A Research-based Analysis of PTSD

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Introduction

This final paper focuses on post-traumatic stress disorder (PTSD) in populations six years of age and older. PTSD was covered in this course, and is described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Multiple facets of the disorder will be identified and analyzed; relevant research will be presented to support assertions. Specific aspects of the disorder will be presented and include psychological, biochemical, environmental, neurological, genetic, socio-cultural, and genetic factors. Specifically, the paper includes five distinct sections, including a description of the disorder including diagnostic criteria, etiological factors, psychopharmacologic interventions, psychotherapeutic interventions, and gaps in research. Comorbidities are also examined, while a summative exploration includes genetic, physiological, and biological factors. Cultural issues were considered.

Posttraumatic stress disorder

The word trauma is derived from the Greek word for “wound” (Gerber & Gerber, 2019). Posttraumatic stress disorder (PTSD) is recognized as a psychiatric disorder that typically occurs after an individual is directly exposed to a traumatic event, such as a terrible accident, terrorist act, sexual assault or war, or has been endangered with death, long-term sexual violence, or a serious injury, including a brain injury (Deatrich & Boyer, 2015; Miao et al., 2018). The diagnostic criteria code of PTSD is 309.81; the F code is F43.10 (APA, 2013).

PTSD was known as “shell shock” after WWI and “battle fatigue” after WWII (Shephard, 2003). PTSD does not only occur in veterans, and the disorder can affect anyone despite their ethnicity, background, culture, or age group. Statistically, females are twice as likely as males to experience PTSD, and about 3.5 percent of adults in the United States will experience PTSD over the duration of their lifetime. Interestingly, non-Latino white males are

less affected by PTSD than Latinos, African Americans, or American Indigenous populations (American Psychiatric Association, 2020; Christiansen & Hansen, 2015; Olff, 2017). Typical types of exposures that lead to PTSD include natural disasters, witnessing a death, or experiencing combat.

After exposure to the trauma, multiple psychological symptoms can arise, especially if the trauma involves direct experience (White et al., 2014). It is important to emphasize that PTSD does not apply to exposure through media events such as television or movies, unless the exposure is work related (Pai et al., 2017). Also, in order to be diagnosed with PTSD, there are eight criteria that need to be met (APA, 2013). Conceptually, the PTSD diagnosis was removed from the anxiety disorders category and moved to "Trauma and Stressor-related Disorders" in the DSM-V (Pail et al., 2017).

Criteria A

To meet criterion A, the client must have been exposed to the trauma in one or more ways. These exposures include through direct experience, in-person observation, trauma inflicted on someone close to the client, or repeated exposure (APA, 2013). Holmes et al. (2016) argue that criterion A should be expanded to include political or psychological oppression and misses the impacts of other types of experiences such as microaggressions, violence from hate crimes, and intergenerational trauma experiences, such as those experienced by members of the LGBTQ community (Herman, 2015; Huynh, 2012). These traumatic events require more study.

Criteria B

To meet criterion B, the client must have the presence of one or more intrusive symptoms. Intrusive symptoms are typically involuntary and distressing (Kleim et al., 2013). Intrusively distressing dreams, memories, prolonged distress, and physiological reactions, along

with dissociative flashbacks are all part of the PTSD diagnostic package (APA, 2013). In addition to involuntary and distressing emotions, other symptoms such as profound anger, sadness, helplessness, guilt, and anxiety frequently accompany other intrusive symptoms (Speckens et al., 2007). Casolaro (2016) pointed out that these symptoms were particularly prevalent in victims of terrorist attacks.

Criteria C

To meet criterion C, the client must be avoidant of potentially traumatic stimuli as evidenced by one or more ways. These avoidant behaviors include memory avoidance or reminder avoidance (APA, 2013). Avoidant coping and PTSD are correlated with the root causes for the trauma. For example, rape victims typically experience different levels of avoidance to external stimuli compared with war veterans (Tiet et al., 2006). Asmundson et al. (2004) suggested that numbing is a distinct aspect of the PTSD experience and should not be discounted.

Criteria D

In order to meet criterion D, the client must have negative alterations in thoughts or moods as evidenced by two or more ways. These negative alterations are comprised of disassociative amnesia, inability to have positive emotions, feelings of social detachment, negative mood, distorted thoughts, and exaggerated negative perceptions (APA, 2013). Hayes et al. (2012) reviewed neuroimaging and neurocognitive studies and correlated a strong connection between emotion and cognition, which indicated that emotional memory tends to be stored more vividly than neutral information. Emotional enhancements in the encoding process can also create false memories and could explain the feelings of distortion, disassociation, and detachment (Brainerd et al., 2021).

Criteria E

To meet criterion E, the client must experience two or more marked alterations in reaction or provocation. Marked alterations in hypervigilance, startle response, difficulties with concentrating, irritability, self-destruction, and disturbed sleep cycles (APA, 2013). Jiang et al. (2019) underscored the importance of early life trauma, adversity, and other ACEs in the long-term vulnerability towards PTSD. Early childhood trauma is a potential gap in the research that connects early trauma with PTSD later in life, unless the client is six years old or younger.

Criteria F

In order to meet these criteria, all disturbances must last one month or longer (APA, 2013). These disturbances include one symptom of recurring experience, one aversion symptom, a minimum of two reactivity and arousal symptoms, and a minimum of two mood and cognition symptoms (NIMH, 2019).

Criteria G

In order to meet criterion G, the client must experience extreme impairment or distress in work or social related areas of function (APA, 2013). These are considered to be functional impairments, and impact the client's ability to operate successfully in daily life (Center for Substance Abuse Treatment, 2014).

Criteria H

The distress cannot be related to any other medical condition, substance abuse, or physiological effects (APA, 2013). In order for PTSD to be diagnosed, the epidemiology typically results from intimate partner violence, interpersonal trauma, organized violence, participation in organized violence, or other life-threatening experience (Sareen et al., 2022).

Regarding dissociative symptoms, experiences of depersonalization or derealization cannot be attributed to substance or abuse or physiologically-based, medical conditions (APA, 2013). The diagnosis of delayed expression, the client does not meet full criteria until at least six months after the event, even though some of the symptoms may occur immediately (APA, 2013).

Etiology of the Disorder

It is important to note that while anyone can experience stress or trauma, PTSD cannot be diagnosed until at least after one month in duration of symptoms. While the typical grief cycle typically lasts six weeks, if the duration is too long, and the client's negative feelings persist and worsen, then this could be an indicator of PTSD (Wang & Wang, 2021). PTSD can be confused with other conditions that are similar such as acute stress disorder, generalized anxiety disorder, panic disorders, depression, and phobias, and these disorders need to be ruled out before diagnosing the client with PTSD (APA, 2013). However, depression and anxiety disorders can both be comorbidities along with PTSD (Bradic et al., 2018).

In the previous section, several PTSD symptoms were identified. Now let's turn to disruptive PTSD symptoms that impair function in everyday routines. Frightening thoughts, flashbacks, and nightmares lasting for more than one month in duration and are easily triggered by otherwise common scenarios are examples of recurrent symptoms. Avoiding thoughts, places, events, people, or objects related to the traumatic event are examples of avoidance. Difficulty sleeping, startling easily, perpetually feeling on-edge, or throwing angry fits of rate include PTSD symptoms of reactivity, or constant high arousal make it difficult to complete daily tasks or concentrate. The fight of flight response can be paralyzing. The client with these symptoms may feel a sense of detachment from family or friends and experience distorted feelings of guilt,

shame, or others. Many people forget keys aspects of the event, and then lose interest in activities that were previously enjoyed (APA, 2013; Bremner, 2016; NIMH, 2019).

Contributing Factors

Contributing factors for men diagnosed with PTSD involve directly watching another person's violent death, experiencing a life-threatening accident, or being directly threatened with a weapon (Kessler, 1995). Combat exposure and injuries during combat have been studied relatively extensively that characterize these factors (Sareen, 2014; Talbott, 2008). For women, studies show that most common causes included experiencing a life-threatening natural disaster, directly watching another person's violent death, or experiencing a life-threatening accident (Kessler, 1995). Additionally, trauma experiences studied more extensively among women include sexual assaults, child sexual abuse, and intimate partner abuse (Sareen, 2014; Wilcox et al., 2009). Suicidal ideation has been positively correlated with PTSD, as well (Wilcox et al., 2009). This is one reason it is vital for the client with PTSD to be under a therapist's care.

Risks

Risk factors among those who are later diagnosed with PTSD include gender. Females are at higher risk than males for PTSD. PTSD is more prevalent in populations who have experienced a cognitive set-back including brain injury. Childhood abuse or maltreatment as well as pre-trauma comorbidities such as having a history of anxiety disorders, depression, or neuroticism are contributing factors that are more commonly found among PTSD sufferers (Cameron et al., 2006; Fauerbach et al., 2002; Fauerbach et al., 2002; Fauerbach et al., 2009; Sareen, 2014). Jakšić et al. (2012) argued that personality traits such as risk avoidance, anxiety, negative outlook, and introversion show a higher proclivity to the PTSD diagnosis. In contrast, individuals who were naturalistically more resilient, and possess a sunny outlook, were more

extraverted, self-directed, and conscientious tended to be diagnosed with PTSD less often (Crestani-Calegaro et al., 2019). Similarly, Allen et al. (2019) pointed out that PTSD is only diagnosed in about fifteen to twenty four percent of the population, which indicates that there are pre-existing vulnerabilities that must be present in order to produce the psychopathological landscape that eventually points to the PTSD diagnosis.

Biological Underpinnings

Heritability

Just like the yellow-brick road led to Oz, there are neurological pathways, biochemical underpinnings, and biological markers that typically lead to the development and eventual diagnosis of PTSD. Heritability and genetics are one common finding among individuals diagnosed with PTSD. For example, Holocaust survivors tended to produce offspring that developed PTSD after trauma exposure (Yehuda et al., 2001). Not surprisingly, if there has been a history of family trauma then the socialization of these traumatic events tends to shape offspring. Thus, PTSD begets PTSD and increases the risk of developing the disorder at an increased risk of forty five percent (Ryan et al., 2016; Sartor, 2012).

After studying 2591 twins, genetic factors tended to account for sixty percent of the variance of high-risk trauma, which correlated with an increased risk for developing PTSD. Significantly, in siblings who voluntarily served in the military, with both reported having combat experiences, studies showed an increased risk for both siblings later developing PTSD, if additive genetic factors such as ACEs, neglect, or abuse were also reported during childhood (Ryan et al., 2016).

Genetic Connections

Dopamine

As of 2016, twenty-five genes were examined to potentially find genetic risk factors for individuals later developing PTSD (Ryan et al., 2016). Dopamine releases after a stressful event (Nagano-Saito et al., 2013). Several studies directly correlated dopamine signaling and regulation as a variant and specifically examined (rs1800497). A few studies among men who had experienced combat indicated that the T allele correlates with an increased risk for PTSD (Comings et al., 1996; Young, 2002). More recent studies show a significant association with (rs12364283) (Nelson et al., 2013). Other more durable findings were reported for the dopamine transporter (DAT1) (Chang et al., 2012).

Serotonin

Serotonergic signaling has also been considered to play a role in PTSD (Davis et al., 1997). The 5-HTT transporter gene has been studied and several studies indicated that 5-HTTLPR influenced the risk of PTSD (Cornelis et al., 2010). Among ethnic populations who have experienced war, trauma, natural disasters, and other direct exposures, the S allele has been associated with increased risk for PTSD (Grabe et al., 2009; Thakur et al., 2009). Risks were especially increased for populations in high-risk factors and the absence of social support (Koenen et al., 2009; Kilpatrick et al., 2007).

HPA-axis genes

Other genes show promise in associating with an increased PTSD risk, which if proven could lead to more effective treatments. Such genes include rs12938031, rs9296158, rs3800373, rs1360780, rs9470080 (Stockman et al., 2009; White et al., 2013; Xie et al., 2010). These studies showed significance for African-Americans, especially (Xie et al., 2010). ADCYAP1 and

ADCYAP1R1 were investigated among a population of highly traumatized African-Americans and showed an association between these genes and PTSD (Ressler et al., 2011). Among females, an association was found between ADCYAP1R1 and estrogen, which could demonstrate a gender-based relationship (Ressler et al., 2011). However, despite the studies of other candidate genes in the regulation of both dopamine and serotonin, only a few of these studies were positively replicated (Voisey et al., 2014).

Is methylation the answer?

While a lot of work is left to be done in identifying specific genetic markers that may associate with developing PTSD, multiple studies conclude that trauma alters DNA methylation and becomes neurologically embedded. There are critical periods during gestation when there is a sensitive zone of vulnerability, in which the impact of trauma is thought to be embedded in developing brain tissue. The long-term consequences are thought to lead to psychiatric disorders later in life, including PTSD (Bruffaerts & Demyttenaere, 2009). Multiple studies focusing on the hippocampus, showed increased methylation in hippocampal NR3C1 among a population of individuals who suffered from childhood abuse and later developed PTSD (McGowan et al., 2009).

Methylation is an epigenetic transfer of a DNA methyl group onto the C5 position of the cytosine which forms 5-methylcytosine. If methylation is altered, then the DNA sequencing is also altered, which can lead to gene mutation, translocation, deletions, and insertions. These mutations can be passed on through heritability (Moore et al., 2012). McGowan et al. (2009) also indicated that prenatal stress was associated with methylation in NR3C1 (Oberlander et al., 2008). Anecdotally, one significant finding from my first dissertation was that every woman in

my study experienced an extreme stress or trauma in children later diagnosed with autism spectrum disorder. This seemed to correlate trauma with neurodevelopment disorders.

Limited findings

Despite findings that suggest genetic conclusions, there are significant limitations in terms of replicable studies. Heterogeneity in populations continue to exist in terms of ethnicity, age, samples, sample size, and gender. The highest number of cases persist in African-American populations, Caucasian veterans, in women. There are also significant overlaps in comorbidity with PTSD and other psychiatric disorders (Sartor, 2012). A new frontier of discovery is on the horizon, which exists in the form of genome-analysis. The next ten years will reveal more opportunities for exploration as more expansive genome-wide analysis occurs and shifts from individual genes (Logue et al., 2015). Until then, heritability of PTSD is estimated to be thirty five percent. More than twenty-five genes have been identified for involvement in PTSD. DNA methylation deserves to be studied more deliberately going forward (Ryan et al., 2016).

Biological Underpinnings

Tamman et al. (2021) suggested that individuals who develop PTSD are unable to form meaningful relationships with others. Researchers studied a sample of former military veterans and found a secure attachment deficit. They are unable to trust others, and reported anxiety when it came to forming meaningful relationships with others. This impact was determined to be a pronounced variant of the IGSF11 gene, which has been connected with the brain's inability to form new pathways. Tamman et al. (2021) further insisted that environmental factors in terms of socialization were key protective factors in avoiding PTSD. Methylation was not mentioned in this study. In terms of therapy, attachment theory may be considered (Zeanah & Gleason, 2014).

Environment

Tamil community in Northern Sri Lanka

For this section, three different environmental considerations were evaluated. First, man-made wars and natural disasters cause extreme trauma regardless of ethnicity, location, or comorbidities. After reviewing the wide-spread incidences of PTSD in postwar Northern Sri Lanka and specifically among the Tamil community, data collected for qualitative case studies indicated that social isolation, socioeconomic status, belief systems, and grief among the collective contributed to duration and recovery of PTSD in that population (Somasundaram & Umaharan, 2018).

Indigenous populations in the Gulf South region

Second, among Indigenous populations in the Gulf South region of the United States, trauma is both naturally occurring and imposed through traumatic experiences. Hurricanes are naturally occurring disasters among a population that already experiences ACEs, spousal abuse, discrimination, and other natural disasters, such as post-flooding. Among this population, there is a systemic and ongoing oppression that has prevented this population from successfully recovering from natural disasters, in addition to their ethnic and minority status, vulnerability, and marginalized status. Environmental factors play a significant role in PTSD among this population (Burnette, 2015).

PTSD in African American and Latino populations

Third, PTSD is common among African American and Latino populations, which places this group at much higher risks in terms of suicidality, anxiety, socioeconomic hardships, and systemic environmental violence with complicated trauma (Marshall et al., 2010). There are so many environmental factors for marginalized groups that play into their PTSD symptoms. For

immigrant populations, abuse can be invisible (Soto et al., 2005). Displacement is another environmental factor that contributes to the duration of PTSD (Pérez Benítez et al., 2014). Sex trafficking and intimate partner abuse are rampant among non-English speaking populations (Banks & Kychelhahn, 2011; U.S. Department of Housing and Urban Development, 2020). Finally, discrimination or perceived discrimination among these groups based on race, skin color, gender, and other demographic factors exacerbate frail mental health conditions and lead to higher risks of PTSD and other comorbidities (Sibrava et al., 2019).

Cross-cultural considerations

Gilmoor et al. (2019) pointed out that cross-cultural validity of PTSD has been questioned historically (Hansen, 2005). Trauma may be defined differently in accordance with cross-cultural framework (Swartz, 2000). Depending on cultural considerations, therapy, and resilience, continue to be embedded in terms of how traumatic events are viewed (Gilmoor et al., 2019). Gilmoor et al. (2019) urged scholars to consider differences in definition, perceived trauma, ethnicity, and approaches to treatment, especially when assessing and treating clients from different cultures. For example, in India, PTSD is measured in accordance with the Impact of Events Scale; however, there are four or five different versions of this test that is used, which may prove errors in validity and diagnosis (Messo, 2013). Findings from Gilmoor et al.'s (2019) study indicated a significant gap in mental health diagnosis, treatment, as well as possibilities for neglect among women, the homeless, those with other comorbidities, as well as abuse victims, and the economically poor. Assessments and treatment for PTSD should consider cultural concepts of distress, panic, trauma, and other symptoms (American Psychiatric Association, 2020).

Treatment – Part One

Psychopharmacology

Effective treatment for posttraumatic stress disorder suggests a combination of psychotherapy, psychoeducation, and psychopharmacology. In treating PTSD with the use of psychopharmacologic interventions, symptoms need to be identified and paired with an appropriate medication. Previous studies suggest that pharmacological medications should focus on reducing traumatic memory formation, drugs that target the hypothalamic-pituitary-adrenal axis, and autonomic nervous system. Intervention should begin right after the traumatic event, and side effects need to be closely monitored (Skeffington et al., 2013). Medications used to treat PTSD primarily include SSRIs, benzodiazepines, antipsychotics, and alpha blockers (Miao et al., 2018).

Favored medications include sertraline, paroxetine, fluoxetine, and venlafaxine (U.S. Veterans Affairs, 2018). Antidepressants such as Venalfaxine is also often prescribed (American Psychological Association, 2017). Benzodiazepines such as alprazolam, clonazepam, diazepam, lorazepam, and temazepam are also favored treatments in cases for extreme anxiety or sleeplessness (U.S. Veterans Affairs, 2018). These medications are non-psychotropic and can be used safely and efficaciously (Riggs & Foa, 2008).

Selective Serotonin Reuptake Inhibitors (SSRIs)

Currently, SSRIs are the most prevalent treatment for PTSD (Chu & Wadhwa, 2022). SSRIs have little impact on dopamine or norepinephrine, and patients have fewer side effects than MAOIs or TCAs because there are fewer impacts on histaminergic, cholinergic, or adrenergic receptors (Chu & Wadhwa, 2022). Anecdotally, to better understand this process,

when serotonin is pinned at the synaptic cleft, then serotonin activity increases, which improves depressed mood and decreases anxiety.

St. John's Wort and Tryptophan

St. John's wort is taken for some mental health disorders, including PTSD, and is specifically identified as a non-specific serotonin reuptake blocker (Coppock & Dziwenka, 2016). St. John's wort shows some positive efficacy in treating depression (Borrelli & Izzo, 2009). Adverse effects include anxiety, agitation, headache, itching, skin rash, and increased anxiety (Knüppel & Linde, 2004). Tryptophan and 5-Hydroxytryptophan (5-HTP) are functionally and structurally similar to serotonin. Tryptophan and 5-HTP increases risk of serotonin syndrome and could cause death in some circumstances (Turner et al., 2006; Van Woert & Sethy, 1975).

Drawbacks

There are concerns in treating every case of PTSD through psychopharmacological interventions. First, only twenty to thirty percent of patients treated experience remission through medication (Berger et al., 2009). Depending on the cause of PTSD, such as veterans suffering from war-related PTSD, many clients leave treatment, which in turn causes additional concerns when titrating off prescribed medications (Hussain, 2008). At times, antipsychotic medications are called for to treat patients who have comorbidities along with PTSD (Leslie et al., 2009). These medications include quetiapine, risperidone, and olanzapine. Antipsychotics require close medical supervision during the titration, and may suffer withdrawal symptoms including nausea, vomiting, fatigue, anxiety, headache, agitation, and intestinal problems (Neks et al., 2019). Sexual dysfunction is a side effect that should be considered before prescribing (Chu & Wadhwa, 2022).

Ethical and Cultural Decision Making

Psychologists are bound to a code of ethics to establish compassionate and intelligent care. Part of the ethical conduct ensures that psychologists maintain therapeutic boundaries, seek consultant from others, work in collaboration with primary care physicians, and safeguard patients in high-risk situations (Hsin & Torous, 2016). First, psychologists have an ethical duty to "do no harm" (APA, 2016). They also have a duty of confidentiality, autonomy, and to practice in terms of their scope of practice and scope of competence (Smith, 2003). Depending on the type of treatment, there are considerations that pertain to ethics, health and safety, confidentiality, and culturally diverse philosophical differences. Tabish (2008) described complementary practices that are used in Eastern cultures and medicine that should also be considered when treating clients. If health and safety is a risk, then this merits a different response than philosophical differences. To be sure, this situation requires extra training by the psychologist, and a collaborative partnership with a PCP. Anecdotally, if the client is competent to make his or her own decisions, then it is best to provide informed consent so that the client understands any associated risks, and monitor the client's well-being and mental state to ensure there are no adverse impacts. Certainly, if the client is demonstrating adverse effects from a sideline treatment, and is observably showing losses in capacity, as a Mandated Reporter then psychologists have a duty of care to ensure safety (APA, 2016).

Treatment – Part Two

Multi-dimensional Treatment Approach

Effective treatment for posttraumatic stress disorder suggests psychotherapy, psychoeducation, and psychopharmacology. Decreasing stress responses, reducing anxiety, emotional regulation, and attentional control have been identified as specific symptoms of PTSD.

Additional referrals will be needed in order to treat pharmacologically. Research does indicate that behavioral, cognitive, and cognitive-behavior therapy (CBT) can be effective and done remotely (McTighe, 2017).

Cognitive Behavioral Therapy

Cognitive behavioral therapy is indicated in reducing symptoms of PTSD. CBT methods will include education about post-traumatic stress disorder, normalization of the experience, and teaching coping tools for current distress. By using CBT, the therapist should hope to engage the client to reconsider their cognition patterns and expectations to recognize distorted, negative thinking to more stable and rational thinking patterns (American Psychological Association, 2017). In this case, the client should focus on the past trauma, and potentially change the associations the client has in terms of connections between the past trauma experience and reliving any of the trauma in the present.

Cognitive Therapy

Treatment involves adjusting the negative evaluations and recollections of trauma to interrupt the behavioral and/or cognition patterns that have been interfering with daily life (Ehlers et al., 2014). The therapist should help the client recognize the pertinent evaluations, recollections and trauma activators that maintain his precise PTSD symptoms. The therapist should also guide the client to establish an evocative narrative account, beginning prior to before the trauma occurred and ending subsequent to feeling safe again. By writing a comprehensive account of the traumatic event the client can rescript the past to begin a new chapter with a more positive meaning (Ehlers et al., 2014). Through this therapy, the client should rewrite the most recent trauma to a more positive ending. For clients who have experienced military experiences, Veteran Support Services might be able to help him feel safer in his present circumstances.

Eye Movement Desensitization and Reprocessing (EMDR) Therapy

EMDR is guided by the Adaptive Information Processing model that is delivered one or two times per week for approximately 6-12 sessions. EMDR utilizes an eight-phase approach that includes taking the patient's history, preparing the patient, evaluating the target memory, processing the recollection to an adaptive outcome, and then evaluating the treatment results. By using eye movements, the patient focuses on a memory and then reports any new emerging thoughts. This process continues until the memory is no longer distressing (McTighe, 2017). This treatment is used frequently in the military, and may offer tangible re-processing.

Medication Management

Therapists should have understanding and knowledge of psychotropic medications. We need to know what they do, and we need to understand how the medication interacts with other medications or wellness products (Aston et al., 2020). It is important to inform clients about potential benefits, risks, adverse effects, and side effects; however, there are clear boundaries on this topic (APA, 2016).

Outputs of Therapy

In addition to the other types of treatment that was discussed, family systems therapy should be considered to help the family cope with the traumatic outbursts of their loved one. Collaboration is an important part of treatment. It is important to ensure therapy creates the trusting relationship that is necessary, a trusting relationship needs to be developed.

Gaps in Research

There are several gaps in research that should be addressed in better understanding and treating PTSD. Haruvi-Lamdan et al. (2018) pointed out that autism and trauma are tightly coupled; however, few research studies have investigated the comorbidities or ways that genetic

markers may play a role in developing PTSD. Autism may also exacerbate PTSD symptoms such as through avoidance, anxiety, perseveration, and cause other clinical implications. O'Donnell et al. (2021) suggested a connection between PTSD and cardiovascular disease that has been under-investigated. The recent pandemic and social isolation have led to some studies that have identified critical gaps involving the trauma associated with COVID-19 and a push to consider new possibilities in terms of how society goes forward in the wake of this phenomenon (Horesh & Brown, 2020). Abdullah et al. (2021) indicated that racial microaggressions play a significant role in causing PTSD for marginalized groups. They suggest that clinicians need to pay special attention to the way that treatment is administered to Black Americans in the therapeutic environment. These are not all of the gaps in research associated with PTSD. This field is broad and requires a much harder look, especially given the societal culture in which we reside.

Summary

This paper only touches the iceberg of diagnosis, treatment, gaps in research, and the cultural framework. Anecdotally, the purpose of my interest in this topic is to determine if there is a correlation between PTSD and COVID-19 during gestation as a predictor for developmental disorders in offspring. According to one article, pregnant women with COVID-19 are statistically more likely to experience preterm birth (delivering the baby earlier than 37 weeks) and stillbirth and may have other pregnancy complications (Fell et al., 2022). Given the potential methylation connection, there is room for more research into this realm in terms of a dissertation topic.

Conclusion

This final paper focused on post-traumatic stress disorder (PTSD) in populations six years of age and older. PTSD was covered in this course, and has been described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Multiple facets of the disorder were identified and analyzed; relevant research was presented to support assertions. Specific aspects of the disorder were presented and include psychological, biochemical, environmental, neurological, genetic, socio-cultural, and genetic factors. Specifically, the paper included five distinct sections, including a description of the disorder including diagnostic criteria, etiological factors, psychopharmacologic interventions, psychotherapeutic interventions, and gaps in research. Comorbidities were also examined. A summative exploration included genetic, physiological, and biological factors. Cultural issues were considered.

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