Exploring Guided Imagery, Mindfulness Meditation and Cognitive Restructuring As Therapeutic Techniques for Treating Post-traumatic Stress Disorder

Arushi Srivastava, Tata Institute of Social Sciences, Mumbai, India
Torsa Chattoraj, Banaras Hindu University, India

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Abstract
PTSD occurs due to direct or indirect exposure to traumatic events, leading to prolonged psychological distress. Its symptomatology ranges from the experience of intrusive thoughts to continued avoidance of stimuli. A few physiological symptoms include heightened arousal and reactivity, which can be observed as rage outbursts, restlessness, reckless behaviour without regard for consequences, hypervigilance, sleep disturbances, and difficulties concentrating. Relaxation techniques have demonstrated considerable amelioration of physiological symptoms of trauma. According to van der Kolk (2002), PTSD treatment must address sensory reminders and help the individual gain bodily control over the triggers evoking traumatic reactions. The use of relaxation techniques may help manage an over-reactive stress response if the individual is cognizant of their triggers and can be ready to react to them. As hypervigilance lessens and focus improves, these strategies may be utilized as a stepping stone to get individuals with PTSD prepared to engage in other evidence-based treatment modalities. In the present review, we aim to explore the efficacy of therapeutic techniques for treating PTSD. We underscore three adjunct therapeutic interventions that techniques (guided imagery, mindfulness-based interventions and cognitive restructuring) two of which are mental relaxation techniques and one a psychotherapeutic intervention that address distressing symptoms of PTSD. The empirical evidence on the efficacy of such techniques is meagre. Still, a growing body of research indicates they are effective approaches for treating PTSD, especially for those individuals who have not been successful with traditional therapies.

Keywords: Post-traumatic Stress Disorder, Guided Imagery, Mental Relaxation, Cognitive Restructuring, Alternative and Complementary Therapeutic Techniques

Introduction

Post-traumatic stress disorder (PTSD) is a mental health condition that can develop in individuals who have undergone or witnessed a traumatic event (Norelli et al., 2018). A few prominent symptoms of the disorders are intrusive thoughts or memories connected to the traumatic incident, avoiding triggers or recollections of the event, unfavourable shifts in mood or cognition, and elevated levels of arousal and responsiveness. PTSD significantly affects a person's capacity to function in everyday life not addressed appropriately. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) lists specific criteria for its diagnosis, including exposure to a traumatic incident, repeated reliving of the event, avoiding stimuli associated with the event, negative alterations to mood and cognition, and hyperarousal (American Psychiatric Association, 2013).

While addressing appropriate treatments, an ideal treatment for PTSD must treat the anxiety response associated with PTSD. As it has been demonstrated that relaxation techniques can help with the physiological implications of long-term stress, these methods can be used to supplement traditional therapy. Alternative methods may help diminish the physiological symptoms of PTSD in people opposed to conventional, evidence-based treatments or those who have attempted conventional therapy without success (Scotland-Coogan & Davis, 2016).

Relaxation techniques, therefore, are used by individuals suffering from PTSD to alleviate the physical and psychological symptoms of stress and anxiety. These methods might range from deep breathing exercises to guided imagery, progressive muscular relaxation, and mindfulness meditation. By employing these techniques, individuals experiencing PTSD can learn to recognize and control the bodily symptoms of stress and anxiety, which can frequently elicit intrusive memories and thoughts surrounding their traumatic events. Moreover, relaxation methods can assist people with PTSD in controlling their emotions and creating coping mechanisms to deal with the difficulties of daily life (American Psychological Association, 2017). Although they can't be employed as a standalone treatment for PTSD, relaxation methods can be effective adjunct therapies when combined with other treatments like cognitive-behavioural therapy (CBT) or medication. Overall, relaxation methods can provide individuals with PTSD with tools to better control their symptoms and enhance their general wellbeing.

Guided Imagery's therapeutic method has been proven to be successful in reducing stress and fostering relaxation (Rossman, 2008). It can be employed as a method to assist individuals with PTSD in coping with their traumatic symptoms and has often been demonstrated to be effective in reducing PTSD symptoms in combat veterans (Wyka & Loewy, 2017). Participants are asked to visualize a tranquil and comforting environment or circumstance in a guided imagery session. This might entail conjuring up a vivid, all-encompassing mental image by utilizing all senses. Guided Imagery supports individuals with PTSD in dealing with intrusive thoughts and boosts positive emotions (Boyd, 2012). The therapist may also employ guided prompts to assist the client in achieving a greater state of relaxation and control over their thoughts and emotions. It can also help people with PTSD manage their hyperarousal symptoms and flashbacks (Wyka & Loewy, 2017). It helps lower their levels of tension and anxiety and achieve a stronger sense of control over their emotions by concentrating on a soothing and serene mental image. The frequency and severity of traumatic memories and intrusive thoughts may also be lessened as a result and can subsequently help people with PTSD lessen their feelings of anxiety and depression (Butler et

al., 2006). Overall, guided Imagery can be a valuable technique for people with PTSD, especially when combined with other treatment modalities (Sadock & Sadock, 2007).

Mindfulness meditation entails being in the present moment while remaining non-judgmental (Keng et al., 2011). In a mindfulness meditation session, participants pay close attention to their breathing, physical sensations, and thoughts while watching them objectively and without judgement.

For those with PTSD who struggle with symptoms like intrusive thoughts and hyperarousal, mindfulness meditation can be very beneficial. Individuals can learn to lower their levels of tension and anxiety and have a stronger sense of control over their emotions by learning to notice their thoughts and emotions without responding to them (Kabat-Zinn, 1990). The frequency and severity of painful memories and intrusive thoughts may also be lessened (Niles et al., 2012). Literature supports mindfulness meditation as a useful adjunct therapy for individuals with PTSD (King et al., 2013). It can also assist people with PTSD in building more resilience and coping mechanisms by raising their self-awareness and encouraging a sense of serenity and acceptance.

In the context of PTSD, cognitive restructuring aims to help individuals identify and change negative and distorted thought patterns connected to their traumatic experiences. PTSD has been connected to negative beliefs about oneself, others, and the world, as well as feelings of guilt, shame, and dread. These emotions and thoughts may contribute to developing and maintaining PTSD symptoms such as intrusive thoughts, avoidance, and hyperarousal. In cognitive restructuring for PTSD, patients work with a therapist to pinpoint and eliminate negative and false beliefs about their trauma. Examining the evidence in support of and opposition to these beliefs might assist with developing more accurate and impartial perspectives. For instance, a person who has PTSD may feel deeply ashamed and guilty because they feel responsible for their trauma, cognitive restructuring works around such thoughts and provides an alternative that helps reduce its impact.

In a similar vein, a study by Sripada et al. (2013) discovered that cognitive restructuring helped those with PTSD lessen their feelings of anxiety and despair by looking at the circumstances leading up to the trauma and recognizing that they were not to blame, therefore, they learned to challenge this belief through cognitive restructuring. This can lessen guilt and shame-related feelings and enhance general wellbeing. In general, cognitive restructuring is a crucial part of treating PTSD, individuals with PTSD can acquire more accurate and adaptive views, which can help to lessen symptoms and enhance their quality of life by confronting negative attitudes and beliefs connected to the experience.

Guided Imagery and PTSD

As discussed earlier, Guided Imagery (GI) is a behavioural technique that directs individuals to effectively create and manipulate mental representations to produce therapeutic changes (Strauss, Calhoun & Marx, 2009) and influence health outcomes in a clinical setting. It's a technique that utilizes narratives and stories to influence the images and patterns that the mind creates (Hart, 2008). In therapy, these techniques are used to guide another individual or oneself to imagine specific sensations or visualize images to elicit a desired goal or a physical response like reduced stress and pain. In essence, GI uses one's imagination to create images to generate beneficial and desirable emotional and physical outcomes. It can be delivered by a practitioner or can be practised on oneself via a recording. This mind-body

technique utilizes the components of mindfulness, skill training and visualization (Strauss, Calhoun & Marx, 2009) and usually begins with helping the client relax by taking some deep breaths. Then the client is guided to imagine peaceful and effective imagery that may promote healing.

The theory supports that if negative and disturbing images can create distressful psychological and physiological outcomes, pleasant and positive images may also help reduce stressful symptoms (Hart, 2008). However, GI should not be confused with positive thinking, as this is not just limited to thinking about pleasant events but also utilizes other aspects that employ imagination, emotions, and a spectrum of bodily senses (Naparstek, 1994), thus making it effective. It should also be distinguished from imagery that focuses on recalling the past traumatic experience, as GI centres around manipulating mental images that symbolize some aspects of oneself or the goal (Strauss, Calhoun & Marx, 2009). Hence, its crucial to be critical of the various unstudied claims around GI before its implementation.

The literature focusing on the effectiveness of GI in reducing unwanted symptoms, stress, etc., is slowly emerging, and studies have found that GI is used for managing stress, anxiety, depression, pain symptoms, and preparation for medical procedures (Eller, 1999). Small-scale studies have suggested that GI may be used to improve numerous conditions like HIV-related symptoms (Auerbach, Oleson, and Solomon,1992), post-cardiac surgery pain (Graffam & Johnson, 1987), cancer pain (Graffam & Johnson, 1987), and migraines (Mannix et al. 1999). It may also improve anxiety (Hammer, 1996; Schindler & Dana, 1983) and depressive symptoms (McKinney et al., 1997).

While GI has been shown to be effective against numerous disorders and conditions, studies have highlighted its efficacy in treating post-traumatic stress disorder (PTSD). An open trial of a group therapy intervention that included GI showed reduced trauma symptoms in 139 adolescents in post-war Kosova (Gordon et al., 2004). In another randomized controlled study by Beck et al. (2017), Guided Imagery and Music (GIM) was used on traumatized refugees seeking psychiatric help to cope with PTSD. The results revealed that GIM improved the psychological health of clinical populations and patients with PTSD. In another similar study by Jain et al. (2012), the researchers conducted a randomized controlled trial to determine whether a complementary medicine intervention (Healing Touch with Guided Imagery) reduced PTSD symptoms compared to the usual treatment returning combat-exposed active-duty military with significant PTSD symptoms. The results conveyed that participation in a complementary medicine intervention resulted in a clinically significant reduction in PTSD and related symptoms in a returning, combat-exposed active-duty military population. These studies provide a narrative elucidating the crucial role that guided imagery has been playing in treating PTSD symptoms, guiding us towards a better understanding of GI as a therapeutic technique and opening avenues for further investigation.

In alignment with this view, Strauss, Calhoun & Marx (2009) developed a clinician-facilitated, self-management intervention to treat PTSD through GI known as Guided Imagery for Trauma (GIFT). The researchers completed a feasibility trial on 50 women with PTSD related to military sexual trauma who were administered GIFT. After completing the full 12-week intervention, there was a significant reduction in PTSD symptoms. These findings highlighted that veterans well tolerated GIFT with military sexual trauma, and it can be easily administered.

As noted by studies, GI focuses on cognitive and affective aspects and actively employs these processes by taking into account the imagination and emotions of an individual. The technique directs an individual to imagine desirable goals/situations to elicit positive/desirable emotional responses and positive outcomes. Hence, it's important to note that GI may help tackle related cognitive and emotional symptoms of PTSD, like having negative thoughts about the world, lower cognitive functioning, difficulties with learning and memory (Roberts et al., 2022), feelings of sadness, anger, irritability, and detachment.

Mindfulness Meditation and PTSD

Kabat- Zinn (1994) describes mindfulness as *"paying attention in a particular way: on purpose, in the present moment, and non-judgmentally."* This translates to "purposefully" shifting one's attention to the present moment and adopting a non-judgemental stance: meaning that the thoughts and emotions one experiences are noted without necessarily assigning a positive or negative connotation. The attention is returned to the breath again if the mind wanders. In mindfulness meditation, the object of focus is the arising, maintenance, and decay of various mental experiences. By observing such change, it is suggested that meditation may bring insight into the nature of the mind and relieve suffering through that insight (Lang et al., 2012).

Numerous studies have highlighted mindfulness meditation's effectiveness in reducing psychological, physiological and emotional stress and enhancing wellbeing. Meditation-based Interventions (MBI) have shown great promise in treating individuals with Major Depressive Disorder, Bipolar Disorder, Anxiety Disorder and Attention Deficit Disorder (Marchand et al., 2019). MBIs have been shown to reduce stress and pain among military personnel, and among Marines, MBIs led to reduced fatigue and increased memory function (Rice, Liu, & Schroeder, 2018). Mindfulness practice has also been shown to diminish physiological arousal, increase attentional control and foster acceptance of unwanted experiences, each of which may address processes that maintain PTSD (Lang et al., 2012). Mindfulness-Based Stress Reduction (MBSR) is a common resource for treating mental health and physical problems, which has been well-documented to improve stress-related symptoms such as depression, anxiety and PTSD (Goyal et al. 2014). In line with this idea, a study conducted by Kearney et al. (2012) discovered that veterans who participated in MBSR experienced significant improvements in measures of mental health, including measures of PTSD, depression, experiential avoidance, and behavioural activation as well as mental and physical health-related quality of life over a 6-month period.

These studies highlight an increase in the adoption of complementary and alternative medicine (CAM), especially mind-body therapies, which are considered effective in treating PTSD in military contexts (Polusny et al., 2015). Mindfulness is one such mind-body technique that emphasizes an array of emotional and attentional regulatory strategies that contribute to happiness cultivation and emotion management (Lutz et al., 2006). A narrative review by Haider, Dai & Sharma (2021) on understanding the efficacy of Meditation-Based Intervention on PTSD among veterans highlighted that meditation-based therapy is a promising approach for treating PTSD specifically among veterans resistant to trauma-focused therapies. Since taking treatment/ medical help may induce guilt and shame for veterans, this alternative approach (mindfulness meditation) may actively work to increase tolerance and acceptance and reduce possible negative moods like guilt and shame (Sun et al., 2021). The meta-analysis also revealed mindfulness meditation to have a significant and large effect on alleviating military-related PTSD symptoms. Therefore, mindfulness meditation can

be an effective therapeutic technique for reducing distressing symptoms of PTSD and enhancing psychological, emotional and physiological wellbeing.

A review by Lang et al. (2012) considered the three aspects of the Kabat-Zinn definition of mindfulness to provide a framework by which mindfulness meditation may help treat specific symptoms of PTSD. The authors state that individuals with PTSD demonstrate attentional bias toward trauma-related stimuli and have deficits in cognitive control (Buckley, Blanchard, & Neill, 2000). In such scenarios, attentional training programs have been shown to be effective in reducing anxiety symptoms (Amir, Beard, Burns, & Bomyea, 2009). Decreases in anxiety are purported to operate via changes in attentional allocation away from threat (Heeren, Lievens, & Philpott, 2011). This indicates that mindfulness, which aims to burnish one's attentional capacity, may be helpful in treating attention and anxiety-related issues in PTSD.

Secondly, the cognitive aspect of mindfulness focuses on being present in the moment (by focusing your thoughts in the "now"). In PTSD, the cognitive styles of worry and rumination have been shown to increase the negative effect, and both worry and rumination are associated with increased PTSD symptomatology (Ehring, Szeimies, & Schaffrick, 2009). This indicates that distressing cognitive patterns, which are a symptom of PTSD, may be reduced by incorporating mindfulness which focuses on a healthy cognitive pattern by allowing one to collect their thoughts and be present in the moment. Studies have shown that greater attention/ awareness to the present was associated with lower PTSD symptom severity and comorbidity, anxious arousal, and anhedonic depression symptoms in a sample of trauma-exposed adults (Bernstein, Tanay, and Vujanovic, 2011).

Further, Lang et al. (2012) also discussed that observing situations non-judgementally may counteract the tendency among PTSD patients to interpret internal and external experiences negatively. Those who adopt a non-judgmental stance may be more willing to approach fear-provoking or emotionally laden stimuli, which counteract avoidance.

These studies are critical in emphasizing mindfulness meditation's role in reducing PTSD symptoms and enhancing a positive state of mind.

Cognitive Restructuring and PTSD

Cognitive restructuring is the main therapeutic component of cognitive therapy, which A. T. Beck and colleagues initially popularised. As indicated previously, the goal of cognitive restructuring is to help patients recognize maladaptive thoughts and cognitive biases, elicit reasonable alternative concepts, and re-evaluate their views about themselves, the trauma, and the external world (Marks et al., 1998; Kubany et al., 2004; Ehlers et al., 2005). A CR conceptualization is centered around schemas since CR is characterized by schematic change. Schemas are meaning-making structures of the conceptual framework of cognition that have content, structure, and function (A. T. Beck, 1964). By challenging the natural acceptance of unfavourable schema-congruent information and promoting the assimilation of more adaptive schema-incongruent material, CR seeks to counteract this maladaptive tendency in schema-congruent processing. A shift in belief ratings is typically viewed as a sign that the individual has moved from maladaptive schematic processing to more adaptive, normalized schema activation (A. T. Beck et al., 1979).

The major focus of CR involves schematic content. Negative individualistic generalized attitudes, beliefs, and preconceptions about the self, personal environment, futures, accomplishments, and social interactions make up the content or predicate parts of maladaptive schemas (Dozois & Beck, 2008; Ingram & Kendall, 1986). According to A. T. Beck (1976, 1987), both healthy emotional states and other psychopathological disorders have distinctive belief contents. In contrast to exposure-based therapies for PTSD, this treatment is intended to reduce stress and assist patients in increasing social support both during and after treatment.

In an extensive review (Grunnert et al., 2007) comparing a frequently used technique-prolonged exposure (PE) with cognitive restructuring (CR), a thorough cognitive-behavioural investigation of two groups of post-traumatic stress disorder (PTSD)-afflicted industrial victims who did not improve with PE alone but did so when an imagery-based, cognitive restructuring aspect was incorporated into their exposure therapy was noted. The theoretical foundations and treatment components of the behavioural and cognitive therapies employed with the research subjects—PE and Imagery rescripting and reprocessing therapy (IRRT)—are compared. PE uses exposure, habituation, desensitization, and elimination as behavioural strategies to help patients process their emotions. PE is founded on theories of classical conditioning. IRRT, on the other hand, uses cognitive therapy to change one's images. In IRRT, exposure is used not for habituation but for trauma memory activation, which enables the identification, evaluation, revision, and integration of the stressful cognitions (i.e., the trauma-related pictures and beliefs).

People with PTSD who have experienced childhood sexual abuse (CSA) frequently experience the feeling of being contaminated (FBC). This ailment has so far received little attention in both study and treatment. To directly target the FBC, Jung and Steil (2013) created Cognitive Restructuring and Imagery Modification (CRIM), a two-session therapy that lasts 90 and 50 minutes. The results confirm the effectiveness of the recently created CRIM in easing FBC and PTSD symptoms in adult CSA survivors.

Another empirical study claims that CR is effective in reducing symptoms of anxiety, depression, and anger in CSA survivors but is less effective in reducing symptoms of guilt and low self-esteem (Möller & Steel, 2002). This study examined the effects of cognitive restructuring in terms of clinically meaningful change for adult survivors of CSA. Before and after ten weekly group sessions of rational-emotive behaviour therapy and during the follow-up session eight weeks later, 26 participants had their levels of sadness, state anxiety, anger, guilt, and self-esteem evaluated. An analysis based on clinically meaningful change revealed a different treatment impact than one based on statistical significance, demonstrating substantial improvements on all variables from pre- to post-treatment.

Consistent with most research conducted on the efficacy of CR in PTSD is the view that CR as a short-term intervention for PTSD helps alleviate maladaptive cognitive symptoms of PTSD and is an economical method that serves a short-term purpose (Müller-Engelmann & Steil, 2017). It is also important to note that there is a considerable dearth of research on the efficacy of CR when paired with other therapeutic interventions and comparative literature that identifies which such pairs could be used as long-term interventions. Therefore, CR provides relief along the lines of addressing maladaptive self-concept beliefs surrounding the trauma and not the memory itself. In doing so, it tackles symptoms of self-destruction, as seen in PTSD (Müller-Engelmann & Steil, 2017). Most studies that incorporated CR with

other therapeutic interventions mostly combined imagery modification (CRIM) and exposure therapy.

Furthermore, the study on the treatment process is still in its early stages and cannot yet advise clinicians on whether to use CR, when to integrate it with other therapies, or when to forego using it. Until then, clinicians can view CR as a successful technique that belongs prominently in their therapeutic arsenal.

Conclusion

The present review aimed to underscore the mental relaxation and complementary therapeutic approaches/techniques that may be effective complementary treatments for PTSD. We specifically focused on three techniques: Guided Imagery, Mindfulness-Meditation and Cognitive restructuring, which captures the cognitive and affective aspects (thoughts, beliefs, emotions) and relates to treating cognitive and affective symptoms of PTSD (lower cognitive functioning, difficulties with learning and memory, sadness, anger).

The studies conducted around Guided Imagery as a technique for treating PTSD Symptoms highlighted that GI effectively reduces stress and anxiety and even aids in physical pain related to HIV or medical surgeries. It has been shown to be effective in alleviating PTSD symptoms like anxiety, trauma-related stress, cognitive decline, etc., and enhancing one's psychological health.

The results were promising for Mindfulness-Meditation as well, as numerous studies revealed it to be an effective and efficient mind-body technique that helps enhance one's attentional capacity and reduce stress, anxiety-related symptoms, and negative and distressing emotions (like worry and rumination). Based on the previous studies, we can consider mindfulness meditation a useful tool in treating PTSD and enhancing one's health.

The greatest benefit of CR however, may be in providing longer-lasting therapy benefits or mediating a change in a particular condition's symptoms. It is also evident that CR, at least in terms of short-term symptom relief, is at best comparable to and at worst less effective than "noncognitive" therapies like exposure or behavioural activation. It is clear that cognitive change is not unique to CR, although there is strong evidence supporting cognitive mediation in symptom treatment. The causal direction is still up for discussion.

Considering that PTSD is a prevalent disorder, the work done around its treatment through alternative and complementary approaches is still limited. The significant treatment interventions/approaches used today for treating PTSD are cognitive behavioural therapy, exposure therapy, response prevention, eye movement desensitization and medications. However, there is a need to make these approaches diverse and accessible to all populations. One way of doing so is utilizing alternative methods like mental and physical relaxation techniques. Two such techniques that we have focused on are guided imagery and mindfulness meditation to delineate the effectiveness and usefulness of these approaches in reducing PTSD symptoms. These techniques will be helpful for individuals who are sensitive to or averse to traditional therapies. So to increase the retention rate, practitioners can adopt such therapeutic approaches. Moreover, techniques like GI and mindfulness meditation can also be practised by an individual on themselves, thus reducing the shame and guilt that a veteran might feel in seeking medical help.

Since there is a dearth of literature on such interventions, there is a need for more robust empirical studies to be conducted around complementary and relaxation techniques in treating PTSD. Secondly, most of the studies conducted in this domain have mainly focused on trauma elicited by military exposure. However, there are a range of predictors of PTSD, like a pandemic, abuse, etc.; hence, it will be helpful to extend these studies to consider if these therapies will be effective with other forms of PTSD.

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Contact email: arushi.9924@gmail.com