

EMDR-Based Interventions for Athletic Traumas: A Case Study of Two Female Golfers

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This article discusses the possible benefit of using eye movement desensitization and reprocessing (EMDR) therapy in treating competitive state anxiety in two female golfers. Golfers may encounter adverse events during performances, which trigger performance blocks, anxiety, and negative symptomology. Adverse events, or small-t traumas referred to as “athletic traumas” in this study, occurring during performances and processed maladaptively can be associated with increased levels of anxiety in addition to negative symptomology. This research utilized a qualitative method, a case study design, to evaluate if EMDR therapy was beneficial in reducing anxiety related to athletic traumas in two professional golfers. The participants received an EMDR-based intervention related to a designated athletic trauma and self-recorded anxiety levels using the competitive-state anxiety inventory. A key theme noted was the reduction of anxiety levels and subjective units of distress associated with the athletic traumas after the EMDR-based intervention. The result of the study suggests EMDR therapy as an intervention for golfers seeking relief from anxiety related to athletic traumas. Implications of this research provide clinicians with an additional intervention tool when working with athlete populations.

Keywords: anxiety; athletic trauma; eye movement desensitization and reprocessing (EMDR); small-t trauma

Failure and losses experienced in sports stay in an athlete’s memory and can impact their future performance in negative ways, such as increasing anxiety. Losses in the final inning of the World Series, missing a last-minute jump shot for the championship basketball game, or lipping out a putt to lose the Master’s tournament on the 72nd hole at Augusta—each is a public event witnessed by society as a major loss for teams and individual athletes. These traumatic events are stored in the athlete’s memory and can create anxiety, fear, depression, phobias, and lost move syndrome (Rotheram et al., 2007). The term “athletic trauma” is used throughout this article to describe adverse life experiences (negatively impactful events occurring during one’s life). Shapiro (2018) differentiated between large-T traumas, which

precipitates posttraumatic stress disorder (PTSD), and small-t traumas, also referred to as adverse life events. The loss of loved ones, experiencing a medical crisis, suffering a life loss, surviving divorce, or a significant athletic loss fit into this category of events, which may cause long-lasting negative effects. Adverse life events, when left untreated and unhealed, have been linked to mental health disorders. Shapiro (2018) noted small-t traumas can be just as clinically significant as large-T traumas associated with PTSD symptoms.

The trauma, loss, or disappointment an athlete experiences not only aids in building resiliency and grit but also can define how athletes view themselves (Seery, 2011). Some losses are so profound, even champions are unable to perform the way they

used to, resulting in “choking,” loss of confidence, and self-esteem. Debilitating anxiety and lost move syndrome, a sudden decrease in the ability to perform learned motor patterns, have been linked to adverse life experiences (Rotheram et al., 2007). After experiencing a loss, failure, or injury, athletes in sports such as gymnastics, diving, cricket, and baseball are noted to experience a loss of muscular function and smoothness in motions and routines they have practiced thousands of times (Rotheram et al., 2007). Golfers who experience small-t traumas sometimes develop the “yips” and become unable to create smooth chipping or putting strokes (small strokes in the golf swing used to advance the golf ball a short distance), leading to symptoms of anxiety, posttraumatic stress, and depression.

Athletes are just as prone to experience mental health symptoms as nonathletes. In fact, some research shows that nearly 17% of current collegiate athletes have experienced depression, while 8% continue to suffer after quitting their sport (National Collegiate Athletic Association, 2014). Nearly all athletes experience at least one of the following scenarios at some point in their career: losing an important game, suffering an injury, choking, performing below one’s standards despite ample training, or experiencing preperformance anxiety. If the negative experience is overwhelming for the athlete’s processing capacities, the memories of these scenarios can remain unprocessed, creating anxiety, and many other symptoms.

The working hypothesis of this research is eye movement desensitization and reprocessing (EMDR) therapy that is a beneficial treatment modality option for reducing anxiety in golfers with athletic traumas. While the effect of EMDR therapy on performance enhancement is a related and relevant question, it is not the focus here due to the study design. Performance benchmarks in golf are ways future studies could explore this. This article reports the findings of an EMDR-based intervention with two professional female golfers who incurred significant small-t athletic traumas that continued, years later, to induce feelings of anxiety, negatively impacting their performance and enjoyment of the sport. The primary researcher contextualizes EMDR therapy within the literature on trauma memories and current psychological therapies used to mitigate the effects of such traumas in athletes.

Trauma Memories

Memory studies reveal two primary perspectives on the relationship between memories and traumatic

events. Dekel and Bonanno (2013) note earlier research supported a static viewpoint of memories in which traumatic events remained unchanged and fixed over time, while current research proposes a more dynamic viewpoint, arguing trauma memory is, in fact, malleable, and the emotions associated with a memory are important. These emotions enhance the vividness of the memory, with the negative arousing pieces of the memory being especially well maintained. They state memories are continually reorganized to fit with a person’s belief system, knowledge, and experience. Furthermore, each time someone retrieves a traumatic memory, it becomes subject to distortion and interference. Wright et al. (2021) reviewed various therapies targeted at the reconsolidation and consolidation of trauma memories, noting the process of reconsolidation can lead to three outcomes: no change, a stronger memory, or a weaker memory. They examined recent scientific advances in the study of memory modification mechanisms to prevent and treat psychopathology and note EMDR as a modality for ameliorating symptoms linked to old trauma memories due to reconsolidation mechanisms.

The memory of traumas and symptomology occurring outside of sport can also negatively impact an athlete while performing. Rotheram et al. (2012) conducted a case study with an athlete suffering generalized anxiety and low self-esteem, which caused them to display avoidance behavior, leave training early, skip training, and experience deteriorating relationships with the coaching staff. The anxiety began to impact the athlete’s participation in sport significantly, influencing the athlete to step away from training and begin work with a sport psychology clinician. The separation between personal and professional athletic life can become murky as the two inevitably interact and influence one another. In a circular manner, the memory of a trauma can create a variety of symptoms including anxiety, and those symptoms can have negative consequences on athletic performance.

Current Sport Psychology Interventions

Current sport psychology interventions prominent with athletes to decrease anxiety and heal from athletic traumas include mindfulness, cognitive behavioral therapy, neurofeedback, and imagery (Röthlin et al., 2016). Scott-Hamilton and Schutte (2016) examined the relationship between mindfulness and flow. They describe mindfulness as a state of sustained awareness free from judgment combined

with a sensory experience. Flow is an experience of enhanced psychological and physical functioning free of negative thoughts or self-conscious evaluations (Csikszentmihalyi, 1990). Because anxiety impedes the presence of flow, using mindfulness as a foundation to reduce anxiety and create an open space for flow to occur is promising. Neurofeedback is a recent addition to the sport psychology field as electronic devices provide ways for athletes to gain feedback on performance states. The research on the efficacy of imagery to reduce performance anxiety shows that it, too, can improve athletic performance (Mousavi & Meshkini, 2011). Visualizing oneself perform before engaging in the physical performance decreases the anxiety related to the performance, thereby allowing the athlete to perform without the presence of debilitating tension and negative thoughts. Mousavi and Meshkini (2011) report athletes who participated in a 15-week mental imagery program improved the accuracy of their dart throwing compared to those who did not perform mental imagery. They suggest appropriate training programs can be extremely beneficial to athletes to help them increase self-awareness, build self-confidence, and have greater control of their emotions.

Wrisberg et al. (2009) found that Division-1 student-athletes are receptive to working with sport psychology consultants to improve performance, and 30%–50% of Division-1 athletic departments employ staff to provide the service. Röthlin et al. (2016) noted that one reason athletes seek out mental coaching is to learn how to perform optimally. They suggest that sport psychologists may want to consider using empirically tested methods to help athletes achieve peak performance, such as psychological skills training and mindfulness-based interventions. While traditional cognitive-behavioral skills-training models are customary approaches for helping athletes achieve optimal performance, Gardner and Moore (2004) suggest that sport psychology alternatives and supplementary approaches, as outlined here, may also benefit athletes.

EMDR therapy is starting to gain traction as an intervention for athletic traumas and will be discussed in more detail later in this article (Röthlin et al., 2016).

Sport Psychology Interventions for Golfers

Overcoming a golfer's athletic trauma during performance means addressing the emotional component of the event and restructuring their belief

about it to sufficiently reduce negative symptomatology in future performances. As with other athletes, the impact of athletic traumas developing in a golfer's life from disappointment, failure, or losses occurring while performing on the golf course can severely disrupt later performances, lower confidence, and increase anxiety. Seery (2011) suggests that adverse events create an element of toughness, or resiliency, allowing athletes to tolerate and manage stressful situations better. Yet, some events occurring during performance are too painful and profound for a golfer to immediately cope with and recover on their own. During a competition, golfers have a large period between shots to increase cognitions and dwell on past performances. A state of mindfulness and flow may be beneficial to the performance of a golfer as negative self-talk or focus on factors out of one's control impede performance. Training one's brain to be in a certain preferred state prior to hitting golf shots is beneficial to the outcome of the shot. Ring et al. (2015) used neurofeedback on recreational golfers to see if skill acquisition could be expedited. Their findings show that neurofeedback helped recreational golfers improve control over cortical activity but failed to assist performance in pressure-induced scenarios. Nilsson and Marriott (2017) found that the development of human skills, which include self-awareness and self-management, helps individuals play better golf. In recent years, many golf touring professionals have been vocal about their use of mental coaches to enhance performance as they recognize how past experiences can disrupt future performances.

EMDR Therapy

EMDR therapy is a clinically supported modality for the treatment of PTSD, as well as for other issues such as anxiety, depression, phobias, and performance enhancement (Lalotiotis et al., 2021). This modality helps reduce the intensity of traumatic memories while also decreasing physiological symptoms associated with the memory (Shapiro, 2018). EMDR therapy is an eight-phase approach processing these adverse memories to decrease the subjective units of distress (SUD) associated with a triggering memory while increasing a neutral or positive belief of oneself about the event and is measured by a validity of cognition scale (VOC) (Shapiro, 2018). Shapiro (2012) found that traumatic events do not process in the brain in an adaptive form. The adaptive information processing (AIP) model posits new experiences integrate into an

information processing system containing memory networks. Perceptions of experiences are linked with associated networks, and when working appropriately, connect to stored memories making sense of those experiences. When an experience is inadequately processed, the incident can become frozen within the neural network in its state-specific form (Solomon & Shapiro, 2008). Dysfunctionally stored memories are the root of future maladaptive response as perceptions of present-day experiences are automatically linked to the memory network. Golfers who experienced a particularly upsetting loss or failure may have challenges processing the event into an adaptive form, thereby causing the memory to serve as a trigger-producing symptomology.

Sharpley et al. (1996) found EMDR therapy reduced the intensity of memory-based traumatic images by 32% over other relaxation methods. Gauhar (2016) found just six to eight sessions of EMDR therapy significantly improved depressive symptoms and quality of life while decreasing trauma symptoms. The powerful treatment effects of EMDR therapy seem promising for athletes suffering from athletic traumas and may be an option for golfers suffering from performance disruptions and anxiety related to difficulty recovering from athletic traumas.

EMDR Therapy With Athletes

EMDR therapy research and practice are continually evolving from singular uses for PTSD treatment to increased applications for performance enhancement and athletic trauma.

Performance Enhancement

From Foster and Lendl's (1996) application in executive coaching scenarios to Bennett et al.'s (2017) EMDR therapy application for eradicating a professional golfer's performance blocks, the generalization of the applications of treatment is promising. Surprisingly, there is minimal research conducted with EMDR therapy in a variety of sports; however, research that does exist suggests it is of value to all athletes. Gracheck's (2011) doctoral dissertation explored EMDR's effectiveness in improving performance through a single case study with a cyclist, noting positive measurable performance outcomes such as self-esteem, motivation, and decreased performance anxiety. Abdi et al. (2019) found EMDR to reduce anxiety and increase performance in karate and taekwondo athletes. With the quick and efficient power of EMDR therapy, the

treatment seems like a promising sport psychology intervention in golf. Bennett et al. (2017) combined EMDR with graded exposure and eliminated visible signs of a golfer's muscle jerking while improving putting performance to 100% from 3 and 4 feet away from the hole, compared to just 50% and 40% from the same distance pretreatment. Because these instances of EMDR's impact on performance enhancement are single-subject case studies, we cannot generalize the results to larger populations yet; however, the results encourage future research within sport populations.

Athletic Trauma

Falls et al. (2017) reported the positive benefits of EMDR therapy for both gymnasts with psychological difficulties after injury or falls and swimmers experiencing anxiety due to distressing past swimming experiences. With most focus to date being on past traumatic events, Falls et al. (2017) started to fill the gap by exploring the benefits of EMDR therapy on prospective imagery. In a study of four competitive, amateur golfers experiencing negative prospective imagery related to their golf games, the researchers wanted to know if EMDR therapy could decrease the negative prospective imagery and reduce anxiety around images derived from the golfer's past distressful experiences. The golfers processed their negative images, including seeing a golf shot go into the trees and being ridiculed and humiliated by playing partners. After 4 weeks of EMDR therapy, all participants showed reduced negative prospective imagery and three of the four golfers showed a significant reduction of negative imagery and decreased anxiety.

Purpose of the Current Study

The primary aim of this study is to explore the effectiveness of EMDR therapy for reducing state anxiety from athletic traumas in golfers. As mentioned earlier, the term "athletic trauma" provides a clear descriptor for athletes who have suffered from small-t traumas occurring in and around their sport. Here, athletic traumas are those traumas linked to a golfer's performance while playing. Based on the literature and this clinical work, this study hypothesized that EMDR therapy is efficacious for reducing anxiety from athletic traumas by reprocessing the athletic traumas and thereby eliminating negative symptoms related to anxiety. While research suggests that EMDR therapy is also an effective treatment for trauma-induced performance

blocks and performance difficulties, which is not the focus of this study as the reduction of anxiety related to athletic traumas is.

Method

Participants

The study used a qualitative method to assess the efficaciousness of EMDR therapy in reducing anxiety related to athletic traumas. Using a sample of convenience, two professional golfers with histories of trauma while competing approached the primary researcher specifically for the EMDR therapy.¹ While discussing options via phone to participate in the study, each participant completed a Dissociative Experiences Scale-II to screen out dissociative conditions, with a required score of 35 or lower, before being accepted into the study (Carlson & Putnam, 1993). At the initial session, each used the Floatback technique to identify their personal hierarchy of athletic traumas. This technique asks the participant to search their memory and float back to earlier times in life when they experienced distressing events that evoke symptoms that are like, or similar, to what is experienced in the present. The events are documented by the therapist and ranked in order of severity, using the SUD scale, and time of occurrence by the participant (Shapiro, 2018). Throughout the period of the study, the primary researcher took pre- and posttherapy measurements, and conducted a follow-up interview a month later. The treatment protocol is the subject of a subsequent section.

Participant 1, “Carol.” Carol, a White female professional in her late 40s, approached the primary researcher after learning about EMDR therapy through an industry presentation. Competing on tour for several decades, she noticed a high level of anxiety around putting that was affecting her performance in competition. She experienced declining self-esteem and increased self-doubt when faced with short-distance putts. This golfer described her symptoms as “nervousness, shyness, shaking, burning feeling, and worry.” During her initial interview, Carol selected the first and worst events she had identified in her hierarchy of athletic traumas list using the Floatback technique, and then identified the traumatic event she remembered as being the worst. She recalled being on a national competitive team with other young women golfers and overheard a teammate talk

negatively about her. The teammate used disparaging words about how Carol was “not likeable, doesn’t fit in, and doesn’t belong.” On the putting green, Carol challenged the teammate to a putting contest, yet continually missed a short putt. She recalled feeling humiliated and ashamed. In addition, Carol had several linked network memories of other experiences in her life when she missed short putts during crucial times in competitions. Although Carol had a long career playing on a professional golf tour, she continually endured feelings of anxiety, flashbacks to the memory, and other memories of missing short putts while doubting her ability. To this day, she still isolates herself from groups of women when traveling on tour and shies away from others for fear of being talked about negatively. This experienced social anxiety and performance anxiety prevented her from establishing healthy, safe relationships with other women in her sport.

Participant 2, “Jenna.” Jenna, a White female in her 20s, was competing on a mini-tour (a smaller professional tour level under the Ladies Professional Golf Association [LPGA]) hoping to transition to full status on a professional tour. She contacted the primary researcher after learning about how EMDR therapy might help her heal from an athletic trauma event that continued to cause her extreme anxiety and depressed feelings. Playing a full mini-tour schedule, she was struggling to finish high enough on the earnings list to secure a spot on the professional tour. She reported, “I feel like something is holding me back and I don’t know why I can’t break through it.” During her initial interview, Jenna created an athletic trauma hierarchy using the Floatback technique, identifying first and worst experiences in her competitive career. She then selected her identified worst memory, which had occurred early in her professional playing career. She described narrowly missing full tour status in a qualifying event and feeling “crushed, disappointed, and hopeless.” Jenna vividly recalled the body language and facial expressions on friends’ and associates’ faces when the news broke; she missed earning a coveted spot to advance by only one stroke. She lamented how this disappointment anxiously runs through her mind, creating feelings of low self-esteem and triggering anxiety when competing. Feelings of being a failure and “not good enough” plagued her while still chasing her dream of earning full-exempt status.

EMDR Therapist

In addition to being the EMDR-trained therapist delivering the therapy during the study, the primary researcher brings a unique perspective to this research as a golf professional. She is a Professional Golf Association Master Professional and LPGA Master Professional, has been practicing psychotherapy for a decade and involved in competitive golf for over 33 years. The researcher's private clinical practice brings the two components together by specializing in using EMDR therapy with golfers and other athletes.

Data Collection

In the spring of 2018, the primary researcher and second author collected and analyzed treatment data for two participants and conducted secondary data analysis after approval by the National University Institutional Review Board in San Diego, California. No personal identifying or demographic variables were collected for the subjects. The measures for this study involved two time periods—pre- and post-EMDR treatment—and two distinct scenarios for three categories of the Competitive State Anxiety Inventory-2 (CSAI-2)—cognitive, somatic, and self-confidence: quiet time and preperformance. Quiet time was defined as a peaceful and low-arousing moment during the participant's day, such as in the morning while preparing for the day or just before bedtime. Additional measures, besides the CSAI-2, included the Impact of Event Scale (IES), SUD of target, and the VOC scale. The SUD of target and the VOC are both individualized measures determined by the client in conjunction or with guidance from the therapist. Thirty days posttreatment, the participants completed a follow-up phone interview.

Competitive State Anxiety Inventory-2

CSAI-2 (Martens et al., 1990) is one of the most well-known, cited, and used instruments to assess anxiety in athletes; it is an internally reliable instrument with demonstrated predictive validity (Cox et al., 2003). This measure provided the baseline assessment both for quiet time measures of state anxiety about the performance when the performance was not being triggered and preperformance measures of state anxiety experienced right before the performance. The 27-item, self-reported measure divides anxiety into three components: cognitive anxiety, somatic anxiety, and self-confidence. Self-confidence is the opposite

of cognitive anxiety and important for managing stress. Scores range from 9–36, with 9 indicating low-state anxiety and 36 indicating high-state anxiety. The reverse applies to confidence, with 36 indicating high confidence and 9 indicating low confidence. The expectation was, after treatment, participants would experience a reduction in cognitive and somatic anxiety while increasing self-confidence. CSAI-2 scales were recorded by the participants while they were at their homes during the week prior to the initial scheduled treatment and completed a second time within 1 week posttreatment.

Impact of Event Scale

The IES—Revised (Zilberg et al., 1982) assesses the effects of trauma. Considered one of the most widely used self-report instruments for assessing trauma symptoms, the psychometric properties of the assessment were rated as satisfactory (Joseph, 2000). The scale assesses the frequency of intrusive experiences after the athletic trauma. The 22-item measure asks the participants to note how distressed or bothered they are by the trauma on a 5-point scale. Scores of 24 or more indicate PTSD may be of clinical concern, 33 and above indicate a probable diagnosis of PTSD, and 37 or more indicate extreme distress. This scale was administered two times during the study: prior to the start of therapy when the target memory was selected for treatment and at the close of treatment.

Validity of Cognition Scale

VOC scores (Shapiro, 2018) use a 7-point scale to measure how strongly the participant connects to a belief (cognition) held in relation to the trauma memory (where VOC 1 = cognition is totally false and VOC 7 = cognition is totally true). Consistent with current EMDR therapy protocols, VOC scores were recorded in phases 3 and 5.

Subjective Units of Distress

SUD scores (Wolpe & Abrams, 1991) identify the participant's level of distress caused by bringing up the traumatic memory (where SUD 0 = no distress at all and SUD 10 = extreme distress). These scores are important for monitoring EMDR's efficacy throughout treatment. The aim is to reduce all SUD scores to 1 or lower. The SUD score was taken in phases 3 and 4, depending on the participant's processing patterns, consistent with the EMDR protocol.

EMDR Intervention

An EMDR-based intervention to treat athletic traumas in two professional golfers with anxiety associated with traumatic athletic memories was used. Both participants consulted with the primary researcher in person and via phone to see if they were a good fit for the study based on their experiences and symptoms and to learn more about how EMDR therapy could benefit them. The therapy took place in the primary researcher's private practice office to complete processing and all follow-up paperwork. To accommodate the participants' schedules, some sessions were longer than the traditional 90-minute allotment with time between sessions varying due to travel and competitive schedules. Once a participant committed to joining the study, an initial session was set up to address issues concerning confidentiality, informed consent, and use of the data, emphasizing the participants could withdraw from the study at any time until publication. The dissociative experiences scale (DES-II) scale was sent via email to each participant to complete at home, ensuring they met the study participation criteria. Upon return, after scoring the scale and finding the participant eligible, she received via email the worksheets of the scales to establish a baseline of the current state of anxiety and the impact of the event to be completed at home. The standard EMDR protocol began in the second session.

EMDR Protocol

A modified version of the eight-phase standard protocol was adopted for this study, focusing on a memory of an event directly linked to present-day anxiety. The Floatback technique and baseline assessments were completed in the first meeting. During the second meeting, participants shared background information about their performance struggles and the targeted events that create anxiety while performing. Set-up in the office, pacing of eye movements, and a brief explanation of what the interventions looked like was discussed. Each participant created their own mental "calm and safe space" to use during the treatment. We set up a therapy timetable commensurate with each participant's personal schedules to enable them to continue through phases 3–7; this included lengthened sessions. Starting with the target each participant had identified as the worst on their hierarchy of athletic trauma scale, and seemingly the cause of present-day anxiety during

performance, the process of desensitization and reprocessing ensued until the participant reached phase 7. Both participants identified just one significant memory related to present-day anxiety symptoms to be the focus of the therapy due to time constraints and the focus of this study. Carol completed phase 7 and closure was after 165 minutes of therapy over a single session. Jenna completed phase 7 after 120 minutes of processing over two sessions in a single week. Each participant received the CSAI-2 to complete at home and email back to the primary researcher. Once received, a follow-up call was scheduled to complete phase 8 of the protocol, the re-evaluation, and complete a social validation questionnaire.

Data Analysis

Data analysis focused on identifying changes over time for the various measures associated with improved emotional and cognitive abilities and was conducted by the secondary researcher. As discussed earlier, research demonstrates these measures are valid and reliable measures for identifying changes in individuals who have experienced trauma to ascertain the degree of reduced anxiety symptoms from EMDR therapy. Because the data involve only two specific cases and the sample size is insufficient to use traditional inferential statistics, a descriptive analysis of change was used for each client to analyze the difference in each diagnostic measure before and after EMDR therapy and measured that against the normative range for each measure. The findings represent a simple change score for each measure calculating the difference between the pre- and post-EMDR scores.

Results

The results of the measurements demonstrate a change in scores for both participants after EMDR therapy. Tables 1 and 2 present Carol and Jenna's test results, both pre- and posttreatment. The decline in the impact of the selected events, the reduction of the SUD to zero, and the improvement in somatic and cognitive anxiety are notable posttreatment. Both participants' anxiety decreased during quiet time while anxiety increased preperformance. Posttreatment, quiet time anxiety scores declined while preperformance also declined.

Pretreatment, Carol's diagnosis was more clinically concerning than Jenna's. For instance, Carol's IES score is 28, indicative of clinical concern, and her SUD of target memory is 10, the highest level of

TABLE 1. Carol: EMDR Protocol Measurement Results

Measure	Quiet time			Preperformance		Change
	Pre-EMDR	Post-EMDR	Change	Pre-EMDR	Post-EMDR	
CSAI-2: cognitive anxiety	20 (moderate)	13 (low)	-7	27 (high)	12 (low)	-15
CSAI-2: somatic anxiety	14 (moderate)	12 (low)	-2	15 (moderate)	12 (low)	-3
CSAI-2: self-confidence	14 (low)	32 (high)	+18	22 (moderate)	36 (high)	+14
	Pre-EMDR			Post-EMDR		
IES	28 (clinical concern)			0 (no impact)		-28
SUD of target memory	10 (highest disturbance)			0 (no disturbance)		-10
VOC	1 (cognition not true)			7 (cognition is true)		+6

Note. CSAI-2 = Competitive State Anxiety Inventory-2; EMDR = eye-movement desensitization and reprocessing; IES = Impact of Event Scale; SUD = subjective units of distress; VOC = Validity of Cognition Scale.

concern. Jenna's scores, while of concern, are six and three points lower, respectively, for these measures. Posttreatment, Carol's IES score reduced to zero, while Jenna's reduced to seven. Carol's confidence posttreatment increased to a score of 32 during quiet time and a score of 36 during preperformance, the highest score possible for confidence on this scale. Jenna's confidence increased slightly during quiet time from pretreatment to posttreatment, increasing 4 points, while her preperformance confidence decreased 1 point to 18 from pretreatment and posttreatment.

Measurement Scores Pre- and Post-EMDR Treatment

Tables 1 and 2 show scores for CSAI-2 during quiet time and preperformance before and after treatment, as well as IES, SUD, and VOC scores.

Competitive State Anxiety Inventory-2 Scores, Pre- and Post-EMDR Treatment

Figures 1 and 2 present the CSAI-2 inventory results for each participant.

Discussion of Findings

Throughout the span of a career, golfers inevitably have multiple negative experiences on the golf course, potentially creating traumatic memories and experiences resulting in distressing symptomology, such as anxiety. Understanding how athletic traumas uniquely impact golfers opens the door for new treatments and interventions to reduce symptoms of anxiety at the time of the experience, allowing performance to be uninterrupted, as well as long after its occurrence. EMDR therapy, most prominently known for the

TABLE 2. Jenna: EMDR Protocol Measurement Results

Measure	Quiet time			Preperformance		
	Pre-EMDR	Post-EMDR	Change	Pre-EMDR	Post-EMDR	Change
CSAI-2: cognitive anxiety	21 (moderate)	17 (moderate)	-4	25 (high)	16 (moderate)	-9
CSAI-2: somatic anxiety	19 (moderate)	12 (low)	-7	21 (moderate)	11 (low)	-10
CSAI-2: self-confidence	19 (moderate)	23 (high)	+4	19 (moderate)	18 (moderate)	-1
	Pre-EMDR			Post-EMDR		
IES	22 (high)			7 (low)		
SUD of target memory	7 (very distressing)			0 (no distress)		
VOC	4 (cognition not true)			7 (cognition is true)		

Note. CSAI-2 = Competitive State Anxiety Inventory-2; EMDR = eye-movement desensitization and reprocessing; IES = Impact of Event Scale; SUD = subjective units of distress; VOC = Validity of Cognition Scale.

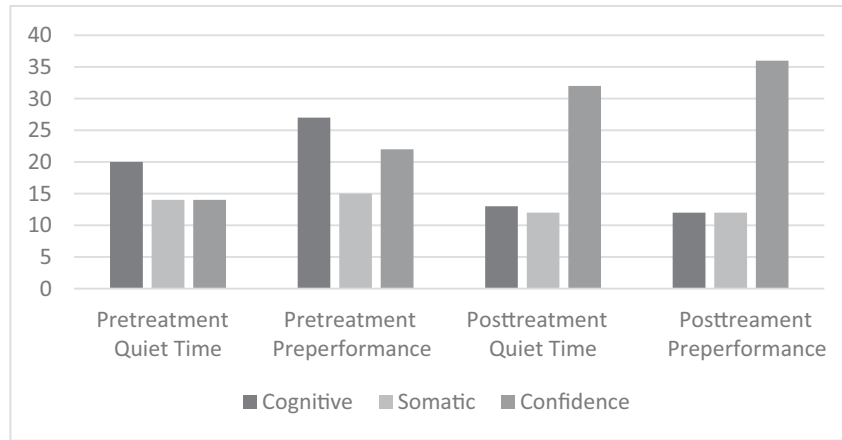


Figure 1. Carol, pre- and post-CSAI-2 results.

treatment of traumatic memories resulting in PTSD, could be a viable treatment option to help golfers reduce anxiety and decrease the distress athletic trauma memories cause.

Previous research indicates a participant's perspective of a traumatic event can evolve due to processing the emotions associated with trauma (Greway, 2003). Following the EMDR-based intervention, changes were noted on several measures indicating a possible relationship between EMDR and decreased anxiety. After the processing of memories with the two golfers experiencing athletic traumas, decreases in anxiety and concurrent increases in resting-state confidence were noted. The quiet time measures were utilized to establish a day-to-day felt anxiety and confidence and provided a comparison measure to preperformance felt anxiety and confidence. Both participants reported experiencing performance anxiety throughout their playing career, yet did not articulate anxiety symptoms interfering with their day-to-day living. Using the quiet time measure established a sense

of how these two athletes operated daily when not concerned with performing in an event. The comparison to preperformance allowed the primary researcher to identify anxiety symptoms increasing, to what degree, and how confidence was impacted. Posttreatment, scores for both participants during quiet time and preperformance anxiety decreased. Additionally, the scores for preperformance posttreatment anxiety were lower than quiet time anxiety scores pretreatment. By installing an optimistic and believable positive cognition in the participants, they were able to disconnect their emotional associations with the former triggers and feel less distress and fewer symptoms of anxiety. In the follow-up phone interviews 30 days posttreatment, Carol realized environments requiring her to participate in a group setting, such as playing in a foursome, no longer elicited doubts about her ability to fit in. She also concluded she no longer needed to isolate herself from groups for fear of ridicule and identified herself as a good putter. She reported, "I feel a lightness, like a happier version of myself wants to jump out

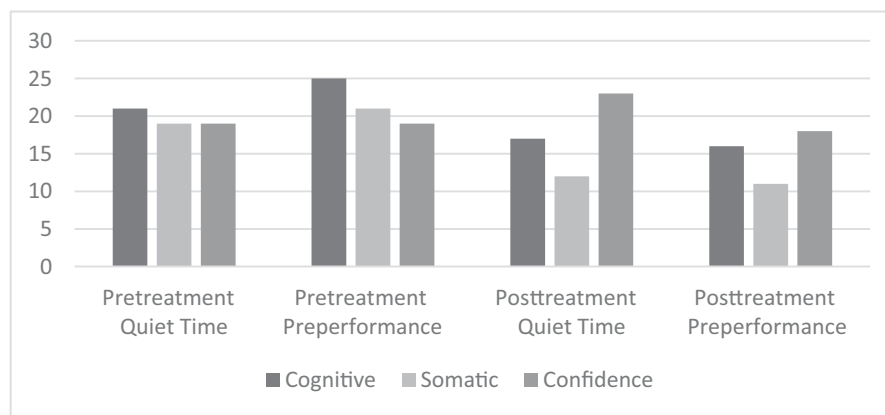


Figure 2. Jenna, pre- and post-CSAI-2 results.

of my skin.” Carol continued to feel confident in her abilities as a golfer and when recalling the targeted event trauma did not report an emotional activation. In a similar manner, Jenna noted, “I’m astonished at how I feel right now. I can’t believe I have been holding onto that for so long. The picture of it seems to be fading away in my mind.” She added that she felt motivated to have a successful remainder of the season and her experience was not going to hold her back any longer. For both participants, posttreatment scores indicated decreased anxiety and increased quiet time confidence. While this is only a sample of two, the results show similar features with other research, such as Gracheck (2010), Falls et al. (2017), and Bennett et al. (2017) in reducing negative symptoms associated with athletic performance and indicating EMDR therapy could serve as a viable tool in reducing anxiety measures in golfers suffering from athletic traumas. Although this study did not focus on EMDR and its effect on athletic performance, it exemplifies the reduction of anxiety symptoms which can cause performance disruptions in golfers.

The researched effectiveness of EMDR to heal unprocessed traumas creates a fast and productive treatment option for golfers. A debilitating double bogey (a score of two over par on a given hole) on the last hole to lose a major championship could be treated shortly after the close of the event by decreasing the intensity of the immediate experience. At the same time, the EMDR therapist would install positive cognitions to prevent future triggering. In measuring the impact of the events selected by the participants, the combination of these interventions showed IES scores decreasing to a level of little to no impact at all. During follow-up, both participants sustained the feeling of the memories no longer impacting them in ways it had before. The reduction of the intensity of the memory measured by the SUD score and decreased feelings of anxiety measured by the CSAI-2 leads one to look at the possible prevention of future disturbances in athletic performance and permit the golfer to heal.

EMDR therapy has a recent history of providing multiple benefits to a variety of populations; however, the benefits to athletes have not been a prominent focus of research (Shapiro, 2018). The use of future template protocols and imagery work to attain peak performance helped people reduce anxiety by processing negative images and mentally seeing oneself successfully perform in the future. For athletes, EMDR therapy could reduce negative

beliefs about events happening in personal and professional life, decrease the vividness of images creating fear and doubt, and eliminate the risk of triggering somatic and cognitive anxiety connected to past events. EMDR therapy success times vary from client to client depending upon their experience, history with athletic traumas, and how well they connect with the EMDR therapy. Simply put, some clients respond more quickly to EMDR therapy and some clients have more intense athletic traumas requiring longer EMDR treatment to see results. In this study, the EMDR-based intervention showed a relationship in declining measures of anxiety and distress while increasing confidence in as little as one extended session for Carol and two extended sessions for Jenna, creating an opportunity for quick relief from athletic traumas in their history.

Limitations and Delimitations

Qualitative case studies provide a limited, but deep, view into one person’s experience, which may not be generalizable to all golfers. For example, the participants in this study had deep histories of professional competition experiences. It is possible amateur golfers may not have as deep a history of athletic trauma or anxiety related to those traumas impeding performance. I believe, and limited research suggests (Falls et al., 2017), there would be no treatment outcome differences based on the level of the golfer, and all golfers could equally be susceptible to an athletic trauma. It is, however, worth considering how the level of skill, history, and whether one makes their living as a competitive golfer may influence the subjective experience of a trauma. While case studies can provide information on a deeper level about a treatment and condition, everyone’s experience is different. In this study, the experience of teammates talking about Carol was significant enough to cause duress; however, for another golfer, it may not impact at all. A limitation of the study is the vastness of experiences golfers live through, and no consistency among the experiences could potentially exist.

Confounding factors may include the effectiveness of the EMDR-based intervention in decreasing anxiety and increasing confidence in golfers. Although EMDR is evidence based in the treatment of mental health disorders and symptoms, this case study was not designed with enough rigor to indicate the causality of EMDR on decreasing anxiety; however, a strong relationship exists between measures of anxiety and confidence changes

after the EMDR-based intervention. Other factors may have played a role in the two participants results such as the attention, rapport, and support felt from the therapist during the time of treatment. The ability to talk and share about a vulnerability being held onto for many years can provide relief. The passage of time between recalling the distressing memory, processing it, then completing the measurements at home could also reduce symptoms.

The lack of previous research on EMDR therapy with female golfers brings up a curiosity as to gender differences in the efficacy of the treatment. Ong and Harwood (2017) shared an interesting perspective citing cultural differences and receptivity to sport psychological interventions. This new limitation, discovered through their study, includes cultural considerations between Western and Eastern golfers, and male and female golfers. For instance, would EMDR treatment be received openly by South Korean women golfers? As they demonstrate, the expansion of topics and contexts of life events to process and repair may be limited by the individual's own cultural and gendered opinions and beliefs about psychotherapeutic modalities. Thus, we cannot generalize findings to golfers across all national and cultural backgrounds at this time.

Subsequent research outside the scope of this study should include a longitudinal design with multiple follow-ups to ascertain the degree of continued progress or backsliding, effects on other mental states besides anxiety, and the impacts of attitudinal change on performance enhancement. Additional studies could include a more rigorous design randomly assigning EMDR to a treatment group of golfers and comparing it to a control group of golfers. It is imperative the metrics used to assess variables remain consistent and to keep in mind measuring subjective experiences can be difficult. What is transferable from this study is the incremental knowledge and lessons gained from each case study and their implications for EMDR-based interventions with golfers.

Conclusion

The results from the study support the initial hypothesis of EMDR therapy as a possible treatment modality for reducing anxiety related to athletic traumas. The data show the therapy may benefit the participants by decreasing both anxiety and the intensity of the trauma. These factors combine to create an opportunity for the participant to

perform without being held hostage emotionally and psychologically due to trauma. Although only a licensed and trained clinician may provide treatment, coaches and golf teaching professionals exposed to this information can refer their clientele who suffer from athletic trauma to qualified practitioners, thereby providing coaches with a larger toolbox.

Losing, failing, and falling short of reaching expectations can cause disappointment and negative effects in golfers. Golf is a sport notoriously known for the large component of mental skills needed to perform successfully. Based on the AIP theory of how memories are stored in networks and serve as triggers, EMDR should be added to the compendium of sport psychological interventions as a possible effective intervention to help golfers reprocess maladaptive memories thus decreasing anxiety symptoms. The unique aspects of golf and what it requires from a player create an opportunity for thriving and failing. The failures golfers experience can linger for decades if left unprocessed in the mind. Performing at advanced professional levels and winning can be difficult when those athletic traumas hold a golfer back. Stagnation, performance blocks, plateaus, and even quitting the game are likely consequences of leaving athletic traumas unprocessed.

Note

1. Participants knew of the primary researcher through industry presentations and speaking engagements

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