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POST-TRAUMATIC STRESS DISORDER IN CHILDREN: WHAT IS IT, WHAT CAUSES IT, AND HOW TO TREAT IT

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POST-TRAUMATIC STRESS DISORDER IN CHILDREN: WHAT IS IT, WHAT CAUSES IT, AND HOW TO TREAT IT

by

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ABSTRACT

POST-TRAUMATIC STRESS DISORDER IN CHILDREN:

WHAT IS IT, WHAT CAUSES IT, AND

HOW TO TREAT IT

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Post-Traumatic Stress Disorder (PTSD) is not a rare mental disorder that is only found among veterans who've seen combat; it is much more common than most people think. PTSD is caused not only by war and violence, but also by animal attacks, medical procedures, natural disasters, sexual abuse, physical abuse, witnessing violence, automobile accidents, airplane crashes, and immigrant and refugee situations. The manifestation of PTSD symptoms may differ depending on the person; some may have insomnia, others may have irritable and angry outbursts, some may experience flashbacks, while others may have amnesia.

This thesis is about PTSD in children and how traumatic events lead to this diagnosis in children. It focuses on what the symptoms of PTSD are in children and how those differ

from what adults go through. It also encompasses different treatment methods and states which one is the most effective. The most effective method to treating PTSD in children that has the most research behind it is trauma-focused cognitive behavioral therapy with a play aspect.

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CHAPTER 1

POST-TRAUMATIC STRESS DISORDER

1.1 What is it?

There are many misconceptions about Post-Traumatic Stress Disorder, where it comes from, and who can have it. A lot of the population may believe that only people who have gone to war and have seen lots of violence there can be diagnosed with PTSD. Indeed, this idea is not far off from the initial name of PTSD, Shell Shock. Many people are also unsure of the manifestation of PTSD. If the general population is asked about it, they may stumble over their words or mumble about veterans not liking loud noises and avoiding fireworks. It is now known that PTSD encompasses much more than just the population of veterans and those two symptoms. Research has explored PTSD in detail, including the causes, who can experience it, and how to best treat it. The topic of PTSD is broad, so this paper focused on the population under the age of 18, children and adolescents.

PTSD is a type of trauma and stressor-related disorder. A trauma and stressor-related disorder covers a group of mental health disorders that are caused by stressful life events, which is different from other disorders – like anxiety and depression. PTSD is an enduring and distressing emotional disorder that occurs after being exposed to a threat that induces fear or severe helplessness. The victim of PTSD typically re-experiences the trauma, tries to avoid stimuli that are associated with the trauma, and develops a decreased level of responsiveness and an increased sense of arousal (Durand, Barlow, & Hofmann,

2017). A decreased level of consciousness would show as being awake but less alert, and an increased sense of arousal could manifest as being anxious.

1.1.1 The Diagnostic and Statistical Manual of Mental Health Disorders, 5th Edition

The Diagnostic and Statistical Manual of Mental Health Disorders, 5th Edition limits the definition of PTSD to children above the age of 6, adolescents, and adults. Their definition is more detailed in that it includes serious injury, exposure to actual or threatened death, or sexual violence. It also lists the ways that the victim could get that exposure: by directly experiencing the traumatic event, personally witnessing it happen to someone else, learning about a traumatic event that happened to a family member or to a close friend (the traumatic event needs to have been violent or accidental if a loved one experienced actual or threatened death), or by being exposed to aversive details of that traumatic event, such as human remains (American Psychiatric Association, 2013). The Diagnostic and Statistical Manual of Mental Health Disorders has made the diagnosis of PTSD dependent on meeting a certain number of criteria in different categories, such as re-experiencing symptoms, numbing and avoidance, changes in arousal, duration, and clinically significant impairment or distress (American Psychiatric Association, 2013).

The Diagnostic and Statistical Manual of Mental Health Disorders, 5th Edition names a series of symptoms that may begin after the traumatic event has occurred. To be diagnosed with PTSD, the individual must experience at least one of the following five symptoms. One of the symptoms is experiencing distressing memories over and over again involuntarily; in children, this may manifest as repetitive play that may express themes or aspects of the trauma (American Psychiatric Association, 2013). Another symptom is having recurring dreams about the traumatic event; in children, these dreams might have

no recognizable content (American Psychiatric Association, 2013). A third symptom that they might experience is dissociative reactions, like flashbacks, in which the individual feels or acts like they are there again and are re-experiencing the traumatic event. These reactions occur on a continuum where the most extreme case would be where the individual has lost complete awareness of their surroundings; children might re-enact actions or scenes specific to their trauma (American Psychiatric Association, 2013). The last two symptoms are psychological distress and physiological reactions when exposed to internal or external cues that the individual associates with the traumatic event (American Psychiatric Association, 2013).

Individuals who suffer from PTSD persistently avoid stimuli that remind them of the traumatic event that has occurred. They will drastically change their behavior to avoid anything related to the trauma including both internal and external cues (American Psychiatric Association, 2013). They will avoid, or try to avoid, distressing thoughts, feelings, or memories that they relate to the traumatic event, and/or external cues of that traumatic event (like people, places, objects, etc.) that bring distressing thoughts, feelings, or memories they relate to the traumatic event (American Psychiatric Association, 2013).

They will also experience negative changes in their mood related to how they think about the traumatic event; these may begin because of or worsen after the traumatic event has occurred (American Psychiatric Association, 2013). Individuals need to experience at least two of the following symptoms to be considered to have PTSD. One symptom is lapse in memory about important parts of the traumatic event. This symptom is caused by dissociative amnesia, not because of drugs, alcohol, or head injury (American Psychiatric Association, 2013). The second possible symptom they may experience is negative beliefs

or expectations they have about themselves that are exaggerated and don't go away, like "I'm bad," "I can't trust anyone," and "The world is an unsafe and terrible place" (American Psychiatric Association, 2013). A third possible symptom is having persistent and misshapen thoughts about the cause that led to or consequences that came from the traumatic event that made the individual blame themselves or others (American Psychiatric Association, 2013). Two more symptoms include consistently experiencing a negative emotional state, like fear, anger, grief, or shame, and never experiencing positive emotions, like happiness, satisfaction, or affection (American Psychiatric Association, 2013). Another possible symptom is that they experience significantly less interest in participating in activities they formerly enjoyed (American Psychiatric Association, 2013). The last symptom they may experience is feeling estranged or detached from those around them and their loved ones (American Psychiatric Association, 2013).

They also experience significant changes in their reactivity and arousal associated with the traumatic event; these changes may begin because of or become worse after the occurrence of the traumatic event (American Psychiatric Association, 2013). These changes need to manifest in at least two of the following ways: irritable behavior and unprovoked angry outbursts expressed verbally or physically, behavior that is reckless or self-destructive, hypervigilance, exaggerated startle response, problems concentrating, or disruptions in sleep (American Psychiatric Association, 2013).

To be diagnosed with PTSD, the individual needs to experience these symptoms and disturbances for more than one month, they must disrupt their social life, their work life, or other important aspects of life in a clinically significant way, and they cannot be

caused by the psychological effects of a substance, a medication, or a medical condition (American Psychiatric Association, 2013).

1.1.2 Symptoms

Some common symptoms experienced by those who have PTSD include anxiety, depression, mania, flashbacks triggered by stimuli (e.g., sounds, smells, images, and feelings), involuntary memories, nightmares, avoidance of anyone or anything related to the traumatic event, negative thoughts and feelings, being self-destructive, having angry outbursts, sleeplessness, and a fight or flight response (Hasan, 2018).

Anxiety is an emotional state in which the individual is experiencing feelings of apprehension, worry, and tension, as well as having a heightened level of activity in the autonomic nervous system (Spielberger, 2010). Depression is an emotional state that makes the individual experiencing it feel sad and lose interest in things they use to like; it also causes loss of energy, feelings of worthlessness, and thoughts of death and suicide (Parekh, 2017). Mania is when a person is in an extremely elevated mood where they talk too much and too fast, don't sleep as often, are easily distracted, and are agitated (Dailey & Saadabadi, 2020). The fight or flight response happens in response to feeling threatened and prepares the individual experiencing it to either run away from the threat or to stay and fight it (The Editors of Encyclopedia Britannica, 2019).

1.1.2.1 Symptoms Specific to Children

Both children and adults experience these common symptoms. However, there are PTSD symptoms unique to children. PTSD can only be diagnosed after one month of consistent symptoms when the symptoms are negatively impacting the child's life at school, at home, or with friends. For children affected by PTSD, symptoms typically start

within 3 months, but it can be months or even years before the signs show (Stanford Children's Health, 2019).

Children express regressive behaviors such as thumb sucking, bed wetting, talking in baby talk, throwing temper tantrums, and sleeping with all of the lights on as symptoms of PTSD. They may also experience separation anxiety and may also start being scared of things they were never scared of before or of things they stopped being scared of (Kaminer, Seedat, & Stein, 2005). They may engage in play that recreates or repeats the trauma, such as using their dolls, action figures, or stuffed animals to reenact the trauma they experienced. They can reenact the event for seconds, minutes, or even hours at a time; some may reenact the traumatic event for days, but that is a rare occurrence (Hamblen & Barnet, 2019).

Children with PTSD can be moody, grouchy, on guard, or even feel emotional numbness. They can struggle academically and emotionally in school because of difficulty focusing. It is not uncommon for children to lose interest in activities formerly enjoyed. They may not like their favorite toys anymore or they may not want to play the sport they like (Hamblen & Barnet, 2019). Their interpersonal skills can decrease, they may not enjoy showing or receiving affection anymore or they may lose touch with reality. Children are not immune to experiencing physical symptoms as well, such as panic attacks, headaches, stomach aches, and other psychosomatic symptoms (Kaminer, Seedat, & Stein, 2005).

1.1.2.2 Symptoms Specific to Elementary Aged Children

Elementary-aged children may not have flashbacks or amnesia, but they do experience a time skew and omen formation, both of which are not typically seen in adults (Kerig, Fedorowicz, Brown, & Warren, 2000). Time skew is when the child mis-sequences

the steps in the traumatic event when recalling the memory. Omen formation is the belief that there were warning signs, or omens, that foretold of the traumatic event. Due to this, children usually think that if they are vigilant enough, they'll detect signs of, and then avoid, any future trauma that may come. They exhibit more post-traumatic play than post-traumatic reenactment. Post-traumatic play is a literal representation of the trauma, involves the repeating of some aspect of the trauma, and does not make the child feel any less anxious. (Hamblen & Barnet, 2019). An example of post-traumatic play would be an increase in playing shooting games after being exposed to a school shooting. Post-traumatic reenactment is when they incorporate aspects of the trauma into their daily lives. For example, the child carries a gun around after being exposed to a school shooting (Hamblen & Barnet, 2019).

1.1.2.3 Symptoms Specific to Adolescents

Adolescent PTSD looks similar to adult PTSD, except for a few things that differ. There may be some post-traumatic play, but there is more post-traumatic reenactment. Adolescents are also more likely than younger children or adults to be impulsive and engage in aggressive behaviors. (Hamblen & Barnet, 2019). Adolescents are also prone to experiencing time skew and omen formation. Additionally, they may withdraw into long periods of heavy sleep, the opposite of insomnia which may occur in adults with PTSD (Kerig, Fedorowicz, Brown, & Warren, 2000).

CHAPTER 2

CAUSES AND STATISTICS

2.1 What Can Cause Post-Traumatic Stress Disorder

The true cause of PTSD lies within the name itself. It can occur after any traumatic event that causes stress and interferes with the day-to-day living of the individual. Different situations impact people in different ways, so what may cause PTSD in one person may not impact a different person the same way. The unexpected or violent death of a loved one can cause PTSD in someone (Hasan, 2018). Rape, fire, assault and/or abuse, shootings, military combat, giving birth, car crashes, natural and/or manmade disasters, train wrecks, invasive medical procedures (especially for children under 6 years of age), animal bites, neglect, violent crimes, kidnappings, and plane crashes are also situations that can cause PTSD (Stanford Children's Health, 2019). ICE raids, refugee situations, and being forcefully separated from family members can also develop PTSD. Additionally, those who vicariously experience, witness, or learn that these events have happened to a close friend or family member are vulnerable to also developing PTSD (Kronick, 2018).

2.1.1 Statistics

Research estimates that at least 40% of minors will experience at least one traumatic event in their lifetime (Smith, 2019). The Department of Health and Human Services is a very resourceful tool when trying to get information about very young children and child abuse, but their information is limited in that they only address abuse and no other traumatic events. The data on childhood abuse are also limited, because like many crimes, not all

abuse is reported (MacMillan et al., 2003). In 2018, situations involving 3,534,000 children were looked into and it was determined that 678,000 of the children were victims of maltreatment. Furthermore, 60.8% of the children were victims of neglect, 10.7% were victims of physical abuse, and 7.0% were victims of sexual abuse. More than 15% of children were victims of at least two of the maltreatment types (Administration for Children & Families, 2020).

There have been several national studies conducted on older children. The National Survey of Children's Exposure to Violence collected data from their nationally representative sample of 4,549 participants aged 0 to 17.2 years old about childhood victimization in the past one year and from their entire life (Fineklhor, Turner, Ormrod, Hamby, & Kracke, 2009). Researchers found that 60.6% of the sample reported to experience or witness victimization in just the past year. Additionally, 46.35% experienced physical assault, 10.2% experienced child maltreatment, 6.1% experienced sexual victimization, 25.3% witnessed domestic or community violence, and 9.8% saw the assault of one family member by another family member. The results of this survey show that a lot, if not more than half, of children witness or experience violence in some shape or form (Finkelhor, et al., 2009).

The National Survey of Adolescents questioned 4,023 adolescents ranging between the ages of 12 and 17 if they had ever experienced physical or sexual assault or violence (Kilpatrick, Saunders, & Smith, 1995). The survey found that 74.3% of the sample experienced at least one of the following types of violence: sexual assault, physical assault, physically abusive punishment, or witnessed violence. In their lifetimes, 8.1% experienced sexual assault, 17.4% experienced physical assault, 9.4% experienced physically abusive

punishments, and 39.4% witnessed violence. (Kilpatrick, Saunders, & Smith, 1995). Though this study is dated, these numbers are much higher than many people would expect. When looking at these two studies, it can be seen that the proportion of children affected does not differ that much, in both more than half of the children involved experienced or witnessed some sort of violence.

2.1.2 Unaccompanied Refugee Minors, Asylum Seekers, and Immigrants

Many people do not think about how traumatic it can be for children to be separated from their families, especially unwillingly. Not many thoughts are given to the mental and psychological repercussions from the forced separations many immigrants, refugees, and asylum-seeking youth face. At daycares and elementary schools, it is not an uncommon sight to witness young children clinging to their parents' legs and bawling about not wanting to go to school. That transition from being home to having to go to school can be mildly traumatic for young children, but it is part of life and they grow from it. But when they are ripped away from their parents and their normal everyday lives, it is much harder for them to overcome that trauma, sometimes even impossible (McGregor, Melvin, & Newman, 2015).

Children who come from refugee backgrounds experience high rates of PTSD, even years after resettlement. Those who were separated from immediate family members showed significantly more symptoms of PTSD (McGregor, Melvin, & Newman, 2015). Over 20% of refugees suffer from anxiety, depression, and PTSD; a review of 42 studies showed that 40% to 63% of refugee children have PTSD, an astonishingly high number (Kronick, 2018). In another study of 124 unaccompanied refugee minors between the ages

of 11 and 18 showed that PTSD was present in 36.7%, depression in 30.2%, and anxiety in 20% of the sample (Derluyn, Mels, & Broekaert, 2009).

Another study showed that 54% of the 93 asylum seekers aged 10 to 16 years old scored above the clinical cutoff on the Child PTSD Symptom Scale 6 months after they first arrived (Jensen, Fjermestad, Granly, & Wilhelmsen, 2015). One longitudinal study showed the progression of PTSD from when unaccompanied minor refugees first arrived to 6 months later to 18 months later and the numbers show a steady incline, from 48% of the sample at arrival had PTSD, to 55.1% of the sample after 6 months, to 53.2% of the sample after 18 months (Vervliet, Lammertyn, Broekaert, & Derluyn, 2014).

CHAPTER 3

INFLUENCING FACTORS ON POST-TRAUMATIC STRESS DISORDER

3.1 What Can Influence the Likelihood of Having Post-Traumatic Stress Disorder?

Just as staying out in the cold weather without warm clothing can increase the likelihood of becoming sick, there are factors that influence the likelihood of a person having PTSD. Many aspects come into play when trying to figure out what can make a person more or less likely to come out of a traumatic event with PTSD. Both genetic predisposition and having a family history of mental illness make it more likely for an individual to develop PTSD (Cornelis, Nugent, Amstadter, & Koenen, 2010). Additionally, socioeconomic status, and much of what is affected by socioeconomic status, plays a role in how likely someone is to develop PTSD (King et al., 2012).

3.2 Genetic Predisposition

Genetics play a role in how susceptible a person is to certain mental illnesses. The chance of an individual having that mental illness depends on how many specific characteristics that individual shares with their family. If someone has a family history of anxiety, then that person has a much greater chance of developing anxiety than someone without a family history of anxiety. Another mental illness a person can become more susceptible to experiencing when they have a family history of anxiety is PTSD (Durand, Barlow, & Hofmann, 2017).

Pre-existing psychiatric and psychological disorders are risk factors that increase the likelihood of developing PTSD, especially in women (Lassemo, Sandanger, Nygard,

& Sorgaard, 2017). Parental psychopathology also increases the risk of developing PTSD later on in the life of the child (Kolaitis et al., 2011).

It has been shown that if a set of twins go to war for the same time, monozygotic (i.e., identical) twins are more likely than dizygotic (i.e., fraternal) twins to develop PTSD (True, et al., 1993). This suggests a genetic influence over the development of PTSD. These genetic factors predispose people to be easily stressed and made anxious, making it easier for them to develop PTSD once they've experienced a traumatic event (Uddin, Amstadter, Nugent, & Koenen, 2012).

Another twin study conducted by Stein and colleagues (2002) showed that genetic factors influence the susceptibility to the development of PTSD symptoms, especially in assaultive trauma. Yehuda (1999) looked into the adult children of Holocaust survivors and found that those children had an increased rate of PTSD when compared to children who were not descendants of Holocaust survivors. However, researchers noted that the children may be more at risk of developing PTSD simply by having to watch a parent deal with chronic and intense PTSD themselves (Yehuda, 1999).

3.3 Other Factors That Predispose Post-Traumatic Stress Disorder

Outside of genetic predispositions, there are many external factors that play a role in whether or not an individual develops PTSD. Studies have found that education levels, family dynamics, behavior in childhood, personality, social factors, and intelligence levels may predispose individuals to have PTSD. They have found that the influence of these external factors may affect a child's personal characteristics and expose them to situations that make experiencing a traumatic event more likely (Norrholm & Ressler, 2009).

3.3.1 Education Levels and Socioeconomic Status

Limited or lack of education is a factor that may predispose a child to developing PTSD. Criminal activity is positively related to unemployment and negatively related to educational levels (Huang, Laing, & Wang 2004). Children whose parents lack an education beyond high school are more likely to grow up in low socioeconomic, less affluent neighborhoods. In other words, there is a strong relationship between socioeconomic status and educational attainment (Tilak, 2002). More often than not, affluent neighborhoods tend to be safe and relatively free of traumatic crimes, but impoverished neighborhoods may be exposed to more crime, gang violence, and gun violence (Huang, Laing, & Wang, 2004). Furthermore, living in less affluent neighborhoods is associated with lower-paying jobs, which may lead to food insecurity, housing insecurity, and a lower quality of education. So, children from affluent neighborhoods would be less likely to face threats to their basic needs, such as loss of reliable food, clothing, or shelter, or threats of violence from guns or community members. Conversely, a child in a less affluent neighborhood may face these struggles, any of which could be traumatic enough to result in PTSD.

3.3.2 Family Dynamics

Dysfunctional family dynamics or family instability has also been found to be associated with an increased risk of developing PTSD (King, King, Foy & Gudanowski, 1996; King et al., 2012). A parent living with severe chronic PTSD can predispose their children to developing secondhand PTSD (Cosgrove, Brady, & Peck 1995). Violent circumstances, like war or a pandemic, increases the risk of violence within the family, increasing the likelihood of a child developing PTSD (Catani, Jacob, Schauer, Kohila, &

Neuner, 2008). In a study by Catani and colleagues (2008), 82.4% of the 296 children experienced at least one war-related event. Of those children, 95.6% reported at least one violent family experience and 30.4% developed PTSD (Catani, Jacob, Schauer, Kohila, & Neuner, 2008).

3.4 Factors that Influence the Severity of Post-Traumatic Stress Disorder

Alongside factors that predispose a person to experience PTSD after a traumatic event, there are factors that influence how severe the PTSD will be once it has developed. One of these factors is the ability to regulate emotions. Child abuse victims with PTSD had worse emotion regulation abilities than individuals who were not victims of child abuse. Those who were able to regulate their emotions were less likely to have PTSD (John, Cisler, & Sigel, 2017). Simply, if a child regulates their emotions and does not have angry outbursts and sporadic episodes of sadness and guilt, then they would be better equipped to ask for help and to manage their feelings and emotions that are a byproduct of abuse; thus, they have a lower chance of PTSD (John, Cisler, & Sigel, 2017).

Other factors that influence the severity of PTSD are the proximity of the child to the traumatic event (Stanford Children's Health, 2019). This could be physical proximity (i.e., how close they were to an actual shooting) or emotional proximity (i.e., did they know or were close to any of the people who were there when the shooting occurred). How bad the event was, the length of the event, if the event occurred more than one time, the resiliency of the child, and how supportive the family and community are afterward, all influence the severity of the PTSD that a child develops (Stanford Children's Health, 2019).

Surprisingly, gender plays a role in how PTSD shows itself. Females scored significantly higher on emotional reactivity to triggers, while males reported significantly higher rates of self-destructive behaviors and recklessness (Murphy, Elklit, Chen, Ghazali, & Shevlin, 2019). Race, on the other hand, has not shown to play a significant role in the development of PTSD. Contractor and colleagues (2015) looked into how the Hispanic ethnicity and the Caucasian race were related to PTSD symptoms in youth. They used PTSD's 5-factor model which list numerous symptoms of PTSD and separates them into 5 subgroups: re-experiencing, avoidance, numbing, dysphoric arousal, and anxious arousal (Contractor et al., 2015). There is no significant variance of PTSD's 5-factor model across the compared racial groups and ethnic groups; the racial groups and the ethnic groups were not very different in their development of Post-Traumatic Stress Disorder (Contractor et al., 2015).

Previous trauma exposure, pre-existing psychiatric and psychological disorders, parental psychopathology, low social support, parental support, and parental PTSD are also factors that can influence the severity of PTSD (Hamblen & Barnet, 2019). Research has shown that previous experiences of trauma lead to a higher risk of developing PTSD after experiencing a new trauma (Breslau, Chilcoat, Kessler, & Davis, 1999). Pre-existing psychiatric and psychological disorders are risk factors that increase the likelihood of developing PTSD, especially in women (Lassemo, Sandanger, Nygard, & Sorgaard, 2017). Parental psychopathology increases the risk for the development of PTSD later on in the life of the child (Kolaitis et al. 2011). Parental PTSD also plays a role in the severity of the PTSD that is later developed in the child or adolescent (Cosgrove, Brady, & Peck, 1995).

Research has also shown that children with higher levels of perceived social support develop significantly fewer symptoms of PTSD (Cluver, Fincham, & Seedat, 2009).

CHAPTER 4

TREATMENT

Just as with other diseases and disorders, PTSD is not without treatment methods. Psychotherapy, Trauma-Focused Cognitive Behavioral Therapy, Exposure Based Therapy, Eye Movement Desensitization and Reprocessing, Play Therapy, Psychological First Aid, and medications are all ways to treat PTSD in children (Kaufman, 2020).

4.1 Psychotherapy

Child-parent psychotherapy is an attachment- and trauma-informed treatment for children from birth to the age of 5. It is used for children who are showing symptoms of PTSD after having experienced a traumatic event, parental mental illness, environmental adversities, and/or harmful parenting practices. The goal of child-parent psychotherapy is to create a safe environment for the child and for the family by promoting age-appropriate relationships and partnerships between the parent and the child (Fieberman, Ippen, & Dimmler, 2019). Treatment is successful when parents become the child's reliable protectors and when they consistently guide the child towards the key components of early mental health: regulating emotions, building safe and satisfying relationships, and loving to explore and learn. (Fieberman, Ippen, & Dimmler, 2019). Child-parent psychotherapy is guided by the child's interactions with the parent and the child's free play with age-appropriate toys selected to bring out trauma play and help foster social interaction (Lieberman, Van Horn, & Ippen, 2005). The focus on improving the child's mental health by fostering a trust-based relationship with the parent is an important factor that makes

child-parent psychotherapy successful in treating PTSD in younger children (Lieberman, Van Horn, & Ippen, 2005).

4.2 Cognitive Behavioral Therapy

Cognitive Behavioral Therapy (CBT) is a psychological treatment used to help with depression, anxiety, eating disorders, and severe mental disorders (American Psychological Association, 2020). It is based on the principle that psychological problems are caused by unhealthy patterns of thinking and unhelpful behavior. CBT focuses on changing these thinking patterns and behaviors by having the client learn to recognize the thought processes that are problematic and then changing them, understanding the behavior and motivation of others better, learning problem-solving skills and building a greater sense of confidence, having the client face their fears instead of avoiding them, and learning to relax their body and calm their mind (American Psychological Association, 2020).

A subcategory of Cognitive Behavioral Therapy is trauma-focused CBT which focuses on the treatment of trauma. It is for children from ages 3 to 18 years old who have experienced some sort of trauma and is a time-limited, phase-based, components-based trauma treatment (Griffin & Wozniak, 2019). It is based on a combination of cognitive models of anxiety and operant conditioning. The goal of the treatment is to reduce symptoms of PTSD, develop positive coping mechanisms, and increase the individual's sense of wellbeing and control (Perrin, Smith, & Yule, 2000). It follows the acronym PRACTICE. P is for psychoeducation and parenting skills; the purpose of this is to educate parents on normalizing and validating the trauma, as well as to increase positive parenting practices. R is for relaxation training; this is to decrease psychological hyperarousal. A is for affective expression and modulation/regulation; the goal of this is to increase emotional

vocabulary, to help appropriately express feelings, and to decrease maladaptive symptoms. C is for cognitive coping; this is to improve the ability to connect. T is for trauma narrative and cognitive processing of the trauma narrative; this is to generate an active trauma narration to help process a traumatic experience. I is for in vivo exposure; this would include the hierarchy of feared stimuli, working upwards from the least threatening to the most triggering. C is for conjoint sessions; these are parent and child sessions which allows for the child to share their trauma narrative with their parents, guardians, and/or caregivers. E is for enhancing safety and future developments; this is to teach personal safety skills. All of these working together make the treatment successful (Griffin & Wozniak, 2019).

Trauma-focused CBT is considered to be one of the most successful in producing the desired results and the most well-supported interventions for childhood trauma (Griffin & Wozniak, 2019). It is the best evidence-based intervention for children who have impairing reactions to traumatic events (Kaufman, 2020). The effectiveness of CBT for the treatment of children with PTSD has been proven empirically more than other treatment methods. Several studies about trauma-based CBT have been about sexually abused children, but there are some studies with children who have experienced other types of traumas as well. All of these studies together show strong support for trauma-focused CBT in the treatment of children with PTSD (Kaminer, Seedat, & Stein, 2005).

4.2.1 Exposure Based Therapy

Exposure based therapies (EBT) are part of CBT and are most relevant when memories or reminders from the traumatic event cause a lot of distress to the child (Perrin, Smith, & Yule, 2000). Participants are taught relaxation while recalling the experience so that they no longer have to be afraid of their memories. Exposure based therapy also

challenges false beliefs about the world being an unsafe place. This is often used in accompaniment of parental involvement and psycho-education, which is education about PTSD, its symptoms, and effects (Griffin & Wozniak, 2019). The better the parents are able to understand and cope, the better they are able to support and help their child cope so that they can function better. (Hamblen & Barnet, 2019). In its most essential form, EBT is the confrontation of memories of the trauma or cues/triggers related to the traumatic event (Bradley, Greene, Russ, Dutra, & Westen, 2005). It uses imaginal or in vivo exposure to help facilitate the processing of emotions surrounding the traumatic memories (Perrin, Smith, & Yule, 2000). In a session, the therapist would ask the child to relive the traumatic event, recount it to the therapist, and discuss what they are thinking and feeling after they are finished with their account, then the therapist will reconstruct any negative or self-blaming thoughts the child has, assign homework, and see the child out (Perrin, Smith, & Yule, 2000).

4.3 Eye Movement Desensitization and Reprocessing

Eye Movement Desensitization and Reprocessing (EMDR) is a psychotherapy treatment that helps access then process traumatic memories (EMDR Institute, 2020). Many people assume that healing from traumatic events takes months or even years, but EMDR allows for that healing to happen at a more rapid rate.

The primary theory underlying EMDR is adaptive information processing. This uses the body's automatic processing for natural healing and applies that to difficult emotional experiences (Clarke & Zack, 2019). The theory behind EMDR is that symptoms occur when trauma or negative experiences overwhelm the brain's natural ability to heal. The individual heals through bilateral stimulation while they are reexperiencing the trauma

in a safe environment, which stems from the concept of dual awareness (Riddle, 2018). They are aware that they are mentally re-experiencing the trauma, but they are also aware of the fact that they are physically in a safe environment where no harm can come to them.

The most common stimulation is directed lateral eye movements, but other stimuli can also be used, such as hand tapping or audio stimulation (EMDR Institute, 2020). The standard EMDR protocol calls for two parts: desensitization of the traumatic memories and forming then installing new thoughts (Amano & Toichi, 2016). EMDR therapy facilitates the formation of new associations created between traumatic memories and more adaptive memories (EMDR Institute, 2020).

There are 8 phases of EMDR treatment which are: taking the history of the individual, preparing the individual, assessing the individual, desensitizing the individual, installation, taking a body scan, helping the individual find closure, and reevaluating the treatment effect (Menin & Jayan, 2010). Research has shown that the use of EMDR helped to significantly reduce PTSD related symptoms in children (Ahmad, Larsson, & Sundelin-Wahlsten, 2009). The American Psychiatric Association recommends the use of EMDR to treat PTSD (Amano & Toichi, 2016).

In a session, the therapist tells the patient to follow the therapist's finger with only their eyes while at the same time thinking about the traumatic event; this is done again and again until the patient is able to think about the traumatic event without being in distress (Perrin, Smith, & Yule, 2000). This would be the desensitization process. Then the therapist would help the client process the memories and feelings, ultimately helping to shift their thought process. For example, a rape victim would transform feelings of self-

disgust and horror into the firm belief of "I am strong and I survived it" (EMDR Institute, 2020). The result of EMDR therapy is that the client leaves feeling empowered by the traumatic event that use to haunt them.

4.4 Play Therapy

Play therapy is a psychotherapy treatment in which the therapist plays with the child; doing this allows for the therapist and the therapy to come down to the child's level (Lawver & Blankenship, 2008). Play therapy is the most effective way of re-exposing traumatic cues to younger children (Kerig, Fedorowicz, Brown, & Warren 2000). It is considered to be the most effective because while adults are more likely to share their feelings through words, younger children are more inclined to share their thoughts and feelings through play (Senko & Bethany, 2019).

Play therapy consists of lots of play, like drawing pictures of emotions, feelings, and events. It also includes playing games, like emotion Jenga where every block has a number or color that is associated with a question or an emotion that the individual and the therapist answer or share. Playdough and sand are also used in play therapy; these mediums can help recreate the traumatic memory or serve as a grounding sensory stimulus. Puppets can be used for play therapy; the individual can express their emotions or talk about their experience in the third person through the puppets or stuffed animals. All of these serve the purpose to process traumatic memories and make them easier to live with (Hamblen & Barnet, 2019). Play therapy helps the child process the traumatic event by making sure they know and solidify that the traumatic event happened in the past and not experience memories of it recurrently in the present (Kerig, Fedorowicz, Brown, & Warren, 2000).

The therapist's interpretations help the child gain self-awareness about their reaction to the traumatic event (Kerig, Fedorowicz, Brown, & Warren, 2000).

4.5 Medication

Medication can be used to help with many things. Even heartbreak isn't impervious to being slightly healed by medication (Vangelisti, Pennebaker, Brody, & Guinn, 2014). So, it should come as no surprise that there is medication available to treat parts of PTSD and its symptoms.

Research suggests that morphine can prevent PTSD (Saxe et al., 2001). This study used 24 children who had been hospitalized for severe burns; they were assessed two times with the Child PTSD Reaction Index, a self-report questionnaire that checks for PTSD symptoms in children and adolescents, once in the hospital and once six months after discharge (Saxe et al., 2001). Researchers found a significant association between the dosage of morphine received and the reduction in PTSD symptoms after the 6 months; specifically, children who received a higher dose of morphine showed a greater reduction over the 6 months in PTSD symptoms (Saxe et al., 2001).

Additionally, there have been two medications that the Food and Drug Administration (FDA) has approved as effective treatments for PTSD. These are sertraline and paroxetine, both are Selective Serotonin Reuptake Inhibitors (SSRIs) (Friedman, Donnelly, & Mellman, 2003). SSRIs increase the levels of serotonin in the brain which helps with sleep, mood, and emotion and thus, can alleviate some symptoms caused by PTSD. Mood stabilizers and anti-adrenergic agents can also effectively reduce symptoms of PTSD in children. Mood-stabilizers help with the fluctuation of mood that some may experience with PTSD. Anti-adrenergic drugs inhibit the central nervous system and help

treat mood, movement, and anxiety disorders. Simply, anti-adrenergic drugs act in an anti-adrenaline fashion. Adrenaline makes a person's heart race and increases arousal. Therefore, anti-adrenergic drugs calm the individual down and lower arousal (Strawn, Keeshin, DelBello, Geracioti, & Putnam, 2010).

Anti-depressants may also be helpful in the early stages of PTSD in children. Though research is limited, one study focused on the treatment of children with acute stress disorder caused by burn injuries. Overall, 83% of the sample that was treated with imipramine, an anti-depressant, responded favorably and only 38% responded favorably with chloral hydrate, a sedative (Robert, Blakeney, Villarreal, Rosenberg, & Meyer, 1999).

Pediatric symptoms of PTSD can also be treated with anti-adrenergic medications like clonidine, guanfacine extended release, or prazosin that work against the sympathetic nervous system which may be particularly helpful for nighttime intrusive symptoms (i.e., nightmares). For example, clonidine relaxes the blood vessels and lowers heart rate, guanfacine extended release helps children with Attention Deficit Hyperactivity Disorder to calm down, and prazosin helps widen blood vessels. These medications help the body relax, lower blood pressure, and have been shown to alleviate some symptoms of PTSD, like reduce anger, aggression, hyperarousal, intrusive symptoms, and impulsivity (Strawn et al., 2010). Some reduction of symptoms can come from second-generation antipsychotics and anticonvulsants, like depression, aggression, and intrusive flashbacks (Brent, Cohen, & Strawn, 2019; Strawn, et al., 2010). Other symptoms of PTSD such as sleep disturbances can be treated with prazosin, especially in conjunction with trauma-focused psychotherapy. Improved sleep can help improve daytime function, reduce

daytime symptoms, and increase the child's ability to engage in evidence-based trauma psychotherapy (Brent, Cohen, & Strawn, 2019).

Children are given these medications in lower doses than what is prescribed to adults. However, children are still developing, and it is important to closely monitor the long-term effects of these medications. Consistently, the literature recommends CBT with play-based components as the best treatment for children with PTSD, since the approach is much less risky than medication treatment (Friedman, Donnelly, & Mellman, 2003).

CHAPTER 5

HOW TO PREVENT AND HOW TO HELP

5.1 How to Prevent Post-Traumatic Stress Disorder

Many prevention techniques begin with teaching children how to stay safe, how to enforce their boundaries, how to get away from danger, and whom to communicate with if something has happened (Stanford Children's Health, 2019). An important skill to teach children is how to say "no" when they are feeling uncomfortable in any situation (Stanford Children's Health, 2019). Many children stay silent because they do not want to say anything to displease or to go against their friends or caregivers, but they need to be taught how to speak up when they do not like what is happening. Given that physical abuse is a common childhood trauma, children should be taught how to say "no" when they are being touched in ways that they do not like or that makes them uncomfortable. The caregiver should show that their child's well-being and safety are more important maintaining a relationship with their abuser who may be a close family member or friend.

Another way to help prevent sexual abuse is to teach comprehensive and age-appropriate sexual education in schools and daycares (Finkelhor, 2007). Once the child has learned the names of body parts and the concept of consent, they will know the behavior is inappropriate and may be able to stop it from happening by running away at the first red flag. However, if they were not able to stop it, then they can at least communicate with their caregiver or a trusted adult more clearly about what has transpired, experience less self-blame, and be able to understand and process the event faster (Finkelhor, 2007).

Teaching self-defense to all children is another way to help prevent PTSD from occurring because it may stop the traumatic event from happening at all (Wurtele, Saslawsky, Miller, Marrs, & Britcher, 1986). If an adolescent is being robbed in an alleyway, then they are much more likely to get away from their assailants if they know self-defense than if they do not. Learning self-defense is also a good way to build confidence as well as channel energy in a productive way, both of which may influence the external factors which lead individuals to put themselves in risky situations (Hollander, 2010).

5.2 How to Help a Child with Post-Traumatic Stress Disorder

The first step to helping a child deal with PTSD is to acknowledge that the event happened and to validate their experience. Pretending that it did not happen will only hurt the child that needs help (Stanford Children's Health, 2019). It is important to be supportive and to get counseling. As previously mentioned, family and social support have been shown to influence the severity of PTSD. Knowing that someone is there to help that loves and cares for them goes a long way with children (Cluver, Fincham, & Seedat, 2009). Caregivers of children suffering from PTSD should be diligent with appointments made with doctors and counselors. They should ask questions, voice concerns, speak out if there is something wrong, and they should not miss appointments. (Stanford Children's Health, 2019).

Care teams may also be a good idea when caring for a child with PTSD (Stanford Children's Health, 2019). Care teams consist of doctors, therapists, family interventionists, nutritionists, and other healthcare providers who will work together to devise a plan about the child's care and then execute it to ensure maximum positive effect on that child

(National Collaborating Centre for Mental Health, 2005). Care teams can also communicate with the child's school to make them aware of the situation, to educate them on how to help the child at school, and to provide additional support and assistance for the child. Special attention should be paid to any mention of depression and/or suicide which could result in a healthcare emergency.

In addition to the help that caregivers provide, their own self-care is very important in helping their child. It is recommended that caregivers find a support group of other parents or guardians whose children have PTSD (Stanford Children's Health, 2019). Hearing from others going through the same experience is empowering and encouraging. Support groups provide emotional, mental, or psychological support that can help caregivers take care of themselves. Support groups have been shown to have significant impacts on physical and mental health (Davidson, Pennebaker, & Dickerson, 2000).

Additionally, social support for the child is also important. The probability of developing PTSD can be decreased exponentially by increased social support from parents, siblings, friends, and teachers (Cluver, Fincham, & Seedat, 2009). Positive coping mechanisms are also associated with a decrease in the likelihood of having PTSD. The more extensive the network of social support the child has access to, the lower their chances are of developing PTSD after exposure to a traumatic event. Simply, this is an inverse relationship - as social support goes up, the chances of developing PTSD go down (La Greca, Silverman, Lai, & Jaccard, 2010).

CHAPTER 6

CONCLUSION

Though PTSD has been studied extensively, research is still needed to learn more about PTSD in children. It is known that PTSD typically occurs after experiencing a traumatic event. Contrary to popular belief, not only war veterans have PTSD but also normal, everyday people can develop PTSD after they experience a traumatic event. The symptoms, such as panic attacks, mood regulation issues, or hyperarousal, and the repercussions of the traumatic event get in the way of their ability to lead a normal life. Children are particularly vulnerable. There are some symptoms that only children experience, such as regressive behaviors, physical symptoms like headaches and tummy aches, and posttraumatic play (Kerig, Fedorowicz, Brown, & Warren, 2000).

Some events that can lead to the development of PTSD are physical assault, sexual assault, neglect, rape, fire, airplane accidents, medical procedures, giving birth, violent crimes, kidnappings, and refugee situations (Hasan, 2018). Most of these are fairly obvious in their trauma, like rape, assault, kidnappings, but some of these events are less likely to be considered traumas (i.e., medical procedures, giving birth, and refugee situations). However, refugees, asylum seekers, and immigrants all have high rates of PTSD in their communities (Kronick, 2018). Being forcefully separated from family is one of the most traumatic events a child can go through. It is not surprising that several studies have shown that over half of all children from these groups suffer from PTSD, anxiety, or depression (Derluyn, Mels, & Broekaert, 2009).

In addition to the actual traumatic event, there are factors that come before and/or after the event that influence the likelihood and severity of the onset of PTSD. Genetic predisposition, education levels, family dynamics, and social factors all influence an individual's vulnerability to develop PTSD (Uddin, Amstadter, Nugent, & Koenen, 2012; Tilak, 2002; King, et al., 2012). After the traumatic event and diagnosis of PTSD, emotion regulation, proximity, resiliency, and social support influence the progression and severity of the PTSD (John, Cisler, & Sigel, 2017; Stanford Children's Health, 2019).

Thankfully, there are quite a few ways to treat PTSD including Child-Parent Psychotherapy, Trauma-Focused Cognitive Behavioral Therapy (CBT), Eye Movement Desensitization and Reprocessing (EMDR), Exposure Based Therapy (EBT), and Play Therapy (Kerig, Fedorowicz, Brown, & Warren, 2000). Though there are no medications yet that treat PTSD in its entirety, there are medications available to treat the symptoms that accompany PTSD. For children, only a few SSRIs have been approved. The most recommended way to treat PTSD in children is through Cognitive Behavioral Therapy with play-based components, as it is less risky than medication and has much more literature supporting its use and success (Friedman, Donnelly, & Mellman, 2003).

The only way to prevent PTSD from occurring is to prevent the traumatic event or prevent exposure to the traumatic event. Though this may be impossible as the world can never be completely safe and accident-free, there are a few ways to help children equip themselves with tools to help them avoid risky and dangerous situations. Teaching them to say "no" when they are uncomfortable in a situation, teaching comprehensive but age-appropriate sexual education, and teaching them self-defense (Finkelhor, 2007; Hollander, 2010). If the traumatic event does occur, then acknowledge and validate the experience,

get a care team put together, create a strong social support network (for both the child and the parents/guardians/caregivers), and take all talks to depression and suicide very seriously.

Given the limited empirical information about Eye Movement Desensitization and Reprocessing and Play Therapy, future research should explore these treatments further. Future avenues of research should also look into how PTSD differs based on the developmental stages of childhood and adolescence. Further, more insight is needed about the influence of early childhood trauma that happens during infancy and toddler-hood.

Researchers should also examine the effects of the ICE raids that have increased in the past few years (Bialik 2018). Specifically, the effects of family separation and the incidence of PTSD within this population should be studied in detail. A longitudinal study design would allow researchers to follow victims of this traumatic event to see how they grow, how they do in school and sports, what their social interactions and relationships look like, what their attachment styles will be, what kind of occupations they will take up, and what their parenting styles will be.

More research should be done in all medical aspects related to PTSD. Specifically, more research is needed to determine which medications work best for children and which ones affect PTSD holistically, rather than individual symptoms. Pharmacological research should be done to develop the most effective medicine. The morphine study which suggested that morphine could prevent the onset of PTSD should be done again and with a larger sample to see if the results are replicable (Saxe et al., 2001). There should also be research done into whether or not these medications for children can be given in another

form that is more appealing to children's taste which would increase consistent usage of the medication.

Resources should be allocated to replicating previous studies done about children with PTSD. The effectiveness of all of the treatments should be analyzed when compared to each other but should also include which populations they do not work well on. For example, perhaps personality types affect the receptiveness of the individual to the treatments, which would be important information to know. It would also be fascinating to see if there is a thing as too much parental involvement in the treatment and recovery process from PTSD.

Future research can also look into how culture and religion play into the manifestation of PTSD; whether the level of commitment to culture or religion influences the chances of developing PTSD, how PTSD shows itself, and how quickly the individual is able to recover from it with treatment. It would also be interesting to see if the type of job worked affects the likelihood of developing PTSD and the amount of time it would take for the individual to recover. It may also be worth looking into whether or not individuals can recover from PTSD on their own, without seeking professional help.

All in all, PTSD is an interesting yet unfortunate disorder that does not predispose against any particular age, race, or creed. Many researchers have delved into the topic of PTSD, yet a majority of that research focuses on adults and veterans. Fortunately, there has also been some research done on PTSD in children and how it is best treated. Trauma-focused CBT with a play component and with supplemental medication, when needed, seems to be the most effective. Although this is a step in the right direction, continual research is critical to confirming current treatments and for finding new and more effective

ones. There is still much to be learned about PTSD, especially with regards to how it effects children.

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BIOGRAPHICAL INFORMATION

Areesha Azam is in her third year at the University of Texas at Arlington and is working towards her first degree in higher education: an Honors Bachelor of Science in Psychology. She graduated from the Islamic School of Irving in 2017 among the top 10 in her grade at the age of 16. She will be applying to graduate schools for Clinical Psychology programs in the Fall of 2020. She is fascinated by the infant brain, human development, and the way the mind can heal itself after experiencing trauma. She would love to do research about adolescents, trauma, and substance use - preferably all of those wrapped in one. She grew interested in this combination of topics from her internship at MHMR in the Spring of 2020. She has participated in Dr. Ickes' Social Interaction Lab since the summer between her freshman and sophomore year, as well as in Dr. Schroeder's WEB lab in the summer of 2019. She wants to be a clinical psychologist focused on trauma and its treatment in the adolescent population.