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ORIGINAL ARTICLE

IMPACT OF EXERCISE VS COGNITIVE THERAPY IN ATHLETES WITH CHRONIC FATIGUE SYNDROME

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ABSTRACT

Background of the study: Athletes are exposed to traumatic events that lead to long term psychological and psychosomatic sufferings. After an athlete experience a traumatic event, sequel may include post traumatic stress disorder. In current past year PTSD prevalence was 3.5% among women it was 7.5% and in men it was about 3.6%. **Methodology:** A observational study is done with convenient sampling. Post Traumatic Stress Disorder DMS-5 was used as a measurement tool and their psychological and psychosomatic sufferings as an outcome measure. Athletes who have scored more than 5 in questionnaire were divided in two groups. Before starting the study they were assessed with PTSD-DMS5 scale. The subjects were randomly assigned into group A & B. Group A were given behavioural therapy and aerobic exercise includes stepper exercise of 3weeks/session of 30mins/session. Group B were given behavioural therapy with aerobic exercise which includes daily brisk walking of 30 minutes before 8AM. All the 30 participants were made to meet the Psychologist weekly once to receive cognitive behavioral therapy of 12 visits of the whole study duration. **Result:** On comparing the pre and post test values of group A and group B on PTSD shows significant difference in the mean values of $p \leq 0.001$. Thus it has been proved that stepper aerobics exercise given in groups along with the music has greater significance. **Conclusion:** There was improvement in post traumatic stress in athletes of both groups. However stepper aerobics and cognitive behavioural therapy showed more significant improvement than aerobics exercise and cognitive behavioural therapy.

Keywords: Post traumatic stress disorder scale; Aerobic exercise; Cognitive behavioral therapy.

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INTRODUCTION

Post traumatic pressure problem happens in 5-10% of the populace and two times as normal in man as well as in ladies. It is been accounted for that 60.7% in male and 51.2% in ladies would insight something like one expected awful mishap in the course of their life. There are dependably the possibilities of competitors getting harmed while contending or during preparing which is by and large the motivation behind why a clinician would ultimately experience a patient who is a not kidding competitor and is in the need of their help to restore their PSTD.

Competitors might be presented to horrible accidents that can prompt long haul mental and psychosomatic sufferings. After a competitor encounters a horrible accident, spin-off may incorporate post horrendous pressure issue yet in addition different responses particularly culture explicit example of side effect and co morbidities such a pressure and sadness. Post awful pressure problem is portrayed by side effects of re-encountering the awful mishap keeping away from tokens of occasion or feeling genuinely numb and hyper excitement.

Symptom of PSDD adapted from DMS-5: It was officially perceived as a mental issue in the third version of analytic and statistical manual of mental issue (DMS-5). [3,7]

- Recurrent and intrusive distressing recollection.
- Recurrent distressing dreams
- Acting or feeling as if events occurring
- Psychological reactivity to cues
- Sleep difficulty
- Irritability or outburst of anger
- Difficulty in concentrating

Aerobic exercise stepper exercise: High impact exercise is a type of actual exercise that consolidates with extending and reinforcing preparing schedules determined to work on every one of the components of wellness adaptability, solid strength, and cardio vascular fitness). Step Aerobics is the type of oxygen consuming activity utilizing of a raised stage.

Practicing with a high-impact steps give a few wellness helps that can help in day to day existence. An extreme cardiovascular exercise will make your heart and lungs work all the more productively. The siphoning of the blood from the calf against gravity gives more oxygenated blood to the cerebrum and along these lines it loosens up the brain as well as the entire body.

Role of aerobic exercise:

- It improves mental health benefits.
- It controls weight.
- It helps to reduce high blood pressure.
- It reduces the chance of diseases.
- It uses oxygen more efficiently.
- It increases metabolism.
- It strengthens immune system.

It improves cholesterol level. Many studies have proved that music with exercise shows positive effects. When music is used before athletic activity, it has been shown to increase the arousal, facilitate relevant imagery and improve the performance of the simple tasks. When music is used during activity, it has ergogenic effects and psychological effects.

Listening to music during exercise can both delay fatigue and lessen the subjective perception of fatigue. It can increase physical capacity, improve energy efficiency, and influence mood. In study after study, the use

of muscle during low to moderate level intensity exercise was associated with clear improvements in endurance.

Effects of cognitive behavioural therapy for stress disorder:

- Manage symptoms of mental illness.
- Prevent a relapse of mental illness symptoms.
- Treat a mental illness when medication isn't good option.
- Learn techniques for coping with stressful life situations.
- Identify way to manage emotions.
- Manage chronic physical symptoms.
- Cope with medical illness.
- Overcome emotional trauma related to abuse or emotion.
- Cope with grief or loss.

The gold standard treatment for PTSD is cognitive behavioural therapy which includes (a) psycho education (b) anxiety management (C) exposure (D) cognitive restructuring.

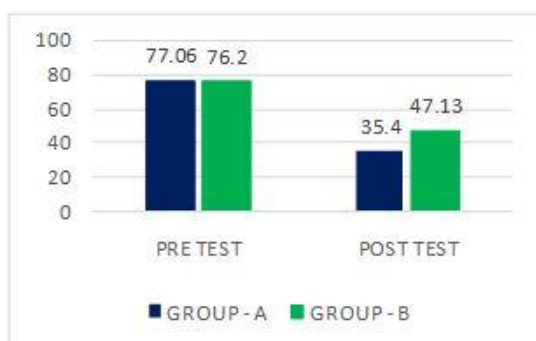
METHODOLOGY

This observational study was conducted among the athletes by comparative pre and post test type. The 30 subjects were selected at outpatient physiotherapy department, faculty of physiotherapy, DR MGR Educational and research institute. Study duration was 12 weeks (Three sessions per week).

Comparison of Post Traumatic Stress Disorder Dms-5 between Group-A and Group-B in Pre and Post Test

PTSD DMS-5	Group - A		Group - B		t-Test	df	SIG
	MEAN	S.D	MEAN	S.D			
PRE TEST	77.06	5.14	76.20	7.09	.383	28	.705***
POST TEST	35.40	5.54	47.13	7.05	-5.41	28	.000***

Table 1: Group A; Cognitive Therapy with Stepper Aerobics, Group B; Cognitive Therapy with Aerobics



Graph 1: Comparison of post traumatic stress disorder dms-5 between Group-A and Group - B in pre and post test

Inclusion criteria were Athletes with post traumatic stress disorder and who are taking medication for stress. Player who scored more than 5 has denoted in trauma screening questionnaire.

Exclusion criteria were any neurological disorder and systemic illness recent surgery and trauma. Stepper, music player, paper pen were the materials used. The subjects were randomly assigned into group A & B. Outcome

measures by post traumatic stress disorder scalDMS-5.

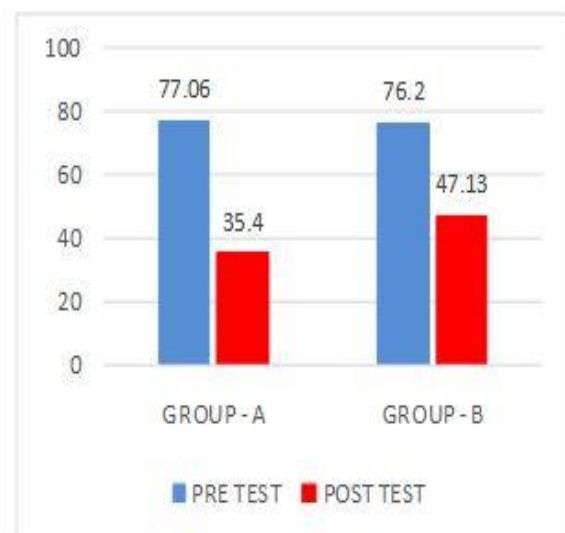
Procedure: Athletes who have scored more than 5 in trauma screening questionnaire was grouped into two groups. Group A n=15, Group

Comparison of Post Traumatic Stress Disorder Dms-5 within Group–A & Group–B between Pre

& Post Test Values B n= 15 Before starting the study the whole study was clearly explained to the athletes. Then they were given with PTSD-DMS5 scale. The subjects were randomly assigned into group A & B.

PTSD DMS-5	PRE TEST		POST TEST		t-Test	Sig
	Mean	S.D	Mean	S.D		
Group A	77.06	5.14	35.40	4.54	27.40	.000***
Group B	76.20	7.09	47.13	7.05	-11.36	.000***

Table 2: Group A – cognitive therapy with stepper aerobics, Group B - cognitive therapy with aerobics



Graph 2: Comparison of Post Traumatic Stress Disorder DMS-5 within group – A And Group – B Between Pre & Post Test Value

Group A were given behavioural therapy and aerobic exercise includes stepper exercise like stepper Stepper L, step up, step down, grape vine stepper etc., of 3weeks/session of

30mins/session given in the groups along the mild music in groups.

Group B were given behavioural therapy with aerobic exercise which includes daily brisk walking daily of 30 minutes before 8AM.All the 30 participants were made to meet the Psychologist once to cognitive behavioural therapy of 12 vist of the whole study.

RESULTS

On comparing the Mean upsides of Group A and Group B on Post Traumatic Stress Disorder DMS-5, it shows huge difference in the post test Mean qualities however (Group A- Cognitive Therapy with Stepper Aerobics) which has the Lower Mean worth is more successful than (Group B - Cognitive Therapy with Aerobics) $P \leq 0.001$.

DISCUSSION

The present study was conducted to determine the effectiveness of cognitive therapy and aerobic exercise in post traumatic stress disorder [PTSD] among athletes. About 50 athletes were selected. They were initially assessed with trauma screening questionnaire. The athletes who scored more than 5 in the questionnaire and athletes who are under medication for PTSD were included in the study. They were randomly selected and at last only 30 participants were selected and remaining 20 were removed from the study due to inconvenient of time, distance and increased stress level. The 30 subjects were grouped into group A [15] and group B [15].

In many studies it has been proved that cognitive behavioural therapy is the gold standard treatment for PTSD. And the beneficial of the regular exercise has a greater impact on psychological makeup which is been provided in the recent studies. The combination of cognitive behavioural therapy and aerobic exercise together plays a major role in bringing back PTSD athletes to the normal.

The statistical reports uncovers that there is no critical distinction in pre test upsides of PTSD[DMS5] score in bunch A and bunch B. But there is statically profoundly huge contrast in post test values in PTSD[DMS5] in both gathering A and bunch B.[$P \leq 0.001$]. Both the gatherings show critical decline in the post test values Group A is more viable than Group B. This shows the two gatherings are huge in decreasing PTSD in competitors however Group A [Stepper Aerobics and Cognitive Behavioural Therapy] is More Significant When Compared to Group B [Aerobics and Cognitive Behavioural

Therapy]. This is no huge distinction in pre test upsides of PTSD [DMS5] score between in Group A and Group B [$p \leq 0.001$]. Both the gatherings show huge diminishing in post test esteems however Group A is more powerful than bunch B.

Hence, this shows the two gatherings are critical in lessening the PTSD in competitors yet bunch A [Stepper and Cognitive Behavioural Therapy] Is More Significant Than Group B [Aerobics and Cognitive Behavioural Therapy]. This is on the grounds that bunch A rehearsed the activity in a gathering and with music. Whenever music is utilized in the any athletic movement it has ergogenic [work enhancing] impacts and mental impact. Standing by listening to the music during activity would both postponement be able to exhaustion and reduces the abstract view of weariness. In bunch practice people had higher aggravation resilience when contrasted with individual exercise performing people.

The increment resistance to agony might come from a more prominent arrival of endorphins- 'the great feel' chemicals because of individuals in a state of harmony or gathered with each other. Whereas group B also done with morning brisk walk can improve the cardio vascular capacity, improves the mood swing and bring positive vibe, and gives time have significant effect but when compared to group B, group A is more effective because the person is not socially well being and some may be introvert and some may be lazy to wake up in the morning and some will be partial involvement in morning walk.

The cognitive behavioural therapy was most effective on treatment for conditions like anxiety and depression. It is most effective in

psychological treatment for moderate and severe depression it is most effective that antidepressants for many types of depression. This is why group A is more effective when compared to group B.

Ethical clearance: Ethical clearance was obtained from the ethical Institutional Review Board of Faculty of Physiotherapy, Dr. MGR. Educational and Research Institute, Chennai with reference No. C53/PHYSIO/IRB/2017-2018 approval letter dated 10/08/2021.

Conflicts of Interest: There is no conflict of interest to conduct this study.

Fund for the study: This is self-funded study.

CONCLUSION

This study shows that there was significant improvement in the post traumatic stress in the athletes in both groups. However stepper aerobics and cognitive behavioural therapy [Group A] showed more significant improvement than aerobics exercise and cognitive behavioural therapy (Group B) and reduces the stress level of the athletes and bring back them to the normal.

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