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Melinda Jones
Pacific University

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The Use of Exposure Therapy for Patients with PTSD or a History of Trauma

Abstract

Despite popular clinician opinion to the possible harmful effects of exposure therapy, research has continued to support the use of exposure therapy for patients with PTSD or a history of trauma. This study utilizes empirical studies of exposure therapy and those diagnosed with PTSD to analyze the rate of participant attrition and adverse events. Similarly, it utilizes small semi-structured interviews with clinicians in 2 county areas within Oregon to determine how often clinicians who specialize in trauma or PTSD are using exposure therapy in their practice. Results showed that, out of 19 research studies or meta-analyses included, an attrition rate of 0-54% was found, with only 4 of these studies showing an attrition rate of less than 17%. One study was conducted in a clinical setting that found only 32 of 115 participants completed treatment, garnering a success or completion rate of under 28%. The majority of these patients (58%) dropped out of treatment after receiving information about how exposure therapy would work; of the remaining 48 patients willing to participate, 28% dropped out before completing treatment. Clinician interviews illustrated that negative perceptions of exposure therapy made clinicians hesitant to utilize this treatment with their patients. Clinicians argued that exposure therapy could retraumatize patients, cause an increase in symptomatology, cause serious adverse events in patients, and increase patient withdrawal from treatment.

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Lisa R. Christiansen, PsyD, Chair

Jennifer Antick, PhD, Interim Dean

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Despite popular clinician opinion to the possible harmful effects of exposure therapy, research has continued to support the use of exposure therapy for patients with PTSD or a history of trauma. This study utilizes empirical studies of exposure therapy and those diagnosed with PTSD to analyze the rate of participant attrition and adverse events. Similarly, it utilizes small semi-structured interviews with clinicians in 2 county areas within Oregon to determine how often clinicians who specialize in trauma or PTSD are using exposure therapy in their practice. Results showed that, out of 19 research studies or meta-analyses included, an attrition rate of 0-54% was found, with only 4 of these studies showing an attrition rate of less than 17%. One study was conducted in a clinical setting that found only 32 of 115 participants completed treatment, garnering a success or completion rate of under 28%. The majority of these patients (58%) dropped out of treatment after receiving information about how exposure therapy would work; of the remaining 48 patients willing to participate, 28% dropped out before completing treatment. Clinician interviews illustrated that negative perceptions of exposure therapy made clinicians hesitant to utilize this treatment with their patients. Clinicians argued that exposure therapy could retraumatize patients, cause an increase in symptomatology, cause serious adverse events in patients, and increase patient withdrawal from treatment.

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The Use of Exposure Therapy for Patients with PTSD or a History of Trauma

Introduction

Post-Traumatic Stress Disorder (PTSD) is a life altering and debilitating disorder that affects a large portion of the population, especially those that work as first responders, military personnel, and women (Barrera, 2012). According to the National Comorbidity Survey Replication (NCS- R; 2008), lifetime prevalence of PTSD in the United States is approximately 3.6% for men and 9.7% for women. Prevalence rates increase among veteran populations and vary drastically depending on the conflict or war that occurred during the individual's service: approximately 30.9% of men and 26.9% of women who served in the Vietnam war were given a diagnosis of PTSD at some point following their service, and approximately 13.8% of veterans who served in the post-9/11 conflicts Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF) have so far been diagnosed with PTSD (NCS-R, 2008). Along with the common symptoms of PTSD—nightmares, flashbacks, negative affect, irritability, aggression, heightened startle response, hypervigilance, and difficulty concentrating—patients with PTSD often have comorbid conditions, in which their PTSD is coupled with other issues, such as depression and substance abuse. These comorbid conditions take an already serious and dangerous disease and escalate it to an often-critical state (McLean & Foa, 2014).

With the high prevalence rates and extreme symptomatology of PTSD, it is increasingly important to find effective treatments for all those suffering from this disorder, those with comorbid disorders, repeated or acute trauma, and patients of all ages. In recent years there has been a push from researchers for therapists to use exposure therapy with these populations. Unfortunately, there are many barriers to therapists choosing to utilize exposure therapy in the clinical setting. Although researchers support the use of exposure therapy for patients with

PTSD, they often find high attrition rates among experimental participants (Goetter et al., 2015; Kemp, 2016), as well as negative attitudes about the treatment's effectiveness among therapists (Ruzek et al., 2014; Van Minnen, Hendriks, & Olff, 2010). The purpose of this analysis is to determine therapists' attitudes towards exposure therapy, learn what impacts their decision to use exposure therapy, and most importantly, discover when and why there are incidents of high attrition or lack of success in clinical and research settings.

Exposure Therapy

Exposure therapy is a form of Cognitive Behavioral Therapy that works to address an individual's fears, anxieties, and phobias by having the patient confront specific situations that are creating the fear or anxiety (American Psychological Association [APA], 2018). Typically, patients who experience severe fear and anxiety develop avoidance behaviors that can extend the life of the fear and exacerbate the psychological disorder. Exposure therapy aims to address these avoidance behaviors by creating a safe environment in which to steadily expose the patient to the fear inducing stimuli. The goal is that, over time, the stimuli's effect on physiological and psychological stimulation decreases; thus, the patient will be able to face the fear-inducing stimuli in the real world without experiencing any adverse effects. Research has shown exposure therapy to be an efficient treatment for several different psychological and emotional disorders, including generalized and social anxiety disorder, phobias, obsessive compulsive disorder, and PTSD (APA, 2018).

According to the American Psychological Association (2018), there are four different styles and three different paces that can be used in exposure therapy, and a therapist should work with the patient to make the determination of which type of exposure to use based on the specific needs of the patient. The different styles include:

- 1) Virtual reality exposure, in which the patient is exposed to the fear inducing stimuli or situation via the use of virtual reality technology. This therapy is an option when real life exposure is not realistic or possible.
- 2) In Vivo exposure, in which the patient is exposed to the fear inducing stimuli or situation in real life environments. This can be as simple as someone who has a fear of crowds, willingly going to a crowded supermarket, or town event.
- 3) Interoceptive exposure, in which the patient is exposed to physiological stimuli, such as increased heart rate, to understand that the sensation is not harmful and doesn't need to be feared by the patient.
- 4) Imaginal exposure, in which the patient is exposed to the fear inducing stimuli or situation by vividly imagining the stimuli or situation and describing the encounter and the emotional phases of the interaction. This would include someone describing a traumatic event that happened to them from start to finish, while the therapist checks in to ask about anxiety levels and emotions.

The therapist should work with the patient to determine the best style for the individual's treatment needs. This will depend on the type of psychological or emotional disorder that the patient has, the attitudes or beliefs of the patient, and the type of traumatic event experienced or the fearful stimuli the patient avoids.

The therapist will also use these factors to determine the appropriate pace at which the sessions should progress. The different paces (APA, 2018) include,

- 1) Systematic desensitization, in which the exposure is combined with relaxation to help the patient cope with the stress of the exposure, as well as help the patient associate the stimuli with relaxation instead of panic.

- 2) Flooding, in which the therapist determines a hierarchical scale of fear-inducing stimuli or situations, with the most fear-inducing at the top and the least on the bottom. Using this hierarchical scale, the therapist begins exposure with the stimuli that produces the biggest fear response to the patient. The idea of flooding is that once the patient deals with the most fearful or anxiety provoking stimuli, exposure to all remaining stimuli will become easier.
- 3) Graded exposure also uses a hierarchical scale for organizing the fear or anxiety-inducing stimuli, but with graded exposure the patient is first exposed to moderate fear or anxiety-producing stimuli and works up to the highest fear producing stimuli. The idea of graded exposure is that the patient will have time to experience success with moderate stimuli before facing the most intense stimuli.

When the correct exposure style and pace for an individual client is utilized, research shows that it can be effective in helping patients with several aspects of their disorder, by decreasing the fear response when encountering specific stimuli, weakening learned behaviors towards these stimuli, creating self-efficacy and confidence in facing fearful stimuli, and learning to attach realistic beliefs to previously fearful stimuli (APA, 2018). Although exposure therapy has been shown to help patients with specific psychological and emotional disorders, many therapists and researchers argue there is a need for well-trained specialists in the use of exposure therapy, since exposure therapy has the potential to cause adverse effects in the patient if incorrectly applied (Grohol, 2018).

Researchers argue that the misuse of exposure therapy can cause serious adverse effects for patients and urge therapists to receive proper training and follow strict protocols during treatment to ensure a reduced risk of adverse effects for patients (Grohol, 2018). As facing fearful stimuli

and reliving harmful or traumatic events can cause an increase in patient symptomatology and has the potential to retraumatize the patient, therapists should be constantly checking in with the patient to make sure the patient is aware of their options and ability to withdraw or slow down treatment at any time (Grohol, 2018).

Therapist Attitudes

Recent research shows that the therapist's attitude toward the effectiveness of exposure therapy can influence when exposure therapy is used with patients, as well as the outcome of the exposure treatment. A study conducted by Van Minnen et al. (2010) looking at when therapists used imaginal exposure therapy (IE) for patients with PTSD found that therapists underutilized IE treatment because of lack of effective training or confidence in their ability to perform the treatment. Similarly, the therapist's attitude toward the effectiveness of IE treatment, including their fears about high dropout rates and increased symptomatology during treatment, negatively impacted a therapist's decision to use IE on patients presenting with PTSD. Researchers also found that therapists were considerably more likely to prescribe medications rather than use IE treatment when patients had comorbid issues such as depression (Van Minnen et al., 2010).

Consistent with research about IE treatment, researchers found that therapists' perceptions of and attitudes towards the use of prolonged exposure therapy (PE) significantly impacted whether those therapists would use PE for patients with PTSD in their practice (Ruzek et al., 2014). It was determined that, even after receiving training on the use of PE from Veteran's Affairs, many therapists had negative attitudes towards the efficacy of PE because of the possible adverse effects to the patient compared to other treatment modalities, such as an increase in patient symptomatology and increased dropout rates. Similarly, researchers determined that therapists' prior experience and theoretical orientation significantly determined

their attitudes toward the use of PE for their patients. Psychologists and therapists with previous experience in PTSD treatment facilities or practicing from a cognitive behavioral therapy (CBT) orientation were more likely to use PE than those from other orientations and backgrounds (Ruzek et al., 2014).

While a lack of proper and effective training seems to be a deterrent to the use of exposure therapy in clinical practices for patients with PTSD, the research suggests that the training by itself does not necessarily result in an increase in the use of exposure therapy among therapists. Research by Schuster (2014) suggests that standard training with the addition of training information about the specific benefits and success of exposure therapy in treating severe symptoms of PTSD may help reduce negative attitudes towards the use of exposure therapy. This additional information should focus specifically on altering the negative perceptions of and attitudes towards exposure therapy by therapists (Schuster, 2014).

Research demonstrates the sensitive nature of exposure therapy and its possibility to retraumatize the patient or exacerbate their symptomatology. The use of undertrained therapists or therapists that lack the confidence in their ability to perform exposure therapy drastically increases the risk of harm to the patient when using exposure therapy in a clinical setting (Grohol, 2018). Therefore, lack of proper training could be a serious barrier to the effectiveness of the use of exposure therapy for patients diagnosed with PTSD.

Attrition Rates

A meta-analysis by Goetter et al. (2015) attempted to analyze why there is a continued underutilization of psychological treatment for soldiers from the U.S. Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF), and Operation New Dawn (OND). With many soldiers returning from combat with differing levels of PTSD, and many different psychosocial

PTSD interventions available, researchers wanted to determine why so many of these soldiers went untreated, either from dropping out of treatment or from not attempting to receive treatment. To do this, researchers Goetter et al. (2015) examined a total of 788 studies of different psychosocial PTSD interventions with military personnel or veterans to determine overall rates of attrition, adverse events, and any differences between individuals and treatments that are successful and those that are not. Researchers found that attrition rates among patients diagnosed with PTSD vary widely, ranging from 0.5% to 78%, with an average pooled attrition rate of 36% (Goetter et al., 2015). Several studies have attempted to determine the causes of attrition among those receiving exposure therapy, and many factors have been identified for further study, including treatment type (exposure therapy vs non-exposure therapy), setting type (clinical vs research), diagnostic differences (singular diagnosis vs comorbid diagnosis), environmental factors (accessibility and transportation), individual factors (age, gender, comorbid diagnosis), and treatment format (group vs individual). Most studies utilized a systematic review and meta-analytic design to determine differences in attrition rates along these factors, yielding mixed findings.

Goetter et al. (2015) explores a multitude of factors that may affect the rate of attrition in therapy, such as treatment setting, format, modality, type, participant age, diagnosis, severity of symptomology, personality type, attitude towards treatment, and social support. This research found that treatment format, individual factors, and environmental factors were significant contributors to participant dropout. Consistent with other research, this meta-analysis did not find significant attrition differences between patients with a singular diagnosis of PTSD and those with comorbid diagnoses of PTSD and substance abuse; nor did they identify a significant difference between treatment modalities (in-person or via telemedicine), and treatment type

(exposure vs. non-exposure; Goetter et al., 2015). This does not necessarily mean that there is no difference between these factors, but that there are moderating factors that have not yet been fully identified.

Although treatment setting (clinical vs research) did not yield significant findings ($p = .07$), there was a drastic difference found between the two, with clinical settings yielding a higher dropout rate (42%) than research settings (28%; Goetter et al., 2015). Research did find significant results, however, among many of the other factors studied. This meta-analysis showed significant differences in dropout rates between treatment format, with those receiving individual treatment showing a lower rate of dropout (31.1%) than those in receiving treatment in a group (54.4%). This suggests that treatment of PTSD may be more effective when completed on an individual level.

After analyzing each study separately, research indicated individual factors that could also account for high attrition. Researchers found age to be a significant factor to attrition, with patients who were younger showing higher attrition rates compared to those who were older adults. Similarly, patients' employment status (with unemployment leading to higher dropout rates), marital status (with those identified as unmarried showing higher dropout rates), disability status (with those receiving disability services showing higher dropout rates), severity of symptomatology (with those showing more severe symptoms of PTSD showing higher dropout rates), and patients that identified as being introverted and having little social support showing higher dropout rates than their counterparts (Goetter et al., 2015). With the vast number of individual factors contributing to the high attrition rates among this population, more research will need to be conducted to ensure the right treatment is being pursued for the patient. As exposure therapy can be harmful to the patient, especially one who has individual factors that

make them unsuitable to handle the intensity of exposure therapy, extensive knowledge of the patient will be necessary before beginning treatment.

A recent study by Kemp (2016) analyzed significant differences between attrition rates for exposure therapy and cognitive behavioral therapy (CBT) among patients diagnosed with PTSD. Kemp originally hypothesized that treatment styles and factors would be a significant indicator of dropout rates among patients, with exposure therapy showing significantly higher rates of dropout than the cognitive behavioral group (Kemp, 2016). This hypothesis was based on the belief that exposure therapy has the potential for increasing symptomatology in patients and can be very abrasive to the patient, whereas CBT is known to be a subtler form of treatment. Contrary to this hypothesis, Kemp (2016) found no significant differences in attrition rates between the two treatment types, and adverse experience in treatment only accounted for a very small amount of attrition differences. Instead, it was determined that the factors leading to attrition were based on environmental factors such as accessibility to treatment, transportation, and scheduling conflicts (Kemp, 2016).

While this research illustrates that environmental and individual factors may play more of a role in attrition rates than treatment type, more research is needed to fully understand what the differences are between those who complete treatment and those who drop out of treatment.

Purpose of Current Study

Previous research on the use of exposure therapy with patients that have a diagnosis of PTSD or a history of trauma has yielded mixed results. While therapists tend to argue that the use of exposure therapy with this population creates further barriers to a patient's success in treatment, the research so far has been unclear on the issue. Several researchers have identified individual, environmental, and setting factors to be a determining factor to the effectiveness of

exposure therapy; while others argue that the therapy type itself is to blame for high rates of attrition and adverse events in patients. While researchers argue that exposure therapy should be utilized throughout clinics in the United States, many therapists are resistant to using it within their practice. This study seeks to use empirical studies to determine if exposure therapy leads to a high rate of attrition and/or adverse events in patients diagnosed with PTSD or with a history of trauma. Second, this study seeks to utilize perceptions and views of local trauma therapists to determine the rate at which exposure therapy is being used in a clinical setting and any barriers that have interfered with a patient's treatment.

Method

This study utilized both a qualitative and quantitative approach to determine factors contributing to the overall attrition and failure of exposure therapy when used with patients diagnosed with PTSD. To understand this issue from a quantitative approach, primary studies and meta-analyses meeting search requirements were reviewed to determine the overall rates of attrition and adverse events within experimental studies and any identified reasoning for the patient withdrawal. To understand this issue from a qualitative approach, trauma and PTSD specialized therapists in two metropolitan counties within Oregon were contacted and briefly interviewed regarding their use and perceptions of exposure therapy.

Quantitative Evaluation

Several online websites, databases, dissertations, and journals were used to search for studies that would yield useful results for this analysis: Psych Info, Ovid, Psychology Collection, Psychology Database, Google Scholar, Notre Dame de Namur, Journal of Psychology, Journal of Traumatic Stress, Veterans' Affairs, and the American Psychological Association. Search terms were used to ensure a wide scope of studies would be found. These terms included PTSD,

trauma, exposure therapy, prolonged exposure, imaginal exposure, virtual reality, attrition, dropout, failure rates, stress, and military stress. Only studies that specifically looked at the use of exposure therapy for patients that have either been diagnosed with PTSD or have a history of trauma were included in this study. These studies were also required to have information about attrition rates, preferably with information about the reasons behind patient withdrawal from the study. Therefore, exclusion criteria included studies that did not disclose information about attrition, either rates or reason, and those that did not specifically deal with patients diagnosed with PTSD or a history of trauma. No restrictions were set regarding between groups or within group studies, if the attrition rate was specified for those receiving exposure treatment.

A total of 48 empirical studies and meta-analyses were found in the database search; these studies were analyzed to determine if rates of attrition and/or adverse events were reported. Of the 48 studies, 20 were identified as meeting the criteria necessary for inclusion in this study. Of those 20 studies, some only reported the number of participants that began treatment and those that completed treatment, while others reported percentages and reasoning for attrition and types of adverse events. Because of this variability, attrition rates were recorded as a simple percentage. Percentages of attrition and/or adverse events were recorded for each study, along with any possible moderating factors that were identified within the studies.

Qualitative Evaluation

Participants. Participants included 26 trauma therapists in two metropolitan counties within Oregon who treat patients using CBT therapies. There were no limitations to training or education, as long as the individual was a licensed mental health professional. Participants were found using internet search tools for trauma therapists within the counties of interest. A recruitment email was sent out to approximately 150 therapists asking for their participation in

this project. Any therapist that did not respond was given a follow-up phone call attempting to speak with them personally or to leave a personalized voicemail message. Of the original 150 therapists emailed, 85 had contact phone numbers available. After calling all 85 phone numbers, 26 answered or responded to the personalized voice mail message, 35 were disconnected phone numbers, and the remainder did not answer or respond to phone call attempts.

Interview. Clinical responses were analyzed via a small semi-structured interview. This interview included asking the trauma/PTSD specialized clinician if they utilized exposure therapy with their patients. If a clinician responded yes, follow-up questions were asked about their experiences with the use of exposure therapy in a clinical setting. If a clinician responded “no”, follow-up questions were asked about their perceptions of exposure therapy and reasoning for not utilizing it in a clinical setting. These interviews were then analyzed to determine any themes that appeared across the different therapists.

Procedure. Clinicians were first invited to participate in this study through a recruitment email that explained the purpose of the study, and what participation in the study would require from the clinician. After receiving only one response from these emails, 85 follow-up recruitment phone calls were made. Voicemails were left with clinicians whose phone number was connected, informing the clinician of the caller’s identity, the purpose of the study, and what participation would require of the clinician. From these phone calls, 26 clinicians responded: 10 with yes or no responses to the question “do you utilize exposure therapy with patients diagnosed with PTSD or a history of trauma?”, and 16 who also included reasoning for their decision to use, or not use, exposure therapy with their patients. After collecting the information via over the phone interviews with clinicians and writing down their responses, responses were analyzed to determine any themes that appeared among the different clinicians.

Results

Quantitative Analysis: Attrition

Of the 20 studies examined, 3 were meta-analyses or multiple study reviews, 16 were research studies, and 1 was a review of exposure treatment in a real world clinical setting. The research studies show attrition rates ranging from 0 to 54%. Only four studies showed an attrition rate lower than 17%. Two studies by Ready and colleagues (2008, 2012), showed significantly low attrition rates. In the 2008 study, Ready and colleagues found an attrition rate of only 3%; in 2012, they found an attrition rate of 0%. These studies analyzed exposure therapy in a group setting for an average of 10 Veterans, both from Iraq and Vietnam. Researchers also found significant symptom reduction rates among these Veterans, between 81% and 54% reduction, suggesting that optimal results of exposure therapy for patients with PTSD or a history of trauma may be achieved in a group setting; rather than individual settings where attrition rates tend to be much higher (Ready et al., 2008, 2012). The third study conducted by Wolf and colleagues (2015), illustrated a completion rate of 100% for those receiving exposure therapy in an inpatient setting; while the study also showed an outpatient completion rate of only 46.3%. This study presents the possibility that setting may have a significant impact on patient attrition, with those in an inpatient setting completing exposure therapy at a much higher rate than those in outpatient care (Wolf et al., 2015). The fourth study conducted by Ruf and colleagues (2010) involved adolescent refugees that received exposure therapy in a group setting. Of 13 adolescents that began treatment, only one participant withdrew from treatment (8% attrition; Ruf et al., 2010). This study further supports the use of group therapy rather than individual therapy when using exposure therapy for patients diagnosed with PTSD. Interestingly, the findings cited within this

paragraph contradict Goetter et al.'s (2015) meta-analysis that suggested dropout rates were higher for those in group therapy.

Nine of these research studies showed an overall attrition rate of 20 to 30%. Of these studies, five compared exposure therapy to a control or waitlist group, whereas four of these studies compared exposure therapy to other forms of therapy, to analyze whether exposure therapy resulted in higher attrition than other effective therapies. Even those studies that had high numbers of participants showed high rates of attrition. A study by Allan, Gros, Myers, Korte, and Acierno (2016) recruited a total of 231 participants that met the criteria for PTSD and reported 171 participants completed treatment. That is an attrition rate of just over 26% (Allan et al., 2016). Other studies revealed similar attrition rates despite different population characteristics. Most of the studies on exposure therapy have focused on sexual assault survivors or military Veterans. One study, however, conducted by Reger et al. (2011) studied the use of exposure therapy on active duty military personnel. Of the 31 participants included, seven (23%) ended up dropping out before the study was completed. Fortunately, researchers also listed reasoning for patient dropout: 2 perceived there to be a poor match between their trauma memory and the exposure treatment, 2 were lost during follow-up, 1 was concerned about the impact of treatment on their medical administration process, 1 declined participation in expectation of negative emotional difficulties, and 1 reported that time demands for military work were interfering with treatment (Reger et al., 2011). This study illustrates that, while several factors may influence a participant's decision to discontinue treatment, patient perception or anticipation of treatment and treatment outcomes could significantly impact their willingness to try therapy.

Of all the research studies reviewed, the one that showed the greatest level of attrition was that conducted by Wolf and colleagues (2015), which showed an attrition rate of 54.7%.

Interestingly, both those who completed treatment and those who did not complete treatment showed a significant improvement in symptomatology on the PCL (95.5% and 40%, respectively) and on the BDI-II (90.5% and 40%, respectively). Unfortunately, this study illustrates an extremely high rate of attrition among participants as well as an increase in symptomatology among some participants: four participants showed an increase in symptoms on the PCL and four on the BDI-II (Wolf, 2015). This study further illustrates the need for clinicians and psychologists to wonder if exposure therapy, though effective, is an ethical treatment for patients with PTSD or a history of trauma.

Several studies that compared the use of exposure therapy to other effective treatment types for patients diagnosed with PTSD or that have a history of trauma showed strong evidence for the efficiency of both treatment types in reducing PTSD symptoms, but also showed high levels of attrition and adverse events in exposure groups. These studies were attempting to determine if exposure therapy is necessary to see a reduction of patient symptomatology. Out of the four studies reviewed, all showed comparable success rates in helping patients with PTSD symptom reduction among the two different therapy types; the exposure group, however, showed higher rates of attrition and some even experienced increased patient symptomatology. In a study by McLean, Su, Carpenter, and Foa (2015) that compared exposure therapy to Client Centered Therapy (CCT), the researchers found a significant reduction in PTSD and depressive symptomatology across both treatment types and relatively equal attrition rates after treatment began. Of the 90 participants who began in this study, 24% dropped out or were removed from the study prior to the start of treatment. Of those removed, 4 became actively suicidal, 3 became actively homicidal, 3 no longer met PTSD criteria, and 3 were living in unstable conditions that

were not conducive for successful completion of treatment. Psychiatric help was provided for those who were suicidal and homicidal (McLean et al., 2015).

A similar study conducted by Schnurr et al. (2007) analyzed differences in exposure therapy and present centered therapy in female Veterans. The study found significantly better improvement in patient symptomatology in the exposure group than the present centered therapy group (effect size = .27, $p = .03$) and those in the exposure group were more likely to achieve total remission of symptoms (15.6% vs 6.7%; Schnurr et al., 2007). Those in the exposure group, however, were also more likely to withdraw from therapy (38% vs 21%) and experience adverse events. There were five serious adverse events that occurred to participants in the exposure group reported in the findings: 4 patients required psychiatric hospitalizations, and 1 reported a therapy related suicide attempt (Schnurr et al., 2007). This study illustrates that, while exposure therapy was more successful in treating participant symptomatology than present focused therapy, it also led to a significant increase in attrition and serious negative psychological effects for some participants.

Researchers Markowitz and colleagues (2015) compared the use of exposure therapy to that of interpersonal psychotherapy (IPT) and found that overall remission rates were similar among the two treatment types (26% for exposure therapy vs 23% for interpersonal psychotherapy). Researchers also found that those in IPT completed treatment at a higher rate than those in the exposure group (85% vs 71%) and had a higher response rate (63% vs 47%) (Markowitz et al., 2015). The fourth study, conducted by McLay and colleagues (2017), examined the differences in virtual reality exposure therapy and controlled exposure therapy, a less intrusive and anxiety provoking form of exposure. Like other studies, there were significant reductions in PTSD symptomatology across both groups. There was, however, a greater rate of

attrition for those in the virtual reality exposure group than those in the controlled exposure group (23.5% vs 13%; McLay et al., 2017).

One of the biggest concerns for clinicians is that there is a disconnect between how patients respond to exposure therapy in a research setting compared to a clinical setting. Unfortunately, there is a lack of research into how exposure therapy is working in the clinic for patients with PTSD or a history of trauma. There was, however, one study that was included in this review by Zayfert et al. (2005) that examined how effective this treatment is in a clinical setting. Of the 115 patients that were asked to participate in exposure therapy, only 48 were willing to complete treatment (58% refusal or dropout rate). Researchers suggested that patient perception of the intensity of treatment affected their decision to proceed. Of the 48 that were willing to follow through with treatment, only 32 finished treatment (28% attrition rate; Zayfert et al., 2005). This study shows that there is a much higher rate of attrition for those in a clinical setting compared to those in a research setting. Researchers suggest this could be due to the definitional difference of treatment completion between the two settings: researchers define treatment completion as specific number of sessions; whereas clinicians define treatment completion occurring when a patient no longer meets diagnostic criteria for treatment (Zayfert et al., 2005). Regardless of the logical reasoning for the difference in success and attrition rates between researchers and clinicians using exposure therapy for patients with PTSD or a history of trauma, this difference needs to be analyzed further.

Quantitative Analysis: Symptom Exacerbation and Adverse Events

Although clinicians are increasingly concerned with the possibility of symptom exacerbation and adverse events occurring when using exposure therapy for patients diagnosed with PTSD or that have a history of traumatic events, most researchers are not reporting these

findings consistently. Of the 20 studies reviewed for this study only three research studies and one meta-analysis reported the percentage or type of symptom exacerbation or adverse events. Between 3.7 to 10% of the participants in these studies reported an increase in PTSD or depressive symptomology (Jayawickreme et al., 2014; McLean et al., 2015; Schottenbauer, Glass, Arnkoff, Tendick, & Gray, 2008; Wolf, 2015). With the debilitating and extreme symptomology that patients with PTSD already experience, any increase in symptoms could lead to severe and life threatening adverse events.

As we can see in several studies, these adverse events have been known to occur and have a serious negative effect on the participant who experiences them. First, it is important to understand that when patients are receiving treatment and experience an increase in symptoms, it can lead to the patient withdrawing from treatment. Once this occurs, the patient is unlikely to seek out any future therapy or assistance. While we are currently unable to determine the rate at which this occurs due to inconsistent reporting of attrition and attrition causes, it is important to understand this risk to the patient before beginning treatment. Second, a common adverse event that has been reported in the literature, is that of an escalation of symptoms leading to psychiatric hospitalization (Asukai, Saito, Tsuruta, Kishimoto, & Nishikawa, 2010; Schnurr et al., 2007; Schottenbauer et al., 2008). Third, and perhaps the most severe adverse event that has been reported in the literature, is therapy related suicide and/or homicide attempts (Asukai et al., 2010; Schnurr et al., 2007; Schottenbauer et al., 2008). While this event is only recorded in approximately one to three of all participants, it is a significant and severe event that requires acknowledgement. It is the severity of adverse events, rather than the number of them, that causes clinicians concern about the use of exposure therapy for patients with PTSD or a history of trauma.

Quantitative Analysis: Barriers to Treatment

Several of the studies reviewed offered reasoning for potential barriers to use of exposure therapy in a clinical setting for patients with PTSD or a history of trauma. One study showed age to be a significant moderator of successful treatment, with those who are older being more likely to complete exposure therapy (Allan et al., 2016). A meta-analysis offered four key things for clinicians to consider before choosing to use exposure therapy with a client such as: that PTSD is the primary presenting issue, there are no known safety issues or concerns, there are no comorbid issues that could impact therapy, and all pharmacotherapy before and during therapy are known (McLean & Foa, 2014). Another meta-analysis suggests that to produce optimal success rates for patients, the clinician must utilize both imaginal and in-vivo exposure (Schottenbauer et al., 2008). Researchers also suggest that a combination of treatments will not enhance treatment results or reduce dropout rates (Schottenbauer et al., 2008). Two studies find major depression to be a significant hinderance to the effectiveness of exposure therapy for patients with PTSD or a history of trauma. First, a study by Markowitz et al. (2015) found that patients with comorbid depression were nine times more likely to drop out of exposure treatments, with 50% of those who withdrew from treatment having major depression. Second, a clinical assessment of exposure therapy found that, of those who withdrew from treatment, 63% had major depressive disorder (Zayfert et al., 2005).

This clinical study also found other factors that led to higher dropout rates for patients. First, they found that patients experiencing higher levels of PTSD avoidance, arousal, PTSD severity, and impaired social functioning at intake, were much more likely to drop out of exposure treatments (Zayfert et al., 2005). Second, researchers also noted that those who dropped out of treatment were more likely to have a history of childhood trauma (66%), more social

phobia (42%), and were more likely to meet criteria for Borderline Personality Disorder (40%) (Zayfert et al., 2005). The factor of childhood trauma was also found to be a significant indicator of dropout rates for patients receiving exposure therapy in a meta-analysis by McLean & Foa (2014) along with sustained physical injury.

A final study by Joycox and Foa (1996) found three obstacles to effective exposure therapy for patients with PTSD or a history of trauma: extreme anger, emotional numbing, and overwhelming anxiety. First, researchers suggest that, while mild to moderate anger does not negatively impact treatment, extreme anger impedes the modification of the pathological threat element that is caused by the traumatic memory (Joycox & Foa, 1996). For the clinician to alter the memory or perception of the memory, they must first find a way to get around the extreme anger the patient has over the memory or event. Second, emotional numbing is a coping mechanism that many people use to avoid feeling the pain, fear, or other emotions caused by a specific memory. Because of this, treatment that involves reliving a traumatic experience that a patient has been avoiding exacerbates the coping mechanism of emotional numbing, which impedes emotional processing by blocking any real engagement with the traumatic event. Without such processing, the clinician is unable to reprogram the response to the traumatic event for the patient (Joycox & Foa, 1996). Third, patients who already experience extreme or overwhelming anxiety are more prone to experience this extreme anxiety when reliving the traumatic event. The issue with overwhelming anxiety during therapy is that it hinders the patient's sense of control while reliving the traumatic event. The purpose of exposure therapy is for the patient to modify their perception and response to the traumatic event by gaining control over the event that occurred. When the patient is unable to feel a sense of control during the

reliving process, they are more likely to be retraumatized rather than healed from the experience (Joycox & Foa, 1996).

All these factors should be analyzed prior to beginning treatment, as alternative treatment may be preferable for patients who exhibit these characteristics.

Qualitative Analysis: Therapist Interviews

After sending out 150 emails and making 85 phone calls, 26 clinicians responded with information about their use, or lack of use, of exposure therapy in their clinical practice and reasoning as to why they felt adversely to this type of therapy. Originally, this study sought to conduct interviews with therapists that specifically utilize this type of treatment to analyze the rate of attrition or adverse events in clinical settings; however, after speaking with clinicians, none were identified that chose to utilize exposure therapy with their patients. Of the 26 clinicians that responded, 16 provided reasoning for their decision to avoid the use of exposure therapy; while the other 10 simply stated that they do not utilize exposure therapy with their patients and declined to elaborate.

Four major themes emerged from the clinician interviews. First, clinicians argued that the use of exposure therapy was an unethical practice for patients who have a history of trauma or PTSD. Second, clinicians claimed to feel inadequately prepared or trained to use exposure therapy with an already vulnerable population. Third, clinicians feared that the use of exposure therapy may lead to a higher rate of patient dropout from treatment. Finally, some clinicians argued that they did not believe in the effectiveness of exposure therapy, and therefore had no interest in training materials or efficiency research.

Most clinicians interviewed made references to ethical concerns with the use of exposure therapy to patients who have a history of trauma or a diagnosis of PTSD. Clinicians argued that

exposure therapy requires you to retraumatize your patient in anticipation that this controlled form of trauma will help the patient reprogram the way they see or interpret the anxiety producing stimuli or the original traumatic event. Clinician 1 made the argument,

As mental health providers, we have the responsibility to create a safe environment for our clients to express themselves and work through any issues they are struggling with.

By placing the client in a position to be re-traumatized by the treatment that is supposed to help them, we are ignoring this responsibility.

Ten of the 16 clinicians who provided reasoning against use of exposure therapy made similar arguments, stating that clinicians have an ethical responsibility to do no harm to their patients, and that exposure therapy must cause harm or trauma to the patient before they can begin to help them. Clinicians argued that performing exposure therapy, specifically with this vulnerable population, goes against their ethical responsibilities and can lead to distrust between the patient and clinician.

Clinicians were concerned that, by using a treatment method that causes their patients to be retraumatized, patients will begin to distrust the clinician and the therapeutic process. This distrust can ultimately lead to patient withdrawal from treatment and hinder them from receiving other treatment modalities in the future. Clinician 6 stated,

It is my job, as a clinician, to not cause harm to my patient. Regardless of the treatment model used, the patient puts their trust in you [the clinician] to provide an effective treatment model that will be as noninvasive as possible. Since exposure therapy tends to be too intense for many patients, any form of trauma or increase in symptomatology that occurs from treatment has the potential to create distrust of the clinician and the treatment process. Once this trust is gone, it is seemingly impossible to regain.

Some clinicians argued that any distrust in the system or the clinician caused by issues with the treatment model can be healed, but to do so requires the willingness and cooperation of the client. Unfortunately, most argued that once the trust between clinician and patient is lost, the patient is rarely willing to come back to treatment or respond to follow-up attempts made by the clinician. Clinician 8 argues,

Even with providing proper explanations of the process of exposure therapy and possible negative effects of such treatment, most patients don't realize how intense treatment can be until they begin with the exposure sessions. This intensity can lead to patients fearing or losing faith in the treatment process and the clinician. Once the patient has decided that the treatment or clinician is not the right fit for them, they often never return for follow-up sessions, which typically means the patient will withdraw from seeking any further psychological help.

Clinicians heatedly stood by their concern for the ethical treatment of their patients and were concerned that no amount of preparation could fully prepare them for an intense and abrasive treatment model, like exposure therapy. The concern was that the clinician would unknowingly cause harm to their patients, thus hindering the therapeutic process.

Four of the clinicians made arguments that exposure therapy required specific and substantial levels of training before performing this intervention in their clinical setting, especially with a vulnerable population such as patients with PTSD. When asked what type of training they have had or seen available to clinicians, most said that with only one class or seminar they were considered fully trained and equipped to perform exposure therapy with clients. Clinician 2 argued,

One class is not enough to make me feel competent enough to attempt this type of treatment with my clients. There are too many things that can go wrong during and after treatment sessions and knowing how to handle and manage these requires more training and practice than has been offered. I do not find it appropriate to attempt this therapy on my clients without feeling confident in my abilities to properly administer and manage that treatment.

Trauma/PTSD specialized clinicians were very protective of their clientele, concerned that the slightest infraction could shatter their already fragile state. While this is admirable, it was this protective nature that seemed to hinder a clinician's confidence in their ability to learn and utilize exposure therapy in their clinic.

Two of these clinicians argued that they felt confident, or trained enough, to use some form of exposure therapy, such as eye movement desensitization and reprocessing (EMDR) but did not feel confident to utilize full exposure therapy. Clinician 5 stated,

I often use some form of EMDR in my clinic, but only in conjunction with other forms of therapy, such as trauma releasing exercise (TRE). This process is closely regulated, and I stop the exposure when physiological symptoms become too intensified and practice either TRE or mindfulness exercises to help reduce the possibility of negative effects caused by the treatment.

When asked why they felt confident with some forms of exposure but not others, clinician 5 responded, "EMDR allows for more flexibility in clinician treatment and it also allows for short bursts of exposure; rather than true exposure therapy that causes the client to be exposed over a prolonged period of time." Clinician 9 argued,

I have more control over the physiological arousal of my patient when I use some type of EMDR; whereas exposure therapy aims to escalate a patient's physiological stimulation to a heightened level before slowly working that stimulation down to a more manageable state.

The clinicians interviewed seemed to be hesitant to utilize exposure therapy, at least partly, because they did not feel there was any flexibility in the treatment model: one couldn't simply stop the exposure and begin mindfulness in the middle of a session if the patient's physiological stimulation became too intense. Concerns about the need for more hands-on training experience as well as about having no ability to alter or reshape parts of the exposure process, seemed to be the biggest reasons clinicians did not feel competent in their ability to perform exposure therapy.

Along with ethical and training concerns, several clinicians were concerned with the possibility of high rates of attrition among patients that were offered or began exposure therapy. Although research tends to argue for mixed results regarding the high rate of attrition with the use of exposure therapy, many clinicians view it as a problematic possibility. With the possibility that patients will drop out of treatment before it begins due to fears of the intensity or negative effects of treatment, clinicians were concerned with missing the opportunity to provide necessary psychological help to patients who needed it. Clinician 11 argues,

A large majority of patients that are diagnosed with PTSD are veterans or active duty military personnel. There is already a negative stigma towards psychological issues, especially among this population. Getting someone to seek out treatment is challenging enough, so if they come to receive therapy and end up dropping out of treatment there is a big risk that they will not willingly seek out treatment again.

With the life altering and severely debilitating symptomatology of PTSD, losing the opportunity to provide effective treatment to these patients was viewed by many of these clinicians as extremely dangerous and irresponsible.

Clinician 7, who had been working with patients diagnosed with PTSD or a history of trauma for over 20 years, described their experience working with military veterans that have already tried exposure therapy through Veteran Affairs (VA). This clinician argued that military personnel are trained to “soldier up” and this mentality creates a significant barrier to any form of treatment, but especially to exposure therapy:

Soldiers are taught to soldier up to deal with any confrontations or negative experiences. This unfortunately leads to suppression of emotions, thoughts, and experiences. The soldier is trained to accept it and move on. This is a significant barrier to psychological treatment, especially exposure therapy, which requires the individual to confront and express negative emotions, thoughts, and events.

Similarly, clinician 7 argues that the VA typically attempts exposure therapy as a first resort of therapy for veterans diagnosed with PTSD, and veterans tend to follow through with treatment even if it is inefficient.

I’ve treated a lot of veterans that have already received at least some amount of exposure therapy through the VA, and it is always a difficult situation. First, you must gain their trust by providing a safe and judgment free environment, where they can openly express their thoughts and feelings. Second, you must work through the patient’s tendency to suppress their emotions, as this will be a barrier to any form of treatment and lead to serious medical issues over time. If you can achieve these two steps, there is a good chance of providing successful treatment to the patient.

These comments illustrate the concern that failure of one treatment can either lead to patients leaving and not returning to treatment or can create other issues that need to be resolved before another type of treatment can be successful.

Finally, three therapists argued that they do not utilize exposure therapy with their patients because they simply do not believe it is an effective or necessary treatment. Clinician 13 stated, “I don’t know how I can help you, I just don’t buy in to exposure therapy, and therefore I don’t use it, and I’ve never been interested in the training or research materials.” This was a somewhat dismissive and surprising response from this clinician, who was already practiced in CBT treatments. The other two therapists had similar responses, but they also included responses about the efficiency of exposure therapy compared to other treatment models. Clinician 14 stated,

I don’t believe that exposure therapy is any more effective than other, less aggressive forms of treatment. With the possibility of increasing a patient’s symptoms or causing negative events to occur in patients, the benefits to exposure therapy don’t seem to outweigh the risks; especially when the same results can be achieved without the risks. These clinicians illustrate the degree to which clinician attitude and perception of a treatment model can affect their choice to utilize it in a clinical setting, regardless of training opportunities or research suggesting its efficiency.

Clinician interviews gave insight into several different factors that determine a clinician’s willingness to utilize exposure therapy within their clinics. Whether it is from prior experience, training, fear, or perception, many clinicians outside of the VA are resistant to the idea of using exposure therapy with clients diagnosed with PTSD or that have a history of trauma. If exposure

therapy is to become more acceptable in the larger psychological community, more defined research will need to be conducted and properly disseminated to ease clinician's concerns.

Discussion

After analyzing 20 empirical studies and meta-analyses, one can argue that exposure therapy does typically cause a high rate of attrition, averaging between 20% and 37% in research settings and even as high as 72% in clinical settings. While some researchers argue that the rate of attrition in exposure therapy is not significantly higher than any other form of psychosocial PTSD therapy, many empirical studies reviewed in this study illustrate significantly higher rates of attrition in groups receiving exposure therapy compared to those receiving other forms of treatment. Studies by Schnurr et al. (2007) and Markowitz et al. (2015) found significantly higher rates of attrition or non-response rates in exposure therapy compared to present centered therapy and interpersonal psychotherapy treatments. While the study by Schnurr et al. (2007) showed higher levels of symptom improvement of those in the exposure group compared to those in the present centered therapy group, the higher levels of attrition and adverse events for patients in the exposure group are cause for concern. Attrition is expected in all studies, and it typically occurs for a range of reasons; unfortunately, it appears that much of the attrition that occurs in patients receiving exposure therapy is due to the nature of the therapy and the perception of, or occurrence of, adverse events in patients.

Similarly, the studies analyzed here show that the types of adverse events for patients receiving exposure therapy are more severe or life threatening than those in control groups or groups receiving other forms of therapy. The study by McLean et al. (2015) reported several individuals that had to be hospitalized after becoming actively suicidal or homicidal. Another study by Schnurr et al. (2007) described four psychiatric hospitalizations and one therapy related

suicide attempt. Although these events do not occur at high rates during treatment, the severity of these events leaves researchers and clinicians concerned about the risks involved in exposure therapy with patients that have a history of trauma or a diagnosis of PTSD.

Several studies reported high rates of attrition in patients prior to the first exposure session. This attrition was reportedly due to the patients' fears or concerns of the negative effects caused by being re-exposed to the traumatic stimuli. Patients were refusing treatment due to their perception of its abrasive nature and concern of an increase in their already severe symptomatology. This high level of pre-exposure attrition is a major concern for those clinicians interviewed, and a contributing factor to the underutilization of exposure therapy in clinical settings.

After interviewing local trauma/PTSD specialized clinicians, four main themes appeared to explain why clinicians were not utilizing exposure therapy with their patients. First clinicians were concerned that the use of exposure therapy was unethical and violated the trust of the patient. Therefore, clinicians expressed concerns that using any type of exposure therapy has the potential to cause significant harm to their patients, thus causing the patient to lose trust in the clinician and the therapeutic process. Second, clinicians argued that the use of exposure therapy with a vulnerable population of clientele requires substantial and hands-on training. They felt adequate training was not currently being offered in the one class or seminar that clinicians are advertised to take to be considered qualified to perform this type of treatment. Third, clinicians' perceptions of high rates of attrition, especially those before exposure sessions begin, hinder their use of this treatment type. Clinicians fear that once a client drops out of treatment, either from fear of anticipated negative side effects or from the intensity level of treatment, the client will withdraw from all future efforts to seek professional help for their PTSD symptomatology.

Finally, some clinicians had a difficult time believing in the need for, or effectiveness of, exposure therapy. These clinicians preferred other types of treatment to the use of exposure therapy and viewed those alternatives as effective, and therefore did not see any reason to think about using exposure therapy in their practice.

Overall, the results from this study illustrate three things. First, there is a disconnection between research psychologists and clinicians in the perceptions and use of exposure therapy. While many researchers argue for the use of exposure therapy with patients diagnosed with PTSD or a history of trauma, it is being underutilized in clinical settings outside of Veteran Affairs. Second, the use of exposure therapy with patients diagnosed with PTSD or who have a history of trauma has the potential to cause serious distress or harm to patients. This harm leads to patient withdrawal from therapy or, in some cases, to serious adverse effects such as patient hospitalization. Third, patient and clinician perceptions, attitudes, and experiences will impact the effectiveness and use of exposure therapy. Negative perceptions or attitudes toward the intensity or risks involved in exposure therapy tend to cause large portions of patients to withdraw from treatment before treatment even begins. Similarly, clinicians' negative perceptions or attitudes towards these risks stop them from attempting exposure therapy with their patients. With several studies and clinician experiences suggesting the effectiveness of other treatment models for patients diagnosed with PTSD or a history of trauma, more research will need to be conducted to determine if exposure therapy is worth the risks involved to patients.

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