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Trauma-Informed Healing: Clinicians perspectives on key factors to address Black adolescent gunshot wound survivors physical and mental health needs
A qualitative study

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CHAPTER 1: INTRODUCTION

Background

Firearm death and injuries are the second most prevalent causes of injuries in children cared for in American trauma centers (Bayouth, Lukens-Bull, Gurien, Tepas, & Crandall, 2019). These numbers disproportionately affect Black adolescents in urban settings who experience a high prevalence of violence that directly impacts their current and future health outcomes (Sheats, et al. 2018). Black adolescents in urban areas, like the Atlanta area, are exposed to higher rates of interpersonal and community violence than their peers, despite socioeconomic status (Gaylord-Harden, Cunningham, & Zelencik 2011). These constant exposures to trauma can increase daily stress, anxiety, and hyper vigilance which have been demonstrated to increase rates of cardiovascular disease and other prevalent chronic diseases in the Black community (Janusek, Tell, Gaylord-Harden, & Mathews 2017). In particular, Black adolescents are disproportionately exposed to gun violence; rates of firearm deaths are 10 times higher in Black youth than their white counterparts, 61% of adolescents with firearm injuries were Black yet Black patients only make up 14% of the pediatric population (Olufajo, et al., 2020).

Adults who report high experiences of ACES (adverse childhood experiences) including domestic violence, abuse, and neglect are more likely to experience disruptive sleep patterns, CVD, diabetes, stroke, cancer, and other chronic diseases (Umlauf, Bolland, & Lian 2011). These physical health outcomes may be due to psychosomatic responses in which emotional and psychological responses to traumatic stimuli translate into somatic outcomes or consequences (Černi-Obrdalj, et al., 2010). In Candace B. Pert, MD book *Molecules Of Emotion: The Science*

Behind Mind-Body Medicine Dr. Candace Pert discusses how the body and mind are one, named the "bodymind", and if we were to explore the emotions and the role they play in the body it would be clear how emotions can be seen as a key to understanding disease (Pert,2003). The traumatic experiences youths have can contribute to negative emotional and physical health outcomes (Sonu, Post, & Feinglass 2019).

Better understanding of how to alleviate some of the long term and immediate effects of trauma through trauma-informed care for African American gunshot wound survivors has the potential to improve their emotional and physical health outcomes. As defined by the Substance Abuse and Mental Health Services Administration (SAMHSA), trauma informed care is when a program, organization, or system realizes the widespread impact of trauma and understands potential paths for recovery; recognizes the signs and symptoms of trauma in clients, families, staff, and others involved with the system; and responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re- traumatization (SAMHSA, 2014). Trauma informed care could potentially better the trajectory of outcomes for trauma patients. Trauma-informed care lowers the risk of retraumatizing or introducing new traumas to pediatric patients and their families (Marsac, et al. 2016). Violently injured urban youth treated after a gunshot wound are more likely to die from a subsequent injury (Cunningham, et al. 2009). Many studies have proven that violence is not inevitable and is a preventable health care problem (Cunningham, et al. 2009). The trauma informed approach helps clinicians, and all involved, realize the widespread impact of trauma, its effects on patients, families, staff and the system, and prevent re-traumatization (Brown, King, & Wissow 2017).

Most medical providers do not receive trauma informed care training; leaving a potential gap in care for patients (Marsac, et al. 2016).

Problem Statement

Adverse childhood experiences have been linked to numerous chronic health problems (Sonu, Post, & Feinglass, 2019). In Georgia, 14.4% of Black adults have diabetes, 4.7 % have had a heart attack, and 4.2% have had a stroke (BRFSS, 2018) and between the years of 2012 and 2016 there were 5,031 cases of cancer in Black adult males and 4,905 cases of cancer in Black adult females ("Cancer Reports", 2019). Further, 29% of Georgia Blacks reported having at least one ACE and 30% reported having two or more ACEs (Sacks & Murphey, 2018). These numbers suggest a potential correlation of ACEs (adverse childhood experiences) and adult health in the Black community. In the not too distant past, medical doctors, clinicians, and health educators taught that many chronic illnesses, such as cardiovascular disease and diabetes, were specifically common and genetically more prone in the Black community. It was not until more recent discovery and attention to socioeconomic status (SES) and other social determinants of health that it was realized that these illnesses are largely attributable to situational and generational patterns and not solely because of one's race. Despite this new realization, chronic diseases such as diabetes and CVD are still prevalent at higher rates in the Black community compared to other racial groups. Although it is understood that many external components factor into these poor health outcomes, further work is need to identify specific targets of intervention.

Purpose Statement

Approximately 40 children between the ages of 14-17 arrive with gunshot wounds annually at Grady Memorial hospital alone. The purpose of this study is to better understand

clinician's perspectives of the experiences of past traumas, and acute gunshot injury among these adolescents with specific attention to their physical and emotional health and how these patients experience within the hospital impacts their physical and emotional recovery. While previous studies have included quantitative approaches towards gathering data using different survey tools that measure the impact of the youth's trauma before the incident, during the hospital experience, and post trauma evaluations, this study seeks to gather qualitative data to further explore the perspectives of clinicians of these patients regarding how these constant stressors impact psychosomatic outcomes in their patients' health and how providers can lessen and heal some of the trauma through trauma-informed care. Studies say that there is no standard structure for trauma-informed care for adolescence gunshot wounds survivors, this study aims to fill that gap by identifying key components of trauma-informed care for Black adolescent gunshot wound patients from the perspective of the clinicians that serve them.

Research Questions

1. What is the perspective of clinicians on the psychological, physical, and social experiences of adolescent African American gunshot wound survivors and how these experiences impact their healing process?

Rationale

Due to a limited understanding of the lived experiences of Black adolescent gunshot wound patients, the current study aimed to fill multiple gaps. The population we planned to study were young Black gunshot wound victims, ages 14-17, at Grady memorial hospital in Atlanta, GA and the clinicians that care for this population. In studying vulnerable populations, various circumstances may force researchers to operate with samples of available subjects

(Abrams, 2010). The goal was to include various genders, ages, and grade levels of patients; however, it is understood that the sampling plan does not leave much control. While, initially the research team sought to interview youth who have survived gunshot wound injury at Grady Memorial Hospital, due to barriers reaching this population, the team adjusted to focusing on the clinician perspective of the youth's experience prior to and post-acute injury. This study used convenience and snowball sampling to conduct open-ended interviews with 10 clinicians.

Theoretical Framework

Clinical medicine traditionally views somatic symptoms to a have corresponding pathological foundation (Zeng, Sun, Yang, Shen, & Liu 2016). The psychosomatic medicine *bodymind* theory allows for the mental and physical experiences of the participants to be viewed together and separately intrinsically. This theory states that there is a psychosomatic network linking the psych (mind, emotion, and soul) to the material soma (molecules, cells, and organs) (Pert, 2003). The Psychosomatic approach's objective is to overcome the mind-body dichotomy and to emphasize the importance of understanding the interactions among biology, psychology, and social factors in every patient, independent of the primary pathology that is being treated (Fritzsche, Goli, & Dobos, 2020). The study aims to explore patient's psychological, physical, and social experiences and how they affect their healing process.

Qualitative Approach

Given that the study aimed to look deeper into the unique experiences of Black adolescent gunshot wound survivors, a modified grounded theory approach was used which helps in understanding the factors that possibly affect their health trajectory from the perspective of those with lived experience. Modified grounded theory allows for the

understanding of the patient's and clinicians experiences to emerge from an in-depth analysis of qualitative interviews. The researcher is able to analyze the clinicians' perspective of patients' social realities of trauma and the impact that their hospital stay has on this traumatic experience through careful analysis of clinicians' perspectives and experiences. Focusing on the underlying meaning while using modified grounded theory allows for multiple interpretations and uses of the data.

CHAPTER 2: LITERATURE REVIEW

Racism in Medicine

Commonly, underserved populations only receive medical treatment when visiting the emergency room. Outside of lack of access, often times there is also a lack of trust, which in the case of Black Americans, is warranted. Historically, Black Americans have been medically abused, used, and mistreated and these experiences are inherent in the inequalities that have shaped the Black experience for centuries (Hammond et. al, 2019; Zebib et. al, 2019). Many Americans know of the Tuskegee syphilis experiment, however, that incident was merely one of a plethora of medical and scientific abuse of the Black body. Dr. Marion Sims, "the father of modern gynecology" experimented surgically on enslaved women, without sedatives. The belief was that the women were merely uncomfortable, but strong. A lot of these malpractices and intrusive research practices were based on beliefs that Blacks are innately different than their White counterparts. These biological views assisted in the justification of slavery, post slavery, and the Jim Crow era (Wailoo, 2018).

Unfortunately, these ideals still resonate today in medicine and research, and patient outcomes reflect this. A study was conducted amongst medical students and residents at the

University of Virginia inquiring what they believed about Blacks and the medical contrasts with Whites. Study participants endorsed beliefs such as Black patients have thicker skin and feel pain less than White patients (Hoffman et. al, 2016). Ideals such as these have been built into the philosophy of medical knowledge (Hogarth, 2019). These beliefs are harmful and significantly hinder the quality of care that Black Americans receive overall, and the intentions of Blacks to seek help when in need. Biases such as "Black people have thicker skin" or "Black people have higher pain thresholds" are fundamentally dangerous and increase the risk of inadequate and inequitable care in any setting. Studies have shown that Black patients are less likely to receive pain medication and even less likely to receive opioids, commonly prescribed for pain management (Wailoo, 2018).

Trauma patients often arrive during one of the worse and most painful days of their lives which can be compounded by inadequate medical care. A recent survey of trauma surgeons showed that 74% demonstrated an unconscious preference toward white people and 92% towards the upper class (Zebib et. al, 2019). Such biases are dangerous to the patient physically and mentally. The possibility of poor pain management and rough care could potentially retraumatize the patient and lead to recidivism. To solve these biases, efforts are needed to move focus from what is possibly different in Black bodies, but in trying to understand the contexts in which that body exists (Hogarth, 2019).

Trauma in the Black Community

Historically, trauma has riddled the Black community before the term Black was the expression of choice to identify those of the African diaspora. Black history goes beyond the date that Black American's first stepped foot on foreign soil, however the known lineage of trauma

begins at just that point. Slavery and slave practices transformed into different forms of oppression throughout time and each adaptation of control, abuse, and manipulation continues to negatively impact and impose trauma on the Black community (Wailoo, 2018). As previously mentioned, medical mistrust stems from the abuse of Black bodies and is a source of trauma in the Black community. This prevalence of historical trauma anecdotally trickles down into the familial dynamic of the Black community and the increase of hypervigilance, fear, and lack of hope often transmutes into maladaptive coping strategies and violent behaviors (Range et al., 2017).

Some say that Black parents berating their children stemmed from slavery practices and continue with intentions of preparing their youth for racist America (Raymond, Jones, & Cooke, 1998). Further, slaves often over disciplined their children in order to save them from a more savage punishment from a slave handler (Wilkins, Whiting, Watson, Russon, & Moncrief, 2012). These are examples of generational traumas, defined as the cumulative emotional and psychological wounding that occurs across generations, stemming from massive group or collective trauma, such as slavery (Benjamin & Carolissen, 2015). Unresolved generational trauma manifests psychologically and physiologically in families and communities (Benjamin et Al., 2015). The violence that stemmed from the traumatic event of slavery manifests in perpetual violence and continuous traumatic events in the Black community.

Community Violence in the Black Community

Community violence refers to intentional, maliciously violent incidence outside the home, within a defined community, that are caused by someone other than a loved one (Galovski, et al., 2016). Many occurrences of community violence are product of outer intrusions, learned

behaviors, or instances of survival. Death rates from homicide have historically been six- to eight-fold greater for Black people than for whites (Braithwaite, 2009). It has been estimated that violence overtime reduces the average life expectancy approximately 1/3 of a year per exposure (Soares, 2006). Continuous traumatic exposures create the sense of constant danger and has been identified as a contributor to compromised mental health and functioning in the affected community members (Eagle & Kaminer, 2013). Homicide, a health disparity, positions Black Americans to be extremely vulnerable to pre-mature death (Smith, 2016). Gun violence is one of highest causes of death among adolescence and young adults in the Black community (Olufajo, et al., 2020). Within the last four years gun violence has increased substantially in the Black community (Smith, 2016; Range et al., 2017). Consistent shootings severely impact Black families and communities causing them to become trauma organized; losing basic sense of physical and psychological safety as well as community functionality (Range et al., 2017). The community in return may become further interwoven as a survival tactic during unremitting trauma, especially when outside systems such as the police are also deemed untrustworthy as well as a source of trauma. Indeed, many Black adolescents have created methods of functioning and survival that are self-sufficient and stabilizing. Black communities often operate on a code system that is set up of mutually known rules and norms often passed down to adolescence to assist them on how to best navigate the streets (Braithwaite, 2009). Protective factors such as street codes are also passed down parallel to generational traumas to somewhat alleviate the presence of said traumas. Many individuals that experience constant community violence cannot recall a day where violence was not present (Smith, 2016). Youth living with the constant threat of community violence, as a protective factor, may demonstrate unrelenting neurological

hyperactivation and physiological arousal consistently as violence exposure continues (Gaylord-Harden, Cunningham, & Zelencik, 2011).

Psychosomatic Consequences of Trauma

All illnesses, if not psychosomatic in foundation, have a definite psychosomatic component (Pert, 2003). The mind and body are in many studies understood to operate in alignment. Outside stimuli that effect the mind and emotions are said to affect one's physical health as well. Negative exterior stimuli brought on by adverse childhood experiences in return have negative health effects in youth, and statistically more so in Black youth (Smith, 2016). Individuals with a history of trauma within their childhood have a higher prevalence of physical and mental health problems throughout life and heighten one's vulnerability towards the harmful effects of long-term toxic stress (Behnke, Rojas, Karabatsiakis, & Kolassa, 2019). Toxic stress is different from other types of stress because it is prolonged, unpredictable, and takes over the brains normal stress processes; further hindering normal brain development and function dysregulating the endocrine and immune systems (Sonu, Post, & Feinglass 2019), increasing the bodies inflammatory mediators and potential risks for diseases intensified by inflammation (Janusek, Tell, Gaylord-Harden, & Mathews, 2017), (Mcfarlane, 2010). There is increasing evidence that psychological stress in childhood are important determinants of adult disease and disability. (Sonu, Post, & Feinglass 2019). All emotions are healthy, because they are what unite the mind and the body (Pert, 2003), healthy methods of expression and resolution are needed to foster holistic healing among Black youth.

In true alignment with human nature, Black youth find ways to mitigate their trauma exposure and survive within their means. These methods may promote survival but may stray

away from actions that lead to good health outcomes. Youth exposed to high levels of violence may show emotional numbing, Black youth living in high crime communities may link vulnerability with victimization; therefore, becoming desensitized to violence. These youth may suppress depressive symptoms to facilitate their ability to navigate dangerous surroundings (Gaylord-Harden, Cunningham, & Zelencik, 2011). The suppression of emotions can result in massive disturbances of the psychosomatic network (Pert, 2003). Often times suppressed emotions tend to manifest themselves in alternative ways. Mentally, children may display signs of anxiety, issues with sleep, and increased attachment needs as a result to trauma (Finklestein, 2016). Insufficient sleep and sleep disturbance have serious consequences on personal health, mood, learning, performance, and safety, as well as societal costs in terms of decreased productivity and diminished quality of life (Umlauf, Bolland, & Lian 2011).

Trauma Informed Care

What is not commonly understood in the medical trauma field is that there is a pre-trauma, present trauma, and post trauma (Range et al., 2017). Examples of pre-trauma can be, and not limited to, witnessing community violence throughout childhood or other instances of mental or physical trauma prior to the patient's incident. Present trauma would be the actual gunshot wound or traumatic incident that brought the patient in to the trauma facility. Post trauma can be linked to the physical and mental experiences surround the previous traumas and the possibility of re-traumatization. It is extremely important to note that it is not just the shootings that are traumatizing, but also what occurs prior to and afterwards (Range et al., 2017). It has been argued that the experience of trauma has been over-medicalized (Coulter, 2018) leaving the patient physically better, yet not fully well. The goal when receiving care post

traumatic injury should be both to heal the physical ailment, and to also avoid further traumatizing the patient. The experience of being in a trauma center, experiencing probably the worst day of your life, with all the surrounding chaos to save your life is a sensitive time. The interaction between clinicians, the patient, and the patient's family can tremendously help or harm the healing process. Many individuals who experience traumatic injuries do not have many of the basic resources needed to heal outside of the trauma center, so every moment within the hospital is critical. To adapt to the lack of many basic resources, Black people often use the church as a place of mental rehabilitation and a source of community (Dempsey, Butler, & Gaither, 2016). Black people, including Black youth that engage in religious activity are associated with better psychological functioning (Gooden, 2016). Culture is also an important factor in understanding each stage of one's experience as a trauma victim. As stated, trauma tends to outweigh the individuals and communities' resources, understanding the affects that trauma has on Black Americans and the resources available to promote healing can help clinicians work more effectively with this population (Range et al., 2017). It is critical that the systems serving the Black population be informed, equipped, and prepared to respond to the mental health needs of young Black people (Smith, 2016).

CHAPTER 3: METHODS

Project Conceptualization

This project was conceptualized and completed by the principal investigator (PI) during her Master of Public Health program at Rollins School of Public Health. The PI (first author) planned the study, conducted the literature review, collected the data, analyzed the data, and wrote the thesis chapters. The PI worked with study team members to recruit participants,

complete team coding of the qualitative data, and as needed for guidance, discussion, and review of chapters. The study team included a clinical psychologist, trauma surgeon, and three master of public health candidates. This diverse team brought valued insights that enhanced the development of this study. The thesis committee, a trauma surgeon and clinical psychologist, guided the studies development and provided much needed insight from experience with their prospective fields. Each member of the study team had CITI certification for the protection of human subjects.

Participants

Study participants included 10 clinicians employed at Grady that have cared for the intended population. Clinicians varied from attending trauma surgeons, surgical fellows, and nurse practitioners. Data was collected through the main source of the key-informant interviews with clinicians.

Clinicians that participated in the study were of various unique experiences and backgrounds that provided depth and variety to each interview. Two clinicians identified as Black, 5 clinicians identified as White, 3 clinicians identified as Asian American. Five of the clinicians were Trauma Surgeons, 2 were Nurse Practitioners, and 5 were surgical fellows. Their varying identities potentially play pertinent roles in how they experience, project, and perceive traumatic experiences.

Procedure

Data were collected through 10 open-ended, qualitative in-depth interviews with clinicians of Black adolescent gunshot wound patients. Data collection began December 2019 and ended March 2020. Five clinicians conducted an in-person interview and 5 clinicians interviewed over the phone. Clinician interview questions focused on their perception of the Black adolescent gunshot wound survivors' experiences including questions specifically exploring psychosomatic responses and how those may impact youth's future health outcomes.

Data Collection

Sampling in qualitative studies is characteristically emergent and subject to change as researchers venture out to recruit individuals that have key insight of the topic of choice amongst available participants (Abrams, 2010). Initially, for the interviews the goal was to recruit Black Grady trauma adolescent patients who were gunshot wound survivors. A trauma research resident provided the patients who met the criteria of age, ethnicity, and cause of injury for recruitment. The research team encountered barriers in attempting to reach the adolescent patients via telephone and therefore had to pursue an alternative strategy to capture the adolescent patients' experience. The adolescent patients' experience was gathered via their clinician's accounts. A list of clinicians that met the criteria was provided by a thesis committee member. Each clinician was then emailed in hopes of recruiting participants. Clinicians were then scheduled for in person or over the phone interviews.

The clinician interview guide was a revision of the intended youth interview guide, changing the questions to explore youths' experience from the perspective of the clinician as well as explore clinicians' perspectives of key area to address in trauma-informed care from

their own experience. The interview guide began with a focus on community violence inquiring about the frequency that the participants receive and cared for Black adolescent gunshot wound survivors and how often they witness the results of gun violence. The interview guide then aimed to gather information about possible psychosomatic symptoms experienced by their patient population and best practices to respond to these symptoms. Finally, clinicians were asked to explain the psychosocial resources available and effectiveness for their patient population. Clinician interviews lasted between 17 and 44 minutes and were audio recorded capturing all nuances such as laughter and pauses. The participants were able to speak freely and fully express themselves and their experiences. All recorded data were transcribed verbatim and pseudonyms, chosen by the patients, were allotted to each transcript. The transcribed data were then read multiple times and thematically coded by the coding team including the first author and two team members.

Data Analysis

All 10 transcripts were transcribed through Temi transcription services. Data were coded thematically using MAXQDA 2020 (VERBI Software, 2019). To protect the identities of the study participant a unique ID was assigned only identifying their occupational status (i.e. TS for trauma surgeon). All participant information and identifiable information was stored on a password protected device and secure password protected electronic storage network. All identifiable information was redacted from all transcripts. All interview recordings and transcripts were stored on the password protected and secure network. All audio recordings were permanently deleted post transcription. Narrative data from interviews when the researcher constructed

natural communication to encourage the interviewee to share their story was merged together in order to find a combined pattern that illuminated the connotations of the narratives (Allen, 2011). The researcher detected several health implications supported by the experiences of the patient's records and the clinician's different stories making a narrative approach appropriate. The patient's individual experiences were a central point of understanding for the clinician's narratives. This approach provides ample alternatives for reporting the participants data (Ollerenshaw et. al, 2002). A focus on meaning while using a narrative approach furthers the potential of interpretive understanding, allowing for vast interpretations of data to inform potential implications (Allen, 2011).

CHAPTER 4: JOURNAL ARTICLE

Trauma-Informed Healing: Clinicians perspectives on key factors to address Black adolescent gunshot wound survivors physical and mental health needs

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Abstract

Background: Adverse childhood experiences (ACEs), including trauma exposure, parent mental health problems, family dysfunction, and community-level adversities have negative health effects that persist throughout adulthood including increased risk for disruptive sleep patterns, cardiovascular disease, diabetes, stroke, cancer, and other chronic diseases (Umlauf, Bolland, & Lian 2011). Individuals with a history of trauma within their childhood have a heightened vulnerability towards the harmful effects of long-term toxic stress (Behnke, Rojas, Karabatsiakis, & Kolassa, 2019). Toxic stress is different from other types of stress because it is prolonged, unpredictable, and takes over the brain's normal stress processes. Toxic stress hinders normal brain development and function and dysregulates the endocrine and immune systems (Sonu, Post, & Feinglass 2019). These higher exposures to trauma immediately put individuals at risk for increased stress, anxiety, and hypervigilance which have been demonstrated to increase rates of cardiovascular disease and other prevalent chronic diseases in the Black community (Janusek, Tell, Gaylord-Harden, & Mathews 2017). To address these issues and improve the care of young Black trauma patients, efforts are needed to understand contextual factors that impact Black patients (Hogarth, 2019). Understanding the multiple effects that trauma has on Black patients can help clinicians work more effectively with this population (Range et al., 2017).

Methods: Data collected for this study came from a total of 10 open ended qualitative in-depth interviews, conducted with clinicians at Atlanta's Grady Marcus Trauma Center. The patients' experiences were contextualized through the

perspectives of the clinicians' primary accounts of interactions with their patients who received treatment at Atlanta's Grady Marcus Trauma Center Clinician.

Results: Several themes arose within the data such as: community violence recidivism, psychosomatic health, family matters, and clinician's role. Clinicians shared their perspective of their patients' responses to community violence and provided suggestions on how to mitigate its reoccurrence for their patient population. Psychosomatic responses to traumatic injury were described, alongside appropriate methods of care for pain that is unrelated to the gunshot injury. Family relationships, in particular mother support, were highlighted as a strong protective factor in the healing process of the youth. Finally, the clinician's role was described as slightly challenged to step outside of the norm of treating solely the physical health of the patient and approach healing more holistically including addressing family and community factors. Each theme emerged from clinician interviews.

Conclusion: Our study suggests that psychological responses to traumatic injury such as night terrors and hypervigilance, and psychosomatic responses are prevalent in this population and important for clinicians to address to provide quality care. Further, our data indicates that limited psychological care for youth is provided in this inpatient setting which may contribute to high rates of recidivism in this population. Future work should examine if trauma informed care that addresses traumatic stress, including psychosomatic responses, engages family members, and addresses community risk factors can mitigate re-traumatization, recidivism, and improve patient experience for Black adolescent gunshot wound survivors.

Keywords: Psychosomatic, Trauma-informed care, Black adolescent health, mental health, Gunshot Wound Survivor

Introduction

Adverse childhood experiences (ACEs), including trauma exposure, parent mental health problems, family dysfunction, and community-level adversities have negative health effects that persist throughout adulthood including increased risk for disruptive sleep patterns, cardiovascular disease, diabetes, stroke, cancer, and other chronic diseases (Umlauf, Bolland, & Lian 2011). Individuals with a history of trauma within their childhood have a heightened vulnerability towards the harmful effects of long-term toxic stress (Behnke, Rojas, Karabatsiakis, & Kolassa, 2019). Toxic stress is different from other types of stress because it is prolonged, unpredictable, and takes over the brain's normal stress processes. Toxic stress hinders normal brain development and function and dysregulates the endocrine and immune systems (Sonu, Post, & Feinglass 2019). This increases the bodies inflammatory mediators and potential risks for diseases intensified by inflammation (Janusek, Tell, Gaylord-Harden, & Mathews, 2017; Mcfarlane, 2010). There is increasing evidence that psychological stress in childhood are important determinants of adult disease and disability (Sonu, Post, & Feinglass 2019).

Black youth are at heightened risk for these negative health effects given disproportionate rates of exposure to ACEs compared to children of other races (Slopen et al. 2016). In particular, Black youth in urban areas are exposed to higher rates of interpersonal and community violence than their peers, despite socioeconomic status (Gaylord-Harden, Cunningham, & Zelencik 2011). These higher exposures to trauma immediately put them at risk for increased stress, anxiety, and hypervigilance which have been demonstrated to increase rates of cardiovascular disease and other prevalent chronic diseases in the Black community

(Janusek, Tell, Gaylord-Harden, & Mathews 2017). In addition, Black youth living in high crime communities may experience emotional numbing due to linking vulnerability with victimization and becoming desensitized to violence. These youth may suppress depressive symptoms to facilitate their ability to navigate dangerous surroundings (Gaylord-Harden, Cunningham, & Zelencik, 2011). The suppression of emotions can result in massive disturbances of the psychosomatic network (Pert, 2003). Oftentimes, suppressed emotions tend to manifest themselves in alternative ways including sleep disturbance (Finklestein, 2016). Insufficient sleep and sleep disturbance have serious consequences on personal health, mood, learning, performance, and safety, as well as societal costs in terms of decreased productivity and diminished quality of life (Umlauf, Bolland, & Lian 2011).

As a result of disparate rates of violent experiences, Black youth are disproportionately represented in hospital populations of individuals receiving care for assaultive injuries (i.e. gunshot wounds, stabbings and blunt assaults) (Zebib, Stoler, & Zakrison 2017). Historically, medical systems such as trauma centers and emergency rooms have prioritized resolving physical injury without addressing other aspects of trauma such as social, economic or psychological ramifications. It has been argued that the experience of trauma has been over-medicalized (Coulter, 2018). It is important to note that it is not just the initial experience of violence that is traumatizing, but also what occurs prior to and afterwards (Range et al., 2017). The interaction between clinicians, the patient, and the patient's family can tremendously affect the recovery process after trauma exposure, positively or negatively. For Black patients these interactions are also influenced by limited access to medical treatment and lack of trust. Historically, Black Americans have been medically abused and mistreated producing inequalities

that have shaped the Black experience for centuries (Hammond et. al, 2019; Zebib et. al, 2019). These inequalities persist with Black patients experiencing disparities in care due to bias and lack of understanding among providers. A recent survey of trauma surgeons showed that 74% demonstrated an unconscious preference toward white people and 92% towards the upper class (Zebib et. al, 2019). Such biases are dangerous to the patient physically and mentally. The possibility of poor pain management and inadequate care could potentially retraumatize the patient and lead to recidivism (Fischer et al. 2019). In addition, lack of understanding of the emotional and psychosomatic effects of trauma limits clinicians' ability to provide high quality care. To address these issues and improve the care of young Black trauma patients, efforts are needed to understand contextual factors that impact Black patients (Hogarth, 2019). Understanding the multiple effects that trauma has on Black patients can help clinicians work more effectively with this population (Range et al., 2017).

Trauma-informed care as defined by the Substance Abuse and Mental Health Services Administration (SAMHSA), is when a program, organization, or system realizes the widespread impact of trauma and understands potential paths for recovery; recognizes the signs and symptoms of trauma in clients, families, staff, and others involved with the system; and responds by fully integrating knowledge about trauma into policies, procedures, and practices, and seeks to actively resist re-traumatization (SAMHSA, 2014). Trauma informed care could potentially better the course of outcomes for trauma patients. Violently injured urban youth treated after a gunshot wound are more likely to die from a subsequent injury (Cunningham, et al. 2009). Trauma-informed care lowers the risk of retraumatizing or introducing new traumas to pediatric patients and their families (Marsac, et al. 2016). Many studies have

proven that violence is not inevitable and is a preventable health care problem (Cunningham, et al. 2009). The trauma informed approach helps clinicians, and all involved, realize the widespread impact of trauma, its effects on patients, families, staff and the system, and prevent re-traumatization (Brown, King, & Wissow 2017). Most medical providers do not receive trauma informed care training; leaving a potential gap in care for patients (Marsac, et al. 2016).

Method

Project Conceptualization

This project was conceptualized and completed by the principal investigator (PI) during her Master of Public Health program at Rollins School of Public Health. The PI (first author) planned the study, conducted the literature review, collected the data, analyzed the data, and wrote the thesis chapters. The PI worked with study team members to recruit participants, complete team coding of the qualitative data, and as needed for guidance, discussion, and review of chapters. The study team included a clinical psychologist, trauma surgeon, and three master of public health candidates. This diverse team brought valued insights that enhanced the development of this study. The thesis committee, a trauma surgeon and clinical psychologist, guided the studies development and provided much needed insight from experience with their prospective fields. Two of the master students assisted in coding the qualitative data. Each member of the study team had CITI certification for the protection of human subjects.

Participants

Study participants included 10 clinicians employed at Grady that have cared for the intended population. Clinicians varied from attending trauma surgeons, surgical fellows, and nurse practitioners. Data was collected through the main source of the key-informant interviews with clinicians.

Clinicians that participated in the study were of various unique experiences and backgrounds that provided depth and variety to each interview. Two clinicians identified as Black, 5 clinicians identified as White, 3 clinicians identified as Asian American. Five of the clinicians were Trauma Surgeons, 2 were Nurse Practitioners, and 5 were surgical fellows. Their varying identities potentially play pertinent roles in how they experience, project, and perceive traumatic experiences.

Procedure

Data were collected through 10 open-ended, qualitative in-depth interviews with clinicians of Black adolescent gunshot wound patients. Data collection began December 2019 and ended March 2020. Five clinicians conducted an in-person interview and 5 clinicians interviewed over the phone. Clinician interview questions focused on their perception of the Black adolescent gunshot wound survivors' experiences including questions specifically exploring psychosomatic responses and how those may impact youth's future health outcomes.

Data Collection

Initially, for the interviews the goal was to recruit Black Grady trauma adolescent patients who were gunshot wound survivors. A trauma research resident provided the patients

who met the criteria of age, ethnicity, and cause of injury. The research team encountered barriers in attempting to reach the adolescent patients via telephone and therefore had to pursue an alternative strategy to capture the adolescent patients' experience. The patients' experience was gathered via their clinician's accounts. A list of clinicians that met the criteria was provided by a thesis committee member. Each clinician was then emailed in hopes of recruiting participants. Clinicians were then scheduled for in person or over the phone interviews.

Interview Guide

The clinician interview guide was a revision of the intended youth interview guide, changing the questions to explore youths' experience from the perspective of the clinician as well as explore clinicians' perspectives of key area to address in trauma-informed care from their own experience. The interview guide began with a focus on community violence inquiring about the frequency that the participants receive and cared for Black adolescent gunshot wound survivors and how often they witness the results of gun violence. The interview guide then aimed to gather information about possible psychosomatic symptoms experienced by their patient population and best practices to respond to these symptoms. Finally, clinicians were asked to explain the psychosocial resources available and effectiveness for their patient population. Questions were created based on validated scales and measures described below.

Scales and Measures that Informed Interview Guide Questions

Adverse Childhood Experiences (ACES)

Open-ended questions from the Life Events Checklist regarding the physical assault, assault with a weapon, and physical violence were modified to gage the patient's previous life exposure to adverse childhood experiences (ACES). Life Events Checklist for DSM-5 (LEC-5) is a measure created to access exposure to 16 events known to potentially result in PTSD or distress that includes one item that assesses for other extremely stressful experience (Weathers et. al, 2013). The open-ended questions ask if the clinicians personally experienced, witnessed, or verbally learned about each occurrence.

Traumatic Stress

The Childhood and Adolescent Needs and Strengths tool's *Symptoms Resulting from Exposure to Trauma or Other Adverse Childhood Experiences Domain* was used to scale for traumatic stress from 0-3 (0 meaning there is no evidence of any needs and 3 meaning the immediate action is recommended). This domain was used to gage whether the patient was experiencing adjustment to trauma, traumatic grief, reexperiencing, hyperarousal, avoidance, numbing, disassociation, or physiological dysregulation. Clinicians were asked about their opinions of symptoms of personal traumatic stress and that of their patients.

Community Violence Exposure

Community violence exposure questions were modified from the *Life Exposure Survey* (LES; Singer et., al, 1995). The clinicians were asked to share the frequency they witness gun violence in their personal life and at work.

Trauma Symptoms

Sleep and medical needs were ratings from the *Life Functioning Domain* of The Childhood and Adolescent Needs and Strengths tool. These ratings were measured from 0-3 were 0 states that the youth is not in need of any intervention and 3 is a life domain in which the child is displaying significant problems and intervention is needed. For example, for the rating of sleep, 3 states that the child is generally sleep deprived or the child finds getting a full night's sleep difficult while 0 states the child gets a full night's sleep each night (Kisiel, Lyons, et al., 2013). The clinicians were asked if their adolescent patients experiences sleeplessness, night terrors, or sleep disturbances during while inpatient.

Items from The Trauma Symptom Checklist for Children were modified to ask the clinicians questions that would grasp whether or not symptoms of traumatic stress, or psychological symptomology were expressed. The Trauma Symptom Checklist for Children (TSCC) measures the severity of psychological symptomology such as anxiety depression, anger, and dissociation in adolescents who have experienced traumatic events (Brier, 1996). Questions such as "Do you feel the above [gun violence] could happen to you?", and "Have you had difficulty sleeping?" were asked to gage the TSCC domains of anxiety and depression.

Resilience

CANS tools' *Child Strength Domain* measures a range of assets that the participants may possess that facilitate resilience. Resilience is a protective factor in healing and overall health (Behnke, Rojas, Karabatsiakis, & Kolassa, 2019). The *Child Strength Domain* uses a scale from 0-3; 0 being a well-developed level of strength that may be able to be used as a protective factor,

and 3 where no current strength is perceived from the patient's responses. Questions asked rated the patient's coping skills, optimism, familial attachments, and overall resilience.

Clinician interviews lasted between 17 and 44 minutes and were audio recorded capturing all nuances such as laughter and pauses. The participants were able to speak freely and fully express themselves and their experiences. All recorded data were transcribed verbatim and pseudonyms, chosen by the patients, were allotted to each transcript. The transcribed data were then read multiple times and thematically coded by the coding team including the first author and two team members.

Data Analysis

All 10 transcripts were transcribed through Temi transcription services. Data were coded thematically using MAXQDA 2020 (VERBI Software, 2019). To protect the identities of the study participant a unique ID was assigned only identifying their occupational status (i.e. TS for trauma surgeon). All participant information and identifiable information was stored on a password protected device and secure password protected online storage network. All identifiable information was redacted from all transcripts. All interview recordings and transcripts were stored on the password protected and secure network. All audio recordings were permanently deleted post transcription. Narrative data from interviews when the researcher constructed natural communication to encourage the interviewee to share their story was merged together in order to find a combined pattern that illuminated the connotations of the narratives (Allen, 2011). The researcher detected several health implications supported by the experiences of the clinicians' different stories making a narrative approach appropriate. The patient's individual

experiences were a central point of understanding for the clinician's narratives, this approach provides ample alternatives for reporting the participants data (Ollerenshaw et. al, 2002). A focus on meaning while using a narrative approach furthers the potential of interpretive understanding, allowing for vast interpretations of data to inform potential implications (Allen, 2011).

Results

Clinician's experiences and perspective of Black adolescent gunshot wound survivors revealed critical aspects of their healing process outside of clinical medical interventions. Reflection on interventions and resources expounded on the importance of viewing patients healing outside of the traditional box of trauma medicine and draws attention to key psychosocial factors that impact their adolescent patients.

Qualitative Themes

Four themes arose from the data that highlight key factors that may enhance patient care for adolescent gunshot wound survivors and contribute to lowering recidivism (See Table 1 for theme occurrences in clinician interviews). In addition, participants frequently discussed recommended strategies to improve care for Black adolescent gunshot wound survivors. Direct quotes are used to illustrate findings, all excerpts are deidentified to ensure confidentiality.

Theme 1: Community Violence

Clinicians shared their perspective of their patients' responses to community violence and provided suggestions on how to mitigate its reoccurrence for their patient population. Clinicians were asked about the frequency that they received adolescent gunshot wound patients and the 9 of the 10 clinicians expressed the high frequency at which they see adolescent gunshot wound patients. A trauma surgeon expressed their initial reaction to the high frequency of gun violence in the surrounding community:

> *I started in 2018 and I will say I was very shocked by the sheer volume of gunshot wounds that come in every day and every night and the amount of surgeries that we have to do, the amount of patients that we see.*

High volume of GSW patients led to the possibility of making the occurrence rather routine. Due to reoccurring community violence and the experience of being shot, clinicians often times have to remind themselves of the personal impact on their young patients. A trauma surgeon expressed how often non-life threatening GSWs such as flesh wounds are quickly treated and discharged:

> *And all these things that there are a lot of interplays, even people that do not have critical injuries. And we just kind of say, Oh, you know what? You look great. Let's just clean this out and send you on your way. This is a very significant event for, for a kid, for someone who's in high school to be shot. You know, it's, it's very significant and I think it's, it's hard for us, right? You know, when we come in and say, Oh yeah, they're fine. It just went through and through the leg, it's a flush wound. You'll be great. And that's not really the case.*

The results of community violence were expressed uniquely through different patient encounters. While clinicians stated that patients expressed that they planned to make changes; clinicians expressed that they often witness victim recidivism. Some patients expressed a lack of care, which is seen in individuals who may not have the self-efficacy or belief that their circumstances can change for the better. A critical care nurse practitioner shared a time where a patient's actions displayed this lack of self-efficacy:

> *So, it surprised me that he seemed very, um, blahzay about having been shot again. Like it was not a big deal that he had already been there once or twice before for something similar…that it wasn't a wake-up call for him but in other patients it definitely is a wake-up call and you know, you can tell that they are very scared and very humbled by what happened to them. But he just, it was like just another day for him*

A trauma surgeon reflected on the totality of the effects of being shot on their adolescent patients:

> *I think something that we don't always pay attention to is, it's not just if they're injured, but just the process of being shot and that effect. And these kids who are so scared to go back to the community that this happened in or, or you know, conversely things where people are talking about, Oh, they're going to go, they want to go get revenge. And all these things that there are a lot of interplays, even people that do not have critical injuries.*

Community outreach and involvement were common suggested remedies to community violence. Clinicians acknowledged that violence and injury prevention start in the community and clinical interventions are usually seen as reactionary. Some clinicians believe that constructive and free community activities can provide youth with opportunities that will not only keep them out of harm's way, but also act as a gateway to education and career opportunities.

> *More outreach, more people, more community centers for the young people to go to more activities…um, the parents need to be educated on the support so they can put their children in it…partnership with the Y, you know, partnership with these schools, these high schools that have, like in the summertime they have been, um, volunteer for them to do something at Grady during the summer. Maybe do something like in back in the day they used to pay them and give them a little sign thing, do something like that so the child can know what it is to do something in honor and living instead of wanting to go out here and stealing … they can learn about the different career opportunities that's available in the health other than just a nurse, the doctor.*

Theme 2: Psychosomatic Health

Psychosomatic responses to traumatic injury were described, alongside appropriate methods of care for pain that is unrelated to the gunshot injury. Majority of clinicians interviewed acknowledged that their adolescent GSW patients experienced somatic responses to psychological distress. One trauma surgeon shared:

I also see that they will complain of physical ailments outside the area that we operated on. So a lot of times just aches and pains or something, um, that's bothering them for some things small that really shouldn't matter. Right. Or, or kind of exaggerated complaints about the wound or something else. And I think, again, it's because there's been a very significant event that's happened to them and it seems in their minds, more socially acceptable to have physical pain than any sort of emotional pain. Right? So, I think that that is not a conscious thing, but people when they are distressed enough, they can physically hurt. Right? But it's on us to recognize that that is the difference. So, we're not just throwing a bunch of pain meds and treating something that really has much deeper causes.

Pain external of the acute gunshot wound was the most common physiological complaint amongst this patient population. A trauma surgeon recalls," Pain, a lot of pain. Yeah" when asked. Another clinician explains, "Um, and you know, then oftentimes they get treated for their agitation with medications and, um, you know, unfortunately that's, you know, they're agitated because they, they just get shot." Pain management varied with each provider. Medication as a solution for such complaints were deemed appropriate for few clinicians. The majority of clinicians acknowledged that medicinal pain management for none physiological somatic complaints is a temporary solution. Psychological and social work services were the most mentioned source of resolution, limited resources were a common barrier. An attending trauma surgeon expresses their disagreement with medicating adolescents who experience pain external to their wounds:

Like there's other things going on. You don't just say, Oh, give them a dose of haldol to calm them down, give them another dose of pain medicine and they'll go to sleep, right? There's a reason people are acting the way they are.

Along contacting social services and psychological resources clinicians assess the complaints of pain outside of the patients GSW wound to better understand the source of the pain. Often times there is no source of physiological explanation for pain. Preventable expenses arose to be a barrier in this method. One surgical fellow stated:

Um, the number one complaint I can think of is abdominal pain. Um, not so much nausea. Um, maybe a decreased appetite. They're all very like vague symptoms that I've noticed that adolescents will tell me…normally after I demonstrate that there's no physiologic reason for them to be having pain, they, they let it go. Um, so I'm not sure if their pain is a manifestation of trauma, their experience, um, uh, psychological equality. But, uh, that's normally the approach I take.

Secondary to pain sleeplessness and night terrors were described as psychological manifestations of the patient's traumatic experience. Traumatic stress presents differently in each patient, trends of night terrors in adolescent gunshot wound survivors were reoccurring in this population. One clinician recalls, "Yeah, a lot of patients have sleeplessness. A lot of them, they do have headaches. Um, you know, they have, uh, night terrors or nightmares, um, a lot and a lot of anxiety." In addition to disruptions in sleep patterns and quality other somatic presentations of traumatic stress occur in adolescent GSW patients. For example, one clinician

shared, “Can't sleep have night terrors, heart rates, going to 120, you know, we're not picking up subtle cases, unfortunately.”

Theme 3: Family Matters

Family relationships, in particular mother support, were highlighted as a strong protective factor in the healing process of the youth. As one trauma surgeon expressed, “We don't have that much time and whatever emotional support they have from family and friends.” Although clinicians shared their clinical attentiveness and dedication to the patient’s physical recovery it was often repeated that multiple cases often blurred over time. Family seem to act as a protective factor not only patients’ recovery but also to be a reminder to clinicians that the GSW survivor is more than another case. Professionals were inspired by emotion and strength that they recognized in the survivor’s support system. A nurse practitioner remarked on how family presence often brings attention to the patient beyond their injury:

> *So some of an impact to me, it really, I'm usually the younger ones or the ones where you can just tell that the family really, really cares about them. Um, so it's hard for me to see their reactions. I usually don't get to start getting upset. And so I see that starting to get upset*

Maternal intervention was repetitively mentioned as a protective factor in the healing process. The healing process is a team effort that goes beyond the clinical team and often heavily relied on the families support and often time the mothers. The rapid pace and heavy patient load

benefits tremendously from non-clinical support that mothers faultlessly provide to their youth. A trauma surgeon recalls a memorable encounter between a patient and their mother:

> *Um, and that the first thing that she did when she saw him was to just give him grief about sneaking out of the house and all these things. Um, it stands out just because of the dynamic that she very clearly loved her son. But even in that moment was, was already kind of looking out for him and, and wanting the best, like being like, you will get up, you will do this, you won't touch that NG tube… Um, but it stood out to me how strong she was for him through his hospitalization. Right. Because some adolescent males don't always necessarily handle physical pain that well. Um, and really just the way she stood by him as a strong mother and said, no, you will do these things. You will get up. We have to do these things for you to get better. Um, just stuck out his whole hospital course.*

Theme 4: Clinician Roles

The clinician's role was described as slightly challenged to step outside of the norm of treating solely the physical health of the patient and approach healing more holistically including addressing family and community factors. In addition, health literacy was a concern of many clinicians who in return made strides to share clinical updates with patients and family. A critical care nurse practitioner shares how she practices effective communication with patients, and teaches others to do the same:

> *I speak in their English. I don't speak in my medical terminology. I try not to, you know, once, one of the things that I try to teach the residents and my students that when*

you're talking to a patient, you have to speak for them to understand this isn't regular English for us, but they don't know what it means for a tracheostomy and all these different things. You need to make it simple.

Clinician support was also described as simple as incorporating time. The majority of caregivers attested to the lack of staff and resources to alleviate time to allocate between patients. Clinicians explained that spending time in the patients has improved patient rapport and possibly lower anxieties about their condition or feelings of loneliness and depression. One trauma surgeon shared:

Everybody's too busy. It's really hard. You know, I was, when I was trying to, I was told that just sitting down in a room doubles the amount of time a patient thinks you spent with her, perceives that you spend with them even if you don't spend any more time with them. So, I make a concerted effort to sit down when I can, especially when you're seeing patients in the clinic and so forth. And I think that helps a little bit. But I think they, a lot of them really struggle because they don't necessarily, you know, as a group, physicians tend to interrupt patients

Benefits of extended patient to clinician interaction time supports further personifying the individual outside of their current role as patient. One nurse practitioner described this stating:

Just sitting down and having a conversation and trying to understand them as a person, not as a patient…That tells a lot about the patient and, and, and, and connecting with the family. And when you connect with the family, you usually connect with the patient.

Clinicians made it priority to ensure that their traumatic gunshot wound patients expressed that they felt safe returning to their immediate homes. Clinicians also supported the promotion of community involvement and activism among themselves. Often times clinician's roles are reactionary to community violence. Mentorship and community health education with and interdisciplinary approach has the ability to work preventatively and lower recidivism. Support and resources were a concern for clinicians to feasibly support additions to their clinical roles. One trauma surgeon expressed this by stating:

> *I mean, we can definitely always work on outreach to the community, you know, as trauma surgeons and providers as mentors to adolescents and to kids. Right? Well, no, in terms of, um, them knowing that they can be doctors, they can be surgeons if they want to, um, continue to educate the community, um, gun violence and, um, in ways we could try to prevent that. And then working closely with our community workers, social workers as well. And as a, you know, again, we can be mentors, we could be providers to come out there and, and reach out. So there's multiple ways I think we could help.*

Recommended Strategies to Improve Patient Care

Clinicians frequently discussed several recommendations to improve patient care for Black adolescent gunshot wound survivors (see Table 2). In general, these recommendations centered around four primary areas: social services, mental health, community involvement, and policy change. Clinicians expressed the importance of reliable psychosocial resources in the patient's care plan. Clinicians believed that psychosocial intervention was a necessary compliment to the patient's physiological care and aided in lowering reoccurring injury.

Clinicians also recommended community partnership and outreach as a preventative method to reducing community violence and gunshot prevalence. Policy advocacy and change, lastly, was an avenue that most clinicians believed was necessary to lowering the frequency of adolescents being shot.

Discussion

Our study suggests that psychological responses to traumatic injury such as night terrors and hypervigilance, and psychosomatic responses are prevalent in this population and important for clinicians to address to provide quality care. Our analysis highlighted the ways in which clinicians adjust and can further adapt common practice to further assist all aspects of healing in Black adolescent GSW patients. Despite challenges, clinicians noted positive results when interpersonal time beyond clinical examination is spent with patients. The more time a clinician spends with their patient is greatly correlated to better patient outcomes (Dugdale, Epstein, & Pantilat 1999). Our analysis supports the idea that interdisciplinary teamwork is beneficial to all staff and care for the patient in the form of trauma-informed care (Brown, King, & Wissow 2017). Trauma-informed care programs have proven successful in trauma facilities in decreasing injury recidivism rates and fostering culturally competent community resources (Smith, Dobbins, Evans, Balhotra, & Dicker, 2013).

A major theme emerging from the data displayed that limited psychological care for youth provided in an inpatient setting may contribute to high rates of recidivism in this population. Clinicians reported somatic and behavioral expressions and high rates of recidivism in their patient population post gunshot wound. In the absence of consistent psychological

resources and adequate available adolescent psychological care young patients are underserved leaving a large portion of their care out and opening the door for reinjury and misdirected emotions. Clinicians recounted that adequate social support was a missing gap necessary to fully meet the needs of this population. Trauma-informed care provides programmatic structure and resources for the patient, family, and staff to cohesively heal and minimize the retraumatizing in the clinical setting (SAMHSA, 2014). Failure to mitigate the ongoing effects of traumatic stress due to childhood trauma is associated with an epigenetic imprint consistent with inflammation related diseases and premature death (Janusek, Tell, Gaylord-Harden, & Mathews 2017).

The themes from these clinician interviews highlight different approaches of support clinicians deemed appropriate in response to reducing traumatic experiences in their patient population. Primarily community outreach and interdisciplinary partnership were emphasized by clinicians. This is consistent with adopting roles outside of traditional clinical responsibilities to better patient care and healing. Michael Marmot asks, "Why treat people and send them back to the conditions that made them sick" in his book The Health Gap (Marmot, 2019). Clinicians expressed this same sentiment with the understanding that healing does not end once the discharge papers are signed.

Future Directions

Future work should examine if trauma-informed care that addresses traumatic stress, including psychosomatic responses, engages family members, and addresses community risk factors can mitigate re-traumatization, recidivism, and improve patient experience for Black

adolescent gunshot wound survivors. Based on clinician responses, adequate and properly trained interdisciplinary staffing is a pivotal in proper execution of trauma-informed healing.

Strengths and Limitations

The main limitation of this study is the barriers that deterred contact with the vulnerable population of interest Black adolescent gunshot wound survivors between the ages of 14 and 17. The rich expressions and personal perspectives of the adolescent patients clinical experience and reactions to care would bring a more depth and understanding beyond clinician accounts of their patients experiences. The generalizability of the study may be limited as the clinician accounts are from one level one trauma center in a specific region and snowball sampling was used potentially limiting the range of perspectives represented. Majority of the clinicians interviewed had experience at different facilities in diverse regions allowing for comparison.

Tables

Table 1.
Frequencies and themes of participants

Theme	*n*	%
Community Violence Recidivism	9	90
Psychosomatic Health	6	60
Family Matters	8	80
Clinician Roles	10	100

Note. N=10

Table 2.
Examples of needs and recommendations to improve treatment and outcomes of adolescent trauma patients and mitigate recidivism

Suggestions	Quotes
Mental Health	I think something that we don't always pay attention to is, it's not just if they're injured, but just the process of being shot and that effect.
	Emotionally. I think it's very difficult unless they express having issues. You know, we, we do ask us to sleep, how's your pain? But again, it's more towards a physical attribute and much less than mental. So I would say pretty minimally, which is not good.
	So to be honest, um, I don't think I do a sufficient job emotionally assessing a GSW patient while they're in the hospital. Um, I think surgeons notoriously are rushed and they have a lot of, uh, cases and particularly trauma surgeons. They have a lot of things going on during the day, which is not an excuse, but I think it's very easy to overlook someone's emotions just as long as they are, you know, physiologically
Social Services	We don't have a lot of resources. So, uh, we don't have people who are very actively, we don't have social workers and things who, um, who talk with the patients, which I think is very unfortunate.
	It was actually very nice in Chicago because, um, we had, um, social workers who would sit and talk with, with these is these kids for a long time and follow up with them. And so it was really

nice and provide emotional support and we just, we don't have that here. Sometimes we end up consulting psychiatry if we really think is problematic, but they don't really let you, usually they don't do any talk therapy in the hospital. They'll usually just prescribe medication. Um, and you know, I think we have like one social worker. So oftentimes, you know, if it's someone who I think is really at risk, I'll, I'll make sure, you know, make sure, you know, they are sort of in plugged in with that. But unfortunately, there's not a lot of resources

I think having a stronger, like social work environment. I think a lot of patients just stay because they have nowhere to go. Um, and the, again, we talked about lack of emotional resources. I think that's more important. I think the medical care, you know, I'm proud to be a Grady. I would want to be a Trump patient, greedy if I had to go somewhere. So from the medical standpoint, I think it's fine. I think it's all the social issues that are the problem.

I think certainly having some sort of trauma informed care, um, would be useful and having, you know, certainly more support staff, more social workers, case managers, you can help patients. Um, you know, people who are available for, we have a lot of unfunded patients and there just never seems to be enough case managers to be able to help them with those issues. Trying to apply for Medicaid or what have you. It seems to be an ongoing issue and then a lot of them have disposition issues. They either don't have insurance or whatever. So I think they're definitely having more support on that and would be very helpful to help patients on the back end of that. Um, and you know, having people to talk to in the hospital I think is helpful and making sure that those patients have follow-up as well I think is also helpful.

Community

More outreach, more people, more community centers for the young people to go to more activities. You know, like my children, I keep them in sports. I keep them in different activities. That's stuff that their family members can afford support like that. I think community support, if you had something for them to do, they wouldn't have time to get in trouble. Um, the parents need to be educated on the support so they can put their children in it. So something for the family and the child to feel that they're supported and there's something for them to do."

	Partnership with these schools, these high schools that have, like in the summertime they have been, um, volunteer for them to do something at Grady during the summer. Maybe do something like in back in the day they used to pay them and give them a little sign thing, do something like that so the child can know what it is to do something in honor and living instead of wanting to go out here and steal it. If you have a grant that can support that, I think that's something when young people to do and they can learn about the different career opportunities that's available in the health other than just a nurse, the doctor, you know. Um, yeah, I think there needs to be a lot of, uh, I wouldn't say reform, but I think there needs to be more engagement with a certain and certain people who had already been victimized by gun crimes or gun violence. Um, whether it be legal support, um, support, getting access to food, um, support and acquiring sustainable, um, employment. Um, gun violence is not, uh, an Island to itself. It's, uh, it's a multifactorial dynamic. And intricate, um, socio-economical cultural issue that can't be fixed with just tweaking one thing. It's inextricably linked to so many variables. Um, and I think there needs to be collaboration with all, I guess, disciplines to try and find the metric that correlates most with gun violence and intervening at that level and demonstrating a sustainable change and then tackling the next thing that can help mitigate it
Policy	Well, I mean, it's kind of political, but you know, guns are made to shoot people. I mean, at their core, that's what they do, right? So, um, stricter gun control laws I think would certainly help. And my response to anyone that says, you know, the founding fathers intended for people to have weapons, like find a handgun. Like, you know, no one needs to go hunting with a semiautomatic rifle. Like your right to defend your property doesn't include a semiautomatic rifle. You know, you can let people be responsible gun owners and take away some of these weapons that are causing these horrible injuries to our youth. I mean certainly not having firearms so readily available, um, to youth especially. I mean, it strikes me because I always think of decisions that I made when I was like 16 years old. Nobody's emotionally stable at that age and you make a ton of poor decisions.

I mean one of the things I think we're really struggling with currently with the current administration is the, they the casual cruelty that is, you know, that we hear all of our clinical leadership leaders talk list. And I think that that's, you know, people just being casually cruel and you know, you, you need to change that call and people need to understand the, you know, that their interpersonal relationships are, um, something they have to be careful with. I mean, I don't know. I don't know what gun laws are, are great and are, would be great. I think, um, you know, or revamping or revisiting them. Uh, but we're not even allowed to study them or we haven't traditionally been allowed to study gun violence. Well, uh, related to them lobbies. I don't know. There are a lot of things that could be done, but I think you have to start with not being so mean.

CHAPTER 5: PUBLIC HEALTH IMPLICATIONS

The amount of Black lives lost to gun violence and the health trajectories of Black people that live in high crime areas not only needs immediate attention, but action. Trauma-Informed Care (TIC) is an ideal start to healing patients, families, and communities while simultaneously creating better systematic infrastructure and clinician workplace satisfaction. Findings from this study support an overall goal should be to holistically heal the patient. To do so, care beyond general trauma training is necessary. The formation of a trauma-informed program within the overarching system could sustain trauma-informed education, regulatory standards, research, and policy that could improve the standard of care for Black adolescent trauma patients. Trauma-informed care has the potential to improve the health trajectories of all patients who enter the trauma-informed facility, potentially bettering the overall health outcomes of the surrounding community. Trauma is anecdotally a large factor in the long history of negative health outcomes within the Black community. Traumatic stress has been named a determinant in long time health issues. This study shows the possible relationship between psychological distress in adolescents and their recovery patterns and highlights several key areas for future research and practice related to providing high-quality care for Black adolescent gunshot wound survivors.

Theoretical Interpretations

This study was informed by psychosomatic medicine theory and took a modified grounded theory and narrative analysis approach. The story telling aspect of the open-ended in-depth interviews allows the researcher to interpret gathered data in multiple ways. The clinicians' experiences in trauma medicine were vividly explained and provided rich data to support the themes in this study. The narrative approach allowed participants the free range of full

expression to share their stories and their perspectives of their patient's stories. Through these narratives, clinicians' perspectives of healing beyond medical intervention that took into account psychosomatic responses was clear. In this study the healing process of adolescent gunshot wound victims was descried as influenced by their interactions with clinicians, family, and community. These findings highlight the importance of physical, psychological, and social factors of the patient's healing process. Clinicians expressed the positive impact that all three factors together had on patient's healing experience, and how the lack of attention to all three factors often lead to reinjury.

Implications for Practice

This study has the potential to change the way trauma medicine is approached in adolescent and adult medicine. The way that clinicians approach patients and their families have the potential to be more interpersonal, beyond the traditional clinical interactions. Hospital staffing has the potential to increase to allow for longer more meaningful interactions that better the patient's experience while in the hospital. Trauma-informed training and care in trauma facilities that promotes interdisciplinary teamwork within trauma departments has the potential to lower reinjury rates. Implications for public health practice from study findings support prioritizing community activism, involvement, and partnerships between trauma facilities, clinicians, and community entities. Trauma-informed care specifically for adolescent gunshot wound patients would provide resources that provide mental health services and social services that continue to influence the youth positively post discharge.

Future Directions

Future research is needed to further examine the psychosomatic experience in the healing processes of Black trauma patients. In future research collecting biomarkers through blood draw would further assist in viewing the patient's somatic responses to the traumatic experience of a gunshot wound including whether cortisol levels rise of fall during the patient's stay. Blood draw would also allow the researchers to measure and compare the patient's telomere lengths possibly post admission. Telomere measurement could possibly predict if lifetime exposure to traumatic events and acute traumas contribute to shortened lifespans and negative health outcomes (Bürgin, et al., 2019).

Future research on trauma-informed care tailored to this population by incorporating interdisciplinary psychosocial care plans and post discharge programs could show how effective a trauma-informed trauma center is for all involved. A culturally responsive trauma-informed program informed by clinician and patient experience could better patient outcomes and patient staff relations. Trauma-informed implementation has the potential of bettering health outcomes and rehabilitation rates substantially.

REFLEXIVITY

I recognize myself as also being a part of the Black community as a strength of this study. I recognize that although myself and the patients may have experienced adolescence in different parts of Atlanta, we may also have some shared experiences. This can assist in myself connecting with the patients. At the same time this may also hinder my broader prospective while sifting through data. This is why I included peer reviewed coding. At the clinicians' wishes study information will be disseminated to them as well.

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APPENDICES

Appendix I: Clinician Interview Guide

Interview Guide
Black Atlanta Youth: Clinicians

Research Question:
What is the lived experience of adolescent African American gunshot wound survivors as they respond to various traumas and stressors?

Inclusion criteria:

- Clinician
- Speak English
- See trauma patients at Grady Memorial

Introduction and Consent

Hi, my name is Briana Boykin, and I am currently student at Emory Rollins School of Public Health. I am conducting this qualitative study. The purpose of today's interview is to discuss your patient's experiences of stress and how they may or may not affect their health. During this interview I will be asking you open-ended questions, giving you the opportunity to express your thoughts and experiences with me. I plan for this interview to last approximately 45 minutes. I truly appreciate your willingness to share your perspective and experiences!

I will audio record our interview today and it will be transcribed (written down word for word). Your personal information will be removed, so that no one can identify you. You will receive a pseudonym, or fake name, that you may choose if you would like. The information you share during this interview will be shared with the research team. During this interview, if you feel that you do not want something you shared included in the transcription, please inform me.

Today we will be discussing mental and physical trauma prior to and after gunshot wounds, how it affects health, and what supports would aide in the situation. If at any moment you feel uncomfortable, please understand that you do not have to share. You are able to opt out of answering any question at your discretion. Your participation in this interview is completely voluntary.

Do you agree to participate in this interview? This interview will be audio recorded with your permission. This recording will be protected on a password protected device. Do I have your permission to record?

Thank! I will now press record.

Interview Guide

Intro

1. Could you tell a little about yourself?
    a. What is your role within the Grady Health System?
    b. How long have you worked in this position?
    c. How long have you worked in the trauma field?
    d. How does your job make you feel?
2. How would you describe your racial or ethnic identity?
3. How do you think that your race/ethnicity impacts the way you experience your day to day life?
    a. Do you think you experience life differently because where you are from or who you are?

Prior Community Violence

I. Could you tell me about a time that treated or received an adolescent GSW patient?
    a. How often would you say that you treat or receive Black adolescent GSW patients?
II. How often would you say that you witness the results of gun violence?
III. How do you cope with stress or feelings from these patient encounters?
    a. What do you do to relax or feel at peace?
    b. Do you avoid things or situations that remind you of any of the previous situations?
IV. What is the likelihood that you feel like you are experiencing secondhand trauma/secondary traumatic stress?
V. Have you been wanting to feel happy lately, but can't seem to shake what-ever it is off?
    a. What do you do to try to lift your spirits?
    b. Does family or friends being around help?
VI. How are you sleeping?

Post GSW Acute Trauma

I. Could you share with me what physical complaints outside their immediate wound that your adolescent GSW patients express?
    a. Stomach Aches
    b. Nausea
    c. Headaches
    d. Tension (neck / back) Belly
II. How do you manage their physical symptoms or changes?
III. Please explain to me how you assess GSW patients emotionally in the hospital?
IV. How often would you say they feel:
    a. neutral?
    b. "blah" or numb?
    c. angry or tense?

d. relaxed/at peace?

Experience in Hospital dealing with trauma (implementations for trauma informed care)

I. Share with me your experience when you first started at the hospital
    a. What was the morale when you first arrived?
    b. How did the trauma bay feel?
    c. Could you explain that a little more or give me a situation that gave you this feeling?
    d. Has this changed?
II. Does your experience at Grady add to or decrease your experience of stress?
    a. What are your interactions with staff like?
    b. Could you give me an example of an interaction that made you feel this way?
III. After your patients are stabilized how do you think the patient perceives how they are treated?
    a. Emotionally cared for?
    b. Do you debrief their circumstances with them?
    c. Do you think they feel like a priority?
    d. Feel listened to?
    e. Do you think a space is created as to where they are able to express themselves?
IV. When you visit patients, how do they normally interact with you?
    a. Do they explain their circumstances with you?
    b. Do you feel listened to?
    c. Do you feel like they care about what you are saying?
    d. Do you feel like they understand you?
V. In what ways do you feel emotionally supported here at Grady?
    a. If none, please share what would make you feel more cared for and supported?

Conclusion

1. What things do you think would make hospital stays better for your patients?
2. Is there anything that you think that would make our community better so that gunshot wounds are not so common?
3. Was there a question that you think I missed or should have delved into deeper during the interview?
4. What else would you like to share with me today?

I truly would like to say I appreciate you for sharing your time, thoughts, and experiences with me in this interview. Your personal viewpoint is extremely important. Please feel free to contact me with any questions regarding this study. Before I go, I would like to share with you this list of mental health resources available to you. I am more than happy to go through the list with you and discuss the options.