ABSTRACT

COLLINS, TRACI PULLIAM. Medical Trauma: An Exploratory Study of Life-Threatening Illness, Abuse, and Adverse Experiences within the United States. (Under the direction of Dr. Stanley Baker).

In the mental health field, a traumatic event has historically been understood as one that harms the psychological integrity of an individual through acts of physical violence, sexual abuse and assault, psychological and emotional abuse, exposure to war and violence, and other life-threatening incidents. More recent integrative studies have established the significance of the body and mind connection, yet little research has examined the experiences of psychological harm from traumatic medical events. In this exploratory study, the researcher examined the medical trauma experiences of a sample of adults in the United States. Medical trauma is defined as a medical event or experience that harms the psychological integrity of the individual. The literature was reviewed, and existing terminology identified, leading to medical trauma categories of illness/diagnosis/diagnosis, adverse events, and abuse. A nationally representative sample was collected using Prolific recruitment services, generating 301 participants. All participants completed the online survey in Qualtrics and were compensated for their participation. The survey included the following measures in the respective order: demographic information, generalized anxiety disorder (GAD-7), patient health questionnaire (PHQ-9), patient health questionnaire (PHQ-15), dissociative experiences scale brief (DES-B), brief trauma questionnaire (BTQ), medical trauma experiences (MTE) checklist, health conditions checklist, impact of events scale (IES-R). Data was imported into SPSS v29.0 for analysis, using Cronbach's alpha, Fisher's Exact test, independent sample *t*-test, Person's *r*, and linear regression analysis. MTE were reported with the following frequency from the sample: illness (*n* = 74, 24.6%), abuse (*n* = 97, 32.2%), and adverse events (*n* = 79, 26.2%). The types of abuse

reported were as follows: sexual (n = 25, 8.3%), physical (n = 19, 6.3 %), emotional, (n = 82, 27.2%), and consent violation (n = 20, 6.3%). Significant relationships were found with the following demographic groups. Medical abuse was significantly associated with gender, ethnicity, and employment. Medical illness was significantly associated with relationship status and employment. Medical adverse events were significantly associated with ethnicity, relationship status, and community size. The mean scores were found significantly different between participants who reported one or more MTE and those participants who reported none for symptom severity measures: GAD-7, PHQ-9, PHQ-15, and DES-B. A multiple linear regression model indicted that both abuse and adverse events were significant predictors of IES-R (PTSD symptoms) when controlling for previous trauma exposure, and life-threatening illness was not a significant predictor of IES-R (PTSD symptoms). Inferences regarding the occurrence of medical trauma experiences that can be drawn from this random sample are as follows: abuse and adverse events may happen at a more frequent rate than life-threatening illness, and abuse and adverse events may lead to higher rates of PTSD than illness. Future research is needed to explore the occurrence with a larger sample and explore the psychological harm related to discrimination and institutional betrayal.

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Medical Trauma: An Exploratory Study of Life-Threatening Illness, Abuse, and Adverse Experiences within the United States

by
Traci Pulliam Collins

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APPROVED BY:

_____	_____
Dr. Stanley B. Baker Committee Chair	Dr. Marc A. Grimmett
_____	_____
Dr. Helen Lupton-Smith	Dr. Angela C. Smith

BIOGRAPHY

Traci Collins is a doctoral student at North Carolina State University in the counseling department. She received her undergraduate degree at the University of North Carolina at Greensboro in psychology and pre-medicine. She received a master's degree in clinical mental health counseling at the University of North Carolina at Greensboro in 2011. She currently practices as a clinician in Greensboro, North Carolina.

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CHAPTER 1

Introduction

Approximately 82% of adults and 91% of children had contact with a healthcare professional over the course of a year (Center for Disease Control and Prevention [CDC], 2021), totaling 1 billion physician office visits (CDC, 2020). Americans made approximately 131 million visits to the emergency room, with approximately 38 million of those visits related to injuries from accidents (CDC, 2020). Here in the United States alone, in every minute that passes, one person will have a heart attack, nearly two people will have a stroke, 78 people will go to the emergency room, and three people will learn that they have cancer (M. Hall & S. Hall, 2017).

While the number of medical experiences is surprising, the psychological implications of those experiences are even more astounding for mental health professionals. Unfortunately, the psychological needs of medical patients have not been a focus of traditional medical models. A conventional, allopathic model of treatment has dominated the medical system in America, addressing symptoms and diseases, using drugs, radiation, or surgery (National Cancer Institute, 2017). Medical patients are growing frustrated with medical care that dehumanizes and at times traumatizes them, and they are seeking alternative treatments that are more holistic (Austad & Gendron, 2018). In 2012, data from a national health survey conducted by the National Center for Health Statistics indicated that approximately 59 million Americans spent more than $30 billion dollars out of pocket on alternative health care (Austad & Gendron, 2018; Clarke et al., 2015).

In the medical field, the psychological consequences of medical interventions have received growing attention since the birth of the biopsychosocial revolution. In 1977, Engel

wrote a pivotal article calling for a new medical model that did not solely focus on the body and the biological factors. He challenged traditional thinking, claiming that disease stems from an interaction of multiple mechanisms: biological, psychological, and social factors. Using a biopsychosocial model, the subject of science became—*the patient*—leading medicine to become more humanistic (Smith, 2002). While this integrationism of American medicine has been underway (Austad & Gendron, 2018; National Center for Complementary and Integrative Health, 2017), the psychological implications of medical experiences still go largely undetected and unaddressed by the medical and mental health professions. For some patients, the medical experiences leave lasting psychological consequences, resulting in medical trauma and post-traumatic stress disorder.

A Brief Historical Overview of the Quality of Medical Care

The institutional and political agendas in America have bearing on the individual's experiences with the medical care system. Over the past 20 years, several organizations (Agency for Healthcare Research and Quality, 2016; Institute of Medicine, 2000; World Health Organization, 2018) and political movements (Rosenbaum, 2011) have brought attention to the quality of healthcare and the importance of the patients' medical experiences.

On the political level, President Barack Obama signed the Health Reform Bill in 2010, also known as the Patient Protection and Affordable Care Act (referred to as the Affordable Care Act) or "Obamacare." While most notably the Affordable Care Act supported expanded health care coverage to nearly 32 million Americans who were uninsured (Jackson & Nolen, 2010), the practices and standards in the healthcare industry were called into question, challenging the quality of healthcare in America. Each of these organizational and political movements revealed several common issues in the health care system—medical errors are happening at alarming rates

and at times patients experience medical care that is not safe, patient-centered, equitable and culturally sensitive. As Brueemann et al. (2012) state—medical care with correct procedures (without medical error) can have negative consequences for patients.

When "Safe" People Cause Harm

One of the core professional values of the counseling profession is *nonmaleficence* or *do no harm* (American Counseling Association, 2014). Counselors have empirically examined when psychological treatments cause harm, with hundreds of publications citing Lilienfeld's (2007) flagship article, "Psychological Treatments that Cause Harm" (Wendt et al., 2015). In parallel, the medical profession shares a similar founding principle of *do no harm,* and medical researchers have published numerous articles considering the psychological impact of medical treatment. However, the counseling profession has limited, sparse research on the psychological harm from medical treatment. A counseling perspective can provide a unique, holistic approach to this topic that tunes into the individuals 'needs with an empathic foundation and considers the inequalities and institutional barriers with a social justice framework.

Medical Trauma

The word *trauma* is commonly used in our culture today to describe a deeply distressing or disturbing experience, with the first recorded use of the word dating back to the 1600s meaning *wound* (Hall & Hall, 2017). A traumatic event has been historically understood as those that harm the psychological integrity of an individual (International Society for the Study of Trauma and Dissociation [ISSTD], 2018). The stressful event or experience in itself is not traumatic, but the effects on a particular individual may be so (ISSTD, 2018). Therefore, not every person that experiences a particular stressful or disturbing event will be traumatized or develop acute stress disorder, post-traumatic stress disorder (Breslau, 2001; ISSTD, 2018;

Kessler et al., 1995; Yehuda, 2002), or other trauma-related disorder. The *wounding* is subjective, and if a person experiences a medical event as traumatic then it is *medical trauma* (Hall & Hall, 2017).

Medical trauma involves the mind and body, falling across professional lines of the medical field and the mental health field. Relevant information and research findings for medical trauma originate from different sources of knowledge or areas of academic inquiry, such as medical research and practice, integrative care, psychology, social work, counseling, public health, and law. Each profession has unique ethical codes, terminology, concepts, political agenda, and empirical foci. On one hand, the many academic perspectives could lead to collaboration and partnership, addressing medical trauma or any other issue with a diverse, integrative effort. On the other hand, the many academic perspectives could result in a lack of clarity. With terminology differences and a lack of cohesion, the resulting body of medical trauma literature makes the interpretation of the findings difficult to compile into useful, transferable data that speaks to researchers, practitioners, educators, and so on.

Defining Medical Trauma

The counseling literature includes few resources focused on medical trauma. Hall and Hall (2013) published an introductory article entitled, "When treatment becomes trauma: Defining, preventing, and transforming medical trauma," following a conference presentation. In 2017, Hall and Hall published a book, *Managing the psychological impact of medical trauma*. They noted the lack of counseling research on the psychological effects of medical trauma and the absence of a general working definition, which they later defined as the following:

> Medical trauma is a trauma that occurs from direct contact with the medical setting, and develops through a complex interaction between the patient, medical staff, medical

> environment, and the diagnostic and/or procedural experience that can have powerful psychological impacts due to the patient's unique interpretation of the event (p.19).

When considering these two definitions (1) the definition provided by Hall and Hall and (2) the general trauma description provided by ISSTD (2018)—a traumatic event has been historically understood as those that harm the psychological integrity of an individual, a concise definition would be most appropriate for the purposes of this study. Therefore, applied to medical trauma, a *medical trauma* is a medical event or experience that harms the psychological integrity of the individual. Medical events or experiences can be understood as direct or indirect contact (i.e., watching the medical experience of another person) with the medical setting (e.g., doctor's office, exam room, surgical room, hospital, ambulance).

Classifying Medical Trauma

The potential medical experiences and the psychological outcomes of those experiences is quite broad. For the purposes of this study, the medical experiences can be better understood categorized as the following types of medical trauma experiences (MTE), which are informed by the existing empirical research articles and terminology: (a) illness/diagnosis (b) abuse (c) adverse events, (d) institutional betrayal, and (e) discrimination.

Illness

Illness/diagnosis medical trauma is initiated by a physical illness or health condition, such as cancer, stroke, or a heart attack (Cordova et al., 2017; Edmondson & von Känel, 2017; Moye & Rouse, 2014; Sommer & Edmondson, 2018). While trauma includes complex internal and external factors, most traumatic experiences are external in nature (e.g., physical violence sexual abuse, car accident). Illness medical trauma is uniquely an internal experience (e.g., a heart attack, cancer). Illness medical trauma research is in its early years, with the majority of

studies examining samples of patients with specific illnesses and limited generalizability (Sommer et al., 2018).

Medical Abuse

For the purposes of this study, the term *medical abuse* is defined as harm and suffering inflicted physically, sexually, emotionally, and psychologically by a medical worker in a medical setting. The existing research articles and general information regarding medical abuse is quite sparse. Most of the existing documentation includes sexual abuse by medical professionals (Disch, & Avery, 2001; Rape, Abuse & Incest National Network [Rainn], 2023, March 27) or the intersection of medical abuse and racism.

Adverse Events

The Institute of Medicine published a call to action in 2000 that acknowledged the shocking realties of medical error and the need for safer medical care, which ultimately increased the empirical focus on medical error and adverse events. Adverse events are harmful or negative outcomes during or following medical care. Adverse events are associated with medical error and can be preventable or unpreventable (Kuriakose et al., 2020). Other researchers have investigated similar concepts of medical mistreatment (Gilstad-Hayden et al., 2015), patient dissatisfaction (Brüggemann et al., 2012), and medical malpractice (Allen, 2021). A massive literature review and meta-anaylsis would be required to support continuity in the terminology, which is out of the scope of this study.

Institutional Betrayal

To examine the medical trauma experiences of individuals, it is essential to stop and consider systemic level influences and factors. Extending outward from an individual perspective to a systemic perspective often challenges the status quo of research practices (Smith & Freyd, 2014). Smith and Freyd (2014) connected the systemic issues in the medical system to the

individual experiences of trauma in their introduction of the term and concept *institutional betrayal*, which is born out of betrayal trauma theory (Freyd, 1996) and describes the institutional action and inaction that exacerbates the impact of traumatic experiences. Acknowledging the societal elevation of institutions such as the institution of medicine brings to light the power that position bestows, in this case to obscure the potential to perpetrate or facilitate abuse (Smith & Freyd, 2014). Additionally, internal conflicts are facilitated by the dichotomies presented by institutions. Institutions operate with power and fear and then create trust and dependency that mirrors primary relationships (Parent & Bannon, 2012; Smith & Freyd, 2014), which can lead to the internal conflict—staying in the institution means enduring more abuse but reporting abuse means losing an important relationship (Smith, 2017).

Discrimination

Extant research indicates socioeconomic status, gender, racial, ethnic, and cultural differences in medical experiences. With seeking medical treatment, Hispanic populations were found to be the least likely to do so, with 42% not visiting a doctor in a year (United States Census Bureau, 2012). There are also differences in the type, quality and safety of care when compared to White counterparts. Researchers have empirically investigated numerous cases of individual discrimination by medical professionals (e.g., Feagin & Bennefield, 2014; Williams & Mohammed, 2009). This research documents countless differences in health care treatment and outcomes for Americans of color. For example, African American women are at greater risk for mortality than White women in several instances. African American women are less likely to develop breast cancer than White women; however, African American women are much more likely to die of breast cancer (Feagin & Bennefield, 2014; Ginty, 2005). African American women are at a greater risk of pregnancy-related deaths, with 3 to 4 times higher likelihood of

death than White women (Center for Disease Control and Prevention, 2017). Despite growing interest and related research focused on understanding how social factors are connected to poor health outcomes, many policy makers, scientists, politicians, and academics remain reluctant to identify racism as a root cause of racial health inequalities (Bailey et al., 2017).

Purpose of Research

Most of what is known about medical trauma is from a focused lens; that is, looking at specific populations, such as adolescents with birth trauma (Anderson & Perez, 2015), post-traumatic stress disorder following spinal cord injury (Hatcher et al., 2009), sexual abuse by medical professionals (Disch & Avery, 2001), and men's experience of abuse in health care (Swahnberg, Davidson-Simmons, Hearn & Wijma, 2012). This purpose of this study was to take a broader look at medical trauma experiences using a nationally representative sample to provide feedback about the prevalence, occurrence, types of medical trauma experiences, and differences between groups. The relevant literature was examined to inform the following research questions:

Research Questions

1. What types of medical trauma experiences (MTE) do participants report? (a) illness/diagnosis, (b) medical abuse, (c) adverse events, (d) institutional betrayal, and (e) discrimination
2. What health conditions do participants that report MTE indicate they were receiving treatment for?
3. Do demographic groups differ on types of medical trauma experiences reported?
4. What are the relationships among the type of medical trauma experiences and symptoms of traumatic disturbance?

5. Do participants that report medical trauma experiences (MTE) indicate greater levels of (a) anxiety, (b) depression (c), somatization, and (d) dissociation than participants that report no MTE.

Summary

This study was designed to explore traumatic medical experiences and expand the general understanding of the reported experiences. This first chapter introduced medical trauma with relevant sociopolitical information, a description of the purpose of the research, and the research questions. The next and second chapter includes a review of the literature that is related to medical trauma experiences. The methodology is presented in the third chapter, which includes details about the participants, the measures, the procedures, and the data analysis. The results are presented in the fourth chapter with necessary tables and figures. The last chapter contain a discussion of the findings, the limitations, and implications and conclusions for future research and practice.

CHAPTER 2

Literature Review

This chapter contains an exploration of medical trauma research in depth, by organizing the literature, providing an overview of the current research findings, and indicating the gaps in the existing literature. This review content will support how the current study can address the gaps in the medical trauma empirical information by outlining the timeliness, conceptual basis, and suggested methodology.

Trauma

Trauma research and academic exploration is rather new compared to other forms of psychological or behavioral research. After the Vietnam War, the term *post-traumatic stress disorder* (PTSD) was first introduced and so began the systematic study of trauma. Since this time, traumatic stress has been explored and understood to occur in ways other than war exposure.

Types of Trauma

The most essential component of trauma is the presence of a *traumatic event*, which leads to traumatic distress. Over time, research and academic inquiry has expanded the definition of a trauma event by exploring how individuals and even masses of people do experience trauma. The *traumatic event* could be one of many sorts of experiences: sexual assault, sexual harassment, rape, sex trafficking, muggings, stabbings, gang violence, emotional abuse, psychological abuse and mind control, neglect, torture, war, witnessing murder, serious accident, illness, medical procedure, victim or witness to domestic violence, victim or witness to community violence, historical or ethnic trauma, racial discrimination, gender-identity or sexual-

orientation discrimination, school violence, bullying, natural or manmade disasters, forced displacement, terrorism, and system-induced trauma and retraumatization, and more.

Trauma experiences occur across the lifespan and can lead to developmental complications. Sadly, many children experience trauma, and their neurobiology can be particularly vulnerable and susceptible to enduring cognitive consequences (Pechtel & Pizzagalli, 2011; Pratchett & Yehuda, 2011). People of all ages experience trauma in large masses that can involve high numbers of injuries and causalities (Briere & Scott, 2015), such as the attacks on the World Trade Center and the Pentagon on September 11, 2001 (Biello, 2011); the school shooting at Marjory Stoneman Douglas High School in Parkland, Florida on February 14, 2018 (Ahmed & Walker, 2018); and the slave trade associated with European colonialism in Africa (United Nations, 2018).

Trauma Occurrence

Trauma experiences and the associated psychological disturbance happens to people worldwide across all ages, gender identities, sexual orientations, socioeconomic statuses, races and ethnicities (Substance Abuse and Mental Health Services Administration, 2015). Surveys of the general population have indicated that more than half of US adults have experienced at least one major traumatic event, and if all threats to psychological integrity were included in these statistics, the number would be even higher (Briere & Scott, 2015). Researchers analyzed articles and reports and described the overall findings regarding the prevalence of trauma in several categories (Briere & Scott, 2015):

- Childhood sexual abuse: 25–35% of women reported experiencing sexual abuse as a child, and 10–20% of men report being sexually abused as a child.
- Physical abuse: 10–20% of men and women report physical abuse as a child.

- Natural disaster: Between 13 and 30% individuals in the US report experiencing a natural disaster.
- Motor vehicle accidents: 20% percent of individuals in the US report experiencing a serious motor vehicle accident.
- Rape: approximately 14–20% of US women report experiencing rape or attempted rape, not including sexual assault (Briere & Scott, 2015; rainn.org)
- Domestic violence: Twenty-five percent of married or partnered adults report at least one incident of domestic aggression.
- Sex trafficking: An estimated 600,000 to 800,000 individuals are trafficked across international borders for sex or forced labor, which includes 14,500 to 17,500 people being trafficked into the United States.
- Torture: While many torture incidents are unknown, it is estimated that 500,000 torture survivors from Africa, Middle East, Eastern Europe, Southeast Asia, and South America currently live in the United States.

These statistics provide a glimpse into the trauma experiences of people in the US across the several categories under the trauma heading. For medical trauma experiences in particular, there are resources that can provide very narrow reports of health experiences in the US, such as the brief annual reports listing health diagnosis data published by the Centers for Disease Control and Prevention's (CDC; 2023) National Center for Health Statistics. However, no summative data of the occurrence of medical trauma could be found.

For medical trauma experiences of abuse, Swedish researchers found that the prevalence of lifetime abuse in healthcare was 13–28% (Swahnberg et al., 2007), and findings from a similar study indicated between 14–20% in clinical samples and 16% in a population sample

(Swahnberg et al., 2004). More studies are needed to understand the occurrence of medical trauma within the U.S.

The Clinical Definition of Trauma

Most research related to medical trauma uses the diagnosis or symptoms of PTSD as a measure of psychological disturbance to the trauma experience (Hall & Hall, 2017); however, trauma has been associated with many symptoms and disorders (Briere & Scott, 2015). The most common resource utilized in the psychological classification and clinical treatment of trauma is the *Diagnostic and Statistical Manual of Mental Disorder*s (*DSM*; American Psychiatric Association, 2013), which is used to understand and categorize mental health symptoms, experiences, and clinical presentation.

In the fifth edition of the *DSM*, the American Psychiatric Association (APA) task force defined trauma as "exposure to actual or threatened death, serious injury or sexual [violence]" (APA, 2013, p. 1). The exposure must result from one or more of the following scenarios, in which the individual: (a) directly experiences the traumatic event; (b) witnesses the traumatic event in person; (c) learns that the traumatic event occurred to a close family member or close friend (with the actual or threatened death being either violent or accidental); or (d) experiences first-hand repeated or extreme exposure to aversive details of the traumatic event (not through media, pictures, television or movies unless work-related).

The *DSM* does not classify an event as traumatic (for potential diagnosis of PTSD) if the event was not life threatening, even if the person reports symptoms that are highly upsetting and psychologically disturbing, for example, extreme psychological or emotional abuse, degradation, racism, coerced sexual experiences that are not physically violent (Briere & Scott, 2015). Medical events such as a heart attack or stroke no longer qualify as a Criterion A traumatic event

that could initiate the onset of PTSD (Sumner & Edmondson, 2018). However, evolving research findings continue to support that PTSD can be induced by medical illnesses such as a heart attack or stroke (Cordova et al., 2017; Edmondson & von Känel, 2017; Moye & Rouse, 2014; Sommer & Edmondson, 2018).

Rubin et al. (2008) challenged the traditional model of trauma classification used in the *DSM* that uses retrospective memory reports that can have substantial biases. The traditional model and conceptualization of trauma may exclude or neglect PSTD symptoms that would otherwise qualify.

The authors of the *DSM-5* report that a life-threatening illness or debilitating medical condition is not necessarily qualified as a traumatic event and that medical incidents that are considered traumatic events must involve a sudden catastrophic event (APA, 2013; Sumner & Edmondson, 2018). Therefore, applying the PTSD criteria to psychological manifestations after a medical illness or event (that was not sudden and catastrophic) would be unwarranted. The *DSM* definition fails to capture the true picture of the human experience of trauma, and, in this case, is not inclusive for traumatic medical illness and events that are not life threatening. Moreover, some research indicates that those who develop PTSD symptoms in response to medical events have a worse progression of illness and are at greater risk for mortality (Edmondson et al., 2012; Sumner & Edmondson, 2018).

Symptoms Following Medical Trauma Experiences

Medical trauma resulting in PTSD symptoms can hinder the physical health recovery process for patients. Researchers conducted a meta-analysis from 24 studies that included nearly 2400 patients with acute coronary events worldwide (Voelker, 2012). When compared to patients that did not develop PTSD, patients with PTSD were at a doubled risk for having another acute

coronary episode or even death within one to three years following the initial event. Researchers claimed that the underdiagnosis and undertreatment of trauma (measured by PTSD symptoms) may be more pronounced in cardiac medical practices than in other types of medical practices (Voelker, 2012).

Trauma exposure has been linked to dissociative disorders, anxiety, and depression (Breslau et al., 1991; Briere & Scott, 2015), along with several other disorders. Dissociation is "a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control and behavior" (*DSM-5,* p. 291). A central hypothesis of the psychopathological implications of severe trauma has been the failure of the nervous system to synthesize and process traumatic experiences into an integrated explicit memory (Diseth, 2006; van der Kolk, 1994). When the experience is so intense and overwhelming the experience may be split off from the conscious control and dissociation occurs (Diseth, 2006). Research has supported a strong association between a history of early chronic abuse and extensive dissociative experiences. Dissociative experiences have been connected to PTSD and dissociative disorders (Diseth, 2006).

Research Gap in Measuring Medical Trauma

Researchers have made efforts to understand the likelihood that someone will develop a psychological condition such as PTSD from medical trauma so they can support early detection and prevention of the condition (Powers et al., 2014). Most researchers studying medical trauma based in the medical field have used PTSD symptoms as a standard measurement of trauma symptom severity, overlooking the significance of dissociative symptom presentations (Diseth, 2006). In addition to dissociative symptom presentations, individuals that have a delayed onset of PTSD will likely be missed.

The Mind and Body Connection

The experience of medical trauma involves a complex set of internal processes that occurs across the mind and body connection. One of the most influential trauma books on the mind and body connection is *The Body Keeps the Score* by van der Kolk (2014), who uses research, theory, and clinical experience to describe how trauma experiences leave an imprint on the body, the brain, and the mind. His work provides crucial information for the mental health and medical professions: trauma is experienced in both mind and body, and therefore treatment must address both trauma imprint areas.

The Nobel Prize–winning work of Blackburn et al. (2009) in physiology and medicine provided insights into the effects of stress through foundational discoveries about the interaction between the mind, body, and environment (Austad & Gendron, 2018; Mathur et al., 2016). The researchers established understanding of a major element in the aging process, that is, how the DNA molecules (i.e., the chromosomes) can be copied during cell divisions and how they can be protected against degradation (Nobel Assembly at Karolinska Institute, 2009). They explored the aging process and the length of the telomeres, which are the chromosome endcaps that shorten and degrade with aging. In follow-up studies, researchers examined the role of stress using women with a trauma history of intimate partner violence (Humphreys et al., 2012). The astonishing findings suggested a link between the duration of trauma exposure and the telomere length, which indicates—trauma exposure had an impact on a cellular level. Psychological stress changes one's physiology. The implications of these findings are momentous. While the body takes priority in the medical system, medical interventions intended to restore health can be simultaneously degrading the body through the effects of stress and medical trauma.

Medical Trauma Experiences

Medical trauma experience is a medical event that harmed the psychological integrity of the individual. This includes a complex interaction between the patient, medical staff, medical environment, and the diagnostic and/or procedural experience that takes place from direct contact with the medical setting (Hall & Hall, 2017). The medical setting describes any aspect of direct experience with the health care system (Hall & Hall, 2017), including hospitals, ambulatory services, surgery centers, testing centers, outpatient medical offices, dental offices, and the medical system at large. Medical trauma can have powerful psychological effects based on the patient's unique interpretation of the event (Hall & Hall, 2017) and the institutional factors of health care (e.g., office wait times, insurance availability, medical racism, societal position of power, institutional betrayal).

The following review of the medical trauma literature serves to organize, to define categories, and to provide a brief literature review of each category. A search of the literature revealed no previous studies have examined the body of medical trauma literature as a whole, providing organization to terminology and concepts. For the purposes of this study, the medical experiences can be better understood categorized as types of medical trauma experiences, which are informed by the existing empirical research terminology: (a) illness/diagnosis; (b) abuse; (c) adverse events; (d) institutional betrayal; and (e) discrimination.

Illness Medical Trauma

Illness/diagnosis-induced trauma is caused by a physical illness or health condition. Most traumatic experiences are seen as *external* to the individual; however, illness/diagnosis medical trauma is *internal* and initiated by a medical illness such as cancer, stroke, or a heart attack (Cordova et al., 2017; Edmondson & von Känel, 2017; Moye & Rouse, 2014; Sommer &

Edmondson, 2018). The literature about illness medical trauma is in its infancy, with the majority of studies examining samples of patients with specific illnesses and limited generalizability (Sommer et al., 2018).

Some researchers have suggested that those who develop PTSD in response to the medical trauma have a worse course of illness and a higher risk for mortality (Edmondson et al., 2012; Sommer & Edmondson, 2018). This indicates the impact of trauma and the importance of psychological well-being on the recovery of physical health.

Some researchers have compared the progression of PTSD from external-trauma to illness-induced trauma. PTSD from an external event was associated with higher rates of depressive disorders, bipolar disorders, and antisocial personality disorders (Sommer et al., 2018), while illness-induced PTSD was associated with increased odds of cannabis use disorder. They found differences in the presentation of symptoms as well, with illness-induced trauma connecting to intrusive thoughts that are future oriented and hyperarousal symptoms (e.g., heart palpitations). In patients with acute coronary syndrome, the researchers looked beyond the traditional understanding of PTSD to examine the mechanisms of risk and perception in traumatic response so more can be understood about what patients perceived at threatening that overwhelmed their ability to cope (Zhu et al., 2018).

Researchers have recently begun to explore and to decipher the differences between trauma resulting from different types of medical experiences. Many researchers have not factored in the influence of the medical setting, staff, and health care system on the severity of PTSD. Researchers exploring illness-induced PTSD (Edmondson, 2014; Husain et al., 2018) mostly use a lens fixated on the illness being the primary traumatic event. While this may be the case for some patients who experience medical trauma, others report that patients report the

surrounding factors as significantly connected to the level of their distress (e.g., interactions with medical professions, lack of informed consent process, emotional distress not being tended to during procedures; Hatcher et al., 2009; Scheel-Sailer et al., 2017). The illness-induced PTSD literature is still in its infancy with most researchers looking at instances related to specific illnesses such as cancer-related PTSD, thus limiting the generalizability of their findings (Sommer et al., 2018).

A patient could experience any diagnosis or procedure as traumatic, yet some circumstances are considered more likely to trigger a traumatic response (Hall & Hall, 2017). Life-threatening diseases and/or chronic diagnoses can have a profound effect on patients ' psychological well-being (Hall & Hall, 2017) and reach traumatic levels for some patients. Patients who receive serious life-threatening medical diagnoses and information sometimes report symptoms of PTSD following the diagnosis, such as HIV/AIDS (Zeligman, 2017).

Medical Abuse

Medical abuse is defined as harm and suffering (Schroll et al., 2013) inflicted physically (d'Olivera et al., 2002), sexually (Disch & Avery, 2001), emotionally or psychologically in a medical setting (Brüggemann et al., 2012) including neglect. Medical abuse is unique in that the abuse occurs in both a physical location or setting and occurs in an institutional setting (Brüggemann et al., 2012).

One example of medical abuse seen in the media can be seen in the accounts of 150 girls that were sexually assaulted and raped by former USA gymnastics doctor Larry Nassar (Hobson, 2018). The positional power of the title of doctor adds a layer of psychological harm and betrayal unique from other sexual assault situations. The alarming words from the victims demonstrate how this doctor–perpetrator used medical jargon to convince the girls and women that a

procedure was medically necessary and beneficial, ultimately sexually assaulting them using the power of the medical title. Each survivor has unique personalities and life experiences that influence how they may interpret the event; yet, at the same time, there is a common thread of institutional power and coercion that impacted each survivor in the interpretation of the event.

An analysis of the United States National Practitioner Data Base (NPDB) disciplinary actions from 2003 to 2013 revealed that 862 physicians had state licensure disciplinary actions because of sexual misconduct (AbuDagga et al., 2016). This occurrence is likely under-reported. In an anonymous random survey, 3.4% of physicians reported a history of sexual contact with one or more patients (Bayer et al., 1996). DuBois et al. (2019) analyzed 101 cases of sexual violation of patients by physicians, using a criminal law framework to look for clusters of causal factors to explain the specific kinds of sexual misconduct. Most of the cases involved more than five sexual abuse survivors (57%), that were women (89%), and the abuse occurred repeatedly in 96% of cases (DuBois et al., 2019).

Findings from several international studies indicated great strides in investigating abuse within the health care system, emphasizing the need to reframe common lingo and firmly calling abuse *abuse*. A literature review of international studies in Peru, Brazil, Tanzania, South Africa, and Nigeria on violence committed by medical professionals and staff revealed four forms of abuse: neglect, verbal abuse, physical abuse, and sexual abuse (D'Olivera et al., 2002). Other researchers have explored medical trauma in different medical settings, such as palliative care (Brüggemann, Persson, & Wijma., 2018), gynecological settings (Swahnberg et al., 2007), and hospital settings (Berglund et al., 2012). Swahnberg et al. (2007) found the prevalence of any lifetime experience of abuse in health setting for women within Nordic countries was 13–28%.

Swahnberg et al. (2012) examined the experiences of men, finding that 7.3% of men reported lifetime experiences abuse in the health care system.

An attorney and author, Maria Borges (2018), applied an *obstetric violence* framework created in Venezuela and Argentina to address the problem of coerced medical procedures during childbirth. Borges (2018) stated that physicians and the courts are prepared to override a women's choice and right to bodily autonomy if they believe there is a risk to the fetus. This stance brings into question the consent process and autonomy in health care. According to the American Sexual Health Association (2019), sexual consent must be given voluntarily and without coercion, sober, continuously, with confidence and enthusiasm, and be informed. A substantial number of physicians reported that they use a blanket consent typically obtained at hospital admission to cover successive medical procedures (Manthous et al., 2003). From the patients' perspective, 94% did not read, sign, or did not recall properly the admission consent-to-treat (Thorevska et al., 2004). Forty percent of medical students and physicians reported that they felt their informed consent training was adequate (Vossoughi et al., 2015). Consent is a decisive step regarding sexual contact being either consensual or abusive. One may apply the same importance of consent in regard to medical procedures, with the same unfortunate consequences of potential abuse and/or medical trauma.

Researchers have used qualitative measures to explore medical staff and professionals' perceptions of abuse within a medical setting, with two disparate categories being ethical failures against a patient and staff members avoiding responsibility (Swahnberg et al., 2010). Medical staff members reflected about the lack of consent and abuse: Swahnberg et al. (2010) reported that: "Patients who came to the gynecological department were not always asked if they wanted to have a pelvic examination or not. Patients who were subjected to an exam against their will–

expressed or not–might also experience abuse in health care" (p. 7). When the patients did say *no* to an exam and they were further questioned about why they came to the office, the staff members reflected how the patients must have felt pressured and abused due to having no choice. Researchers in Australia reported that women chose to give birth with an unregulated birth worker at home to avoid a system that they saw as traumatizing and inflexible where they had no choice (Rigg et al., 2017)

In a call to action, AbuDagga et al. (2019) implored the medical community to initiate dialogue and enact a zero-tolerance standard against sexual abuse of patients by physicians. They described the factors that allow this problem to persist and why so many cases may go unreported. Patients may feel so traumatized with consuming feelings of shock, disbelief, guilt, shame, and fear and be hesitant to report due to the power imbalance within the medical system. The abuse survivors may not know how to navigate the process of filing a report, and even when they do file complaints, they may feel further traumatized by the investigation (AbuDagga et al., 2019). Also, people that experience trauma may have a disruption of memory or ability to recall the event, yet still experience distressing symptoms of PTSD. Disch and Avery (2001) found that nearly 40% of survivors of sexual abuse by professionals reported a time period where they could not remember what happened to them.

Disch and Avery (2001) compared the experiences of survivors of sexual abuse by professionals who were employed as 9, mental health professionals, and medical professionals. Almost 40% of the survivors reported that they could not remember what happened to them at one point following the traumatic event. More than half of the survivors reported that they did not allow themselves to think about what happened, which was highest among survivors of sexual abuse by physicians (73.7%) when compared to those abused by mental health

professionals or clergy. Also, medical abuse survivors were more likely to experience panic attacks (65%) and indicate harm to their sense of self and view of the world. Considering the relative brevity of the relationship between patient and medical professional, these survivors reported the greatest harm and lasting issues with medically related concerns. These findings substantiate the seriousness and depth of the harm to the patient who suffers medical trauma such as abuse in a medical setting.

In my review of empirical studies, theoretical articles, and news articles, I noticed some disturbing portions. The reporting of discrimination and medical abuse appears to be happening at a frequency well beyond the frequency of research studies aimed to address medical abuse in marginalized populations. For example, Allen's article (2021) documents the medical mistreatment and abuse that took place at the US Immigration and Customs Enforcement (ICE) detention center in Georgia. Medical procedures that were coercive and non-consensual to an unprotected population. More than forty women reported being forcibly and coercively sterilized along with other non-consensual medical procedures (Allen, 2021; Jayapal, 2020). The only more disturbing number is the amount of occurrences that never reach the media.

Adverse Events

The Institute of Medicine published a call to action in 2000 that acknowledged the shocking realties of medical error and the need for safer medical care, which ultimately increased the empirical focus on medical error and adverse events. In the US Department of Health and Human Sciences, the Office of Inspector General defines *adverse event* as medical care that "resulted in an undesirable clinical outcome-an outcome not caused by underlying disease-that prolonged the patient stay, caused permanent patient harm, required life-saving intervention, or contributed to death" (2022, Key Terms section, para. 2).

In 1996, the Institute of Medicine, a nonprofit organization that advises national leaders, launched a rigorous effort to assess and improve the quality of healthcare (National Academies of Sciences, 2018). The Institute of Medicine assembled a group of scholars, the Committee on Quality of Health Care in America, which published *To Err is Human: Building a Safer Health System* in 2000. This included alarming statistics on medical error, which is defined as "the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (p. 4). Shockingly, almost 98,000 people die each year due to preventable medical errors. The scholars stated, "More people die in a given year as a result of medical errors than from motor vehicle accidents (43,458), breast cancer (42,297), or AIDS (16,516)" (Institute of Medicine, 2000, p.1). This begs the question: How can 98,000 people be dying from preventable medical errors? Approximately 70% of those 98,000 deaths were attributed to ineffective communication (Institute of Medicine, 2000). Since 2000, initiatives directed toward improving team-based communication have begun to address this one area that contributes to safety of medicine (Hall & Hall, 2017) and continued focus on improving provider knowledge.

One year later, the Institute of Medicine (2000) expanded their work on safety by exploring the quality of care in the follow-up publication, *Crossing the Quality Chasm: A New Health System for the 21st Century*. This publication provided a reconceptualization of quality that departed from the previous focus on improving provider knowledge, leading to a call for action to all parties (e.g., institutions, organizations, health care providers) to adopt a shared vision of six targeted areas for health care improvement: safe, effective, efficient, personalized, timely, and equitable care (Institute of Medicine, 2000).

Routine or planned procedures (e.g., an outpatient surgery or a pelvic exam) can suddenly become scary and be perceived as threatening, leading to psychological distress and medical

trauma in some patients. In the mid-1990s, several research studies (Ballard et al., 1995; Fones, 1996) discussed women with PTSD following childbirth (White et al., 2006) and sparked interest among other researchers to the possibility of childbirth trauma (Ayers & Pickering, 2001; Creedy et al., 2000; Wijma et al., 1997). In one study women were surveyed about their birth experience, and 34% of participants indicated their birth was traumatic (Improvingbirth.org, 2019). These numbers are likely associated with a range of medical trauma experiences, such as illness-induced, medical abuse, adverse events, medical error, etc. More information is needed about the medical trauma experiences in order to give context and a clear voice to patients. For example, one in six women reported medical mistreatment during their births (Newman, 2019).

The literature includes some studies that are more patient center and others that are more medical provider centered. One qualitative study gathered feedback from participants following an adverse medical event (Duclosi et al., 2005). Participants described their experiences in the days after with financial concerns, often physician pain, confusion, and emotional harm and upset from the lack of "disclosure, an apology, and information about what happened and how it can be prevented from happening again" (Duclosi et al., 2005). With the audience of medical providers, Pham et al. (2012) provides a detailed analysis of medical errors, listing areas of medicine and procedural and diagnostic concerns and suggestions for change. I found the definitions noteworthy, calling an adverse event, *unintended* patient harm caused by medical management.

The Institution of Medicine

The mainstream medical literature lacks information and discourse about systemic power inequalities and how these inequities may influence or facilitate medical trauma. Medical education and curricula do not often explore the institutional origins of race, class, and gender

inequalities in medical care and research (Angoff et al., 2016). Yet, the medical institution has historically been a field where the provider of the service (i.e., doctor, nurse) has a significant amount of power as compared with the recipient of the service—the patient (Olayiwola, 2016). Yale School of Medicine holds annual *power day workshops* to define and analyze the power dynamics within the medical hierarchy, which addresses the barriers and resistance to the word *power* (Angoff et al., 2016). Angoff et al. (2016) point out that the literature and frameworks that will address the power dynamics in healthcare will likely come from outside of the medical literature.

Considering the macro prospective, Hall and Hall (2017) applied an ecological approach to medical trauma, noting that behavior is contextual, and the environmental and systemic factors have varying degrees of direct or indirect influence on the outcomes. Judith Herman (1992) provided a voice for the women harmed by interpersonal violence, bringing attention to the societal influences on their individual experiences. Once these experiences of trauma and the systemic forces were brought "out of the shadows" an explosion of research followed (Smith & Freyd, 2014, p. 576). With medical trauma, there must be a *bringing out of the shadows* using a macrosystem approach (i.e., cultural attitudes, racism, institution, and culture of medicine) to illuminate the societal power structures for change to happen.

Culture in Medical Training

Researchers have begun investigating one aspect of the medical training culture that is relevant for medical trauma. Medical students report mistreatment within medical schools in the U.S. and around the world (Chung et al., 2018). Some medical students have been subjected to abusive behaviors, leaving them more likely to experience mental health issues such as PTSD, depression, and dissatisfaction with their careers (Chung et al. 2018; Heru et al., 2009). Chung et

al. (2018) reported that 63% of medical school students reported experiencing mistreatment. Similarly, findings from a meta-analysis indicated that 59% of medical school trainees experienced at least one form of harassment of discrimination during their training (Chung et al. 2018; Fnais et al., 2014). As Chung et al. (2018) put it: “Unless the cultural of medicine changes to affirm that mistreatment is unacceptable, students are unlikely to feel safe expressing concerns, providing feedback, and helping to identify mistreatment” (p. 8).

Medical student mistreatment is “cultural and institutionalized” and must be disrupted and replaced with a “culture of compassion, tolerance, and respect” (Chung et al., 2018, p. 7). It would be fair to assume that this culture within the medical schools between educator–teacher would continue over into colleague–colleague relationships, ultimately being integrated into how medical doctors then relate to their patients. One of the medical students described accepting the mistreatment and coping because that’s just the way it is, which indicates the process of cutting off their own feelings to cope and stay in the system (Chung et al., 2018). This dehumanizing and desensitizing process would most certainly impact the way these doctors would interact with their patients. The medical community has a long-standing tradition of objectifying the body and therefore dehumanizing the patients (Timmermans & Almeling, 2009). Connecting to an earlier statement, medical patients are growing frustrated with medical care that dehumanizes and at times traumatizes them (Austad & Gendron, 2018). Just like the hesitant medical students that required a research outlet for their voices, these mistreated, traumatized, and abused patients need empirically supportive efforts to bring awareness and a pedestal for their perspectives and voices.

Medical Racism

Medical racism exists on all levels of medical care from health insurance access to interacting with medical professionals, access to treatments, quality of treatments, offenses during medical interactions and procedures, and neglect in follow up care. Interacting with medical abuse and adverse events, medical racism adds additional layers of potential psychological harm.

Physicians' racial biases and perceptions have distorted diagnoses and treatments (Dossey, 2015), leaving many cultural groups hesitant and afraid to seek medical care. The safety of medical care is not a new concept among African American populations, as the discomfort and estrangement from medical care has been a fundamental part of the Black experience for generations (Hoberman, 2012). For example, African American women are four times more likely to die than white women when controlling for socioeconomic status (improvingbirth.org, 2019) during birth experiences.

There are numerous studies that have documented the differences in medical treatment based on race. For example, the Connecticut Children's Medical Center (2011) in Hartford found that physicians were less likely to monitor the pain of Black children with sickle cell anemia than white children with fractures. Researchers found racial differences in the rates of chronic illnesses, such as obesity, infant mortality, heart disease, stroke, diabetes, kidney disease, hypertension, and liver cirrhosis (Anderson, 2012; Wallace et al., 2017). As mentioned earlier, the diagnosis and treatment of chronic conditions can be stressful and traumatic for some patients. Researchers found that when social economic status is the same, 27.2% of women of color reported medical mistreatment as compared to 18.7% of White women (Vedam et al., 2019). Regardless of the race of the mother, women who had a partner that was Black reported

medical mistreatment at an increased rate (Vedam et al., 2019). In a literature review, the authors reported mixed results for ethnicity as a risk factor for cardiac disease–induced PTSD, and only one study provided data indicating socioeconomic status (SES) to be a risk factor (Vilchinsky et al., 2017). With illness-induced medical trauma, the trauma occurs within the body and external or environmental factors (such as racism) would have less impact on the development of PTSD.

Wallace et al. (2017) examined racial inequities in the infant mortality rate by giving a voice to 18 African American women who shared about the mistreatment and discrimination. One woman shared that that after multiple miscarriages a doctor stated "Oh, you're young, you can have more kids" Another woman stated that a doctor asked, "How many times have you been pregnant?" and appeared surprised when she said "never" (p. 6) In a survey of American Indian women, 67% reported discrimination at some point during their lifetime health care use (Gonzales et al., 2013). The researchers found that these women were less likely to complete needed services to treat their diabetes than others that had no experienced discrimination (Gonzales et al., 2013).

Patients who experience abuse and discrimination often avoid medical services. Ye et al. (2012) investigated medical avoidance, finding that people who experience psychological distress are more likely to avoid visiting the doctor because of fear of illness, mortality, or some threat to their safety. Also, individuals of color experience health care disparities such as unequal access to resources such as health insurance (Wallace et al., 2017). Being less likely to have health insurance, they are more likely to experience racist attitudes, discrimination and unequal access to quality health care (Adler & Rehkopf, 2008; Anderson, 2012; Benjamins & Whitman, 2014; Fernando, 2012; Garcia & Sharif, 2015; Klonoff, 2009; Smedley, 2012), which can also lead to chronic illnesses and higher mortality rates (Anderson, 2012; Garcia & Sharif, 2015;

Klonoff, 2009; Smedley, 2012). The psychological experiences of medical racism from the differences in treatment based on race alone combined with any additional traumatic outcomes, create a multiplying effect of unsafety in medical care for African Americans and other non-white cultural groups.

Institutional Betrayal

Patients put trust into the medical system and providers when receiving medical care. When a person is harmed or abused by someone they are in relationship with (instead of a stranger), they can experience betrayal trauma. Betrayal trauma suggests that abuse perpetrated within a relationship is more harmful than abuse by a stranger because of the violation of trust (Smith & Freyd, 2014).

Betrayal trauma is associated with worsened outcomes and increased symptoms of PTSD, dissociation, anxiety, depression, and borderline personality disorder (Freyd & Birrell, 2013). Efforts to alleviate traumatic distress are mostly focused on individuals rather than systems (Hertzog & Yeilding, 2009; Smith & Freyd, 2014). New research has begun to focus on traumatic events that do not neatly fit into the individually focused model of trauma, such as fleeing one's country as a refugee (George, 2010), working in violence (like law enforcement) (Violanti, 1997), or being subject to racism and discrimination (Bryant-Davis, 2007). Medical trauma is not just an individualized experience of distress; it is an occurrence that fits within the larger institution. Researchers applied betrayal trauma theory (Freyd, 1996) to a range of contexts such as universities' responses to sexual assault, military sexual assault, abuse in religious institutions, and most recently the medical system. A presence of *institutional betrayal* emerged and can be understood as the institutional action and inaction that exacerbates the impact of traumatic experiences (Smith & Freyd, 2014).

Institutions such as medicine hold an elevated place in our society, leaving room to obscure the potential to perpetrate or to facilitate abuse (Smith & Freyd, 2014). Institutions can operate with power and fear and then can create trust and dependency that mirrors primary relationships (Parent & Bannon, 2012; Smith & Freyd, 2014), contributing to an internal conflict where staying in the institution means enduring more abuse but reporting abuse means losing an important relationship (Freyd, 2017). Institutions sometimes fail to prevent or respond effectively to unexpected or negative experiences. Through acts of *omission,* the institution of medicine has structures in place to ignore or to not appropriately respond to complaints (Smith & Freyd, 2014; Tamaian et al., 2017). Acts of *commission* are betrayals that happen when the institution answers grievances with retaliatory action (Smith & Freyd, 2014).

Little is known about how institutional betrayal relates to medical trauma with acts of omission and commission. Findings from a few introductory studies have set the groundwork, providing a baseline understanding of institutional betrayal in the medical system. Tamaian and Klest (2017) investigated the reliability and validity of a self-report questionnaire aimed at institutional betrayal within the medical system. In a sample of 352 adults with chronic medical conditions, a factor analysis revealed three stable factors of institutional betrayal: negative healthcare experiences, cognitive-affective reactions, and systemic responses to the negative experiences. More research efforts are needed to distinguish negative medical experiences from traumatic medical experiences.

Tamaian et al. (2017) used a qualitative approach to explore the connection between patient dissatisfaction (with adverse events) and institutional betrayal. The findings indicated that institutional betrayal is composed of two levels of betrayal: doctor-level and system level. Doctor-level betrayal revealed two themes of betrayal. One theme, *inadequate medical care*

could be broken down into the failure to provide effective care, unwillingness to look at alternative treatments, and lack of necessary training. The other theme of doctor-level betrayal included *lack of psychological support*, which was composed of lack of compassion, poor communication, and strong emotional reactions. Participants indicated that betrayal included a system-level theme of doctor-knows-best culture, systemic barriers to care, and negative medical experiences are common occurrences. Smith (2017) examined how these experiences of institutional betrayal impact health care utilization. The impact of institutional betrayal on patients ʾtrust and use of the health care system was examined. Two-thirds of participants reported institutional betrayal, which was a strong predictor of disengagement of health care use ($r = 0.36$, $p < .001$). Just over 80% of participants reported negative medical experiences. According to the participants, the institution betrayed participants by a failure to take steps to prevent an unpleasant health care experiences (31.5%) and responded insufficiently to concerns or reports of a negative experience (24.8%).

The institution of medicine has practices and systems in place that facilitate medical trauma, medical racism, and leaves patients feeling betrayed by the very organization that sought for support and healing. Using the words of participants, the medical systems ʾshortcomings exist on two levels—the doctor-level with individual interactions and the system-level with cultural attitudes and practices (Tamaian et al., 2017).

Summary

Trauma was defined by body and mind connection. Medical trauma experiences were defined and described in categories for exploration. The literature review revealed a need for change that is echoed in many studies, calling for medical care that is kind, safe, and equitable.

Improvement requires ownership, taking responsibility, and tolerance for critique. Hardy (2019) described her position of advocacy with improving the medical experiences:

> When I say I do not like war, it does not mean I dislike soldiers. When I critique the current state of our education system, it does not mean I dislike teachers/educators. When I am critical of the U.S. maternity care system, it does not mean I dislike nurses/providers/hospitals. Without critique there will be no change. (Hardy, 2019)

CHAPTER 3

Method

The following chapter provides details of the methodology aimed at exploring medical trauma experiences across the United States. Demographic information about the participants is provided. Detailed summaries of the measures, procedures, and data analyses are included.

Study Design

A survey research design was implemented to gather quantitative information about the medical trauma experiences of participants. The survey data were analyzed by using descriptive and inferential statistics in order to acquire information about the occurrence of medical trauma experiences, to understand the relationships between the participants' characteristics and the types of experiences, and to explore predictors of psychological impact and outcome.

Participants

Population and Sample

The population of interest consisted of adults located in the United States. Participants were recruited and compensated using an online research platform—Prolific. The Prolific platform recruited a nationally representative sample, using simplified U.S. Census factors (age, sex, ethnicity). Prolific recruited 311 participants that began the study, eventually 7 were removed due to incomplete data and 3 were removed due to potential bot detection flagged by Qualtrics. The remaining sample of 301 participants consented and completed the study in Qualtrics. The sample ranged in age from 19 to 83 years old ($M = 45.71$, $SD = 16.30$), including 152 females (50.5%), 147 males (48.8%), and 2 non-binary participants (0.6%).

Demographic Summary

Gathering a nationally representative sample was important for the study. The online platform Prolific was used to support the recruitment and research participation from a nationally representative sample. See Table 1 for complete demographic information. The sample of 301 participants ranged in age from 19 to 83 years old (M = .45.71, SD = 16.26), including 152 female, 147 male, and 2 non-binary participants. Most participants reported White (n = 213, 70.8%) as their ethnicity, with 40 participants (13.3%) reporting Black or African American, 23 Asian participants (7.3%), 17 Latino/Latina (5.6%), and a small percentage of participants reporting American Indian or Alaska Native (n = 3, 1.0%) or multi-racial (n = 5, 1.7%). In terms of sexual orientation, 248 (83%) participants reported straight, 36 bisexual (12%), with the remaining 5% of the sample reporting gay, lesbian, queer, pansexual, or other.

Table 1

Demographics of the Sample

Variable		*n*	%
Age [a]		45.70	(16.30)
Gender			
	Male	147	48.80
	Female	152	50.50
	Non-Binary	2	0.70
Ethnicity			
	American Indian or Alaska Native	3	1.00
	Asian	23	7.60
	Black or African American	40	13.30
	Latino/ Latina	17	5.60
	White	213	70.80
	Multiple Races	5	1.70
Sexual Orientation			
	Bisexual	36	12.00
	Gay	6	2.00
	Lesbian	3	1.00
	Straight	248	82.40

Table 1 (continued).

	Queer	4	1.30
	Other (Pansexual, other)	4	1.30
Relationship Status			
	Single	86	28.60
	Married/Civil Partnership	117	38.90
	Separated or Divorced	32	10.60
	Committed relationship (cohabitation)	41	13.60
	Committed relationship (non-cohabitation)	16	5.30
	Widowed	9	3.00
Education			
	Less than high school degree	4	1.30
	High school diploma or equivalent	26	8.60
	Some college but no degree	78	25.90
	Associate degree in college (2-year)	37	12.30
	Bachelor's degree in college (4-year)	113	37.50
	Master's degree	36	12.00
	Doctoral degree	2	0.70
	Professional degree (JD, MD)	5	1.70
Employment			
	Employed (full-time)	115	38.20
	Employed (part-time)	81	26.90
	Unemployed (seeking employment)	32	10.60
	Unemployed (not seeking employment)	23	7.60
	Disabled	17	5.60
	Retired	33	11.00
Income			
	Less than $19,000	38	12.60
	$20,000 to $39,999	66	21.90
	$40,000 to $59,999	53	17.60
	$60,000 to $79,999	46	15.30
	$80,000 to $99,999	35	11.60
	$100,000 to $149,999	43	14.30
	$150,000 or more	20	6.60
Community Size			
	Small city or town	75	24.90
	Suburb near a large city	125	41.50
	Large city	64	21.30
	Rural area	37	12.30

Note. [a] *M* and *SD* are provided for continuous variables.

The sample was well educated, with 90% of participants (*n* =271) having some college education or a college degree. Most participants reported working part time (*n* = 81, 27%) or full time (*n* = 115, 38%). The average reported household income for the sample was $50,000–$59,000. Most participants (*n* = 125, 41.5%) reported living in a suburb near a large city. Similar amounts of participants reported living in a small city (*n* = 75, 24.9%) or a large city (*n* = 64, 21.3%), and the least participant representation reported currently living in a rural area (*n* = 37, 12.3%). Remarkably, the sample was spread across the US with 98% of the sample (*n* = 295) reporting unique zip codes.

Instrumentation

The survey measures are described in detail below, following the order of presentation to participants during the survey. Several survey measures can be found in the appendices: demographic questionnaire (Appendix A), medical trauma experiences checklist (Appendix B), and health conditions checklist (Appendix C). The remaining measures were not included in this document due to copyright limitations.

Demographic Information

Initially, participants were asked to report demographic information: age, education, income, employment, relationship status, gender identity, sexual orientation, ethnicity, community size (e.g., large city, rural area), and Zip code. See Appendix A for the demographic items and responses.

Generalized Anxiety Disorder (GAD-7)

Participants were presented with the GAD-7 Anxiety Likert scale to measure the presence and severity of anxiety symptoms among participants. This seven-item anxiety scale was

developed to assist in the detection of anxiety disorders across medical and mental health settings with strong reliability (Cronbach's alpha = .92; Spitzer et al., 2006). The items are rated from 0 to 3 indicating from "not at all," "several days," "more than half the days," to "nearly every day." The total GAD-7 scores range from 0 to 21, with cut-offs detecting mild anxiety (score 5-9), moderate (10-14) and severe (greater than a score of 15). The internal consistency of this survey in this sample was as expected, Cronbach's alpha = .93.

Patient Health Questionnaire- 9 (PHQ-9)

Participants completed the PHQ-9 screening tool used to detect and measure the severity of depression symptoms. The items are rated from 0 to 3 indicating from "not at all," "several days," "more than half the days," to "nearly every day." PHQ-9 scores range from 0 to 27, detecting mild depression (scores between 5-9), moderate (10-14) and severe (greater than a score of 15). The PHQ-9 is a widely clinical and empirically used measure with strong reliability findings (Cronbach's alpha =.89; Kroenke et al., 2001). For this sample, the reliability was strong, Cronbach's alpha = .91.

Patient Health Questionnaire-15 (PHQ-15)

Participants completed the 15-item assessment measuring the presence and severity of somatic symptoms. The PHQ-15 is a Likert-scale with items rated from 0 to 3 indicating from "not at all," "several days," "more than half the days," to "nearly every day." The severity cut points are seen as follows: mild somatic symptoms with scores 5 to 9, moderate symptoms with scores 10 to 14, and severe somatization with a score greater than 15 (Kroenke et al., 2002). Internal reliability measures indicated Cronbach's alpha ranged from .73–.80 (Kroenke et al., 2002; Leonhart et al., 2018) in previous research studies, with a higher value of internal consistency found in this study (Cronbach's alpha = .84)

Dissociative Experiences Scale Brief (DES-B)

Participants completed the DES-B to provide an indication of the presence and severity of dissociative experiences. The DES-B consists of an 8-item Likert scale, scored from 0 to 4, modified from the dissociative experiences scale-revised (DES-R; Dalenberg & Carlson, 2010). Previous findings have indicated strong reliability and validity for the brief measure (Naish, 2020). Researchers found that the DES-B is highly correlated to the longer version DES-R (r = .93; Dalenberg & Carlson, 2010) with strong reliability (Cronbach's alpha =.93–.95), and test-retest reliability (r = .90). The internal consistency was lower in this study (Cronbach's alpha = .79) and still within acceptable range (Tavakol & Dennick, 2011).

Brief Trauma Questionnaire (BTQ)

The brief trauma questionnaire (BTQ; Schnurr et al., 1999) is a self-report questionnaire that was derived from the brief trauma interview designed to assess traumatic exposure. The BTQ is considered a reliable and valid measure of trauma exposure that parallels clinical interview measures of trauma exposure (Sumner et al., 2015), with strong Kappa coefficients ranging between .74–1 (Schnurr et al., 2002). BTQ includes 10-items rated with binary yes/no responses, where indicating exposure to an event would be indicated as "yes".

Medical Trauma Experiences

I identified two existing instruments in the medical trauma literature: Norvold Abuse Questionnaire —Abuse in Health Care (Swahnberg & Wijma, 2003) and the Negative Medical Experiences, Adverse Consequences, and Unexpected or Lasting Pain Assessment (MEACULPA; Smith, 2017). Two statistical experts and I had concerns about participant comprehension of the Norvold Abuse Questionnaire. With the MEACULPA, the concerns were that the assessment would not capture experiences of abuse as a goal of the study. Ultimately, the

researcher constructed questions to assess for medical trauma experiences instead of using the existing questionnaires.

The researcher constructed 14-items to assess for the medical trauma experiences modeled after the format seen in previous trauma experience checklists, such as the BTQ described above. The binary (yes/no) items were constructed so that participants would respond with "yes" to indicate having the experience. Several clinical trauma experts reviewed the questions to support content validity, resulting in the following questions included in the survey and analyzed (12-items): life threatening illness and diagnosis (2 items), medical abuse (5 items), adverse events (2 items), institutional betrayal (1 item), discrimination based on race and ethnicity (1 item), and discrimination based on race and ethnicity (1 item).

If participants answered "yes" to any of the 12 medical trauma questions, they were presented with two follow-up Likert questions asking about (a) the number of separate reported medical trauma experiences referred to and (b) time passed since reported medical trauma experiences. See Appendix B for the complete list of items and responses.

Health Conditions Checklist

The participants will be asked to indicate their health condition(s) that are connected to the MTE reported. A comprehensive health conditions checklist of 50 items was compiled using two sources: (a) "Top reasons to visit your primary care provider" (Meyer, 2019) and (b) "Most frequent health concerns" (MedicineNet, 2020). Participants were prompted with the MTE "yes" responses previously given and asked to select only the items that were associated with the MTE. See Appendix C for the complete list of items.

Impact of Event Scale-Revised (IES-R)

The Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997;) is a self-report measure that measures traumatic stress in symptoms of PTSD in relation to a specified traumatic event (Horowitz et al., 1979; Rojas-Ashe, 2016). The IES-R consists of 22-items that asks participants to rate how much they have been distressed by various experiences related to a traumatic event. Questions, such as "I felt irritable and angry," "pictures about it popped into my mind," and "I stayed away from reminders of it," are rated on a scale from 0 to 4 indicating from *not at all* to *extreme.* The IES can be broken down into three sub-scales that follow PTSD symptom categories, with high internal consistency: intrusion (n = 8; Cronbach's alpha = .87–.94), avoidance (n = 8; Cronbach's alpha = .84–.87), and hyper-arousal (n = 6; Cronbach's alpha = .79–.91; Beck et al., 2008; Creamer et al., 2003; Weiss & Marmar, 1997). For this study, the internal consistency was excellent (Cronbach's alpha = .96).

Procedure

Data Collection

Participants were presented information about the study in Prolific and directed to read and complete the consent documents and survey in Qualtrics. Participants completed the survey measures in the same order, taking on average 10 minutes to complete the measures described below. The IRB completed the appropriate level review and approved all study procedures and measures.

Participants were presented the list of measures presented above in same order. They were prompted to complete every question but not required to complete any question (after completing the consent document). Two attention check questions were included in the middle of the survey to minimize inattentive participation and to increase the validity of survey findings,

Participants had to correctly answer both questions to be continued to the next scale in the survey. If both questions were answered incorrectly, participants were directed to the mental health resources list and survey participation was ended.

Using Qualtrics options, participants were presented on the screen with the summary list of all questions from the medical trauma experiences checklist that they answered "yes" to, priming them to consider the responses when answering the remaining two instruments, Health Conditions Checklist, and the IES-R.

Data Analysis

The data were analyzed using SPSS version 29 (IBM, 2022). Two statistical experts were consulted during research design and data analysis to minimize researcher error, to ensure the most appropriate statistical tests were utilized within SPSS, and to expand the interpretation of the findings. Initially, the researcher completed descriptive statistical tests and univariate analyses to generally understand the data and to identify potential issues with outliers. No significant concerns outliers were identified, and no surveys were removed at this stage.

Descriptive statistics helped to identify the sample's characteristics and to provide context for the remaining hypothesis testing results. Bivariate analyses and multi-variable analyses were conducted to complete hypothesis testing and address the remaining research questions, including Fisher's Exact test, independent sample *t*-test, and linear regression analysis.

Summary

The current chapter provided an overview of the study design and methodology. A description of the population and sample was presented. Each measure was described in detail, and the reliability data was included. Procedural information was incorporated above, giving a picture of participants' experience before, during, and after the survey. The steps of data

collection and data analysis were included in this chapter as well. Next, in chapter four, the results of all statistical testing will be presented in detail and in order of completion with relevant tables. All discussion of the results will be included in chapter 5.

CHAPTER 4

Results

This chapter provides information about the findings of statistical testing. The information is provided in a linear manner following the steps of completion. The chapter includes details of data preparation, descriptive statistics describing the sample and measures and the multi-variable analyses.

Data Preparation

An initial review of the data was conducted in Qualtrics. Seven surveys with incomplete data were deleted from the data set. Several verifications were in place within Prolific and Qualtrics to minimize the likelihood of the surveys being completed multiple times by the same participants or by Bots, including unique participant IDs managed by Prolific and Bot detection using reCaptcha verification. To maintain the integrity of the data, three surveys were removed due to reCaptcha scores below .50. All remaining 301 surveys included participants that successfully completed two attention check questions during the survey. Prior to exporting the data and commencing data analyses, all identifying information (i.e., Prolific ID number) was removed from the data set.

Descriptive Statistics

Univariate analyses were conducted to understand the scales and the sample, prior to bivariate or multivariable analyses. Each instrument was reviewed for outliers with univariate analyses and scatterplots, and no surveys were removed. Description of the sample by instrument can be seen in Table 2.

Symptom Severity Measures

Participants completed the first half of the survey with the following measures: GAD-7 (anxiety), PHQ-9 (depression), PHQ-15 (somatization), DES-B (dissociation), and BTQ (trauma). Overall, the sample indicated higher levels than previously expected national averages on each of the symptom severity measures for anxiety, depression, and somatization. For the GAD-7 scale, nearly half of the total sample (n = 148, 49%) reported clinically significant symptoms of anxiety, ranging from mild, moderate, and severe. The average score was 5.44 (SD = 5.40) falling into the mild range of anxiety and the median (Mdn = 4) just below the mild range. For the PHQ-9 scale, 51% of the sample reported symptoms of depression that ranged from mild to severe, meeting criteria of clinical significance (M = 6.4, SD = 6.35). Participants completed the PHQ-15 scale indicating their severity level of somatization. A majority of the sample (n = 173, 57.5%) indicated clinically significant somatization symptoms that ranged from mild to severe (M = 7.14, SD = 6.0).

The participants completed the 5-point Likert scale for the 8-item DES-B (measuring dissociation) with the average score .66 (SD = .64). Twenty-five percent of the sample indicated the presence of dissociation experiences, with mild, moderate, to severe symptom levels. Participants completed the BTQ disclosing their history of trauma exposure with 10 binary items. Roughly a quarter of the sample (n = 73, 24.3%) reported no trauma exposure in their lifetime, with most of the sample (n = 162, 54%) reporting between 1–3 experiences of trauma exposure and the remaining portion indicating four or more trauma experiences. The average response was 2.08 (SD = 1.85).

Table 2

Description of Sample by Measure

Measure	Cronbach's Alpha	Items	Range	*Mdn*	*M*	*SD*	*95% CI (M)*		*n*	%
GAD (Anxiety)	0.93	7	0–21	4	5.44	5.40	4.82	6.05		
None/Minimal									153	50.80
Mild									82	27.20
Moderate									41	13.60
Severe									25	8.30
PHQ-9 (Depression)	0.91	9	0–27	5	6.40	6.35	5.68	7.12		
None/Minimal									148	49.20
Mild									74	24.60
Moderate									40	13.30
Moderately severe									25	8.30
Severe									14	4.70
PHQ-15 (Somatization)	0.84	15	0–30	6	7.14	6.00	6.46	7.82		
None/ Minimal									128	42.50
Mild									82	27.20
Moderate									52	17.30
Severe									39	13.00
DES-B (Dissociation)	0.79	8	0–32	4	5.31	5.10	4.73	5.89		
None/ Minimal									225	74.80
Mild									63	20.90
Moderate									10	3.30
Severe									3	1.00
Brief Trauma Questionnaire		10	0–10	2	2.08	1.85	1.87	2.29		
None									73	24.30
1–2 exposures									117	38.87
3–4 exposures									81	26.91
5–6 exposures									23	7.64
7–8 exposures									6	1.99
9–10 exposures									1	0.30

Medical Trauma Experiences (MTE) Checklist

Starting the second half of the survey, participants completed the medical trauma experiences (MTE) checklist. The responses on the MTE checklist were scored by yes/no indicating the presence of medical trauma experiences or not into the following categories: illness (n = 74, 24.6%), abuse (n = 97, 32.2%), and adverse (n = 79, 26.2%). The types of abuse reported are as follows: sexual (n = 25, 8.3%), physical (n = 19, 6.3 %), emotional, (n = 82, 27.2%), and consent violation (n = 20, 6.3%). These were not mutually exclusive categories.

Descriptive statistics were conducted to answer the research question—what types of MTE do participants report? Out of 301 total participants, 156 participants (51.8%) reported at least one experience of illness, abuse, or adverse, and 23 participants (7.6%) reported at least one experience in all three MTE categories (i.e., MTE all 3). A demographic summary of MTE groups is presented in Table 3. Table 4 displays the descriptive statistics of MTE groups for each instrument, where average scores of symptom severity for each group were at clinically significant levels for the GAD, PHQ-9, PHQ-15, and the DES-B.

Two survey items gathered information about the experiences of discrimination in a medical setting. The 13 participants (4.3%) who reported discrimination based on race and ethnicity, identified as Black or African American (46.2%), Asian (15.4%), Latino/a (15.4%), and White (23%). The 17 participants (5.6%) that reported discrimination based on gender or sexual orientation indicated the following: 76.5% identified as female, 23.5% identified as male; 52.9% identified as straight, 35.3% as bisexual, 5.9% as gay, and 5.9% as queer.

Table 3

Demographic Summary and Bivariate Relationships with each MTE Group

	Illness *n = 74*		Abuse *n = 97*		Adverse *n = 79*		All 3 *n = 23*	
Measure	*n*	*%*	*n*	*%*	*n*	*%*	*N*	*%*
Age[a]	51.49	(13.6)	46.18	13.18	47.63	14.51	49	13.1
Gender	**0.44**	***p* = 0.880**	**9.79**	***p* = 0.004***	**2.98**	***p* = 0.189**	**0.78**	***p* = 0.715**
Female	39	52.70	61	62.90	45	57.00	13	56.5
Male	35	47.30	35	36.10	33	41.80	10	43.5
Non-binary	0	0.00	1	1.00	1	1.30	0	0.0
Ethnicity	**8.45**	***p* = 0.108**	**13.06**	***p* = 0.015***	**12.35**	***p* = 0.020***	**9.87**	***p* = 0.051**
American Indian or Alaska Native	1	1.40	2	2.10	3	3.80	1	4.3
Asian	2	2.70	1	1.00	4	5.10	0	0.0
Black or African American	10	13.50	16	16.50	12	15.20	6	26.1
Latino/ Latina	2	2.70	6	6.20	2	2.50	0	0.0
White	56	75.70	70	72.20	55	69.60	15	65.2
Multiple Races	3	4.10	2	2.10	3	3.80	1	4.3
Sexual Orientation[b]	**6.77**	***p* = 0.408**	**8.33**	***p* = 0.224**	**2.45**	***p* = 0.972**	**6.63**	***p* = 0.474**
Bisexual	9	12.20	16	16.50	11	13.90	6	26.1
Gay	2	2.70	2	2.10	1	1.30	0	0.0
Straight	60	81.10	76	78.40	66	83.50	17	73.9
Queer	3	4.10	3	3.10	1	1.30	0	0.0
Relationship Status	**15.91**	***p* = 0.005***	**2.56**	***p* = 0.778**	**16.58**	***p* = 0.004***	**4.45**	***p* = 0.425**
Single	12	16.20	24	24.70	16	20.30	3	13.0
Married/Civil Partnership	36	48.60	40	41.20	44	55.70	13	56.5
Separated or Divorced	10	13.50	11	11.30	10	12.70	3	13.0
Committed relationship (cohabitation)	10	13.50	16	16.50	7	8.90	3	13.0
Committed relationship (non-cohabitation)	1	1.40	4	4.10	2	2.50	1	4.3
Widowed	5	6.80	2	2.10	0	0.00	0	0.0
Education	**5.86**	***p* = 0.524**	**5.67**	***p* = 0.574**	**3.90**	***p* = 0.798**	**4.22**	***p* = 0.709**
Less than high school degree	2	2.70	1	1.00	0	0.00	0	0.0

Table 3 (continued).

High school diploma or equivalent (GED)	7	9.50	5	5.20	7	8.90	2	8.7
Some college but no degree	23	31.10	27	27.80	23	29.10	9	39.1
Associate degree (2-year)	11	14.90	16	16.50	13	16.50	4	17.4
Bachelor's degree (4-year)	24	32.40	35	36.10	27	34.20	7	30.4
Master's degree	7	9.50	10	10.30	8	10.10	1	4.3
Doctoral degree	0	0.00	1	1.00	0	0.00	0	0.0
Professional degree (JD, MD)	0	0.00	2	2.10	1	1.30	0	0.0
Employment	**20.07**	***p* <0.001***	**14.37**	***p* = 0.012***	**5.04**	***p* = 0.411**	**14.99**	***p* = 0.005***
Employed (full-time)	14	18.90	26	26.80	28	35.40	4	17.4
Employed (part-time)	22	29.70	33	34.00	22	27.80	7	30.4
Unemployed (seeking employment)	11	14.90	10	10.30	6	7.60	2	8.7
Unemployed (not seeking employment)	7	9.50	12	12.40	7	8.90	2	8.7
Disabled	8	10.80	8	8.20	8	10.10	6	26.1
Retired	12	16.20	8	8.20	8	10.10	2	8.7
Income	**5.56**	***p* = 0.475**	**3.99**	***p* = 0.682**	**3.91**	***p* = 0.694**	**4.17**	***p* = 0.648**
Less than $19,000	10	13.50	12	12.40	9	11.40	2	8.7
$20,000 to $39,999	21	28.40	21	21.60	19	24.10	7	30.4
$40,000 to $59,999	14	18.90	22	22.70	15	18.90	6	26.1
$60,000 to $79,999	12	16.20	15	15.50	10	12.70	2	8.7
$80,000 to $99,999	6	8.10	9	9.30	8	10.10	2	8.7
$100,000 to $149,999	9	12.20	14	14.40	15	19.00	4	17.4
$150,000 or more	2	2.70	4	4.10	3	3.80	0	0.0
Community Size	**6.96**	***p* = 0.073**	**5.13**	***p* = 0.163**	**15.38**	***p* = 0.001***	**6.61**	***p* = 0.073**
Small city or town	24	32.40	20	20.60	17	21.50	4	17.4
Suburb near a large city	24	32.40	36	37.10	26	32.90	7	30.4
Large city	13	17.60	25	25.80	16	20.30	5	21.7
Rural area	13	17.60	16	16.50	20	25.30	7	30.4

Note. Fisher's Exact test statistic and *p*-value presented above in bold. [a] *M* and *SD* presented for continuous variables. [b]Lesbian and Other categories were removed because of no values present.

Table 4

Descriptive Statistics of MTE Groups by Measure

		Illness *n = 74*			Abuse *n = 97*			Adverse *n = 79*			All 3 MTE *n = 23*		
Measure	Items/Range	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*M*	*SD*
GAD	7 (0–21)	5.00	5.81	5.15	7.00	6.96	5.22	6.00	7.05	5.67	8.00	7.74	4.05
PHQ-9	9 (0–27)	7.00	7.99	6.86	7.00	8.95	6.84	8.00	8.7	6.87	12.00	11.30	6.12
PHQ-15	15 (0-45)	8.50	9.77	6.89	9.00	9.75	6.28	9.00	9.61	6.73	11.00	13.09	7.40
DES-B	8 (0–32)	0.63	0.80	0.75	0.63	0.83	0.73	0.75	0.87	0.71	1.00	1.14	0.71
BTQ	10 (1–10)	3.00	2.89	2.04	3.00	2.94	1.91	3.00	3.08	1.89	4.00	4.09	2.02
IES-R	22 (0–88)	12.00	19.46	18.09	15.00	21.85	19.02	20.00	22.65	18.89	35.00	29.48	20.26

Note. Clinical severity ranges for each instrument are as follows: GAD mild anxiety (5–9), moderate (10–14) and severe (15+); PHQ-9 mild depression (5–9), moderate (10–14) and severe (15+); PHQ-15 mild somatization (5–9), moderate (10–14) and severe (15+); DES-B average scores rounded to nearest whole number, none (0), mild (1), moderate (2), severe (3), and extreme (4); BTQ scores indicate the number of trauma exposures; IES-R - none to subclinical PTSD symptoms (0-24), partial to full PTSD diagnosis likely (24-36), and severe/chronic (37+).

Health Conditions Checklist

Participants were presented a list of all MTE responses that were selected with "yes" to reference when completing the remaining two assessments: health checklist and IES-R. For the health conditions checklist, participants were prompted to select only the health conditions they were being treated for at the time of any reported MTE (selecting all that applied). In regard to the research question—What health conditions are associated with MTE, see Table 5 for detailed information. The total sum of subgroups (illness, adverse events, and abuse) across each of the 50 health conditions were calculated using SPSS and excel. The same health condition—accident or physical injury (n = 104)—was listed most frequently by participants across each MTE group of illness, adverse events, and abuse.

Table 5

Health Conditions Checklist Frequency by MTE

Variable	Illness	Abuse	Adverse
	n	*n*	*n*
Accident or physical injury	28+	43+	33+
Allergies	10	13+	10
Anxiety	13+	24+	19+
Arrhythmias (irregular heartbeat)	6	9	7
Arthritis or joint issues	12	10	12
Asthma	5	8	7
Back Issues	16+	18+	18+
Blood Pressure	16+	12	14+
Cancer	23+	10	13+
Cardiovascular issue/Heart attack—Urgent health issue	11	3	7
Cardiovascular or Heart issue —Non-urgent	5	5	6
Cholesterol issues	5	5	6
Chronic pain	14+	22+	13+
Cold, Flu, or Respiratory illness	6	8	8
Coronavirus (COVID-19)	8	6	5
Dental care	14+	24+	19+
Depression	13+	23+	17+
Diabetes	13+	6	10
Digestion issues	10	9	9
Dizziness or vertigo	9	5	7
Domestic or physical violence injury	4	3	4
Endocrine or thyroid issue	2	3	4
Epilepsy	1	1	1
Eyesight	10	10	9

Table 5 (continued).

Fibromyalgia	4	3	2
General medical exam/Physical	7	18+	10
Hearing and Ear	2	5	2
HIV/AIDS	1	0	0
Infection (bacterial, virus, parasitic diseases, etc.)	10	12	11
Lung issue	7	2	5
Malaise and fatigue	4	3	3
Men's health	1	1	1
Migraine or headaches	7	9	7
Muscular or connective tissue issue	5	6	7
Neoplasm (growth, tumor, etc.)	1	0	1
Neurologic disorder (e.g., epilepsy, stroke, TBI, multiple sclerosis)	3	2	3
Obesity or weight management	5	11	9
Other mental health Issue	6	7	4
Podiatry/Feet	2	2	2
Sexual Assault	4	5	4
Sexual Health	5	5	6
Skin issue	7	11	7
Sleep issues	6	7	7
Stroke or transient ischemic attack (TIA)/mini-stroke	0	0	0
Substance use or overdose	2	2	3
Surgery	20+	18+	20+
Urinary tract infection/Bladder	5	7	6
Women's health (gynecological exam or interventions)	9	19+	18+
Women's health (childbirth)	9	13+	10
Women's health (pregnancy)	5	11	7

Note. +Indicates the top 10 most frequently selected health condition by MTE group which are not mutually exclusive. Bolded health conditions were most frequent by all 3 MTE groups.

IES-R

The participants that reported one or more MTE completed the IES-R. Again, participants were presented a list of all MTE "yes" responses that were selected prior to reference when completing the IES-R. Scores ranged from 0 to 66, with the average IES-R score being 19.1 (*SD* = 17.5; *MD* = 14). In the subclinical PTSD symptom range, 77 participants (47%) scored between 0–12 with none to minimal symptoms present, and 29 participants (17.8%) scored between 13 and 23 indicating some PTSD symptoms present. Fifty-seven participants (35%) that reported one or more MTE indicated symptoms of PTSD that were at or above a clinically significant level, likely qualifying for a PTSD diagnosis. This includes 27 participants in the likely PTSD diagnostic level and 30 participants falling in the severe or chronic PTSD symptom severity range.

Bivariate Analyses

Fisher's Exact, Pearson's *r*, and independent sample *t*-tests were conducted in SPSS. The correlation coefficients can be seen in Table 6. In the sample, all correlations were found statistically significant for the following instruments: GAD-7, PHQ-9, PHQ-15, and DES-B. In the portion of the sample that indicated one or more MTE, all correlations were found statistically significant for the following instruments: GAD-7, PHQ-9, PHQ-15, DES-B, and IES-R. Significant correlations were found between all measures, as seen in Table 6.

Table 6

Correlations of Measures

	Sample (N = 301)				
Measures	1	2	3	4	5
1. GAD					
2. PHQ-9	0.83**				
3. PHQ-15	0.67**	0.77**			
4. DES-B	0.61**	0.66**	0.56**		
	MTE groups (n = 163)				
Instrument	1	2	3	4	5
1. GAD					
2. PHQ-9	0.81**				
3. PHQ-15	0.62**	0.72**			
4. DES-B	0.51**	0.62**	0.51**		
5. IES-R	0.38**	0.45**	0.42**	0.48**	

Note. ** Correlation is significant at the 0.01 level (2-tailed)

MTE Groups

Significance testing for the research question—Do demographic groups differ on types of medical trauma experiences reported?—Was determined using Fisher's Exact tests (instead of Chi Square tests due to some expected values less than 5). In the above Table 3, the Fisher's Exact test statistics and p-values for all bivariate relationships of MTE group variables and demographic variables are included. For all Fisher's Exact tests, the null hypothesis states that there is no association/relationship between (MTE group) and (demographic variable).

For gender and the MTE abuse group, the null hypothesis was rejected (Fisher's Exact statistic = 9.79, $p = .004$). In all other MTE groups (i.e., illness, adverse events, MTE all 3), no relationship with gender was of statistical significance and the null hypothesis was not rejected. With regard to ethnicity, statistically significant relationships were found with MTE abuse (Fisher's Exact statistic = 13.06, $p = .015$) and MTE adverse (Fisher's Exact statistic = 12.35, $p = .020$). Therefore, the null hypothesis was rejected. The null hypothesis was maintained, as no significant relationship was present with ethnicity and MTE illness group. A nearly significant relationship with present with ethnicity and MTE all 3 group (Fisher's Exact statistic = 9.87, $p = .051$). For sexual orientation and all MTE groups, the null hypothesis was upheld as no statistically significant relationship was present. With the relationship status variable, an association was found with MTE illness (Fisher's Exact statistic = 15.91, $p = .005$) and MTE adverse events (Fisher's Exact statistic = 16.58, $p = .004$), supporting the rejection of the null hypothesis. No association was found with relationship and MTE abuse or MTE all 3. The null hypothesis was not rejected for education and all MTE groups, as no statistically significant values existed. Significant associations were determined for the following categorical variables: employment and MTE illness (Fisher's Exact statistic = 20.07, $p < .001$), employment and MTE abuse (Fisher's Exact statistic = 14.37, $p = .012$), and employment and MTE all 3 (Fisher's Exact statistic = 14.99, $p = .005$). No significant relationships were determined between income and all MTE groups. Community size and MTE adverse events were associated at a significant level (Fisher's Exact statistic = 15.38, $p = .001$). The null hypothesis was not rejected for community size and other MTE groups, since no significant relationships were found.

Independent sample *t*-tests were used to compare the mean age between MTE group category (i.e., MTE reported and MTE not reported). More specifically, the mean age of

participants that reported MTE illness (M =51.49, SD = 13.60) compared to participants that did not report MTE illness (M =43.83, SD = 16.64) was significantly different (t(299) =-3.59, p <.001). With the MTE abuse variable, no difference between means was found between those who reported MTE abuse (M =46.18, SD = 13.18) and those who did not (M =45.50, SD = 17.56; t(299) = -.34, p =.735). No significant difference was found with average age of participants who reported MTE adverse events (M =47.63, SD = 14.51) or those who did not report MTE adverse events (M =45.03, SD = 16.82; t(299) =-1.22, p =.223).

Discrimination

Participants that reported racial discrimination (n = 13) significantly differed from the expected values for ethnicity. The Fisher's Exact test indicated a significant association with reported racial discrimination and ethnicity (Fisher's Exact statistic = 17.71; p =.002). An independent t-test showed no significant difference in the mean age of participants who reported compared to those who did not report discrimination based on race and ethnicity.

Participants that reported discrimination based on sexual orientation or gender identity (n = 17) significantly differed from the expected values. A Fisher's exact test indicated a significant association with reported sexual orientation discrimination and sexual orientation (Fisher's Exact statistic = 16.75; p < .023). An independent t-test showed no significant difference in the mean age of participants who reported compared to those who did not report discrimination based on sexual orientation or gender.

Institutional Betrayal

The relationship between reported institutional betrayal and gender was found non-random and significant (Fisher's Exact statistic = 6.41, p < .040). Similarly, the relationship between reports of institutional betrayal and ethnicity was found to be non-random and significant (Fisher's Exact statistic = 15.56, p < .004). An independent t-test showed no significant difference in the mean age of participants who reported institutional betrayal (M

=42.29, *SD* = 14.26) compared to those who did not report institutional betrayal (*M* =46.07, *SD* = 16.44; *t*(299) =1.17, *p* = .242).

Participants Who Reported MTE

The following research question was addressed next: Do participants that report MTE indicate greater levels of: (a) anxiety, (b) depression, (c) somatization, and (d) dissociation then participants that report none? MTE includes all and any experiences reported in the following categories: illness, abuse, adverse event, discrimination, and institutional betrayal. To test the hypothesis that symptom severity would be significantly higher with MTEs, the mean scores on the symptom severity measures were compared between MTE and no MTE in the sample. Table 7 provides statistics on *t*-test analyses by instrument. The mean scores were found significantly different between participants who reported one or more MTE and those participants who reported none for each instrument: GAD-7, *t*(299) =-3.15, *p* = .002; PHQ-9, *t*(299) =-4.34, *p* < .001; PHQ-15, *t*(299) =-5.79, *p* < .001; DES-B *t*(299) =-2.21, *p* = .028.

Table 7

Comparing Group Means by Measures

	No MTE		MTE[a]			
Measure	*M*	*SD*	*M*	*SD*	*t*	*p*
GAD-7	4.38	5.25	6.33	5.39	-3.15	0.002*
PHQ-9	4.72	5.77	7.82	6.50	-4.34	<.001**
PHQ-15	5.07	5.19	8.90	6.11	-5.79	<.001**
DES-B	0.58	0.59	0.74	0.67	-2.21	0.028*

Note. df = 299; [a] MTE includes illness, abuse, adverse, discrimination and institutional betrayal* $p < .05$, ** $p < .001$

Multi-variable Analysis

Regression analyses were used to explore the relationship between multiple variables, to address the research question: What are the relationships among the type of MTE and symptoms of traumatic disturbance? A multiple linear regression model was used to quantify the relationship between MTE groups (MTE illness, MTE abuse, MTE adverse events) predicting the IES-R scores as a measure of traumatic disturbance, when controlling for previous trauma exposure using the BTQ score. The overall regression was statistically significant, $R^2 = .14$, ($F(4, 155) = 6.27$, $p < .001$). There was a significant mean difference between the participants that reported an adverse event versus not on the IES-R ($B = 7.82$, $p = .006$), even after controlling for the other predictors in the model. Similarly, there was a significant mean difference between the participants that reported abuse versus not on the IES-R ($B = 8.76$, $p = .004$), even after controlling for the other predictors in the model. A significant mean difference was not found between those that reported illness and those that did not on the IES-R($B = 2.02$, $p = .467$). Table 8 shows the complete linear regression model statistics.

Table 8

Linear Regression Analysis MTE Groups

Instrument	*B*	*SE*	*p*	95% CI	
Illness	2.02	2.77	0.467	-3.35	7.50
Adverse	7.82	2.79	0.006	2.31	13.32
Abuse	8.76	2.97	0.004	2.90	14.63
BTQ	1.66	0.75	0.029	0.17	3.15
Intercept	4.14	3.47	0.234	-2.71	10.99

Note. $R^2 = .14$, ($F(4, 155) = 6.27$, $p < .001$)

Additional linear regression models were used to determine the relationship between MTE discrimination predicting traumatic disturbance using IES-R and MTE institutional betrayal predicting traumatic disturbance using IES-R. MTE Institutional betrayal was a significant predictor for the IES-R (B = 12.08, p <.001) controlling for previous trauma exposure using the BTQ, with the overall regression significant as well, R^2=.12, (F(2, 162) = 11.31, p <.001. MTE Discrimination based on race and ethnicity was a significant predictor for traumatic disturbance using the IES-R score (B = *9.94*, p =.043) even controlling for previous trauma exposure using the BTQ, with the overall regression significant as well, R^2=.08, (F(2, 162) = 7.11, p <.001. MTE discrimination based on gender or sexual orientation was not a significant predictor of IES-R (B = 7.11, p =.104), with the overall model showing significance (R^2=.07, (F(2, 162) = 6.32, p <.002). See Tables 9, 10, and 11 for all regression statistics.

Table 9

Linear Regression Analysis Institutional Betrayal

Measure	*B*	*SE*	*p*	95% CI	
Institutional Betrayal	12.08	3.48	<.001	5.21	18.95
BTQ	1.84	0.71	0.011	0.43	3.24
Intercept	12.04	2.31	<.001	7.48	16.61

Note. R^2 = .12, (F(2, 162) = 11.313, p <.001)

Table 10

Linear Regression Analysis Discrimination Race and Ethnicity

Measure	*B*	*SE*	*p*	95% CI	
Discrimination - Race and Ethnicity	9.94	4.88	0.043*	0.30	19.58
BTQ	2.32	0.72	0.002	0.90	3.73
Intercept	12.03	2.39	<.001	7.30	16.76

Note. R^2 = .08, ($F(2, 162) = 7.107$, $p < .001$)

Table 11

Linear Regression Analysis Sexual Orientation

Measure	*B*	*SE*	*p*	95% CI	
Discrimination - Sexual Orientation	7.11	4.35	0.104	-1.49	15.71
BTQ	2.20	0.72	0.003	0.78	3.63
Intercept	12.40	2.39	<.001	7.69	17.20

Note. R^2 = .07, ($F(2, 162) = 6.323$, $p < .002$)

Summary

In this chapter, the results of the study were presented. The descriptive and inferential statistics were included with details of the statistical test, the test statistics, and information regarding significance. Medical abuse was significant associated with gender, ethnicity, and employment. Medical illness was significantly associated with relationship status and employment. Medical adverse events were significantly associated with ethnicity, relationship status, and community size. The mean scores were found significantly different between participants who reported one or more MTE and those participants who reported none for

symptom severity measures: GAD-7, PHQ-9, PHQ-15, and DES-B. A multiple linear regression model indicted that both abuse and adverse events were significant predictors of IES-R (PTSD symptoms) when controlling for previous trauma exposure, and life-threatening illness was not a significant predictor of IES-R (PTSD symptoms). In chapter five these results are discussed in the context of the relevant literature and implications for counselors and researchers.

CHAPTER 5

Discussion

The previous chapters introduced this study, information about previous literature, methodology, and the results. This chapter will provide a discussion of the current findings in connection to previous findings. The limitations, implications, and conclusions for future research are presented below.

Discussion of The Sample

The sample aligned closely with the national representation of demographic groups, supporting the generalizability of the findings. The sample did report symptoms of anxiety, depression, somatization, and dissociation at higher-than-expected levels. Nearly 50% of the sample reported mild, moderate, or severe symptoms of anxiety, depression, and somatization. Previous studies reported having estimated dissociation symptoms in less than 10% of the U.S. population. For comparison, 25% of this sample reported symptoms of dissociation that were mild, moderate, or severe. Following the Covid-19 pandemic, these numbers may likely display the psychological impact on the general populations' mental health condition.

Previous surveys of the general population estimated that more than half of U.S. adults have experienced at least one major traumatic event (Briere & Scott, 2015). The current findings suggest that the estimate would be higher, with 75.7% of the sample indicating one or more trauma exposure on the BTQ and 54.2% reporting one or more medical trauma experience.

Recommendations for Practice and Future Research

MTE Occurrence

The present findings provide approximate estimations of experiences in the U.S. population. Roughly 26% of participants reported an adverse event, which is larger than some

previous studies have suggested as being an occurrence of 10% of patients (de Vries et al., 2008) and consistent with reports of occurrence of 25% of Medicare patients (Office of Inspector General, 2022).

Most previous medical research has focused on the psychological impact of illness or adverse events. The current findings suggest that abuse in a medical setting occurs at similar, if not higher, rates than illness or adverse events within the U.S. population yet is disproportionately less represented in the research literature. Abuse reported at the following rates support not only future research and practice changes, but an urgency to consider and implement strict changes to protect the patients from harm: sexual (*n = 25*, 8.3%), physical (*n* = 19, 6.3 %), emotional, (*n = 82*, 27.2%), and consent violation (*n = 20*, 6.3%).

In terms of national occurrence, the discrimination and institutional betrayal findings have weak generalizability due to single-item measures. The findings in this sample likely provide under-estimations of actual occurrence in the U.S. populations. Previous findings that have focused on the difference in experience across ethnic and racial groups have reported higher occurrences. For example, researchers found that 27.2% of women of color reported medical mistreatment as compared to 18.7% of White women (Vedam et al., 2019). Additionally, this suggests that the sample size of the current study, while nationally representative, may have been too small to detect statistical significance for occurrence purposes. Also, the research design may have created a limitation to capturing the actual occurrences for people of color. As other studies have seen that regardless of the race of the mother, women who had a partner that was Black reported medical mistreatment at an increased rate (Vedam et al., 2019). This was outside of the scope of this study, yet an important consideration for future research, is the presence of other

people during MTE and how that may impact the types of experiences and the severity of psychological impact.

MTE Locale

When reviewing the literature, I noticed the vast specialty areas in medical treatment and potentially the significance in knowing where in the medical system MTE may be occurring at more significant frequency. This led to creating the research question: What health conditions are associated with MTE? Across illness, abuse, and adverse events, treatment for physical injury or accident was listed most frequently as the health condition that initiated treatment when the MTE occurred. Other most frequently indicated health conditions include the following: anxiety, back issues, chronic pain, dental care, depression, surgery, and gynecological exams. The implications of these findings are that the impact of treatment in these areas of medicine are more likely to leave patients with the occurrence of MTE and potential traumatic disturbance.

These findings suggest that medical training, medical supervision, more diligent oversight, and research could benefit by focusing on these specialty areas: emergency care, mental health care, chronic pain, and gynecology. For counselors and other mental health workers, there are several places for client support and advocacy. Clinicians can be aware that clients who experience emergency care may have experienced an adverse event or abuse in addition to the medical illness. Detecting these complications and potential experiences of harm or betrayal, will inform mental health treatment with greater clarity, leaving clients with improved overcomes and recovery. Researchers examining medical trauma, betrayal or related areas can focus on the health conditions described for sample recruitment or populations of interest.

MTE Population and Demographic Disparities

Significant differences were found in the types of reported MTE across demographic groups. As earlier stated, medical abuse was reported at greater frequencies by those with female gender identities and marginalized ethnic groups. Therefore, the people in the U.S. population that identify as part of the following ethnic groups are more at risk for abuse in a medical setting: American Indian or Alaska Native, Asian, Black or African American, Latino/Latina, and multiple races.

With adverse events, significant associations were found with ethnicity, relationship status, and community size for reported MTE. The portion of the MTE adverse events group that reported a marginalized ethnicity was of larger portions than seen in the total sample for those demographic groups, suggesting that adverse events happen in greater proportions to those of marginalized ethnic or racial groups in the U.S. population. The portion of the MTE adverse events group that reported *rural area* was larger than portions seen in the sample or MTE illness group or MTE abuse group.

These findings reveal demographic disparities with marginalized groups and expose a need for intervention supporting more positive interactions between patient and medical worker. As seen in counselor education training, the combination of knowledge, self-awareness, skill development, practice, and supervision better prepare clinicians to relate, connect, and support clients from diverse backgrounds. Developed by Jean Baker Miller (1967), several ideas and principles from relational-cultural theory can be used to operationalize and apply the findings of this study: the importance of understanding contextual factors and power dynamics, growth-fostering relationships, empathy, and authenticity. Such preparation would further equip and

empower medical workers to understand the needs of their patients and how to care for their patients more effectively.

MTE and Traumatic Distress

MTE abuse and MTE adverse events were significant predictors of IES-R scores. Surprisingly, MTE illness was not found to be a significant predictor of IES-R score. Most medical research focuses on the relationship between illness and PTSD. Based on this sample, the abuse MTE and the adverse events MTE are more likely predictors of PTSD as connected to medical experiences, even when controlling for other types of trauma exposure. Similarly, experiences of racial and ethnic discrimination and institutional betrayal were significant predictors of IES-R traumatic disturbance scores. The findings suggest that these experiences create significant psychological distress for people.

The implications for counselors and other mental health professionals are to consider these types of experiences when assessing for trauma exposure as part of clinical diagnosis and treatment. People that experience trauma may have a disruption of memory or ability to recall the event, yet still experience distressing symptoms of PTSD. For example, Disch and Avery (2001) found that nearly 40% of survivors of sexual abuse by professionals reported a time-period where they could not remember what happened to them. Therefore, counselors are challenged to consider that people who have MTEs may not mention the experiences without prompting and at times memory of the experiences may be disrupted.

These findings have implications for future research, training, and policy. Future researchers may find a qualitative approach beneficial for understanding the experiences of medical abuse, adverse events, discrimination, and institutional betrayal. There is a need for a

clearer perspective on traumatic distress in patients that is more relational (i.e., listening, understanding) empathetic medical care.

The most recent case of gender-based medical abuse, the 2020 story of the Yale Fertility Center that made headlines, where it took more than 200 women expressing excruciating pain before it was discovered that a nurse had secretly swapped out their pain medication for saline (Lindner, 2023). This example disturbingly describes patient care as task-focused and less connected and relational. Similarly, a nursing student shared a clinical training experience with me. She shared that a training nurse gave her suggestions about dealing with patients that are difficult, which was to distract them or to intentionally not inform them of medical procedures. The nursing student witnessed the nurse dismissing a patient's efforts to communicate with her (expressions of pain, questions) and the nurse turned him over and inserted a suppository anally. Anal penetration with deception and without consent is rape. In both accounts and in the current study's findings, patients' voices can be heard. Whether conscious or unconscious, there is a tuning out or dismissal of patient voice that requires action on a training and policy level.

Conclusion

The results of this study contribute to the understanding of the MTE and the relationships between the following variables and MTE: demographic groups, health conditions, and mental health conditions. It is important that the findings are interpreted within context of the studies limitations. One limitation mentioned above, is that no casual conclusions can be drawn from the study based on the descriptive research design and testing utilized in the present study.

Additional limitations include sample size. While the sample size followed nationally representative standards, the representation of marginalized groups in ethnicity or race, sexual orientation, gender identity, and other groups who often experience discrimination is limited.

Future qualitative and quantitative studies could focus more of the MTE of these under-represented groups. In addition, generalizability is limited due to the unknowns regarding the people that were presented the study and chose not to move forward and the people that did not complete the survey.

The contributions of these findings must also be placed into systemic context. Future research on the medical system is required to understand the application of such findings, so in which ways can training and medical oversight be changed to reduce the frequency of MTE. These findings contribute to the understanding of the types of MTE and the associated psychological symptoms for the mental health and mental health counseling communities. Counselors are challenged to consider inquiring about these experiences for diagnostic and treatment purposes. Future research is needed by the counseling profession to expand on the understanding of the individual experiences and the potential systemic advocacy needs.

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APPENDICES

Appendix A

Demographic Questionnaire

1. What is your age? ___

2. What is the highest level of school you have completed or the highest degree you have received?
    - Less than high school degree
    - High school graduate (high school diploma or equivalent including GED)
    - Some college but no degree
    - Associate degree in college (2-year)
    - Bachelor's degree in college (4-year)
    - Master's degree
    - Doctoral degree
    - Professional degree (JD, MD)

3. What is your average household income?
    - Less than $10,000
    - $10,000 to $19,999
    - $20,000 to $29,999
    - $30,000 to $39,999
    - $40,000 to $49,999
    - $50,000 to $59,999
    - $60,000 to $69,999
    - $70,000 to $79,999
    - $80,000 to $89,999
    - $90,000 to $99,999
    - $100,000 to $149,999
    - $150,000 or more

4. Which of the following categories best describes your current employment status?
    - Employed (part time)
    - Employed (full time)
    - Not employed, looking for work
    - Not employed, NOT looking for work
    - Disabled
    - Retired

5. What is your current relationship status?
    - Committed relationship (not living together)
    - Committed relationship (living together)
    - Married or civil partnership

- Separated or divorced
- Single
- Widowed

6. Which of the following best describes your sexual orientation?
    - Asexual
    - Bisexual
    - Gay
    - Lesbian
    - Queer
    - Straight
    - Other

7. What is your gender?
    - Female
    - Male
    - Non-binary
    - Other

8. What is your ethnicity?
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Latino/a
    - Native Hawaiian or Pacific Islander
    - White
    - Multiple races

9. What best describes the place where you live?
    - Small city or town
    - Suburb near a large city
    - Large city
    - Rural Area

10. What is your ZIP code?

Appendix B

Medical Trauma Experiences (MTE) Checklist

Please answer the following questions about your medical experiences during your lifetime. Please consider your experiences with health care, including interactions with nurses, doctors, and medical staff, medical procedures, interventions, hospital visits, dental care or procedures, and any other contact with the health system where you were a patient.

	No	Yes
Have you ever experienced a serious or life-threatening illness?		
Have you ever received a serious or life- threatening health diagnosis?		
Have you ever experienced a medical situation where an unwanted procedure or intervention was conducted without your informed consent or permission?		
Have you ever experienced a medical situation where you were asked to undress or show your body when not appropriate or necessary?		
Have you ever experienced a medical situation where you were physically mistreated or abused by a medical worker (doctor, nurse, or other medical employee)? (For example, a procedure conducted more aggressively than necessary; pushing you; shoving you)		
Have you ever experienced sexual mistreatment, sexual harassment, sexual assault, or sexual abuse by a medical worker (doctor, nurse or any other medical employee)? (For example, having unwanted sexual conversations, touching you or having you touch their body in a sexual way; attempting or having sexual contact with you)		
Have you ever experienced a medical situation where you were emotionally or psychologically mistreated or abused? (For example, you were disregarded, offended, bullied, humiliated)		
Have you ever experienced a medical situation where you were betrayed by a medical worker(s), medical practice, health clinic, or hospital? (For example, you were discouraged from reporting negative events, your experience was invalidated or mishandled, mistakes were covered up, or you were punished or pressured to protect the reputation of the medical worker or practice).		
Have you ever experienced a medical situation where you were mistreated or discriminated because of your race or ethnicity?		
Have you ever experienced a medical situation where you were mistreated or discriminated because of your gender identity or sexual orientation?		
Have you ever experienced a routine medical event that suddenly became scary?		
Other medical error, adverse experience, or lasting/unexpected pain associated with medical care?		

Please indicate how many separate medical experiences you were referring to in the statements you selected above:

- None
- 1
- 2
- 3 or more

Please select the option or options that best describe when the medical experiences occurred. Select all that apply.

- Within the last 6 months
- 6 months to 1 year ago
- 1-3 years ago
- 3-5 years ago
- 5-10 years ago
- 10 or more years ago

Appendix C

Health Conditions Checklist

	Health Conditions	0 = (not selected)	1 = Selected
1	Accident or physical injury		
2	Allergies		
3	Anxiety		
4	Arrhythmias (irregular heartbeat)		
5	Arthritis or joint issues		
6	Asthma		
7	Back Issues		
8	Blood Pressure		
9	Cancer		
10	Cardiovascular issue/Heart attack—Urgent health issue		
11	Cardiovascular or Heart issue —Non-urgent		
12	Coronavirus		
13	Cholesterol issues		
14	Chronic pain		
15	Cold, Flu, or Respiratory illness		
16	Dental care		
17	Depression		
18	Diabetes		
19	Digestion issues		
20	Dizziness or vertigo		
21	Domestic or physical violence injury		
22	Endocrine or thyroid issue		
23	Epilepsy		
24	Eyesight		
25	Fibromyalgia		
26	General medical exam/Physical		
27	Hearing and Ear		
28	HIV/AIDS		
29	Infection (bacterial, virus, parasitic diseases, etc.)		
30	Lung issue		
31	Malaise and fatigue		
32	Men's health		
33	Migraine or headaches		
34	Muscular or connective tissue issue		
35	Neoplasm (growth, tumor, etc.)		
36	Neurologic disorder (epilepsy, stroke, traumatic brain injuries [TBI], multiple sclerosis, etc.)		
37	Obesity or weight management		
38	Other mental health Issue		
39	Podiatry/Feet		
40	Sexual Assault		

41	Sexual Health		
42	Skin issue		
43	Sleep issues		
44	Stroke or transient ischemic attack (TIA)/mini-stroke		
45	Substance use or overdose		
46	Surgery		
47	Urinary tract infection/Bladder		
48	Women's health (gynecological exam or interventions)		
49	Women’s health (childbirth)		
50	Women’s health (pregnancy)		
51	Other		