



2018

Childhood Trauma: An Analysis of Associated Co-Morbidities and Various Psychotherapies

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**CHILDHOOD TRAUMA: AN ANALYSIS OF ASSOCIATED CO-MORBIDITIES AND
VARIOUS PSYCHOTHERAPIES**

By

Brittney L Benson

A scholarly project

Submitted to the Graduate Faculty

Of the

University of North Dakota

In partial fulfillment of the requirements

For the degree of

Master of Physician Assistant Studies

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ACKNOWLEDGEMENTS

I would like to gratefully acknowledge the contributions of Dr. Jeff Hostetter, Family Medicine MD, Brynn Luger, Licensed Counselor, Russ Kauffmann, PA-C, and my various peers in the development of this paper. I would also like to thank the UND writing center in contributing to the editing of the final draft.

ABSTRACT

American and European studies suggest that anywhere from 14 to 67% of children have experienced at least one traumatic event throughout their life. Furthermore, about 13.4% of them go on to develop post-traumatic stress disorder (PTSD) or symptoms (Diehle, J., Opmeer, B.C., Boer, F., Mannarino, A.P., & Lindauer, R.J., 2015). One study suggests that as many as 63.9% of adults suffer from ACEs (Adverse Childhood Experiences) (CDC, 2016). The 4th Edition of the Diagnostic and Statistical Manual (DSM-IV) states that PTSD is the most common Axis I disorder in children that are victims of abuse with statistics ranging from 20% (PTSD only) to 53% (PTSD or complex PTSD)(Chard, 2005). First line treatment for PTSD includes psychotherapy. Cognitive Behavioral Therapy (CBT) has been established as the “gold standard” for the treatment of PTSD. However, a good percentage of children still present with symptoms post treatment. Therefore, a need for other forms of psychotherapy has been made apparent. This paper attempts to highlight the various detrimental effects of childhood trauma, explore the various types of psychotherapies used to treat PTSD in children as well as adults {CBT, Eye Movement Desensitization and Reprocessing (EMDR), Cognitive Processing Therapy (CPT) and Prolonged Exposure}, and determine which therapy is most effective. The research gathered mostly supports the use of CPT in adults suffering from ACEs. However, in children, the most supported therapy for the treatment of PTSD is CBT, followed by prolonged exposure and EMDR.

INTRODUCTION

At such a young age, children are often dramatically affected by adverse events as their development and maturity have yet to flourish. It is known that children who suffer from abuse later develop PTSD or symptoms as well as other psychosis, depression, and anxiety. With experiencing such traumatic events, first line treatment often involves some form of psychotherapy. To date CBT has been the standard therapy for trauma associated mental health. However, some patients do not respond well to CBT. Therefore, clinicians need to be knowledgeable about the other various psychotherapies their healthcare facility offers. These include EMDR, CPT, and Exposure Therapy, to name a few.

Because mental health bestows such staggering statistics and is associated with other various comorbidities such as anxiety, mood or substance use disorders, aggressive and violent behaviors, especially if left untreated, it's imperative to the primary care provider to coordinate prompt, effective psychotherapy individualized to the patient. American and European studies suggest that anywhere from 14 to 67% of children have experienced at least one traumatic event throughout their life. Furthermore, about 13.4% of them go on to develop symptoms of PTSD (Diehle, J., Opmeer, B.C., Boer, F., Mannarino, A.P., & Lindauer, R.J., 2015).

In order to prevent the development of mental health associated co-morbidities, early psychotherapy is crucial. In 2009, 12% of youth ages 12 to 17, received mental health treatment primarily as an outpatient (Substance Abuse and Mental Health Services Administration, 2012). The rate of children within the US that suffer from depression has increased from 5.9% to 8.2% in just three years (from 2012 to 2015). Although the specific cause of the increase in depression is unknown, it's likely that a good percentage of them have been subjected to trauma. Furthermore, 76% of the youth within the US have either received insufficient treatment or no

treatment at all (Nguyen, T., 2018). Primary care is where mental health needs to start. Providers need to be aware of the statistics as well as the various psychotherapies their facility provides. This paper attempts to discover the effects of childhood trauma, evaluate the various types of psychotherapies used to treat such trauma, and compare them. What are the effects of Adverse Childhood Experiences (ACEs) and childhood trauma? What are the various types of psychotherapies commonly used to treat PTSD? In children that are victims of trauma and/or adults whom suffered from childhood maltreatment, is CBT, EMDR, CPT, or prolonged exposure the best therapy to treat their PTSD?

REVIEW OF LITERATURE

Various research was obtained and analyzed in an attempt to determine the psychological and physical effects of trauma on a child as well as the effect of ACEs on the adult, explain and detail the various psychotherapies used to treat PTSD in children or adults whom suffer from PTSD, and compare them while subsequently determining which one is more effective in the treatment of mental health disorders. A search was conducted using PubMed, PsychINFO, and Google Scholar databases. Only academic journals, journal articles, systematic reviews, and clinical trials all published within the last five years were included as resources. Search terms included: physical abuse, sexual abuse, childhood maltreatment, adverse childhood experiences, post-traumatic stress disorder, cognitive behavioral therapy, eye movement desensitization and reprocessing, psychotherapy, cognitive processing therapy and exposure therapy. Various articles and studies were obtained. Studies that included adults whom suffered from PTSD but it was not a direct result of an ACE were excluded. Studies that included trauma related to a motor vehicle accident or a firework disaster and such were also not included. Most of the research found with the adult subjects, included women whom suffered from sexual abuse.

Effects of trauma

Ivan Hill was a young boy subjected to mental and physical abuse by his father. At the tender age of seven, he witnessed his father shoot his mother in the face with a handgun. When he was just a baby, his father would place a heavy pillow over his head to drown out his crying. If he accidentally wet the bed, he was subjected to a whipping with his father's belt or a tree branch. By the age of nine, he was left at home with his siblings to fend for himself. His traumatic childhood led to his development of killer. At age 48, Hill was sentenced to life in prison for the slayings of nine women (Blankstein, 2006).

ACEs are stressful/traumatic events that occur during childhood. These include: neglect, physical, sexual or emotional abuse, domestic violence, and witnessing abuse of drugs and/or alcohol. These are only some of the types of trauma that have been shown to lead to an increased risk of the child developing comorbidities. Research shows that the timing in which the trauma is experienced correlates with the degree of health impairment. For example, from birth to about the age of five the brain is rapidly developing. The first postnatal synaptogenesis is associated with sensory processing, cognitive and social skills, as well as emotional regulation, owing to the alteration in development if an ACE occurs at this time. This developmental time is extremely vulnerable to environment inputs, especially stressors. The continued activation of the stress response system changes the way it responds to future stimuli. The chronicity of the stress can become toxic and is actually associated with an increase in activity with the stress response systems within the body. Increases in the stress response system produces an increase in cortisol production, reduced function of the immune system, and a marked increase in inflammatory cytokines. The dysregulation can lead to impulsive risky behavior, decreased cognitive skills, attention-deficit/hyperactivity disorder (ADHD), anxiety, depression, and developmental delay.

In fact, in an article published by the Journal of Developmental and Behavioral Pediatrics, children whom experienced three or more ACEs were 2.22 times more likely to have at least one physical and one developmental condition and 9.18 times more likely to have at least one mental and one developmental condition than children whom never experienced an ACE (Bright, M.A., & Thompson, L.A., 2017). Chronic childhood maltreatment also has a correlation with aggressive and violent behavior, personality disorders, child welfare and juvenile justice system involvement (Leenarts, L., Diehle, J., Doreleijers, T., Jansma, E., & Lindauer, R, 2013). The 4th Edition of the DSM-IV (Diagnostic and Statistical Manual) states that PTSD is the most common Axis I disorder in children that are victims of abuse with statistics ranging from 20% (PTSD only) to 53% (PTSD and complex PTSD)(Chard, 2005).

Cognitive Behavioral Therapy

CBT was developed by a psychologist named Andrew Beck in the 1960s. He described the term “automatic thoughts” as the thoughts developed within one’s mind that are based on emotion. Through identifying these thoughts and learning how to change them, he subsequently developed CBT. He further describes the importance of realizing that it is not the specific trauma that causes such negative thoughts, but rather meanings one gives them. Interestingly enough, Beck claims the association of these negative thoughts with the developmental state during childhood. Certain expectations and experiences that have occurred during a child’s life will likely set the course for how they will react to similar situations. Therefore, the majority of how a person feels is what the person thinks (Martin, B., 2016)

CBT is a mostly based on cognition and behaviors. The goal of the therapy is to decrease or eliminate the negative childhood emotions and behaviors while reprocessing and transforming the dysfunctional cognitions or thoughts about the traumatic event. Trauma focused CBT (TF-

CBT) is a little more detailed and will sometimes involve the parents, as long as they are not the abuser. The typical number of sessions is around 12-16 (Rodenburg, R., Benjamin, A., De Roos, C., Meijer, A.M., & Stams, G.J., 2009).

CBT is one psychotherapy that bestows extensive research, so much to the point that it has been deemed the “gold standard” for psychological therapy. Throughout the therapy session, behaviors and thoughts associated with the trauma are identified and modified. CBT has been shown to be particularly effective in treating patients whom suffered from ACEs. The damaging effects of the dysregulation within the stress response system can actually be reversed with CBT. Furthermore, CBT demonstrates a decrease in risky behaviors (Korotana, L.M., Dobson, K.S., Pusch, D., & Josephson, T., 2016).

Eye Movement Desensitization and Reprocessing

Although CBT has been the most researched and supported type of psychotherapy, Diehle, J. et al., claims that about 16-40% of children treated with CBT still meet diagnostic criteria for PTSD post treatment. Therefore, EMDR was developed as an alternative therapy. EMDR is a unique psychotherapy developed by psychologist Francine Shapiro in 1990. It originally was developed as a treatment for PTSD for adults. However, its use has grown and now is proving to be effective for children as well. The main concepts of EMDR include: psycho-education about the trauma, preparation of the target memory, desensitization of that specific memory, identifying various body sensations, and re-evaluating the target. The patients are asked to keep the target image of the memory in mind while also focusing on the distracting stimulus of the therapist’s finger moving back and forth. After so many sessions, the target should not produce distress for the patient any more (Diehle, J. et al., 2015).

EMDR typically involves a three pronged approach that includes: questions regarding the traumatic event in the past, the current triggers from the traumatic event that cause PTSD symptoms, and the formation of new thoughts about how to cope with the future disturbing times. At the first session of EMDR, the therapist will gain some knowledge about the traumatic event, depending on how much the patient longs to share. Then the therapist will ask the patient to formulate an image in their mind that represents the trauma. The patient is asked to explain the negative, dysfunctional thought about the trauma as well as form a new positive thought. They are also asked to rate this sensation on the Likert-scale using Subjective Units of Disturbance. A patient that scores their sensation as a zero would not be distressed by the trauma at all while a score of ten would indicate the worst imaginable distress. While the patient is focusing on the image, they are asked to “assess” their body and describe the way in which the traumatic image currently makes them feel. As the patient is focused on the sensation in which their body experiences while imagining the traumatic event, the therapist will provide an outside stimulus such as: moving their finger back and forth in front of the patient’s face, playing a series of audible tones, or tapping on the patient’s hands. The patient’s distress is constantly reevaluated using the Likert scale until the distressing traumatic event is scored at a zero (Rodenburg et al., 2009).

Cognitive Processing Therapy

CPT was developed by Resick and Schnicke in the late 1980’s for the treatment of victims of rape that still suffered from PTSD and depression. It is thought that symptoms of PTSD develop when the traumatic event cannot be cognitively integrated in to the individuals’ thought pattern. The basis of CPT is information processing of traumatic stress. The two main concepts in CPT include: 1. the exposure to the traumatic event or memory with disintegrating

the strong negative thoughts associated with that memory through homework, and 2. transforming the negative beliefs about safety, trust, power, esteem and intimacy into more positive ones (Chard, K., 2005). CPT is actually endorsed as the best practice for the treatment of PTSD by both the US Department of Veterans Affairs and Defense and the International Society of Traumatic Stress Studies. It typically consists of 12 sessions with the main goal of decreasing the patient's symptoms of PTSD, depression, avoidance, and helping them to improve their day to day life.

Exposure therapy

In the early 1990's, John Watson and Ivan Pavlov originally developed exposure therapy. Exposure therapy is another type of CBT that is specifically geared towards individuals that suffer from fear, such as PTSD. Throughout the therapy, the individual is continuously exposed to the traumatic memory that causes them distress. The ultimate goal of this therapy is to help to patient feel safe in the environment of the trauma. The therapist will gradually increase the "picture" of the traumatic memory, while teaching the patient proper coping skills. The earliest example of prolonged exposure is when Pavlov conditioned his dog to salivate at the ring of a bell. In 1924, a women by the name of Mary Cover Jones further developed exposure therapy by changing the response of an unwanted thought. She subsequently implemented comfort food to condition a young boy to no longer fear rabbits. Today, exposure therapy can include imaginal exposure, in vivo exposure or virtual reality exposure. Imaginal exposure involves mentally forming an image of the trauma. In vivo exposure, the individual is actually exposed to the traumatic event, whether it be an object or a specific setting. Virtual reality exposure is a mixture of the two. As one can imagine, this specific therapy has some questioning the necessity and

efficacy, especially with children. Some question if the direct exposure to the trauma exacerbates the fear (Goodtherapy.org, 2015).

Foa, McLean, Capaldi, & Rosenfield claim prolonged Exposure Therapy is the most studied evidence-based treatment for adults suffering from PTSD. However, it has not been widely used with children due to the concern that it may further worsen their PTSD symptoms and children likely do not have the proper coping skills required before instillation of exposure therapy (Foa, E.B., McLean, C.P, Capaldi, S., & Rosenfield, D., 2013).

Comparing psychotherapies with children

A Cochrane review journal analyzed 758 children ages three to eighteen years from 14 different studies and compared their results based on the therapy in which they received. The studies included Exposure therapy, CBT, EMDR, as well as a couple other types of therapies. With each type of therapy improvement was seen in symptoms of PTSD (n=271, -0.90, 95% CI -1.24 to -0.42), anxiety (n=91, -0.57, 95% CI -1.00 to -0.13), and depression (n=156, -0.74, 95% CI -1.11 to -0.36), when compared to the control group. Furthermore, the therapy with the most improvement in symptoms was CBT (n=49, OR 8.64, 95% CI 2.01 to 37.14). However, the sample size within this review is rather small (Gillies, D., Taylor, F., Gray, C., O'Brien, L., & D'Abrew, N., 2013).

In a RCT including 14 sexually abused Iranian girls, TF-CBT and EMDR were both found to be effective. However, EMDR was found to be more efficient (i.e. decreasing the number of sessions needed to achieve the same effect). The girls all received 12 sessions of either TF-CBT or EMDR. Reductions of post-traumatic stress symptoms (PTSS) were found with both therapies. Neither one was found to be significantly more effective than its counterpart.

It is important to note that this study failed to use expert TF-CBT counselors and suffered from a small sample size. Another study including 48 children ages eight to eighteen years were subjected to a maximum of eight 60 minute sessions of either TF-CBT or EMDR. The children's symptoms were assessed with the Clinician-Administered PTSD Scale for Children and Adolescents (CAPS-CA). This questionnaire has attained the role of the gold standard in the assessment of PTSD in children. The children's CAPS-CA scores improved 20 points with the implementation of both TF-CBT and EMDR. The study demonstrated a large effect size of 1.1 for TF-CBT and a medium effect size 0.72 for EMDR. The authors strategically omitted one child from the study statistics as she seemed to "skew the data" unfavorably. This study also noted that there was not a significant difference in length of therapy from TF-CBT to EMDR. Parents were also interviewed and assessed their children with standardized questionnaires. By the conclusion of this study, it was found that TF-CBT more positively effects the child's comorbid conditions than EMDR. A small sample size and a long recruitment time were a couple of the downfalls to this study. Although the therapists within this study were adequately trained, their experience differed which could possibly influence the results (Diehle, J. et al., 2015).

A unique study conducted within Mexico City found children that were subjected to living in the streets and having been victims of prior trauma and abuse to suffer from major health issues. One hundred children, ages 12 to 18, were involved in this study to assess the effects of CBT on traumatized children suffering from PTSD. Fifty-six of these children experienced sexual abuse, 47 were physically abused, 18 witnessed a violent event and 17 witnessed the death of a family member. The children were either randomly assigned to receive the CBT or they were waitlisted, meaning they did not receive treatment until a later time. The children that were assigned to receive the therapy completed 12 one hour sessions. The

children's symptoms were assessed before treatment, after treatment and three months post treatment. The group of children that were treated with CBT showed a significant improvement ($p < 0.001$) in symptoms and behavior as opposed to the waitlisted group. Furthermore, the three month post treatment assessment still showed benefits from the treatment. Although this study demonstrates positive results for CBT, the comparison was a waitlisted group. Therefore, the results cannot tell us if CBT is more effective than other psychotherapies. Also, these were children within a specific culture and region which may differ from other areas (Shein-Szydlo, J. et al., 2016).

One systematic review of children ages six to eighteen, whom were exposed to childhood maltreatment, found improvement of PTSD symptoms with the use of TF-CBT, CBT, and EMDR. A total of 33 studies were included. EMDR was shown to decrease memory-related distress and problem like behavior. This review agrees with some other studies in that EMDR requires a shorter amount of time for treatment. TF-CBT was proven to effective in reducing children's abuse related fear and general anxiety. The review also analyzed the effects of CPT and found a large effect size between pre and post treatment groups with this therapy. This review examined other psychotherapies, some of which involved the parents of the child, which can lead to biased results. However, the main conclusion of this review hypothesizes TF-CBT remains to be the most supported treatment option for children exposed to maltreatment (Leenarts, L. et al., 2013).

A meta-analysis, by Rodenburg, R. et al., that included seven studies with 109 children treated with EMDR and 100 children in a control group, found that EMDR was efficacious in treating children with PTSD. All of the children within the studies were ages 4-18 years old. EMDR produced a medium effect size of 0.52, $p < 0.001$ in the post-test analyses. This meta-

analysis also supports that EMDR is more efficient than CBT in that a fewer amount of sessions were associated with better outcomes. However, this study also lacks in sample size (Rodenburg, R. et al., 2009).

A randomized controlled trial observed 26 children that were treated with CBT while another 26 were treated with EMDR in an attempt to decipher which one was more effective at treating trauma related symptoms in children. All children had four sessions alone with four other sessions involving their parents. Both the parents and the children were questioned about stress disorder symptoms and behavioral problems within the child. It was determined that both treatment options were effective in reducing children's symptoms of post-traumatic stress, anxiety, depression, and behavioral problems. However, EMDR produced effects at a quicker rate, leading to decreased cost. The UCLA PTSD Reaction Index for the DSM-IV was implemented during this trial. This form allowed parents to assess the child's trauma exposure and PTSD symptoms. Prior to treatment, 17.3% of the patients met full criteria of PTSD while another 59.6% met criteria for partial PTSD. The post treatment test indicated that none of the participants met the criteria for full or partial PTSD anymore. The recruitment time was long, leading to possible changes in symptoms. Also a total of 14 patients dropped out during treatment, further decreasing the sample size. The parents of the children were also involved in this trial which is a different aspect and could highly influence the results (Roos, C. et al., 2011).

61 adolescent girls between the ages of thirteen and eighteen were involved in a study that implemented prolonged exposure and supportive counseling. The participants suffered from PTSD as a result of childhood sexual abuse. They were randomly assigned to either receive prolonged exposure therapy or supportive counseling. They were assessed with the Child PTSD Symptom Scale-Interview (CPSS-I). This assessment is part of the DSM-IV and subsequently

grades the individual's PTSD from either below threshold to extremely severe. The girls were assessed with this tool prior to and after treatment. The three month post-treatment results were superior in the prolonged exposure group when compared to the supportive therapy group ($p < 0.001$). The basis of this study was to prove that prolonged exposure is also effective for adolescence and not just adults. It is important to note that this study consisted of a small group of only female participants (McLean, C., Yeh, R., Rosenfield, D., & Foa, E., 2015).

In 2008, a review published their findings on psychological treatment for child and adolescent trauma exposure. It included 21 randomized controlled trials (RCTs) in which children were exposed to various types of trauma and subsequently treated with psychotherapy. The treatments were grouped by the type of treatment provided, whether the treatment was individual or in a group, and by the participants (child and parent vs just the child). Individual and group CBT as well as TF-CBT were all found to be *well-established*. CBT vs non-CBT treatment demonstrated more than double the effect size for PTSS (0.50 vs 0.19), depression symptoms (0.29 vs. 0.08), and externalizing behavioral problems (0.24 vs. 0.02). EMDR was found to be *probably efficacious*. Since 2008, an update to this review included 37 additional studies. The types of trauma experienced by the children within these studies included: sexual abuse, varying traumatic exposure, terrorism/war, physical abuse, family violence, natural disaster and death. Individual CBT was very similar to TF-CBT by focusing on imaginal and in vivo exposure. The average number of sessions was 13. Three of the six RCTs demonstrated a decrease in PTSS, PTSD diagnosis, and depression. However, in two of the six studies, CBT did not outperform the control group. In one of the trials, prolonged exposure showed a doubling in the effect size when compared to the control. Since the last review, three more RCTs focused on the efficacy of EMDR. The additional studies further support EMDR when compared to a wait

list control group. However, these results are limited by the small sample size and two of three EMDR RCTs actually integrated parts of CBT into their EMDR treatments. This likely skewed the data and made it difficult to differentiate between the effectiveness of each therapy. The update does remain consistent with the prior review in that CBT is still the recommended first-line treatment for child suffering from exposure to traumatic events (Dorsey, S. et al., 2016). For the purpose of this paper, the treatments that involved the parents, a group, or other types of therapy were not analyzed.

A Cochrane Systematic Review involved 6,201 children in 51 trials. These children were exposed to a range of trauma including: sexual abuse, war, community violence, physical trauma, and interpersonal violence. The children were treated with EMDR, CBT, and Exposure Therapy as well as other various psychotherapies. All therapies were compared to control group. The post treatment likelihood of the child being diagnosed with PTSD was significantly reduced in the short term when comparing every therapy to the wait list (OR 0.51, 95% CI 0.34 to 0.77). However, post treatment scores for anxiety, depression and behavior were not significantly different than pre-treatment scores. CBT and EMDR were found to be equivalent in reducing the diagnosis of PTSD. It is important to note that this review compared every therapy to a wait list instead of comparing therapies to each other. Therefore, it cannot be determined which therapy is more efficacious. Also of note, the authors point out the lack of quality within the included studies, leading to a limitation in the review (Gillies, D. et al., 2016).

One study attempted to compare the effects of prolonged exposure therapy to a supportive counseling control group. Sixty one adolescents were randomly assigned to either receive prolonged exposure therapy (specific to adolescents) or supportive counseling. Participants received at least eight treatment sessions. The results indicated that both groups

demonstrated significant improvement of PTSD and depression symptoms and some even improved to the point in which they no longer fulfilled the diagnosis of PTSD. However, greater improvement was noticed with the group that received prolonged exposure therapy (difference in improvement, 7.5; 95% CI, 2.5-12.5). These findings were consistent for 12 months post treatment. The counselors in this study had no prior experience with the prolonged exposure therapy and once again the sample size was rather small (Foa, E.B., McLean, C.P, Capaldi, S., & Rosenfield, D., 2013).

One randomized controlled trial attempted to compare the efficacy of prolonged exposure therapy and active control time-limited dynamic therapy in the treatment of adolescents with PTSD. This study involved thirty eight adolescents, ages 12 to 18. They were randomly assigned to either group. Of the beginning thirty eight adolescents, eight dropped out. The children were assessed with the CPSS. This scale is a self-reportable questionnaire that includes 17 different symptoms of PTSD. The group that received the prolonged exposure therapy decreased their CPSS scores by 19.4 points, while the other group only decreased their scores by 10.8. As a whole, the depression symptoms were significantly improved from pre to post treatment assessments with a difference in scores from 17.82 to 7.37. Post treatment, 64% of the group treated with prolonged exposure no longer met the criteria for PTSD. This study does a great job at comparing a therapy that directly confronts the trauma (i.e. prolonged exposure) and a therapy and attempts to avoid directly addressing the trauma it (i.e. time-limited dynamic therapy). The study also suffered from a small sample size (Gilboa-Schechtman, E., Foa, E., Shafran, N., Aderka, I., Powers, M., Rachamim, L., ...Apter, A., 2010).

Comparing psychotherapies for adults suffering from ACEs

A total of fifty three adult females were included in a study to assess the effectiveness of CPT on survivors of childhood sexual assault. This study involved 17 weeks of treatment. 28 of the women were assigned to the treatment group and received the CPT, while the other 25 women were assigned into the minimal-attention group. Assessments of symptoms were taken prior to, right after, three months after, and one year post treatment. Prior to treatment, all of the fifty three women met the criteria to be diagnosed with PTSD. However, the post-treatment assessments indicated that only two of the women whom received treatment with CPT met the criteria for diagnosis while all of the minimal-attention participants still met the criteria. Other factors influencing PTSD were assessed such as issues of safety, trust, power, esteem, and intimacy. All of these topics were significantly improved upon with the group receiving CPT. Although it may seem trivial, participants were paid \$50 for each assessment. This could have contributed to biased results. Also, the participants only included women and therefore cannot be generalized to the public population (Owens, G., Pike, J., & Chard, K., 2001).

121 women were randomly assigned into different therapy groups within a study. 41 women received treatment with CPT, 40 received prolonged-exposure therapy, while another 40 made up the wait-list control group. The CPT group underwent 12 sessions while the prolonged exposure group only went through nine. The wait list group was later randomly assigned to either type of therapy. Results indicated that both the scores from the Beck Depression Inventory questionnaire and the Clinician-Administered PTSD scale significantly decreased from prior to treatment to post treatment assessment in the active therapy groups. Other symptoms such as dissociation, impaired self-reference, and dysfunctional sexual behavior also showed improvement with treatment. However, this study did not show any difference between CPT and prolonged-exposure therapy (Resick, P.A., Nishith, P., & Griffen, M.G., 2003).

A pilot study conducted by Amy House consisted of six women whom all experienced sexual abuse as children. The abuser was either their biological father, step father, or other male family member. The women completed anywhere from one to seven individual CPT therapy sessions that were modified towards sexual abuse. Prior to treatment, five out of the six met the criteria for PTSD according to the DSM-IV. Post treatment only one woman remained with the diagnosis of PTSD. Depression scores also decreased post treatment. Prior to treatment three of the six women met criteria for severe depression. Post treatment, two of those women improved to only having mild depression. This study consisted of a very small sample size and one of the therapists was the author of the study, possibly contributing to a biased result. However, the author mentions that one of the dropouts within this study attempted to commit suicide during treatment. This presents a confusing situation as one cannot evaluate whether the treatment worsened her symptoms or she was dealing with a much larger psychosis than mentioned. The author concludes with mentioning the limitations of this study and that the data be used as a preliminary consideration only. It is also important to take in to consideration that the therapy was not assessed against another type of therapy or a control group (House, A.S., 2006).

In a journal article by Chard, seventy one women were randomly assigned to either the treatment group or the minimal attention wait-listed group. These women were survivors of childhood sexual abuse. In order to be part of the study, they had to have the diagnosis of PTSD, have experienced at least one sexual abuse encounter, and still have one memory from the abuse. The average age of onset of abuse was 6.4 years. The treatment group received 17 weeks of CPT that was geared specifically towards sexually abused/rape victims. The wait listed group received a five to ten minute phone call every week for the 17 weeks. They were given brief supportive therapy. Results showed a significant improvement of the patients' PTSD, depression, and

dissociation with the group treated with CPT ($p < 0.001$), whereas the wait-listed group did not show significant change. These results lasted even three months and one year post treatment, proving that the therapy was effective in keeping the patients' mental state stable. This study supports the use of CPT as an alternative therapy for patients that suffer from the effects of sexual abuse. The study claims that none of the participants reported a worsening of symptoms. One downfall to this study is that some participants were taking mental health medication which could have greatly impacted the results. A small sample size was yet another issue (Chard, 2005).

A meta-analysis by Ehring, T. et al., examined various psychological interventions used to treat PTSD in adults who suffered from childhood trauma. Sixteen randomized controlled trials were evaluated. The psychological therapies included EMDR, TF-CBT, and non-trauma focused CBT. All therapies were compared to a wait listed group. The active psychotherapies demonstrated a large pre to post treatment effect size ($g = 1.00$, 95% CI 0.87-1.14). The results favored the trauma focused therapies but did not differentiate a superior therapy between CBT and EMDR. It is important to note that the interventions included in the various studies was rather heterogeneous (Ehring, T. et al., 2014).

A pilot study including 22 adults suffering from PTSD, attempted to compare EMDR and prolonged exposure in the treatment of their PTSD. The participants' trauma included: rape, molestation, death of a family member, and physical assault. They were assessed at baseline, after six sessions and three months after completing the treatment. Significant reductions were noted in PTSD symptoms with both the EMDR ($p = 0.008$) and the prolonged exposure ($p = 0.002$) group. It was determined that both therapies were effective in treating PTSD, yet neither therapy was considered more effective than the other. There was also a significant reduction in

depression scores with both therapies producing a p score of 0.001. The assessments did not differ significantly from after the six sessions to the three month post treatment. It is important to note that EMDR experienced a lower dropout rate as opposed to prolonged exposure. This study is also subjected to small sample size and the assessments were self-report (Ironson, G., Freund, B., Strauss, J., & Williams, J., 2002).

A met-analytic study by Seidler & Wager compared the efficacy of EMDR and TF-CBT in the treatment of PTSD in adults. Seven studies consisting of 209 adults were included in the analysis. The results did not statistically differ between EMDR and TF-CBT in the improvement of PTSD. However, EMDR demonstrated significant improvement of depression when compared to CBT (ES 0.40, 95% CI: 0.05, 0.76). The authors state that the included studies could have bias and therefore they caution the validity of the reports (Seidler, G. & Wager, F., 2006).

DISCUSSION

The research supports that children whom experience trauma are likely bound to develop mental health issues such as PTSD as well as other various comorbidities if left untreated. In order to prevent the negative consequences of exposure to traumatic events, timely delivery of evidence-based psychological treatment is critical (Dorsey, 2017). However, it is imperative that future studies involving psychological therapies consist of a larger sample sizes. Also, the professionals that administer the therapy should be sufficiently trained and unbiased. Also, it seems as though it would be advantageous to further identify which type of therapy is more suitable to which specific type of trauma endured. With the proper information and statistics to support the implementation of psychotherapy, clinicians would be more likely to properly treat and/or refer their patients to receive the appropriate therapy and in turn prevent further disease progression.

What are the effects of Adverse Childhood Experiences (ACEs) and childhood trauma?

Research has greatly supported the association of childhood trauma/ACEs and subsequent mental and physical health disparities. Children whom experience neglect, physical abuse, sexual abuse, family death, domestic violence, and divorce are likely to develop anything from ADHD, anxiety, depression, PTSD, risky behaviors, or substance abuse disorders amount many other negative consequences.

What are the various types of psychotherapies commonly used to treat PTSD?

CBT is a psychotherapy that was developed by Andrew Beck. The purpose of CBT is to transform the negative emotional thoughts associated with trauma, into positive thoughts. Although Beck hypothesizes that the basis for these negative thoughts was likely childhood, he highlights the power one had to change these thought for the better. The behaviors and memories associated with the trauma are modified. CBT was found to be particularly helpful in treating adults that have suffered from ACEs. Kortana et al, claims that CBT actually reduces risky behaviors. If an indivial thinks in a positive way, they can experience life in a positive way.

Shapiro developed EMDR primarily for the treatment of adults suffering from PTSD. Until recently, it has not been tested on children. The basis of EMDR involves: education about the effect of trauma, forming the memory associated with the trauma, desensitizing that memory, identifying one's body reactions associated with the memory, and reevaluating the memory while implementing new positive thoughts. This therapy is unlike others in that it implements a distracting stimulus that the patient can focus on.

CPT was developed by Resick and Schnicke and is closely related to CBT. It primarily was developed for the treatment of rape victims suffering from PTSD. The main concept of CPT

is processing through information related to the traumatic event. Patients are sent home with “homework” that involves writings their personal account and memories associated with the trauma. The end goal of the therapy to is transform all the negative thoughts that coincide with the trauma. The patients, typically women, are evaluated on their sense of trust, safety, power, esteem and intimacy. It’s also important to note that the Department of Veterans Affairs and Defense have endorsed CPT as the specific therapy to treat PTSD.

Exposure therapy was developed was Watson and Palov to primarily treat the extreme fear that was associated with PTSD. This specific therapy does retain some skepticism, as it directly exposes the individual to the traumatic memory in which they are so fearful of. However, the continued exposure takes place in the therapist’s office, which is thought to be a “safe” environment. The therapist also teaches the patient how to cope with the distressing fear while also exposing them. The patient can either form the memory of the trauma in their mind, be directly exposed to an object or setting associated with the trauma, or both. Foa et al, actually claims that exposure therapy is the most studied, evidence-based therapy in the treatment of PTSD.

In children that are victims of trauma and/or adults whom suffered from childhood maltreatment, is CBT, EMDR, CPT, or prolonged exposure the best therapy to treat their PTSD?

The studies included within this paper, mostly support the use of CBT for the treatment of PTSD in children. It is closely followed by exposure therapy and EMDR. Gilles found that in 758 children, CBT was the most effective when comparing in to EMDR and exposure therapy and control groups. All the therapies however decreased the symptoms of PTSD, anxiety and depression. However, Diehle did not find a difference between TF-CBT and EMDR. Both

therapies decreased PTSD symptoms with TF-CBT producing a large effect size and EMDR producing a medium effect size. EMDR was found to be more efficient with reaching the same effects in a lesser amount of time. Shein compared CBT to a control group and found that it was more effective than the control group but this study did not compare CBT to another type of therapy. Therefore, one cannot determine which therapy is more efficacious. Another study included 33 studies comparing TF-CBT, CBT, EMDR, and CPT. TF-CBT was found to be the most effective although CPT produced a large effect size. Roos found no significant difference between EMDR and CBT, but also found EMDR to be more efficient. Roos also brings to mind the high dropout rates of patients with PTSD. One analysis of 21 studies comparing CBT, TF-CBT, and EMDR found no significant difference between the therapies. TF-CBT and CBT were found to be “well established” while EMDR was found to be “probably efficacious”.³⁷ additional studies were added to this analysis and again found not significant difference between CBT, prolonged exposure, TF-CBT, and EMDR. A huge study consisting of 6,201 children also found EMDR, CBT, and exposure therapy to be equivalent when compared to a control group.

Rodenburg found EMDR to be more effective when compared to a control group. EMDR was again found to be efficient and produced a medium effect size. Another study compared prolonged exposure to a supportive counseling group and found a statistical difference with the prolonged exposure group. The last study included in this paper, compared prolonged exposure to a control group that received dynamic therapy. Once again prolonged exposure was found to be more effective in the treatment of children with PTSD.

The studies that included adults suffering from ACEs mostly agreed with the implementation of CPT in the treatment of PTSD. EMDR, TF-CBT and prolonged exposure also did provide benefits. One study compared CPT with a control group for 53 women, with two

other studies consisted of six and seventy one women. All studies agreed that CPT was found to significantly improve the women's PTSD symptoms when compared to the control group. It is important to note that these studies compared one therapy to a control group and therefore one cannot fully determine which psychotherapy would be more efficacious. Another study compared both CPT and exposure therapy to control groups and found them to be more efficacious in the treatment of adults with PTSD. Ehrling compared EMDR, TF-CBT, and non-trauma CBT to a waitlist. They found EMDR and TF-CBT to improve PTSD significantly when compared to the waitlist but did not find a significant difference with the non-trauma CBT. 22 adults were involved in a study that compared EMDR and prolonged exposure. Both were found to be effective. Furthermore, EMDR produced a lower dropout rate. EMDR and TF-CBT were compared in a review consisting of 209 adults. Both were found to be effective in the treatment of PTSD.

In conclusion, the research supports EMDR, CBT, prolonged exposure, and CPT. A good portion of the studies compared the therapies directly to a control group and not to another type of therapy. Therefore, although the therapies may be efficacious, one is not able to decipher which one is more efficacious.

APPLICABILITY TO CLINICAL PRACTICE

Although the research seems to favor CBT as a first line treatment for children with PTSD, it is important to keep the option of EMDR as well as prolonged exposure therapy in mind. EMDR has proven to be effective in the treatment of PTSD and could be the only effective treatment for any individual patient. CPT also seems to be the most supported therapy for treatment of PTSD in adults suffering from an ACE. However, research does support the implementation of each therapy within this paper. While examining children who have been exposed to trauma, the clinician should thoroughly explain each treatment modality available to them. This will help the patient decide which therapy they may respond to more. It is also important that the therapist is certified to perform the psychotherapies. All patients should be screened for anxiety, trauma, and depression at every appointment to ensure providers are adequately treating the patient as a whole and not just physically. Another important factor is to question children while the parent is not in the exam room. This would prevent them from feeling fear to report that abuse is occurring. One study also suggested implementing a “record” of how many ACEs the child has experienced. This information would be as important as the child’s vaccination list. With implementation of the appropriate tracking and screening, a huge amount of comorbidities, which in turn leads to a huge amount of healthcare dollars, could be prevented. Perhaps if individuals like Ivan Hill were treated with psychotherapy at a young age, they wouldn’t develop such profound mental health issues.

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