of the intervention, surveys developed by the DNP students were used. (Appendices A-C) The demographic questionnaire included eight questions about participant gender, age, race/ethnicity, job title/discipline, years of experience in the role, and years with the organization. The pre-/post questionnaires contained nine Likert scale questions with five possible answers designed to assess the participant's knowledge and awareness about the impact of trauma and adverse childhood experiences, and their confidence in providing trauma-informed care. The pretest has one yes/no question regarding prior trauma-informed care training. The post-assessment had three additional multiple-choice questions, and two open-ended questions to elicit feedback assessing the participant's satisfaction with the presentation, the appropriateness of the content, and if they believed that the training was helpful. Space was also available for additional comments.

Analysis

A combination of quantitative and qualitative methods was utilized in the data analysis. Descriptive statistics were used to evaluate the pre- and post-intervention survey and content analysis was used to analyze the open-ended questions on the post-survey. A paired sample *t*-test was conducted to compare the pre-education and post-survey responses. This information was used to determine the impact of the intervention.

Ethical Considerations

The project site does not have an Institutional Review Board (IRB) and approval of the project was granted by the company's CEO and a letter of support was provided (Appendix D). The facility's Director of Nursing and the Clinical Director reviewed and approved the educational training before implementation. Approval from The University of Southern Mississippi's IRB was received prior to implementing the intervention (Protocol #23-0627). All participants were educated regarding informed consent, the pre-test, and the post-test surveys. To ensure the confidentiality and privacy of participants, all electronic data was stored within Qualtrics and deleted after project dissemination.

Summary

This chapter addressed the design and methodology used in the DNP project. The link between theory and practice in addiction medicine has long needed strengthening. This project's focus on trauma-informed care staff training's practical benefit helps close this gap. This DNP project provided healthcare providers and organizations with practical insights by rooting research in clinical practice.

CHAPTER III – RESULTS

The purpose of this DNP project was to evaluate the effectiveness of staff training in trauma-informed care. This chapter presents the results of the data analysis, including the quantitative survey results and answers to the open-ended qualitative questions. The paired t-test was used to evaluate the mean differences of the survey responses before and after the intervention. Demographic data is described, and key findings are highlighted.

Sample

A total of 114 employees met the inclusion criteria and were invited to participate in this project. 26 individuals completed the consent form, demographic survey, and the pre-intervention questionnaire. At the conclusion of the data collection period, 12 participants completed the project in full, yielding a 10.5% participation rate. Only respondents who completed all components of the intervention were included in the analysis.

Nurses (RN/LPN) represented the highest proportion of respondents (67%). Most of the participants were women (83%), white (92%), and employed full-time (92%). Over half of the participants (58%) reported some previous trauma-informed care training, and the remainder (42%) reported no prior training. The details of the participant demographics are displayed in Table 1.

Analysis of Findings

The paired t-test was utilized to compare mean differences in the pre- and post-intervention survey responses. The responses were measured on a 5-point Likert scale. Questions were grouped into three sub-scales to examine the participant's self-rated

knowledge, familiarity, and confidence in applying trauma-informed care principles into practice. The results for the overall survey results and each sub-scale were evaluated.

Table 1

Sample Demographics

Demographic Characteristics	*n=12*	%
Gender		
Male	*2*	16.67
Female	*10*	83.3
Age		
21-30	*4*	33.3
31-40	*2*	16.67
41-50	*2*	16.67
51-60	*3*	25
61+	*1*	8.33
Race		
White	*11*	91.67
Asian	*1*	8.33
Employment		
Full-time	*11*	91.67
PRN	*1*	8.33
Discipline		
RN/LPN	*8*	66.67
APRN	*1*	8.33
Treatment Advocate	*3*	25
Years in Current Discipline		
1-5	*4*	33.33
6-10	*3*	25
11-20	*3*	25
20+	*2*	16.67
Years Employed at Facility		
Less than 1 year	*5*	41.67
1-4	*4*	33.33
5-9	*3*	25

A paired sample t-test assumes that the data is continuous (interval/ratio), the observations are normally distributed and do not contain any outliers. Shapiro-Wilk tests

were conducted in order to determine whether the distributions of pre- and post-surveys were significantly different from a normal distribution. The results were not significant based on an alpha of .05, indicating that the normality assumption was met. The results are presented in Table 2. A box plot was used to visualize data and identify outliers. Outliers can bias the results and cause a disproportionate analysis of the data, leading to misinterpretation (Fein et al., 2022). The box plot is displayed in Figure 1

Table 2

Shapiro-Wilk Test Results

Variable	*W*	*p*
Pre-Survey	0.94	.488
Post-Survey	0.90	.147

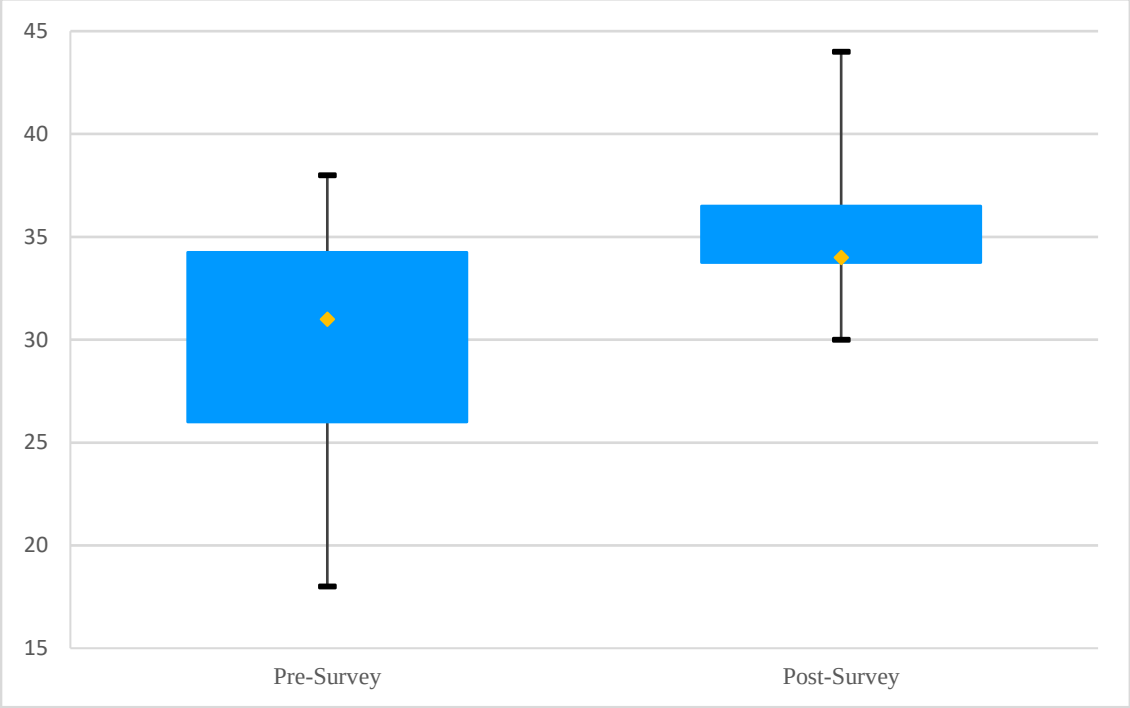

Figure 1. Box Plot of Pre- and Post-Survey Responses.

Paired t-test Results

A paired samples t-test showed a significant difference between the the pre-survey (*M*=29.58, *SD*=6.47) and the post-survey (*M*=35.42, *SD*=5.18). The paired t-test results of the sub-scales found a significant difference in pre-survey knowledge (*M*=10.58, *SD*=1.51) and post-survey (*M*=12.58, *SD*=1.62); and pre-survey familiarity (*M*=8.00, *SD*=2.92) and post-survey familiarity (*M*=10.50, *SD*=2.47). There was not a significant difference found between the pre-survey (*M*=11.00, *SD*=2.59) and the post-survey (M=12.33, SD=1.56) for the confidence sub-scale. Detailed paired t-test results are displayed in Table 3. The alpha value for all tests was 0.5. Effect size is measured using Cohen's *d (0.2=small, 0.5=medium, 0.8+=large).* Bar charts of the pre- and post-survey results are displayed in Figures 2 and 3.

Table 3

Paired T-test Results

	Pre-		Post-				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
Knowledge	10.58	1.51	12.58	1.62	-6.14	<.001**	1.77
Familiarity	8.00	2.92	10.50	2.47	-2.59	.025**	0.75
Confidence	11.00	2.59	12.33	1.56	-1.73	.112	0.50
Overall	29.58	6.47	35.42	5.18	-3.17	.009**	0.91

Note. N = 12. Degrees of Freedom for the t-statistic = 11. d represents Cohen's d. *= p<00.5; **= p<0.01

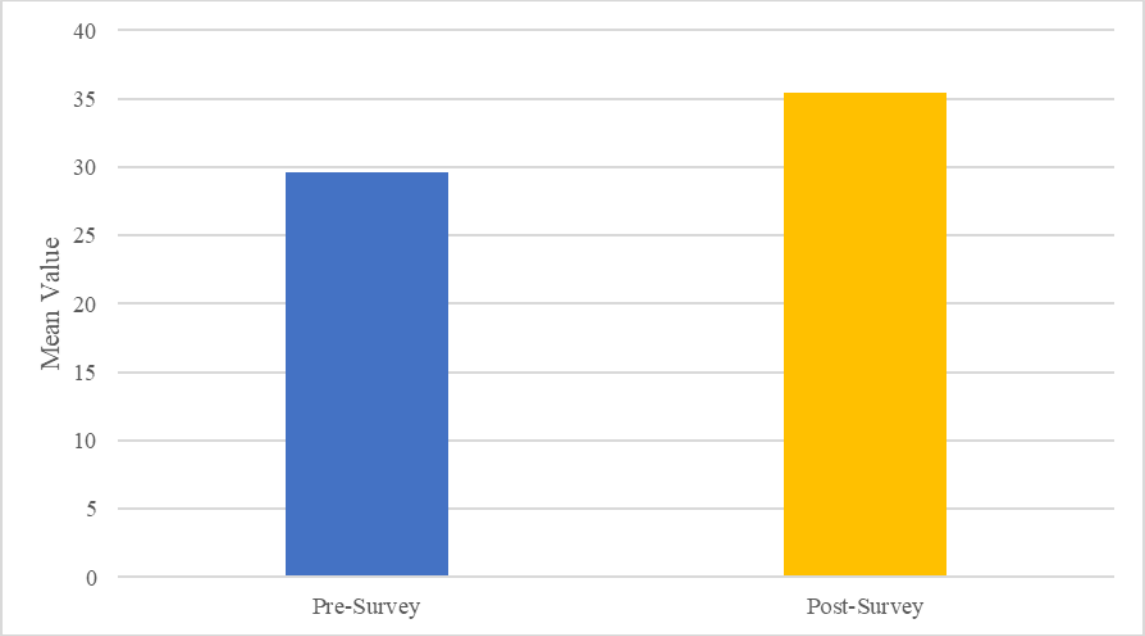

Figure 2. Pre- and Post-Survey Results.

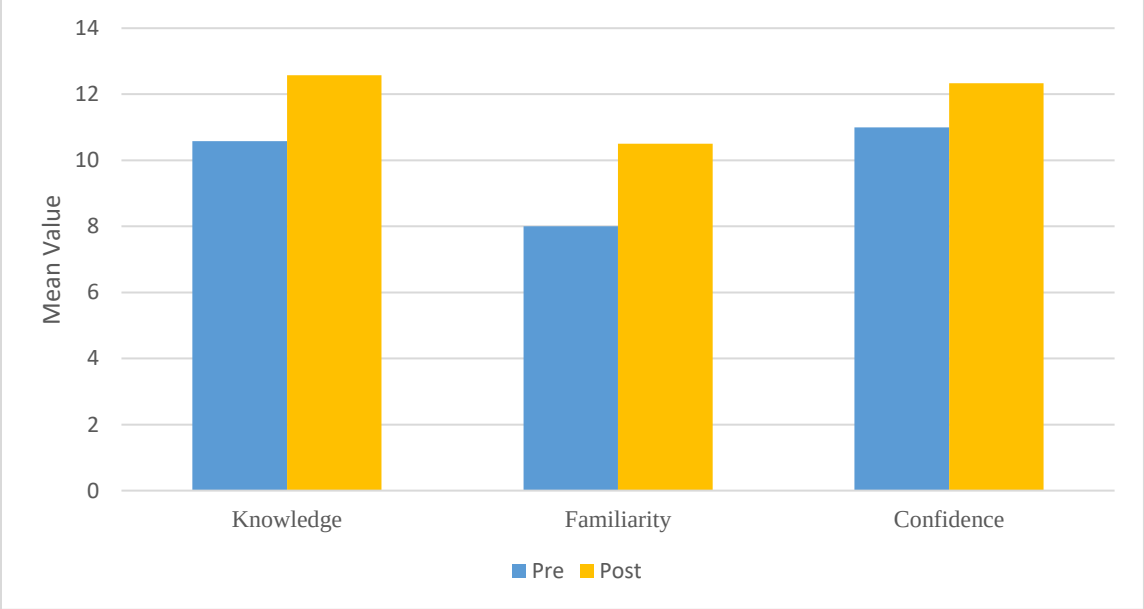

Figure 3. Pre- and Post-Survey Sub-scale Results.

Subjective Feedback of Education

Questions 10-15 on the post-test survey examined the participant's assessment of the education. Questions 10 and 11 were measured using a 5-point Likert scale and

question 12 was measured using a dichotomous scale. Nine individuals (75%) reported being “very satisfied” with the training presentation and eleven participants (92%) reported increased knowledge and understanding as a result of the education. All participants felt that the content was appropriate to their clinical setting. Questions 10-12 were analyzed using descriptive statistics and are detailed in Table 4.

Table 4

Subjective Feedback

Question	Response	*f* (%)
10. How satisfied are you with the training presentation?	Very satisfied	9 (75%)
	Somewhat satisfied	2 (17%)
	Neutral	1 (8%)
11. Do you think that the training increased your knowledge of the impact of trauma and trauma-informed care?	Definitely yes	11 (92%)
	Probably yes	1 (8%)
12. Was the content appropriate to your clinical setting?	Yes	12 (100%)

Questions 13 and 14 on the post-survey were optional open-ended questions and question 15 allowed for additional comments or feedback. Nine participants answered questions 13 and 14 and four provided additional comments on question 15. Content analysis was used to analyze open-ended question responses and feedback. When asked to describe what they liked most about the presentation, participants felt that it was “very informative”, and “well presented”, and appreciated the way in which the information was explained and “broken down”. When asked to describe what they disliked about the presentation, a majority of the respondents stated “nothing”. One respondent stated that it

would have been helpful to provide resources for additional information and training, and another respondent felt that the “mono-tone voice” of the narration was distracting.

When given the opportunity to provide additional feedback or comments, participants’ reactions were positive. One individual stated, “I really enjoyed this presentation. Anyone working in behavioral health would benefit from Adverse Childhood Experiences training”. Another participant commented, “I thought it was very informative and needs to be put into practice. Nurses need to be more aware of what they are dealing with.”

Summary

Overall, the paired t-test demonstrated a statistically significant increase in the survey scores after viewing the educational intervention. Specifically, there was an increase in the composite score and the sub-scales assessing knowledge and familiarity with the content; there was no significant difference observed in the confidence sub-scale. These findings illustrate that the educational presentation improved participants' understanding of trauma and trauma-informed care.

CHAPTER IV – DISCUSSION

The purpose of this DNP project was to increase knowledge of trauma and trauma-informed care for employees at an inpatient substance use treatment facility. To achieve the project's purpose, an educational presentation was developed, implemented, and analyzed to determine its effectiveness. Examining what methods work best will create evidence-based strategies tailored specifically to those who would need them when dealing with addictions and traumas together. Analysis of the paired t-tests demonstrated that the training effectively improved the participant's understanding of trauma-informed care. Specifically, the sub-scales of knowledge and familiarity, as well as the composite score showed a statistically significant increase after viewing the education. There was an increase in the confidence sub-scale but was determined by analysis to not be statistically significant.

One surprising finding of this investigation was the lack of a correlation between prior trauma-informed care training and participant discipline and years of experience. For example, the study included one APRN with six to ten years of experience who reported "no prior training", but two RNs/LPNs with one to five years of experience reported "some training". The small sample size could have contributed to this result.

Limitations

Limitations include the small sample size and limited diversity of the participants. The small sample size decreases the external validity of the project. A majority of the participants were nurses (67%), female (83%), and white (92%). The lack of diversity limited the generalizability of the findings. Another limitation of this study is the project design. The evidence that this DNP project provides is weaker due to the lack of a control

group and randomization. Additionally, the study relied on self-report measures to assess participant knowledge and familiarity with trauma and trauma-informed care, which may be subject to social desirability bias. Lastly, it is also important to note that the study was conducted at a single inpatient substance use treatment facility, which may limit the applicability of the findings to other settings.

Conclusion

Overall, the outcomes indicate that implementing staff training on trauma-informed care is effective. This DNP project addressed the need for trauma-informed care training, staff education to improve patient outcomes, and integration of addiction medicine research and practice. The project improved trauma-informed care understanding and knowledge among the personnel who participated. The instructional session gave employees foundational knowledge about knowledge and tools to be more sensitive to patients' trauma. These findings demonstrate the importance of customized training programs in creating a compassionate and competent addiction treatment environment. Trauma-informed care is highlighted in this capstone project, which advances health care and addiction medicine. The DNP project’s emphasis on practical implementation promotes continuous development in addiction treatment settings and improves understanding of how educational interventions might apply theoretical concepts to real-world healthcare settings. The findings contribute to the growing body of evidence supporting the integration of trauma-informed care principles into addiction medicine.

Implications for Future Practice

Best practice guidelines that address the training and education of healthcare workers on trauma-informed care are needed. Training healthcare providers is crucial for the successful implementation of trauma-informed practices, but there is a lack of standardized training programs and guidelines that outline the core competencies and skills needed for trauma-informed care (Fleishman et al., 2019; Purtle, 2018). While existing guidelines have made important contributions to trauma-informed care, there are still gaps and areas for improvement. Future guidelines should aim to provide comprehensive and standardized recommendations for different populations and healthcare settings, address training and education needs, and guide organizational and systemic changes to support trauma-informed care.

Trauma, addiction, and health care must be explored moving forward. Relapse rates, mental health improvements, and overall well-being could be studied in the long run to determine how trauma-informed care affects patient outcomes. To implement trauma-informed treatment, healthcare organizations should prioritize staff training. Through workshops, seminars, and professional development, staff can stay current on industry trends and best practices. Trauma-informed care should also be integrated into policy formation and organizational culture to provide complete and sustainable patient care. Understanding trauma, treating its association with addiction, and equipping healthcare staff with the correct tools enhance care and promote a more holistic healing process.

APPENDIX A – Demographic Survey

1. What is your Gender?
    - Male
    - Female
    - Other
2. What is your age?
    - 21-30
    - 31-40
    - 41-50
    - 51-60
    - 61+
3. What is your ethnicity?
    - Hispanic or Latino
    - Not Hispanic or Latino
4. How would you describe yourself?
    - White
    - Black of African American
    - American Indian or Alaskan Native
    - Asian
    - Pacific Islander
    - Middle Eastern
    - Other (please describe):
5. What is your current employment status?
    - Full time
    - Part-time
    - PRN
6. What is your job title/discipline?
    - RN or LPN
    - Advanced Practice Nurse
    - Therapist
    - Case Manager
    - Treatment Advocate
7. Years of experience in current discipline:
    - 1-5
    - 6-10
    - 11-15
    - 16-20
    - 20+
8. Years at facility:
    - Less than 1 year
    - 1-4
    - 5-9
    - 10+

APPENDIX B – Pre-Intervention Survey

1. How familiar are you with trauma-informed care?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

2. How important is trauma-informed care in your clinical setting?
    - Not at all important
    - Somewhat important
    - Moderately important
    - Very important
    - Extremely important

3. How confident are you in your ability to practice trauma-informed care?
    - Not at all confident
    - Somewhat confident
    - Moderately confident
    - Very confident
    - Extremely confident

4. How knowledgeable are you about how trauma affects the brain?
    - Not at all knowledgeable
    - Somewhat knowledgeable
    - Moderately knowledgeable
    - Very knowledgeable
    - Extremely knowledgeable

5. How familiar are you with the Adverse Childhood Experiences (ACEs) study?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

6. I understand the impact of adverse childhood experiences (ACEs) across the lifespan.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

7. How familiar are you with the long-term physical and behavioral effects of ACEs?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

8. How knowledgeable are you about the connection between ACEs, trauma, and substance use disorder?
    - Not at all knowledgeable
    - Somewhat knowledgeable
    - Moderately knowledgeable
    - Very knowledgeable
    - Extremely knowledgeable

9. I can define trauma and traumatic stress.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

10. What previous training have you had in trauma-informed care?
    - No training
    - Some training
    - Extensive training

APPENDIX C – Post-Intervention Survey

1. How familiar are you with trauma-informed care?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

2. How important is trauma-informed care in your clinical setting?
    - Not at all important
    - Somewhat important
    - Moderately important
    - Very important
    - Extremely important

3. How confident are you in your ability to practice trauma-informed care?
    - Not at all confident
    - Somewhat confident
    - Moderately confident
    - Very confident
    - Extremely confident

4. How knowledgeable are you about how trauma affects the brain?
    - Not at all knowledgeable
    - Somewhat knowledgeable
    - Moderately knowledgeable
    - Very knowledgeable
    - Extremely knowledgeable

5. How familiar are you with the Adverse Childhood Experiences (ACEs) study?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

6. I understand the impact of adverse childhood experiences (ACEs) across the lifespan.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

7. How familiar are you with the long-term physical and behavioral effects of ACEs?
    - Not at all familiar
    - Somewhat familiar
    - Moderately familiar
    - Very familiar
    - Extremely familiar

8. How knowledgeable are you about the connection between ACEs, trauma, and substance use disorder?
    - Not at all knowledgeable
    - Somewhat knowledgeable
    - Moderately knowledgeable
    - Very knowledgeable
    - Extremely knowledgeable

9. I can define trauma and traumatic stress.
    - Strongly disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly agree

10. How satisfied are you with the training presentation?
    - Very satisfied
    - Somewhat satisfied
    - Neutral
    - Somewhat dissatisfied
    - Very dissatisfied

11. Do you think that this training has increased your knowledge on the impacts of trauma and trauma-informed care?
    - Definitely not
    - Probably not
    - Unsure
    - Probably yes
    - Definitely yes

12. Was the content of the training appropriate to your clinical setting?
    - Yes
    - No

13. What did you like most about the training presentation?

14. What did you dislike about the training presentation?

15. Please list any additional comments or feedback.

APPENDIX D – Letter of Support

Oxford Treatment Center

People Who Care. An Approach That Works.

[redacted]

[redacted]

The University of Mississippi
Institutional Review Board

I am writing this letter to commit support for Brandy Hood's proposal to provide ACE training for Oxford Treatment Center staff through her Doctor of Nursing Practice Program at the University of Southern Mississippi. As a behavioral health facility specializing in the treatment of substance use disorder, our staff could greatly benefit from trauma-informed training.

Oxford Treatment Center will support in the following ways:

1) Our staff and administration will participate in a focus group to provide feedback to determine the most appropriate means for training to occur.
2) If desired, we will review the initial stages of the adapted content.
3) I will also encourage our facility employees to attend the IRB sanctioned activities.

As CEO of Oxford Treatment Center, I would like fully support Brandy Hood to achieve her academic endeavor in this clinical practice project. I look forward to hearing the results of this study and the implications for clinical practice. I understand that participation by facility staff members is completely anonymous and voluntary. There is no compensation for their participation. I understand that this letter of support will be included in the University of Southern Mississippi Institutional Review Board (IRB) application and the planned dates are within 30 days of receiving USM IRB approval.

If there is any other information you should need, please do not hesitate to contact me.

Sincerely,

[redacted]

Oxford Treatment Center

APPENDIX E – IRB Approval Letter

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI using the Incident form available in InfoEd.
- The period of approval is twelve months. If a project will exceed twelve months, a request should be submitted to ORI using the Renewal form available in InfoEd prior to the expiration date.

PROTOCOL NUMBER:	23-0627
PROJECT TITLE:	Effectiveness of Staff Training on Trauma-Informed Care
SCHOOL/PROGRAM	School of Leadership & Advance Nursing Practice
RESEARCHERS:	PI: Brandy Hood Investigators: Hood, Brandy~Coleman, Carolyn~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	10-Aug-2023 to 09-Aug-2024

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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