

PTSD and Exercise

By Isabella Rosazza and Graduate Student Mentor, Eric Leslie

Introduction

Exercise is one of the most important parts of helping prevent and treat injuries or diseases. Exercise for those who have psychological injuries, like the more traumatic based disorder: post-traumatic stress disorder (PTSD), are also important so that the mind is distracted. During exercise, the brain is getting enough dopamine and serotonin to counteract the psychological traumas it has endured. (8) Many types of exercises will help keep the body systems in homeostasis and is important for rehabilitation and maintenance of the mental health of patients. Post-traumatic stress disorder patients have a broad range of what can be done to help them in everyday life, like exercising in the morning before their day starts, eating good healthy meals that don't trigger their trauma, going to their therapists as well as going to sleep at a decent hour. This review of how post-traumatic stress disorder and exercise are related will discuss how PTSD effects the mind and body, the role of exercise as a treatment, considerations for age groups and sex differences which will help health and fitness professionals prescribe the correct exercises for those individuals that have been diagnosed with post-traumatic stress disorder.

Introduction of Post-traumatic stress disorder and what it means

When someone experiences a traumatic event in their life there is a normal response in their bodies to have a fight-or-flight reaction. This fight-or-flight reaction is a survival technique that first occurs in the brain and causes dysregulation of the levels of dopamine, serotonin, and any other chemicals in the brain. If the body is chronically dysregulated then the symptoms of posttraumatic stress disorder start to show themselves. To understand what symptoms might show themselves with post-traumatic stress disorder we need to know what this disorder is. It is defined to be “a mental health condition that’s triggered by a terrifying event- either experiencing it or witnessing it.” These symptoms that might come up are based on the individual’s traumas that they have experienced. The patients can experience some that can be quite unpleasant and vary in intensity which can typically be categorized into three different domains: (i) reminders of the exposure (including flashbacks, intrusive thoughts, nightmares); (ii) activation (including hyperarousal, insomnia, agitation, irritability, impulsivity and anger); and (iii) deactivation (including numbing, avoidance, withdrawal, confusion, derealization,

dissociation, and depression). (8) Which ones come up solely depend on how an individual's body reacts to those traumas that messes with the brain. These symptoms coincide with those patients who have been chronically deregulated and have been diagnosed with PTSD.

Impact of Exercise on Sleep

For those whose bodies have been chronically deregulated can be helped with exercise and if the exercise regimen is intense and correct then those patients will sleep better. This is seen in a study that has stated that they found that at the end of the trials there is a good engagement with exercise which has shown to reflect in a better quality of sleep at the one-year follow up mark. (5) There was also a decrease in the psychological symptoms that these veterans or other patients might experience. (5) Sleep is when most of our healing is done after causing trauma to it throughout the day with walking and other daily activities. When a patient is sleeping, the body is being used less then it normally would which allows the systems to slow down and rebuild the things that are needed for the following day.

Exercise Programs that help reduce symptoms that use direct and indirect types

Exercise can be used to treat these symptoms of "war-related posttraumatic stress disorder" with a technique called integrative exercise. (1) Integrative exercise uses aerobic and resistance exercises with other techniques called mindfulness-based principles and yoga. A study, that was completed for 12 weeks, showed an integrative exercise program for war veterans with PTSD who saw significant improvements in mindfulness, body awareness, as well as positive states of mind. With these integrative exercise program, some direct and indirect types of exercise can be helpful on how to help those diagnosed with post-traumatic stress disorder. (1) Both direct and indirect types of exercise have qualities that are good for those who have post-traumatic stress disorder in the fact that there have been improved the quality of live for veterans and other patients of post-traumatic stress disorder. (3) These improvements have seen to include sleep and mindfulness exercises. Direct effects have shown to have post-traumatic stress disorder symptoms when there is strenuous intense exercise and for those patients who experienced avoidance or numbing and hyperarousal symptoms. (3) Indirect effects would be the symptoms like poor sleep quality, bodily pain, alcohol, and substance abuse which would make those symptoms of post-traumatic stress disorder worse. (3) Exercise, in general, has been shown to reduce bodily pain, improve sleep quality, and alter substance use pattern which can be done at little or no cost and is convenient for the individual in various environments. (3) This would be

considered the direct effects that exercise can have. This can be especially helpful when there are several barriers, like the fact that they don't have access to the medications they need to stop the hallucinations or make sure they are lucid enough to seek those that will help with exercise programs, they also need to have money to be able to get those things, which all can prevent those with post-traumatic stress disorder from seeking treatment.

Age and sex differences in post-traumatic stress disorder

Along with those that have some barriers from seeking some treatments, there also seems to be some age and gender biases that effects how they are able to get the treatment they need. Age barriers are those that make patients who are elderly or older than 50 harder to get the treatments they need since most treatments are focused for those veterans who are in good standing in the military, those who are young and have money, who are lucid enough to know they need help, and those who know where to seek treatment. (7) Males who have been diagnosed with PTSD and that are currently active, meaning that they regularly exercise, show to have significantly lower symptoms then their female counterparts have based on the findings that a study found in which they compared males and females with the same post-traumatic stress disorder. (4) Most symptoms for everything are individual experience based but when there is research being completed, an underrepresentation of women diagnosed PTSD due to men being the main subjects for this research. This should not be the case however due to there being a higher prevalence of post-traumatic stress disorder in women than men. (9) This disorder can affect anyone of any age or gender and there needs to be more research done to represent that.

Exercise Regimens

There are lots of different exercises that those with post-traumatic stress disorder symptoms would benefit from. Resistance training is especially important for the body and even more so in those that have a post-traumatic stress disorder diagnosis and are not in physical pain while they are moving. Adding in some aerobic exercises in places in a training program with resistance training will give them a good balanced treatment plan. For calming and relaxing that should be included every so often in the training program to help keep the patients relaxed and give them a variety of training types, like doing yoga or other nonaerobic exercises. (2) These relaxing and calming exercises could be things like yoga and different types of mindfulness exercises that slowly bring them out of their comfort zones and past barriers they have put up for themselves. (2) These types of exercises have shown to reduce stress and improve the mood

chemicals in the brain that should decrease how often the symptoms are experienced. (8)

Keeping the patient with PTSD calm, relaxed, exercising, and taking good care of themselves should help keep the triggers that make the symptoms flare up at bay. (6)

For someone who has PTSD, good exercise regimens and good sleep could make all the difference in the world by improving how often symptoms of post-traumatic stress disorder are experienced and how “normal” a patient will start to be able to feel. Most people who experience PTSD but have a strict exercise program and diet program have shown to have increased mental capacity to start taking care of themselves better. With this these patients will see reduced bodily pain, sleep quality, as well as keeping up with their mindfulness and yoga exercises that helps them live a better daily life. If a patient is able to start seeing their success they may then prefer to have a family member complete the rest of their treatment with them instead of the caretaker. (10) In research, we have seen that there is a big gender bias among women with PTSD due to the lack of experiments there are to see if there are any differences between men and women. Resistance training and aerobic exercises are good training exercises to do while training to help reduce the signs/symptoms of those with PTSD. While having these good exercises to help the symptoms, there is often sleep disturbances among those with PTSD that have been shown to be reduced if patients keep with their good exercise programs. When treating someone with post-traumatic stress disorder, they need to make sure their patients are sticking to their strict schedules so they don't stray and digress back into the state they were in before they sought out treatment. The caretakers need to also make sure that the patients know that they are safe and away from their traumas when first starting out with their programs and need to keep with these sentiments with their training programs to see good improvements moving forward.

The Elements

Apply it: Exercise is an evidence-based treatment for PTSD patients that improves daily health and reduces sleep disturbances. The signs and symptoms that these patients experience will slowly diminish as the amount of exercise they complete increases.

Bridging the Gap:

- A control study that lasted 12-weeks had a program called integrative exercise in which war veterans took part in and they saw improvement of their PTSD symptoms as well as improvement in mindfulness, interoceptive bodily awareness, and positive states of mind.

- Women are the majority of people that have experienced trauma and then diagnosed with PTSD over men yet we typically only seen in tests about PTSD and exercise.
- When a patient exercises very well it then cares into how well they sleep at night which might also help reduce the severity of PTSD symptoms as well as those who might also get depression or substance abuse disorders.

Summary Statement: PTSD patients have a big struggle when need to get help and they can't seem to due to being stuck in a place where the trauma they endured was at. Finding a cheap inexpensive way to try to help these people who are suffering is ideal even though that medicine will start that process. This process is still developing due to that this is an injury/disorder on the brain which is more complicated to help heal then the rest of the body and having good research is also the key to help make sure no one is looked over.

Pulled text:

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Bio:

Isabella Rosazza is currently pursuing her Bachelor's degree at the University of New Mexico with a focus on Exercise Science where she is also involved in an honor society. She works three-part time jobs to help save up for doctorate school and loves to be around animals who give a sense of peace.

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