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Trauma Affecting School-Aged Children in the San Francisco Bay Area

ABSTRACT

This research study focused on trauma affecting children and youth in an urban school environment. The objective of this the research was to gain a deeper understanding of the current challenges and barriers relating to assessments and treatments of children with a history of trauma. This research reviewed a representative sample of qualitative observations made by clinicians who worked with children in urban school districts in the San Francisco Bay Area in northern California. In addition, we assessed secondary information of hand-written notes from past clinicians who previously worked in these same schools. Reflexivity (researcher's views/experiences) methods were used and framed within an evolutionary perspective, specifically the concept of the flight-freeze response to violence; this perspective offers us insight into how we as human beings react and respond to threats and violence in our lives. We concluded that among our sample, a significant portion of school children have had past trauma and clinical symptoms relating to those past traumatic experiences, in particular post-traumatic stress disorder (PTSD). Screening for trauma is critical for matters relating to the development of effective and appropriate interventions. We believe that conducting past family histories, and specifically conducting assessments of any history of past trauma, may help assist in being able to administer more effective treatments.

Keywords: Trauma; Child traumatic stress; ADHD; PTSD; Psychosis; Anger.

INTRODUCTION

Childhood exposure to violence has been shown to have both short-term and long-term psychological problems that can lead to long-life impairment. Approximately one million children are exposed to abuse annually (U.S. Dept. of Health and Human Services, 2007). One in four high school students report engagement in at least one physical fight (Substance Abuse and Mental Health Services Administration, 2015). About 19% of those injured and 12% of the 19% of those youth had physical illnesses and developed some symptoms of PTSD (SAMHSA, 2015). More than half (54%) of families in the US population have been affected by some type of disaster [1]. Research on biological systems disrupted by "childhood trauma is consistent with the patterns of behavioral, cognitive, affective, and relationship symptoms" [2]. Trauma has long-term impact and its manifestation can be detrimental to the health and well-being of an individual. A brief description on the biology of the brain and the impact of trauma may offer some insight into its consequences, which will be discussed below.

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The so-called "limbic" regions of the brain have long been associated with both memory and emotion. As a broad concept, the limbic brain generally refers to the areas of the amygdala, hippocampal formation, hypothalamus, thalamus, and nearby "paralimbic" cortex, such as the anterior cingulate cortex, orbitofrontal cortex insula, and temporal poles [3]. The amygdala is the brain's emotional computer and alarm system. As a key structure for emotional processing, the amygdala plays a role in aggression. There is some evidence that shows a link between childhood trauma and a smaller amygdala, which leads to worsening cognitive function [4]. Besides being responsible for memory and cognition, the hippocampus consolidates information from short-term memory to long-term memory and assists in spatial navigation [5]. It also helps new memories form. The hypothalamus monitors blood levels of glucose, salt, blood pressure, and hormones [6]. In startle response, all information goes to the thalamus then goes straight to the amygdala, and finally in a rapid pace (a hundredth of a second) to the brainstem [6]. The rate at which the brainstem receives information does not allow a person time to think before reacting. Like the impact of trauma on the amygdala, the hippocampus is sensitive to stress-related psychiatric conditions, including PTSD [7]. Both the hippocampus and the amygdala have been shown to have smaller volume in traumatized brains. All these areas are a part of the limbic system, which is a complex set of structures that lies on both sides of the thalamus, just under the cerebrum. The limbic system is the emotional part of the brain that is more complex, more malleable, and can be changed. The limbic is responsible for emotional states, long-term memory, self-preservation, and building blocks.

Conceptual Frameworks

This research study focused on children who have experienced trauma and children who have clinical symptoms relating to those experiences and to gain a deeper understanding of the current challenges and barriers involved in assessments and treatments. This section reviews the conceptual frameworks of the research study to shed light on issues affecting children who live in violent communities and who have ongoing challenges accessing government services.

Trauma

Trauma is defined as a deeply disturbing or distressing experience, which can include physical injury. Trauma can affect not only the individual but also the social fabric of a nation or culture. The criterion for trauma in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) [9], is precise. According to the definition, trauma involves either direct exposure to an event or the witnessing of it in person. Cultural trauma, however, is more complex; cultural trauma is deeply rooted at the collective level in cases such as war, natural disaster, and genocide.

Trauma is transmissible from one generation to the next. Research has shown that the impact of child traumatic stress can last well beyond childhood. Trauma is a risk factor for nearly all behavioral health and substance use disorders. For example, child trauma survivors may experience the following: learning problems, increased use of health and mental health services, increased involvement with child welfare and juvenile justice systems, and long-term health problems such as diabetes and heart disease (SAMHSA, 2018). Childhood traumatic events are associated with both behavioral health and chronic physical health conditions. Furthermore, some of the long-term consequences include substance use (such as smoking, excessive alcohol use, and taking drugs), mental health conditions (such as depression, anxiety, or PTSD), and other risky behaviors (such as self-injury and risky sexual encounters). These risk factors have been linked with traumatic experiences, especially in childhood [9].

Transgenerational and complex trauma (Complex post-traumatic stress disorder)

Transgenerational trauma and complex trauma, also known as complex post-traumatic stress disorder (C-PTSD), have not been well understood until recently. The general definition of transgenerational trauma is trauma that is passed down from one generation of trauma survivors to the next, and so on down through generations of the survivors' offspring. The latter transmission tends to manifest in complex post-traumatic stress disorder. The most obvious evidence in literature on the intergenerational effects of parents' traumas concerns those individuals who survived the Holocaust [10].

Symptoms associated with witnessing or experiencing traumatic events include volatility of emotions, hyperarousal, pervasive fear, and anxiety [11]. Such reactions are adaptive responses intended to keep a person away from similar dangerous situations in the future [12]. Complex post-traumatic disorder, or complex trauma, manifests as a set of symptoms

resulting from repeated and prolonged stress of a social or interpersonal nature. Individuals who suffer complex trauma can present with marked emotion dysregulation deficits [12].

Evolutionary perspective

An evolutionary perspective may perhaps offer a unifying and coherent conceptual framework within which the etiologies and symptoms of mental illness can be better understood. The evolutionary perspective is a functional approach that helps us gain a deeper understanding of how we as human beings react to traumatic events. Trauma impacts us in the most fundamental ways. It transforms the individual at both biological and psychological levels. The general biological processes underlying the stress response are said to be universal; however, the specific dynamics are a function of the unique sociocultural environment and psychological makeup of the individual [13]. Fear is the key emotion in PTSD. Fear's evolved function is to serve as a motivating survival trait through defensive behaviors [14,15]. Fear has been suggested to be a defensive option taken to the extreme, part of the functional adaptation of humans to dangerous environments [16]. Evolved mammalian defensive mechanisms consist of six key defenses: avoidance, attentive immobility, tonic immobility, withdrawal, aggressive defense, and appeasement. These six defenses have been selected for early on in human evolution, as males and females were vulnerable to human and non-human predators [16]. For example, continuities are postulated to exist between tonic immobility (as seen in "playing possum") and the dissociation that sometimes accompanies trauma (Cantor, 2005) [16]. Two types of immobility also may be essential for defense: attentive immobility, which makes us stop and use all our senses to identify a threat, and tonic immobility, which is a state of paralysis in the face of an overwhelmingly dangerous threat [16]. Some of us freeze (or become immobile) when confronting dangers. Furthermore, dissociation, which is commonly understood as pathological, may have been a defensive option taken to the extreme and part of a functional adaptation to dangerous environments [16].

Recent contributions to evolutionary theory on numerous psychopathologies offer insight into past human experiences with danger. The anxiety spectrum, for example, is rooted in the way the human species responds to danger. Evolutionary study is about looking backward to understand the traits that have survived through many generations by serving an evolutionary purpose. This is not to suggest that all traits that are present still provide advantages to the species. However, certain characteristics or traits, such as phobias, might have roots in the way we as humans once survived or recognized danger. As some authors have suggested, "evolution is not forward looking and could not anticipate a future where being stared at by a large group of nonsmiling, non-kin specifics was more likely than not to be followed by negative consequences" [17]. However, evolutionary theory offers sound scientific explanation of why certain human behaviors are present and what happens when too many of such behaviors are displaced. In other words, it becomes problematic when there are too many of these behaviors. All biological phenomena, including human basic emotions, are considered to have evolutionary advantages. Two independent explanations for understanding human responses to emotions have been proposed [15]. The first type involves a proximate explanation of the structure, regulation, and ontogeny of the glow organ [15]. The evolutionary explanation accounts "for the function of the character, its evolutionary history" and why specific emotions exist [15]. The benefits of having emotions stems from broad categories of functions. These functions lie in the areas of motivation, communication, and cognition [15]. Emotions are defined as specialized modes of operation that are shaped by natural selection to adjust the physiological, psychological, and behavioral parameters of a species in ways that "increase its capacity and tendency to respond adaptively to the threats and opportunities characteristic of specific kinds of situations" [15]. Certain kinds of situations arouse explicit types of emotions and that natural selection shaped the various emotions [15]. Some of the basic responses such as fear, panic, agoraphobia, and moods (such as sadness and happiness) have evolved to serve specific functions for organisms, especially in human beings [13]. The anxiety spectrum, which ranges from anxiety to PTSD, can best be explained using the evolutionary perspective because these traits are found not only in our species but also in the animal kingdom.

Freeze, flight, fight, or fright

The freeze-flight-fight-fright response can be explained using an evolutionary framework. Our response to danger has its roots in human evolution as part of the defense strategy. This lies at the core of involuntary functions in the human brain. We are wired to record potential risks to protect ourselves from danger. Various research studies have focused on the

concept of tonic immobility (TI) in species, including humans, as related to evolution to gain a deeper understanding of our responses and reactions to danger. An evolutionary framework helps explain the various ways we confront danger. Some of us run when we feel afraid, some of us freeze when we face danger, and some of us fight when we perceive that we are at risk of being hurt or killed. There is extensive scholarly literature on TI that attempts to explain why such a response is necessary and how it evolved in all species over time.

Tonic immobility is described as a basic defense strategy that every species has built in its involuntary response in the brain. It has been proposed that TI may allow a species an opportunity to perceive and find a way out (Galliano et al., 1993) [18]. In the case of TI, a species is said to respond in a non-reactive and immobile manner because it perceives that escape is not an option. There is no way out of the situation and thus a species assumes its best course of action is inaction. Data seems to suggest that TI may be a relatively frequent phenomenon in victims of rape and sexual abuse, but its occurrence has not been systematically explored in other types of trauma (Galliano et al., 1993) [18]. In a study of TI conducted among 100 individuals who had experienced various types of trauma, ranging from sexual to violent, participants were asked to define the levels of severity and types of trauma in which they had experienced (Bados et al., 2008) [19]. The Tonic Immobility Scale was used to measure immobility, and trauma was assessed using the modified Traumatic Events Questionnaire. The aim was to determine whether tonic immobility varied with the type and nature of the trauma experienced. Approximately 70% of the sample had experienced trauma; no significant differences in tonic immobility were noted between different types of trauma (e.g., physical abuse, assault or aggression, and serious accident) [19]. The study did find that the mean tonic immobility score was significantly higher in the group with trauma that was directly physical/psychological or related to sexual abuse than in the group that indirectly experienced trauma from receiving news of the mutilation, serious injury, or violent or sudden death of a loved one [19]. The tentative conclusion is that tonic immobility may not only be typical of sexual traumas but also of other kinds of directly experienced trauma [19].

The fight or flight response is a physiological response that is triggered when a species feels fear. Fear is a normal emotional response in species to a perceived threat or danger. Fear is also closely associated with anxiety in some ways [17]. The fight or flight response is best explained in evolutionary terms, solely based on a functional approach. This reaction evolved to enable species to react with appropriate actions to either run away or fight. Within the evolutionary framework, the emotion of fear protected us from dangers, predators and other threats, and thus served to help the species survive. Fear serves as a form of protection against predators/dangers; therefore, fear is adaptive, functional, and necessary [20]. There is also another important aspect of fear that has to do with decision-making processes as well as survival. When an emotion is triggered, it impacts how we make decisions in certain situations [20]. One research study examined risk-taking to understand how human beings react and make decisions when confronted with emotions such as fear [20]. The study found that individuals with certain personalities react to fear in more negative ways and that those who experience a more extreme emotion of fear tend to perceive risk at higher or more severe levels [20]. They also found that participants who were fearful consistently made judgments and choices that were relatively negative and pessimistic, and those individuals tended to amplify their perception of risk in a given situation [20]. This contrasts with participants who were happy or angry; both those groups were more likely to disregard risk by making relatively optimistic judgments and choices [20]. In addition, individuals who had personality characteristics dominated by the emotion of fear tended to avoid taking risks that were generally perceived by others as relatively nonthreatening [21].

Childhood trauma

Childhood trauma involves the impact of extreme physical or psychological stressors that overwhelm a child's ability to cope. Trauma occurs when children are exposed to any of a range of traumatic stressors, including sexual and physical assault, domestic violence, car accidents, shootings, war, and terrorism [22]. These experiences have a profound effect on a child's development [23]. Trauma is an experience that can transform a child's world. It is the "human brain that processes and internalizes traumatic experiences" [23]. It is also the brain that mediates emotional, cognitive, behavioral, social, and physiological functioning [23]. Understanding the development of the human brain can illuminate how a child responds to trauma and copes with traumatic events, both as a child and later in life as an adult. It is particularly important to understand why some children develop symptoms while

others do not, how children deal with trauma, and how children's brains respond to threats.

The brain is a complex system consisting of billions of neurons and tens of billions of glial cells designed to sense, process, store, perceive, and act on information from internal and external environments [23]. The internal environment consists of responses such as the hormonal signals associated with hunger [23]. The external environment includes the nervous system associated with visual, tactile, olfactory, and auditory senses (Perry et al., 1995) [23]. The main part of the brain consists of working neurons, which are responsible for communicating with other neurons. Individual neurons are connected into networks, which are organized into systems, and these systems work together to mediate specific functions such as alerting when danger is imminent [23]. The frontal cortex is responsible for abstract thought processes, such as complex language, while the brain stem at the base of the brain is responsible for involuntary functions, such as heart rate, blood pressure, and arousal states [23]. The middle part of the triune brain is the limbic system that is responsible for attachment, affect regulation, and aspects of emotion.

Fundamental to a child's life is how she/he is impacted by trauma. Children are particularly vulnerable to adverse reactions to trauma as their brains are still developing and undergoing rapid developmental periods. In addition, they have limited coping skills and are dependent on their primary caretakers to protect them from experiencing trauma.

Background of trauma and violence

The schools in this study were in an urban community that is socioeconomically depressed with high crime rates, violence, poverty, and drugs. The city recently ranked among the highest in per-capita robberies among big cities nationwide (those with 100,000 people or more). Compounding or perhaps because of these challenges, the school district from which this data was drawn performed poorly overall; some schools could not even be rated because they fell below 1 on a scale of 1 to 10, with 1 being the poorest and 10 being the best performance. In addition, the district has yet to recover from large financial deficits and might benefit from a re-evaluation of its spending priorities. In the year while this study took place, much of the support staff received pink slips. In the school where the primary author of this paper worked, all the support staff, including the school psychologist, received "pink slips" (dismissal from employment) during the first week of the second semester. During the same year, the district spent almost a million dollars for recruitment expenses for its chief financial officer. It seems understandable that the school district is at its current state of being dysfunctional, inept, and cannot address challenges in most effective way.

METHODS

Research questions

We considered two principal research questions. 1) To what extent does trauma impact children's functioning in urban schools? and 2) Are there clinical symptoms that we need to focus on to ensure that the treatments and interventions are adequately provided?

Research has shown that both direct and historical trauma has long-term lasting impacts on the mental health and well-being of a population. Trauma is an event or process that can overwhelm the individual, family, and community, and hinder one's ability to cope in mind, body, soul, and spirit [24]. Trauma and its impact can be passed between generations [25]. Many children who live in urban communities often experience violence (directly or indirectly) sometimes during the entire period of their upbringing. The effects of violence on the mental health of a population have important implications for overall well-being as well as livelihood. Collective trauma, as direct or indirect experience, can impede the success and survivability of a population overall even decades after the event and in many generations thereafter.

Based on previous research, we hypothesized that trauma can impact many generations-that is, the children of those who experienced trauma may exhibit symptoms of traumatic events that they themselves did not directly experience. These children also may acquire some of the clinical symptoms of their parents or previous generations who directly experienced the trauma. In addition, we hypothesized that the success and survivability of school-aged children to live productive and meaningful lives would be correlated to the individual's responses to traumatic events and the psychological consequences thereafter and whether there were effective interventions to deal with symptoms associating with these traumatic experiences. Furthermore, we hypothesized diagnosing children can further stigmatize them and hinder their ability to function normally.

Secondary information

Secondary observational information (de-identified) came from clinical notes from clinicians who worked for a school district. There were descriptions of clinical symptoms, anecdotal accounts of challenges, barriers, and incomplete personal histories. The information was meant to present some patterns of diagnoses among clinicians. There are roughly ten common diagnoses being listed among school-aged children. Some details focused on treatment plans, progress or lack thereof after an intervention, and barriers and challenges expressed by clinicians through observations or other clinicians' observations. No names of staff were recorded in notes. Notes were handwritten or typed and in raw data form without analysis. Three cases of notes were closely analyzed to seek for patterns of histories of common personal experiences and exposure to violence; clinical symptoms that may not have been the result of exposure to violence but rather other factors (physiological, developmental issues, medical-induced, etc.) were highlighted in this study to gain a deeper understanding of what happens to children who have experienced severe traumatic events.

Reflexivity in qualitative research

The concept of 'reflexivity' validates the importance of studying others and recognizes how one's own lens as a researcher influences or informs the research findings. Over the course of twenty years of experience and conducting research in the field, I (primary author) have learned the importance of a researcher's knowledge of the culture, community settings, historical context, and environment of a study. Such insight into the lives of participants can greatly contribute to the richness of research findings. The concept of 'reflexivity' as discussed by [26] validates the importance of studying others and recognizes how our own lens as a researcher influences or informs the research findings [26-42]. state that reflexivity has become more important in social work literature as it relates to social work education. This is the case with my own experience as an anthropologist, researcher, and now a clinical social worker/Social Work professor who conducts research studies in a community setting.

RESULTS

Secondary information from clinicians

All clinicians in the study stated that they frequently used the nine diagnoses listed in **(Table 1)**. They also stated that they struggled with their own values and professional code of ethics when conducting assessments. They realized that they were labeling children when they added a diagnosis to a treatment plan. They stated that they felt forced to do this because insurance companies and Medi-Cal billing required a diagnosis. **(Table 1)** lists some of the disorders that were commonly diagnosed among the school-aged children in our sample, in order of frequency of diagnosis.

Table 1: Common youth diagnoses (DSM-IV and DSM-5) in this urban school district.

Diagnosis	DSM-IV	DSM-5
Attention Deficit/Hyperactivity Disorder F90.2 - Combined Presentation F90.0 - Predominately Inattentive Presentation F90.1 - Predominately Hyperactive/Impulsive Presentation	314.01	59-60
Disruptive, Impulse-Control, Conduct Disorder F91.9	312.9	480
Generalized Anxiety Disorder F41.1	300.02	222
Conduct Disorder F91.1 - Childhood Onset Type F91.2 - Adolescent Onset Type F91.9 - Unspecified Onset Type	312.81	469-471
Adjustment Disorder F42.21 - With Depressed Mood F43.22 - With Anxiety F43.23 - With Anxiety and Depressed Mood F43.24 - With Disturbance of Conduct F43.25 - With Mixed Disturbance of Emotions and Conduct F43.20 - Unspecified	309.0	286-287
Major Depressive Disorder F32.0 - Mild F32.1 - Moderate F32.2 - Severe	296.20	160-162
Persistent Depressive Disorder (Formerly Dysthymic Disorder) F34.1	300.4	168-169
Social Anxiety Disorder F40.10	300.23	118-119
Specific Phobia F40.218 - Animal F40.228 - Natural Environment F40.23x - Blood-injection Injury F40.248 - Situational F40.298 - Other	300.29	116-117

The diagnoses in **(Table 1)** are listed in order based on clinicians' response to the most common diagnoses used for these school-aged students in this urban school district. ADHD, for example, was ranked the number 1 common diagnosis used for their treatment plans. The primary author noticed in her caseload of clients a similar pattern in her own experience

of diagnosing urban school-aged children when she was working as a clinician in her own caseload. ADHD was most commonly diagnosed, especially among male elementary school students, followed by anxiety spectrum and conduct disorder. Adjustment disorder ranked as the fourth most common diagnosis among these clinicians. Depression was fifth and various types of phobia were last but still considered to be a common diagnosis based on symptoms presented at the time of their assessments.

Table 2: Common symptoms reported by three different types of clinicians.

Common symptoms reported by a psychologist	Common symptoms reported by a clinical social worker	Common symptoms reported by a family/ marriage therapist
Anxiety Anger Irritability Mood swings Depression Incontinence as a result of anxiety or stress Mild cognitive impairment as a result of depression Fear Denial Withdrawal	Anxiety/PTSD Depression DV/Trauma Attachment issues Anger Irritability Rejection Explosive disorder Depressed mood (Intermittent) emotional outbursts Fear	Anxiety Depression Guilt Self-blame Fear PTSD-like symptoms Abandonment Rejection Fear of it happening again

The results from **(Table 2)** suggest that regardless of a clinician's training, the identified underlying symptoms among this school-aged group were similar. The top three symptoms reported by these clinicians were anxiety, anxiety/PTSD, and depression. However, anxiety ranked top as the common symptom.

Other common symptoms reported by these clinicians included emotional dysregulation and associated symptoms such as attachment issues, mood swings, irritability, and guilt/self-blame. Conduct and related symptoms such as anger, rejection, denial, withdrawal, and abandonment were also reported as common symptoms. Fear was also reported by these three clinicians as a common clinical symptom among children in this urban school district.

Results: Case vignettes

Data from these case vignettes came from old notes with all personal identifiers removed (i.e., name of a person, phone, student ID, address, or any other information that would make identifying individuals possible). These case vignettes are based on secondary data retrieved from hand-written notes from the urban school district. The district consists of many elementary schools, middle and high schools; therefore, it is unlikely that any single person would be able to decipher an individual based on the descriptions from these case vignettes. What follows are three case studies representative of the trends that we observed in the data. A summary of the case is presented, along with a table summarizing the information.

Case 1: Grief & loss

This youth had an Individualized Education Program (IEP) and was diagnosed with ADHD three years earlier (after his father was incarcerated). He was on ADHD meds due to behavioral problems at school and in the classroom (anger control, substance use, disrupting class, throwing objects across the classroom, etc.). The parents were divorced when he was a little boy. Dad was incarcerated, and the youth had no relationship with his father but had had brief contact with the father when he was a baby (less than one years old). The youth grew up with his grandmother, until the day he came home from school and discovered his grandmother's dead body and called 911. Prior to the passing of his grandmother, the youth lived with his grandmother and his mother. However, his mother had several jobs and rarely spent time with him.

The youth rarely attended school and failed all his classes after the passing of his maternal grandmother. He got into fights with other students. He particularly did not get along with male teachers and tended to walk away from them to avoid confrontation or engagement with them. After the passing of his grandmother, he also started to argue with female teachers and got suspended as a result. A psychiatrist recommended to start ADHD meds again when he entered high school, especially after the passing of his grandmother, but his mother refused.

After the death of his grandmother, his mother had a passive approach to his care. The youth stayed with a cousin and he slept in their living room on a couch. The youth stated that owing to his mother's work schedule, they rarely saw each other or had time to build a closer relationship with one another. He often expressed a need to have someone like his grandmother back in his life. He used to eat home-cooked hot meals regularly. He did not feel like he was alone when his grandmother was alive.

Prior to enrolling in high school and after the death of his grandmother, the youth had also witnessed multiple violent

incidents in his school surroundings. One event involved a stabbing where the victim's head was partially severed from his body. The youth reported that the victim died before the ambulance arrived; he and his friend were within reach of the incident when the incident occurred. He also recognized one of the people in the altercation. Another incident involved a woman beaten to death by her boyfriend. The youth claimed he did not know what happened to the woman. He and his friend left the location where the incident occurred before police arrived. A third incident involved the youth directly. He was asked to join in a robbery near a Bay Area train station. One of the people in his group took out a gun and pistol-whipped the victim. The youth claimed that he did not help the victim, but instead chose to grab the victim's laptop and pushed the victim against a hard surface. He reported that he could hear the victim land on the cement with loud bang sound.

Table 3: A case of grief and loss.

Identifying Information	Reasons for Referral	Clinical Info/Interventions
AA Male 15 y/o 9th Grade	Anger control Low self-esteem Truancy Previous diagnosis ADHD in elementary school	Had IEP Was diagnosed ADHD/on med Anger, substance use, disrupting the class/throwing objects Youth was forced to stop taking ADHD med when he entered high school (3 years prior).

Case 2: Sexual assault, drugs, and gang violence

This case concerns a 17-year-old female who was in 11th grade in age but whose school credits were the equivalent of 9th grade. She had an IEP and was diagnosed with ADHD and mood disorder. The youth had prescriptions for both diagnoses. She lived with both parents who worked full-time jobs; the family characterized as lower middle-class. Two years earlier, when youth was in junior high school, she experienced two traumatic events. 1) She was drugged and raped by ex-boyfriend.) She discovered her best friend's body (a suicide). The clinical notes describe the youth stating that she could not close her eyes at night and confessed to not taking her medications; instead she would keep them under her tongue. She said she "refused to take her meds because they made her sick in the stomach." Youth never received any support for loss/grief after the suicide of her friend or the rape by her ex-boyfriend. Some of the symptoms noted included excessive crying, hearing voices telling her to kill herself, and feeling guilty over the death of her best friend.

Assessments were made using the Beck Depression Inventory (BDI) and the PTSD Checklist (civilian version from the VA). On the Beck Depression Inventory, she scored 52, which meant the youth was extremely depressed. On the PTSD Checklist she scored 77, which indicated high severity in symptoms relating to PTSD. The youth continued to see a psychologist as late as two years ago when the youth was in 11th grade.

Table 4: A case of sexual assault, drugs, & gang violence.

Identifying Information	Reasons for Referral	Clinical Info/Interventions
Latina Female 17 y/o 11th grade in age but school credits shown to be in the 9th grade	Truancy Substance use Defiant behavior	Had IEP Was diagnosed with mood disorder On meds for mood disorder ADHD Psychosis Suicidal ideation Anger, substance use

Case 3: Refugee past

Case 3 documents a kindergartener, a Southeast Asian female who was born in the U.S. and whose mother died in a car accident when she was six years old. Her mother was a refugee from Southeast Asia. Her mother became pregnant with the girl while dating another man and decided to run off with this new man who was not the child's biological father. The child never met her father who lived out of state. Before arriving in the U.S., the mother had suffered serious trauma in her home country during the war in Southeast Asia and in the refugee camps before the child was born; she had symptoms of PTSD and had never sought help. The mother was five years old when the war broke out in Southeast Asia and caused the collapse of the country to the communist rule. Like many Southeast Asian refugees, her mother survived the Vietnam War and the atrocities that killed a third of the population.

Prior to car accident, the six-year-old girl never had any trauma experiences and lived with both parents in a home and was never seen by a counselor to address her symptoms; however, school staff had noted possible signs of PTSD in the child. She was more alert, edgy, and sensitive than the average kid her age, especially to sounds. However, the child was never seen by a mental health professional to deal with these symptoms.

A school counselor sought this primary author's opinions on this case since she is a Southeast Asian herself and a clinician. The counselor's report detailed the child's experiences for six months while she was still attending the same elementary

school. The six-year-old kindergartener lost her mother to a car accident. Both the mother and the mother's boyfriend were killed. The child was described as quiet and timid. Some adults described her as shy and studious. The girl and her mother lived with the family of her mother's boyfriend. After her mother and the boyfriend died, the child continued to live with the boyfriend's family in the same room that her and her mother's boyfriend stayed. For the first six months, her teacher thought that things were back to normal. She was studying hard and followed instructions. She never voiced her opinions. The only sign that the teacher reported was that the child no longer displayed any emotions. She was stoic and was startled easily when touched. She also started to change at home. She preferred wearing black clothes and chose black ink to write. She switched between screaming and being silent. The school was told that her biological father was informed and agreed to take her in. She would be moving to another state once her paperwork was complete.

Table 5: Refugee past.

Identifying Information	Reasons for Referral	Clinical Info/Interventions
Female Southeast Asian 6 years old	Signs of ADHD from school counselor but not fully assessed No reaction No response No engagement in class/at home	Prior to the experience - known to have anxiety issues (edgy/unfocused) Post news of deaths -Went silent -Stoic -Mood swing (laughing quickly/crying)

DISCUSSION

The results from this research seem to suggest two common patterns relating to the social environments of our research sample and the occurrence of clinical symptoms. One pattern is the common past experiences of trauma among the individuals in this study; nearly all had experienced trauma of one kind or another. The second pattern is that ADHD was the most frequently given diagnosis among this group of traumatized young people. These results do not provide us with clear evidence that experiencing trauma is a primary pre-condition for ADHD, nor whether those who have symptoms of ADHD are more prone to have symptoms of PTSD. Nor were we able to determine whether any of those diagnosed with ADHD were suffering from PTSD. However, what we can conclude from these results is that screening for PTSD is critical for matters relating to the development of effective and appropriate interventions. Every person who has a diagnosis of ADHD also should be screened for trauma and PTSD. Additionally, conducting past family histories, and specifically conducting assessments of any history of past trauma, may help reduce the likelihood of misdiagnosing and may assist in being able to administer more effective treatments.

The one fact we know that can offer insight into this relationship between ADHD and trauma is that both affect the same part of the brain, the prefrontal lobe/cortex. This area of the brain is responsible for executive functions relating to the ability to differentiate among conflicting thoughts, such as determining good and bad, better and best, and whether something is the same and/or different, as well as the ability to realize and weigh future consequences of current/immediate actions, work toward a specific and concrete goal, predict outcomes, have expectations that are based on actions, and exercise social control [23]. Fundamentally, it is the part of the brain that can suppress urges or irrational thoughts. This is the part of the brain that controls the rational mind of a human being and prevents an individual from acting in ways that might lead to socially unacceptable outcomes.

One final point about this is that we know that there is ample evidence on how our brains react to violence/trauma and how the brain is altered when we are met with repeated traumatic experiences. The earlier the exposure to trauma the more likely this altered brain will become more permanent. This change is in a state of use-dependent fashion where there is no part of the brain that can change without being activated first [23]. In a non-use state such as sleep, the brain is not used and therefore is not activated to take on an experience. On the other hand, when a person is faced with a traumatic experience, the brain is more likely to be activated to record that experience. In the case of trauma or when a person is in a persistent state of fear, the brain function becomes impaired and lacks the capacity to access or benefit from meaningful social, emotional, and cognitive experiences.

Limitations

This research was limited in time and scope. One major limitation was the lack of MRI images. This would have informed us of the underlying neuro-pathophysiology of this group and provided more conclusive evidence. Instead, we

relied on observational information for our analysis. While the latter offered some insight and clues, it was not possible to make absolute conclusions. Observations were conducted but limited to group recreational activities in large spaces such as auditoriums, stadiums, theaters, and playgrounds. None of these observations related to any specific participants. The observations focused on school environments and whether such locations were subject to violence. Because of time limitation, I (primary author) did not have the opportunity to observe group dynamics or individual interactions with known diagnoses. In addition, the hand-written or typed notes were in the form of raw data that was initially compiled without a research study in mind, and therefore posed some analysis challenges.

CONCLUSION

Further systematic observation is needed to fully understand how trauma impacts children and their ability to function and its implication. We recommend trauma be approached in a prospective longitudinal research study with a referent group.

What we do know is that this type of poor urban youth community has, and will no doubt continue to experience a plethora of trauma, and that many of their parents have grown up in a similar environment with similar experiences of trauma. Therefore, reason tells us that there is a high degree of probability that some of these children may have clinical symptoms of anxiety spectrum disorders in general, and PTSD in particular, because of their exposure to (repeated) and often generational trauma.

Past trauma may play a role in a child's life and the question remains to what extent does trauma contribute and what predispositions might place individuals at greater risk for experiencing symptoms? Some children may be more prone to experience symptoms from trauma than others. What is relevant is the sheer amount of trauma found among this population that has received other diagnoses and how our brains are wired to adapt to changing circumstances, to more effectively treat those suffering from trauma.

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