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Can Early Intervention with Group Therapy or Individual Therapy Improve the Family Dynamic in PTSD Patients?

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Can Early Intervention with Group Therapy or Individual Therapy Improve the Family Dynamic
in PTSD Patients?

by

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Abstract

Post-Traumatic Stress Disorder (PTSD) is a mental health disorder that affects an individual directly, while also affecting their family members around them. While PTSD is not directly correlated to the development of Secondary Stress Disorder (STS), PTSD has been shown to lead to increased rates of divorce and mood disorders in children whose parents are diagnosed with PTSD. Children who have grown up with divorced parents, or parents with PTSD, have been shown to have an increased chances of developing mood disorders and risky lifestyle behaviors. The combination of having a parent with PTSD who are also divorced, would likely increase the odds even further of developing a mood disorder. While there are no set guidelines for the treatment of PTSD, the use of various types of group therapies that include family members has been shown to increase relationship satisfaction. While this type of method is useful, individual therapy or even pharmacologic regimens should also be included for best results. Educating family members about PTSD, and what the symptoms look like, can help reduce the increased stress associated with PTSD symptoms. If families are educated properly, divorce rates and mood disorder development among family members can be decreased.

Keywords: PTSD, STS, divorce rate, mood disorder, therapy, pharmacological regimen

Introduction

In 1980, Post Traumatic Stress Disorder (PTSD) was officially recognized as a disorder and was added to the Diagnostic and Statistical Manual of Mental Disorders (DSM). This addition into the DSM means there are specific symptoms associated with the identification and diagnosis of PTSD. A common misconception regarding PTSD is that it is only found in military veterans who were unable to face their experiences during war. According to the DSM-V, criteria for PTSD includes:

“1. Directly experiencing the traumatic event, 2. Witnessing, in person, the event(s) as it occurred to others, 3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental, 4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).” (DSM-V 2019)

After the experience of these traumatic events, the DSM-V states that the presence of any of the following are considered the most common symptoms of PTSD; flashbacks, recurrent dreams, avoidance of external reminders (people, place, situations), negative emotional state, detachment, irritable behavior, reckless behavior, exaggerated startle response, and sleep disturbance. This list is not exhaustive and there are many more symptoms listed in the DSM-V. These symptoms can have a huge impact on day-to-day life. For instance, in a short documentary video by Kara Frame called “I Will Go Back Tonight”, her father, a Vietnam Veteran, has a remarkable answer for when he’s asked when he was in Vietnam. His response is “It was last night, it was this morning, five minutes ago before you asked me, and I will probably go back tonight.” This is a typical occurrence among individuals with PTSD.

According to Sidran Institute, a nonprofit organization that specializes in PTSD, dissociative disorders, addiction, self-injury, and suicidality, an estimated 13 million people have PTSD at any given time. As stated before, one of the most common cognitive symptoms among

people with PTSD is flashbacks with outbursts of anger. These types of symptoms, as expected, can cause increased strain on any family, which can be evident by examining divorce rates and parenting abilities among these families. In a recent article released by Kara Frame, she states that her father's PTSD "manifests primarily as anger – the erupt-out-of-nowhere irrational kind." (Kara Frame, 2018). She goes on to state that she sees the same type of anger in herself and her other siblings. This type of behavior that occurs with members who work or live with individuals affected by PTSD is called Secondary Traumatic Stress (STS). STS looks identical to PTSD except for the lack of traumatic exposure. STS occurs in people who are constantly exposed to people with PTSD and hear about their traumatic events. This can occur to anyone at any age. The exposure to increased stress as a child can lead to many different types of symptoms as they develop, if not treated properly. Individuals with PTSD are typically treated with antidepressants and individual behavior health therapy. There are no concrete guidelines to the treatment of PTSD, there are many other treatment options that can be used. The purpose of this study is to determine how likely children who grow up with PTSD parents are to develop other mental health issues, and what treatment options are available for prevention.

Statement of the Problem

With Operation Enduring Freedom becoming one of the longest running wars in American history, there is an increase in the development and diagnoses of PTSD. The family dynamic seen with these patients is very poor and typically leads to divorce and even suicide within the family. These types of issues can put a strain on the mental development for all members of the family.

Research Questions

Can having a spouse/parent diagnosed with PTSD lead to the development of STS?

Does PTSD cause an increase in divorce?

Is there a cognitive change in behavior with children who have grown up with a parent diagnosed with PTSD?

Is there a cognitive change in behavior with children who have grown up with divorced parents?

In newly diagnosed PTSD patients, is there a preferred treatment option used to improve the family dynamic and in doing so reduce the risk of further mental illness development in other family members?

Methodology

The databases searched for this research topic include PubMed and PsycINFO from January 1999 through October 2018. Keywords and mesh terms were used to narrow the research topic and include: PTSD, Post Traumatic Stress Disorder, STS, Secondary Traumatic Stress, veteran, families, children, divorce, parenting, development, anxiety, depression, individual therapy, multi-family therapy, pharmacology treatment, structured approach therapy, emotionally focused therapy (EFT), couples' therapy, and meta-analysis. Only articles that were peer reviewed, related to clinical trials, comparative study, meta-analysis, randomized controlled trials and systemic reviews were used, with the exclusion of articles that were not published in the English language. Using these subject headings, the following articles used within this literature review were evaluated and selected for this topic.

Anticipated Results

With the always increasing number of patients diagnosed with PTSD, the use of family therapy could improve the family dynamic. This could also lead to a decrease in the divorce rate and development of STS in other family members. If these outcomes prove to be true, there

could be a new gold standard for the treatment of PTSD. The early use of the treatment could potentially lower the number of newly diagnosed mood disorders in the United States.

Literature Review

A review of the literature shows that there is an increase in divorce rates amongst individuals diagnosed with PTSD. Growing up around a person with PTSD typically do not develop secondary PTSD. Children that grow up with divorced parents, a parent with PTSD, or both can cause a change in the behavioral health of children or other family members. While there is no algorithm for the treatment of PTSD, there are many different approaches to it. Each method has individual benefits. However, it seems that all the research points to the use of combination therapy including individual and some sort of family-based therapy.

Can having a spouse/parent diagnosed with PTSD lead to the development of STS?

A meta-analysis done by Julia et al. (2016), used the database of Pubmed, PsycINFO, Embase, the Cochrane library and PILOTS to determine the prevalence of secondary traumatic stress in significant others. The databases were searched using the search terms of [secondary OR intergenerational OR family] AND [PTSD OR posttraumatic OR traumatic symptoms OR combat disorder] AND [military personnel OR veterans OR reservist]. The studies were included if they were published in peer-reviewed journals, participants were significant others of military personnel, and PTSD symptoms were assessed by means of a validated instrument or by clinician assessment. The studies were excluded if the articles presented a case study, primarily focused on intimate partner violence, or published in languages other than English. The final selection consisted of 36 studies of which 27 included partners of veterans, two consisted of parents of veterans, and nine included children of veterans (Julia et al., 2016). Correlation between partners' STS and veterans' PTSD was reported in eight of the 27 studies. The two

studies involving parents of PTSD veterans both showed no indication of elevated symptoms in the parents. The majority of the studies involving children of PTSD veterans included adult children only or adult children and adolescents. Only two studies included adolescent only or younger children only. Most of the studies found that although children of veterans scored significantly higher on instruments measuring STS than children of civilians, these scores were not in the clinical range.

This study was limited by a broad search criterion. The studies that were selected used various populations differing in demographics, deployment sites, clinical status, and used various measures to assess PTSD and STS. Therefore, the authors were only able to present study findings descriptively rather than combining the data in a quantitative synthesis. Another limitation the authors identify is the exclusive inclusion of studies that had been published in peer-reviewed journals, which may have led to some bias in the results. Another consideration is that some of the studies used questionnaires instead of clinical interviews, as well as how the diagnoses of PTSD were determined. There needs to be more studies of young children of veterans as opposed to adult offspring of veterans. Overall, this analysis was very brief and didn't go into details of each of the studies. However, with the number of articles they did use, they showed that there was no correlation with the development of STS with PTSD parents.

In a different study done by Thomas et al. (2016) included a sample of 115 male veterans who met the criteria of having received a psychiatric examination, their partners had been interviewed, and had at least one child aged 6-16 who lived in the residence. Of the 115 veterans, their children which consisted of 52 girls and 63 boys who were assessed using the Child Behavior Checklist (CBCL) to score on internalizing (depression/anxiety) and externalizing (violence outbursts) their symptoms (Thomas et al., 2016). They were also assessed on the

Psychiatric Epidemiology Research Interview (PERI), which looks at The Demoralization Scale. The scale was comprised of 27 items that include helplessness, hopelessness, depressed mood, dread, anxiety, low self-esteem, and psychophysiological disturbances. The veteran fathers were then assessed according to the DSM-III to obtain the diagnoses of PTSD. The results showed that 25 of the children (13.5%) met the borderline/clinical criterion on Internalizing scale, and 22 (14.8%) met it on the Externalizing Scale (Thomas et al., 2016). It also showed that the girls had a higher likelihood of internalizing than externalizing, where the boys showed the exact opposite.

Some of the limitations of this study were the small sample and the low rate of some of the child outcomes. Which is likely lead to the wide confidence intervals. Having a large sample size would likely reduce the confidence intervals and may have led to more statistically significant data. This study was also only done on Vietnam Veterans, while this was a war which has been contributed to the veteran's PTSD, not all wars are the same; therefore, a larger sample size of different generations exposed to war would have been beneficial. Nevertheless, this article did show some significant data that there is some association of internalizing and externalizing behavior in the children of parents with PTSD. While the use of "borderline range" means that the children don't meet the criteria, it does show a trend of internalizing or externalizing symptoms in the children. This was seen in about 28% of the sample size of children who were exposed to parents with PTSD.

Does PTSD cause an increase in divorce?

Foran et al. (2013) researched the impact of combat exposure, mental health symptoms, and aggression on intent to divorce or separate among military personal. A survey that included measures on organizational factors, leadership, and mental health was sent out at four and nine months after the return from a deployment. Only soldiers who were married, had previously

deployed, and who had completed the survey were included, creating a sample of 851 participants. The survey covered combat experience using a 34-item Combat Experience scale, depressive symptoms using the PHQ-9, PTSD symptoms using the Post-Traumatic Stress Disorder Checklist, Intent to divorce or separate, relationship psychological aggression, general aggression using a 4-item scale, and marital distress. The results showed that combat exposure is a significant predictor of intent to divorce above PTSD. Combat exposure alone is not enough to raise the risk of divorce, but rather in the context of marital distress.

One limitation that the authors identify is the fact that they didn't assess the marital length. Another limitation was the fact that the spouses were not participating. This means that the decision to divorce or separate may be coming from the spouse rather than the veteran and that could be due to other issues that include infidelity. A third limitation is the fact that the researchers lost some of their sample size, this was due to the fact that some of the soldiers had to re-located to another base before their 9-month survey could be completed. In conclusion, this study was consistent with previous studies that looked at the correlation between marital distress and PTSD, as well as marital distress and depressive symptoms.

Along the same lines, Negrusa et al. (2014) used a longitudinal data set to compare the divorce probability of deployed soldiers who report post-deployment mental health symptoms with that of deployed soldiers who do not report mental health symptoms. Using a computerized database called the Defense Enrollment Eligibility Reporting System (DEERS) the information on marital status and number of children was noted. The authors then obtained information on mental health symptoms using a Post Deployment Health Assessment (PDHA) and Post deployment Health Re-Assessment (PDHRA). Within the PDHA and PDHRA forms is a four-item screen for PTSD which was used to assess for PTSD within that soldier. Using this data

from the members who entered the military between March 1999 and June 2010, and who married after joining the military to ensure that both spouses are aware of becoming a military family. This leaves a sample of 69,577 soldiers who deployed while in their marriage and at least filled out one PDHA form, or non-deploying soldiers. The results showed that soldiers who are deployed have a higher probability of divorce compared to non-deployed soldiers. The study also showed that the soldiers with PTSD have a higher likelihood of divorcing versus a soldier who has not deployed. The authors have also determined that the more times a soldier deploys, or the longer they are deployed, the higher the risk of divorce.

The authors didn't list any limitations, but one that stands out is the use of the self-reporting with the PDHA and PDHRA. This limitation only applies to the PTSD portion of the research because the four questions are very subjective, and no actual diagnosis is made based off that form. Some of the strengths with this research are the use of a very large sample size and the fact that soldiers had to get married while they were already in the military. This study showed a very strong correlation between divorce and the number of times deployed and duration of deployments. It also showed a strong connection with divorce and individuals who reported PTSD symptoms versus those who didn't report any symptoms.

Is there a cognitive change in behavior with children who have grown up with a parent diagnosed with PTSD?

In 2017, Creech and Misca performed a meta-analysis using the databases of PsycINFO, MEDLINE, PubMed, and Web of Science from the years 2001-2006 using the key terms that included “military/soldier*/arm/combat/veteran**” AND “Iraq/Afghanistan/OIF/OEF” AND “parent*/maternal/paternal” AND “PTSD/posttraumatic stress” AND “outcome/problem/disorder”. A total of 83 studies were found and after assessing the criteria of

population, representativeness, sample size, validity of outcomes measures and statistical power of results, 20 studies were used. When looking at the influence of PTSD on child outcomes, one study showed that having active duty parents with PTSD symptoms predicted child depression, as well as internalizing and externalizing behavior. Another study found a moderate relationship between PTSD symptoms in service members and secondary trauma symptoms in children. Mental health symptoms in the parent resulted in a 171% increase in the likelihood of a service member reporting a child with an emotional, behavioral, or adjustment problem. (Creech and Misca, 2017) PTSD symptoms show an effect on children's internalizing and externalizing symptoms, including depression, social emotional adjustment, increased anxiety in early childhood, and adjustment problems in school-age children.

Some of the limitations of this study include that most of the symptoms of the children's behavior were reported based on the parent's perception. The parent's perception alone may not be an accurate or reliable indicator of the actual behavioral problem of the child. Secondly, all the studies were only conducted in the United States. This meta-analysis' strengths were that all the samples that were questioned were veterans of foreign wars. While the reasoning for PTSD can vary among these individuals, the use of the same type of sample is very beneficial.

In a similar study done by Forrest et al. (2018), they investigated the long-term effects of military deployments on the mental health of war veteran's children. Using a survey and propensity score they explored the effect of parental deployment on mental health of the adult children of Australian veterans of the Vietnam war. The data was obtained in 1966 from 1,418 participants and consisted of 35% men and 65% women whose fathers were surviving veterans of the Vietnam War (Forrest et al., 2018). The measures that were used were the self-reported diagnosis of or treatment for anxiety and depression, suicidality based on the Psychiatric

Symptom Frequency Scale, and current mental health measured by the Mental Health Inventory of the SF-36. The results showed that the adult children of deployed veterans were more likely to develop anxiety, depression, thoughts of suicide, self-harm, or to have made a suicidal plan compared to those of non-deployed veterans.

A few limitations to this study that were discussed include the use of only the propensity score analysis (Forrest et al., 2018). This analysis was unable to control for unobserved difference between the deployed and non-deployed veterans. Another limitation is the use of self-reporting of mental health. The use of self-reporting is not always the most accurate measure to determine mental health. The study also didn't consider the measures of depression, anxiety, alcoholism or divorce among their PTSD parent. With these limitations aside, the study used a very large sample size that shows that there is a correlation between the development of anxiety and depression and being a child of a parent with PTSD.

From a different perspective Dansby and Marinelli (1999) investigated the behavioral development of adolescent children with parents diagnosed with PTSD. The study included 28 children of 23 fathers who had been exposed to hostile fire in Vietnam. The veterans were to complete a demographic questionnaire and the Mississippi Scale for Combat-related PTSD. The adolescents were assessed by use of school records, observation, and self-report questionnaires. Each aspect that was assessed looked at the behavior of the adolescent and their attitudes toward their PTSD parent. The results showed that children of combat veterans reported significantly more problematic behaviors in school and at home. There were also more reports of mild depression, apprehension, tension, and anxiety in the adolescents of PTSD parents compared to the comparison group.

Some of the limitations that were discussed within the study include the use of a small sample size and the fact that some of the households had two adolescents included in the study. They also discussed the lack of determining if the veteran themselves suffered from depression. However, the study was able to show evidence that the adolescents of PTSD parents should be assessed for anxiety and depression more often than non-PTSD parents.

To explain why this behavior is likely happening researchers Ugolini et al. (2018) conducted an experiment that examined the effects of anxiety during early life experiences. The researchers bred 25 male mice which immediately after birth were separated into three groups. A maternal separation group (MS), tactile stimulation group (TS), and control group (CNT). Each litter was separated from their mother and moved to a different cage from day one to fourteen. The MS group were left undisturbed for 180 minutes, the TS group were individually separated and during the separation period were subjected to tactile stimulation via massaging of the pups. Behavioral testing was then performed postnatal day 40-50 which is considered late-adolescence. The behavior testing consisted of three different tests that were created to examine different aspects of normal behavior seen in late-adolescent individuals. The results indicate that anxiety-like behaviors were noted in mice with increased protein kinase A (PKA) activity and are rooted in adolescence. This is very similar to studies of mood disorders in humans that report that signs and symptoms of mental disorders emerge slowly and that anxiety disorders are associated with puberty. It also shows that a chronic increase in PKA activity during critical periods of brain development leads to anxiety phenotypes in adult mice.

There were no limitations that were discussed within the paper. Some of the limitations that stuck out include that this has only been tested on mice. While yes, the study did state that this type of behavior is very similar in humans, it's not always a guarantee. While using only one

type of mouse is a limitation, it also a strength. It shows that each mouse is very close to being genetically the same and results should be very similar between each individual mouse. Another strength is the use of previously researched use of the three behavior tests. In conclusion, increased stress during critical times of development shows a link to increased mood disorder development in adults.

Is there a cognitive change in behavior with children who have grown up with divorced parents?

Afifi et al. (2009) investigated how the experiences of child abuse and parental divorce related to long-term mental health outcome. A National Comorbidity Survey for ages 15-54 that included a sample size of 5,159 looked at respondents living in two parent intact families until the age of 15 and respondents experiencing divorced at or before age 15. The sample groups were then interviewed by trained interviewers using the Composite International Diagnostic Interview (CIDI) and assessed the presence of psychiatric disorders based of the Diagnostic and Statistical Manual 3rd edition revised (DSM III-R). The results showed that individuals that experienced parental divorce only were associated with increased odds of having any mood disorder, depression, dysthymia, bipolar I, and PTSD. The study also showed increased odds of having any disruptive disorder, conduct disorder, alcohol abuse/dependence, and drug abuse/dependence. At the same time, the study showed no association with suicidal ideation.

The limitations of the current study are that it's cross-sectional data and it prevents the inference that parental divorce causes poorer mental health outcome, but more of an association between them. Also, the design of the survey may introduce a recall and reporting of bias. The study also excluded personality disorders. However, with the use of the nationwide survey, the researchers were able to obtain a large sample size. With the large sample size and the use of

trained interviewers, the researchers were able to determine increased odds of lifetime psychiatric disorders among children of divorced parents.

In a longitudinal study, Ängarne and Wadsby conducted an experiment in 2010 to investigate if there was a presence of a psychiatric disorder among children and young adults with the experience of parental divorce. The divorce group consisted of 239 participants, 119 males and 120 females between the ages of 0-18 when their parents had completed a divorce at the district court within the year of 1987-1988. The comparison group consisted of the exact same number of participants and number of males and females within that given time period. The researchers compared the names of the children of the divorced parents and looked to see if they had a psychiatric file within the psychiatric clinic or hospital in the region. If a record was found, they would note the diagnosis and if the visit was with a psychiatrist, psychologist, or social worker. They would then investigate the number of in and outpatient healthcare visits, somatic diagnoses, and mental and behavioral diagnoses from the beginning of the data collection all the way to the end of the data collection, which was December of 2008. All the participants that were diagnosed with a mental illness were diagnosed according to the DSM-IV. The results showed that both males ($p < 0.001$) and females ($p < 0.001$) in the divorce group (20.9%) had more often had a psychiatric contact as a child than the non-divorced group (2.1%) (Ugolini et al., 2018). However, there was no significant difference found between the divorce and non-divorce group in adult psychiatric contacts. The study also showed a higher incidence of the diagnoses of "Injury, poisoning and certain other consequences of external causes" ($p < 0.001$). This indicates that the children may be more likely to live a more hazardous life or perform risky health behavior. Some of the more common diagnoses seen in the children of divorce include anxiety and depression.

The limitations of the study that were identified include the fact that some of the patients may have gone elsewhere outside of the region or to a private healthcare that did not agree to the study, to seek a psychiatric evaluation. Another issue is the lack of control of socioeconomic status between the divorce and non-divorce group. The risk of divorce has been shown to be higher among lower socioeconomic families, which is also a risk for poorer health. The strength of this study is the use of actual healthcare professional diagnoses with the use of the DSM IV as opposed to self-reporting of mental health. This study found significant statistical information that showed that children of divorced parents seek psychiatric help for mental healthcare.

Along the same lines, Theunissen et al. (2017) investigated the link between divorce and Emotional and Behavior problems (EBP) in children. In the study, they asked the Dutch Child Health Care Services to provide a random sample of children aged 24, 36, and 45 months who had received invitations for a routine well-child exam. The parents were then invited to participate in the study by using a letter that was added to the routine invitation for the well-child visit. The families that did not provide complete data and children who did not live in a family with two biological parents for reasons other than divorce or the termination of the relationship were excluded. This left the study with a sample size of 2,490 children. The parents that were included in the sample size were then asked to use the Child Behavior Checklist that consists of 99 problem items to report any emotional and behavior problems. The children would then come to their scheduled well-child visit and a routine history and physical were assessed for each child. The background characteristics of the child and family were recorded which included ethnicity, child age, gender, maternal and paternal highest level of education obtained, family size, birth of a sibling within the last year, family moved to a new place of residence, duration of pregnancy, type of delivery, weight at birth, and either recent or lifetime divorce status of the parents. Once

all the data was collected, the results showed that EBP are more likely to occur in children with lifetime divorce ($p = 0.02$), whereas recent divorce was not associated with the Child Behavior Checklist (Theunissen et al., 2017). The study also identified that externalizing problems was more likely to occur ($p = 0.03$) (Theunissen et al., 2017).

The study however did not consider the factors of remarriage of either parent, or the amount of contact the child receives from either their mother or father. Another limitation is the use of self-reporting on the Child Behavior Checklist, while the questions do ask about specific things like cries too much or doesn't look people in the eyes, this is very subjective for the parents and what they might consider "abnormal" is typical for that age group. The study did however have statistically significant information showing that young children's behavioral problems were more likely to occur in families with lifetime divorce, but emotional problems showed no change.

In newly diagnosed PTSD patients, is there a preferred treatment option used to improve the family dynamic and in doing so reduce the risk of further mental illness development in other family members?

Maccani et al. (2012), did a literature review of the potential pharmacological therapies that can be used in the treatment of PTSD in order to reduce the number of PTSD flashbacks. The first medication that was examined was the use of propranolol as a secondary prevention for PTSD. One study found that the use of propranolol (40 mg four times a day) in adults reduced the psychophysiological reactivity compared to a placebo. Another study also reported a decrease in PTSD incidences with the use of propranolol. However, a third studied that was reviewed showed that there was no difference with an alternative dosing strategy. Another medication that was examined was the use of glucocorticoids shortly after a traumatic event, this

is because the use of high dose hydrocortisone has been shown to impair memory consolidation and recall. One study compared the administration of hydrocortisone and placebo to 25 patients within 6 hours after a traumatic event. The findings supported a decrease in anxiety symptoms and PTSD in the hydrocortisone group. In another study, trauma patients were administered a 10-day regimen of low-dose (20mg, twice daily) hydrocortisone administered to trauma patients reported lower PTSD symptoms at 1- and 3-month follow-up appointments compared to placebo recipients.

The use of opiates was also examined because opiates may attenuate noradrenergic activation and dampen fear condition. One study examined the association of the administration of morphine after an injury and 3-month PTSD symptoms. The participants that had PTSD had received less morphine than the other group. A second study looked at U.S troops who had been injured overseas and linked that the patients who had received morphine shortly after their injury had significantly lower rates of PTSD than the soldiers who did not receive morphine.

The authors didn't identify any limitations to their review, but some of the drawbacks could include the potential bias. For every medication that was examined, the authors only used 2-3 studies that typically showed the results they were looking for. Another limitation is that the authors didn't state what the statistics were, but rather just stated that they were statistically significant. On the other hand, the authors did state that patients with PTSD all have different symptoms and that these medications aren't always going to work for people with PTSD. In the end, the authors made a great point that pharmacologic treatment is not enough for patients with PTSD. The combination of medications and therapy could decrease the symptoms of PTSD for these vulnerable patients.

Neil et al. (2017) conducted a pilot study in which placed veterans and their partners in Emotionally Focused Couples Therapy (EFT). The couples were recruited by an urban Veterans' Affairs Medical Center in Baltimore. In order to be eligible for the study, the participants had to be in treatment for PTSD, returned from active duty deployment for more than 1 year, had scored 50 or above on the Clinical Administered PTSD Scale, both partners needed to score between 75 and 110 on the Dyadic Adjustment Scale (DAS) and a score showing a moderate to strong commitment to the relationship, and finally participants could not have profound cognitive limitations, a severe psychotic spectrum disorder, or self-reported substance dependence or abuse. A total of 15 couples was selected and were assessed by a doctoral-level clinician and received 26 to 36 weekly sessions of EFT. Two weeks after completion of EFT the participants were evaluated again and asked about their treatment experience. During the study, five couples were excluded due to substance abuse and three dropped out due inability to complete the treatment. The mean relationship length was 13 years and the veterans were exposed to combat-related experiences that were life threatening, involving serious injuries or death of others. The veterans had served in Vietnam, Vietnam and Persian Gulf, Iraq and Afghanistan. The veterans showed no improvement in PTSD symptoms, but showed improvements in general life satisfaction, depression and relationship satisfaction when compared to the pre-test. The veteran's partners also exhibited the same improvements in behavioral health and relationship satisfaction.

This study shows that the use of EFT in individuals with PTSD is a promising treatment option to strengthen the family dynamic. All the veterans who completed the treatment demonstrated positive improvements in all aspects of their relationship and a slight reduction in their partners STS symptoms. It is also important to note that not only did the veterans show

improvement, but their partners also showed the same improvements. The strengths of the study are the use of multiple measures of psychological symptoms. The limitations of the study are the use of a very small sample size, and the uncontrolled design of the study because it did not allow the researchers to make any casual inferences about the effect of EFT on the veterans and their partners. While the sample size may be very small, the results of the study should not be overlooked. While EFT may not be the answer for the individual treatment of PTSD, it shows that it is a powerful treatment option used to improve family relations. This is also a very important aspect to treat among individuals with PTSD.

Similarly, Sautter et al. (2016) compared the use of structured approach therapy (SAT) versus the use of PTSD family education therapy (PFE). Using the criteria of PTSD from the DSM, 57 veterans and their spouses were randomized to either SAT or PFE therapy. The SAT was a 12-session couple-based treatment that was designed to encourage veterans to disclose and discuss their trauma with their partners. The PFE was a 12-session manualized educational intervention that focused on providing couples with information about PTSD without any of the active SAT treatments. Used as a baseline, the veterans also completed the Affective Control Scale (ACS) which is a 42-item self-report scale for fear of intense anxiety, depression, positive emotions, and anger. They also completed Difficulties in Emotion Regulation Scale (DERS) as a baseline, which is a 36-item self-report measure that looks at difficulties in emotion regulation. The results showed that only the veterans in the SAT had improvements on the DERS and ACS when compared to baseline ($p < 0.001$). This shows that there is a statistical significance with the use of SAT over PFE (Sautter et al., 2016).

The limitations of the study that were identified included the use of a small sample size, the lack of measurement for emotional regulation and the short follow up after treatment. A

strength was the use of the exact same number of sessions and the inclusion of the veteran's spouse in all the sessions. Overall, the researchers were able to show that the use of SAT can improve PTSD symptom, especially with emotional dysregulation.

In a different view, van Ee (2018) conducted a Delphi study which included 15 psychiatrists, clinical psychologists, family therapists or psychiatric nurses with an average experience of 5 current years using Multi-family Therapy (MFT). A Delphi study is a study that can create a guide for experts to best practice. This study consisted of three rounds. In the first round, a survey was created and sent to the experts in which they were asked to respond to eight questions. The questions are based on the strengths, drawbacks, and what they believe are the best methods for conducting MFT. In the second round, the experts were to score on a 5-point scale to their peer's personal view on the strengths and drawbacks based on relevancy and frequency (1 = not relevant or not frequent, 5 = very relevant or very frequent). In the third and final round, the experts were to respond to feedback from individual experts. A consensus was defined as an agreement between experts of at least 75% relevancy. The results showed that the experts' goals for MFT was to target the treatment of the consequences of PTSD on a systemic level. Some of the systemic effects of PTSD include the loss of trust in people, loss of meaning, loss of control, loss of the ability mentalize, and loss of a future perspective. The experts also state that the use of MFT alone is not recommended and that individual therapy should be combined with MFT. Thus, making it a promising treatment for patients with PTSD.

One of the major limitations to this research is the generalizability of the results. All the experts included have been using MFT for patients with PTSD, so their opinion might be biased. Another limitation of the study is that the family's opinion of MFT wasn't taken into consideration. At the same time, the use of experts who have been using MFT gives firsthand

experience on what some of the positive and negative outcomes of MFT are. In conclusion, MFT is a feasible treatment for patients with PTSD, but as stated previously, this should not be the stand-alone treatment for PTSD.

Discussion

PTSD is becoming one of the largest growing mental health diagnoses in America. This is primarily due to the current longest running war in American history. Not only does the effects of PTSD affect the individual who experienced the trauma, it also affects their family. The research that has been have collected has shown that while PTSD may not necessarily cause STS in the members of the family, it has shown that there is some internalizing and externalizing of symptoms. These results directly correlate with the mental development of children with a parent diagnosed with PTSD. The research has also shown that there is an increased chance of divorce among couples where one partner has PTSD, and that divorce can also lead to altered mental health development in children. While treatment for PTSD is still highly controversial, there is a consensus that individual therapy alone is not recommended.

Can having a spouse/parent diagnosed with PTSD lead to the development of STS?

It's a very common occurrence for healthcare professionals, who work constantly with people who have PTSD to begin to develop an STS. This is due to the constant exposure to others' personal trauma. This type of trauma can mimic the symptoms of PTSD without experiencing a traumatic situation themselves. Thus, it would be reasonable to hypothesize that living with someone who has PTSD could lead to the development of STS.

In a meta-analysis done by Julia et al. (2016), this is the exact question that they wanted to explore. Using studies found on many different databases, they discovered that most of the studies showed no indication of the development of STS in the spouse or children of a PTSD

patient. The studies showed that while there were indications of the development of STS, this wasn't enough to be clinically diagnosed. This is very similar to Thomas et. al (2016) research. In their research they looked directly at the children of veterans, whose PTSD was diagnosed clinically, and discovered that 13.5% of the sample were also borderline for STS symptoms. While the study did show that there was some development of STS, it was only 14.8% of the sample size. That study also showed that the severity of the PTSD didn't matter, but how recently the trauma had occurred was significant.

The data that has been collected shows that there is no correlation between the development of STS among the spouse or children of a PTSD patient. Both studies do show that while there is a development of symptoms, they do not meet the criteria to be clinically diagnosed as STS. With that in mind, even though these symptoms may not be severe enough to diagnose STS, it does show that there is some development of mental health issues. These issues could easily become more pronounced as time goes on as more stress develops in the spouse's or children's lives.

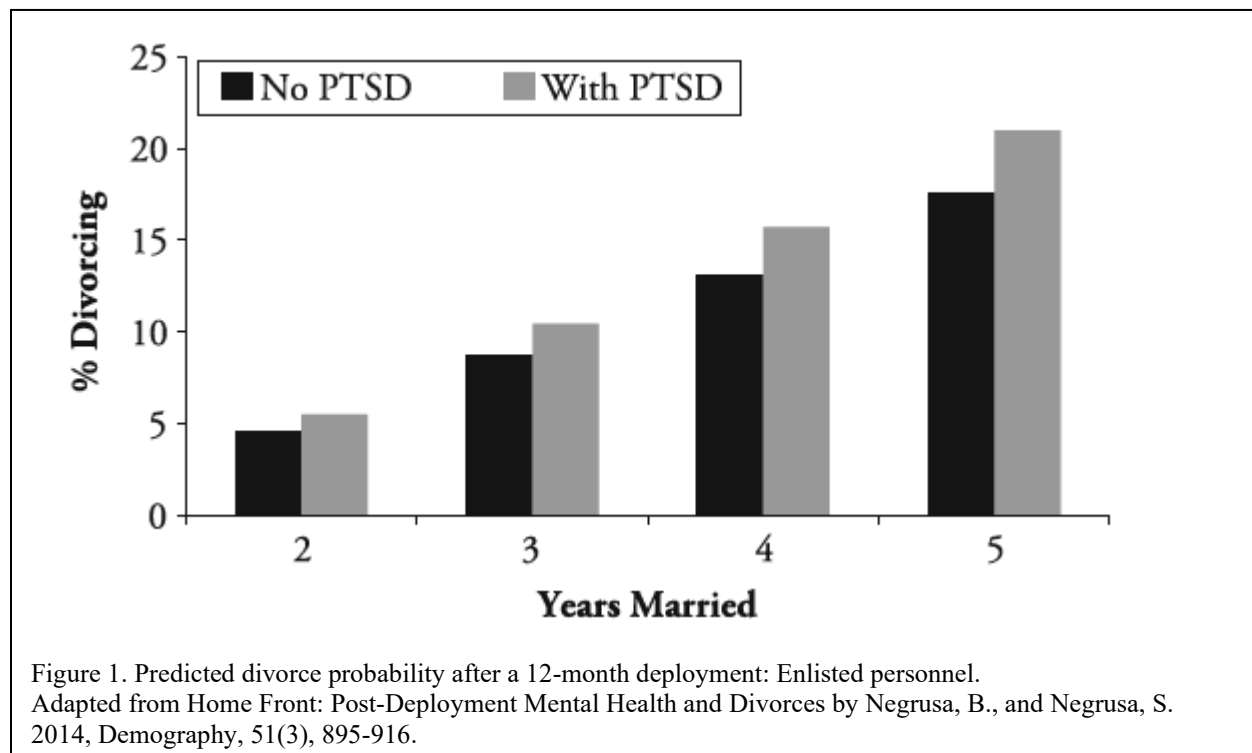
Further research needs to be done on this topic. The use of a longitudinal study may be very beneficial for this type of clinical question. While both studies may show that there is no statistically significant STS development, it is possible that these borderline symptoms can develop into the diagnostic criteria needed once new stresses are added into their lives.

Does PTSD cause an increase in divorce rate?

Divorce has been becoming more and more prevalent in today's society. Researchers Foran et al. (2013), discovered that it is very common amongst veterans and even more common amongst veterans with PTSD. They discovered that PTSD is not the main indication for divorce. What they determined is that any combat exposure was likely linked to divorce. They attributed

this to changes in cognitive function from the combat exposure. Negrusa et al. (2014), used a longitudinal study to determine the answer to this question. Their study showed similar results indicating that it is the combat exposure that is more likely to lead to divorce opposed to PTSD symptoms. Their research also took into consideration that the marriage had to occur while one of the soldiers was already in the military. This takes out the factor that the divorce occurred because the spouse wasn't aware of what it was going to be like. Their research showed that there is a 4.6% higher chance of divorce if the soldier is deployed within the first two years of marriage and it jumps to a 5.5% chance if they report PTSD like symptoms. They also determined that the longer the marriage, the higher the chance of divorce.

The sample sizes for these studies were very large and thus showed a significant correlation with both combat exposure and PTSD linked to increased divorce rate. However, both studies used a checklist to determine whether the veteran had PTSD or not. This can be very subjective and could have either been falsely claimed, or not claimed at all because the



participant did not think the symptoms were severe enough. Another limitation is the fact that both studies did use a veteran sample. While the veteran population may be the most prominent population to develop PTSD, it is not the only population. A study needs to be done with the same parameters, but the sample group needs to include a civilian population.

Is there a cognitive change in behavior with children who have grown up with a parent diagnosed with PTSD?

As the previous research has shown, having a parent with PTSD doesn't lead to their children developing STS. While the constant exposure to PTSD may not lead to the development of STS it may lead to other personality disorders as the child gets older. Creech and Misca meta-analysis (2017), showed that the veterans who had PTSD reported that their children had more emotional, behavioral, or adjustment problems than the veterans who did not have PTSD. Their researched was collected from the point of view of the parent. In Forrest et al. (2018) research, they used the perspective of the child of a veteran once they were adults. Their research was also able to support this data by showing that the children of veterans with PTSD were more likely to develop mental health disorders like anxiety, depression, thoughts of suicide, self-harm, or a suicidal plan when compared to the children of non-deployed veterans. Dansby and Marinelli (1999) used another point of view and looked at it from the perspective of the child and their teachers at school. Once again, the research showed that there is a higher likelihood in the development of depression, apprehension, tension, and anxiety. All three of these studies have pointed to a change in behavioral health in the children when one of their parents are diagnosed with PTSD. What makes this research more powerful is that each study looked at the children's behavior from different point of views and still came out with the same result.

Patients with PTSD commonly report that their most common symptoms are intense anger and violent outbursts. Constantly being exposed to such anger can cause stress on a person because they want to do whatever they can to avoid these outbursts. Ugolini et al. (2018) demonstrated that the earlier a young mouse is exposed to the stress, the more likely they are to develop personality disorders. Their research showed that there is a link to increased PKA activity when exposed to stress and this can lead to mood disorders in the child's life later. While his study was conducted on mice, it was stated to be similar to humans because it is a metabolic change that occurs in humans as well.

One could argue that there are some major limitations to the first three studies since they were self-reported symptoms. While it was very beneficial to see that the same symptoms were reported from three different perspectives, it is even more beneficial to see that there is a change in the body that can occur with the increased stress. When you combine the results from all of these studies, it validates that there is some behavioral change that occurs in children when they grow up with PTSD parents.

Is there a cognitive change in behavior with children who have grown up with divorced parents?

Research has shown that there is an increased divorce rate among individuals diagnostic with PTSD. As one might assume, this sudden change in lifestyle can cause a behavior change in the children of divorced parents. Afifi et al. (2009) showed that children that had parents that had divorced before they turned to the age of 15 showed an increase in mood disorders including depression, dysthymia, bipolar I, suicidal ideations and even PTSD. The study also showed that these individuals were more likely to exhibit disruptive behaviors and conduct disorder along with alcohol and drug abuse/dependence. Theunissen et al. (2017) conducted a similar study that

showed the same results that children with divorced parents are more likely to exhibit external emotional problems. One study used trained interviewers and the other used a self-reporting questionnaire to obtain their results. This shows that what is being reported on the questionnaire is also being seen by experienced clinicians.

In a longitudinal study done by Ängarne and Wadsby (2010) they took a set of 0-18-year-olds with divorced parents and looked at the percent of the sample that had been seen by a psychiatric clinician. They determined that roughly 21% of the divorced population was having psychiatric contact compared to a non-divorced group. This was only clinically significant when the patients were adolescents because there was no difference found in psychiatric contact in adults. The study also showed a similarity with Afifi et al. (2009), in that the children of divorced parents are more likely to live a more hazardous lifestyle and experience anxiety and depression.

All the studies have shown, through different methods, that children with divorced parents are likely to exhibit more behavioral changes than children of non-divorced parents. This is just one more example of a lifestyle change that can occur in children with a PTSD parent. Since individuals with PTSD are at increased risk for divorce, this becomes a risk factor that can potentially cause children to develop a mood disorder. The combination of having a parent with PTSD who is also divorced could lead to even higher rates of mood disorders. Future studies should be done to examine children of divorced PTSD parents to truly know if this is a possible occurrence.

In newly diagnosed PTSD patients, is there a preferred treatment option used to improve the family dynamic and in doing so reduce the risk of further mental illness development in other family members?

PTSD has a very strong effect on the family dynamic. Previous research shows that individuals with PTSD have an increased rate of divorce. Not only does PTSD influence the mood of members in the family, so does divorce. There are no set guidelines for the treatment of PTSD or their family. Maccani et al. (2012) looked at the use of pharmacological treatments. They determined that there are several medications that can be used shortly after the traumatic experience that can prevent the development of PTSD. They determined that the use of beta-blockers, glucocorticoids, or opiates given shortly after a traumatic experience could prevent the development of PTSD symptoms. While this is a promising treatment, the window for the administration of these medications was less than 24 hours. While this may be possible for individuals that were involved in a traumatic experience and were injured, if they were not injured during the event, the odds of receiving these treatments in time would be very slim.

Neil et al. (2017) explored the use of EFT for the treatment of PTSD and the improvement of the family dynamic. While this study did use a very small sample size, they also did have the longest treatment time. Their research did show that both the veteran and their partner showed improvement with mood disorders and relationship satisfaction. They also determined that the use of EFT isn't the best option to use for the improvement of PTSD symptoms. In a similar study done by Sautter et al. (2016), they explored the use of SAT which like EFT also showed promising results. Unlike EFT, SAT was only 12 sessions long and they did not include the veteran's spouse in the results. van Ee (2018) conducted a Delphi study that asked experienced clinicians on the use of MFT. That Delphi study concluded that MFT has also shown to be effective in the treatment of symptoms for individuals with PTSD. All three of these studies have shown that the use of therapy that includes the individual's partner has shown to increase their relationship satisfaction.

While the use of EFT, SAT, or MFT has shown to improve relationship satisfaction among individual with PTSD, any one of these treatment options is not recommended to be used as a stand-alone treatment. The use of EFT, SAT, or MFT should be paired with individual therapy and potentially even pharmacological regimens. Individual therapy and couples-based therapy such as EFT, SAT, or MFT treat different aspects of PTSD. Individual therapy focuses on the individual and the ability to handle the symptoms that come with PTSD. The other therapy options focus on getting the family member involved so that they can learn and understand what PTSD is and what symptoms to expect. Mental health disorders are very difficult to treat because they must be approached from numerous different angles. One standalone treatment is typically never enough to fully treat any mental health disorder.

Applicability to Clinical Practice/Policy

The goal of this study was to determine the effects of PTSD on the family dynamic. What was shown is that parents with PTSD typically have children who develop mental health/behavioral issues. It was also demonstrated that people with PTSD typically have a higher rate of divorce, and that children who grow up with divorced parents are more likely to develop mental health/behavioral issues. The combination of having a PTSD divorced parent would likely increase the odds of developing a personality issue. With Operation Enduring Freedom currently going on, the number of veterans diagnosed with PTSD is at an all-time high and is likely to continue to increase. This increase in PTSD can have a trickle-down effect. There is a transitive possibility that with the increase of PTSD, there will be more diagnoses of anxiety and depression in the children of PTSD patients. This will lead to a higher demand in therapist, and insurance will likely have to pay more each year for therapy and anti-anxiety/depression medications. There has been some promising research that shows that treatments like EFT and

MFT can lead to a reduction in PTSD symptoms and improvement in marriage happiness. If these types of therapy were to be more readily available or considered the gold standard for treatment, there could be a reduction in future anxiety and depressive symptoms in children. The overall goal in therapy is to improve the family dynamic in hopes to prevent the development of a personality disorder in the family's children.

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