



# Effect of Aerobic Training Program to Reduce Stress and Anxiety Among Persons with Alcohol Withdrawal Syndrome

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## KEYWORDS

Aerobic  
Training  
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Syndrome;  
Stress &  
Anxiety

## ABSTRACT:

**Introduction:** To determine the effect of aerobic training programs on reducing stress and anxiety among people with alcohol withdrawal syndrome

**Objectives:** To identify stress and anxiety among alcohol withdrawal patients by using the DASS scale; To find out the effectiveness of conventional therapy among alcohol withdrawal patients in the control group; To administer an effective aerobic training program among alcohol withdrawal patients in the experimental group; To find out and correlate whether this aerobic training protocol is effective for stress and anxiety relief among alcohol withdrawal patients.

**Methods:** A total of thirty (30) populations were selected according to the inclusion criteria. The alcohol withdrawal persons with stress and anxiety were measured by the DASS-21 scale. The samples were divided into fifteen (15) samples in the experimental group and (15) fifteen samples in the control group. The intervention that is given to the sample is mild to severe levels of stress and anxiety. The pre-test and post-test were collected from both the control and experimental groups. The experimental group receives aerobic training exercise whereas the control group does not receive aerobic training exercise.

**Results:** The results showed that the comparison of pre and post-test mean DASS 21 of the experimental group was highly statistically significant, as compared to the control group because of the effect of aerobic training programs to reduce stress and anxiety among persons with alcohol withdrawal syndrome Since the p-value of 0.001 is lesser than 0.05. The DASS 21 measure scores of the pre and post-test of the control group were significantly lower than that of the experimental group after the implementation of an aerobic training program.

**Conclusions:** The current study concludes that there was a significant improvement in the experimental group than the control group after the aerobic training program. Thus, this study proves that aerobic training programs can be used as an effective intervention to reduce stress and anxiety by using the DASS 21 scale for persons with alcohol withdrawal syndrome.

## 1. Introduction

A well-defined group of symptoms known as alcohol withdrawal syndrome is brought on by the abrupt reduction or cessation of long-term alcohol intake. A poorly characterized symptom of prolonged withdrawal may develop after acute withdrawal has gone. Alcohol withdrawal results in serious sickness or death.

Clinical features

- Anxiety
- Depression
- Sleep disturbances
- Stress
- Cognitive impairment

- Delirium
- Hallucinations
- Confusion and disorientation

## STRESS AND ALCOHOL WITHDRAWAL

Alcohol use especially, withdrawal and stress have a complicated interaction. Withdrawal symptoms are powerful stressors that activate the HPA axis, create long-lasting deregulation of neuroendocrine stress response, and alter sympathetic nervous system activity. This triggers stress behaviour and alcohol-seeking behavior. (Howard C Becker Alcohol res.2012)



## ANXIETY AND ALCOHOL WITHDRAWAL

Long-term alcohol consumption particularly alcohol withdrawal episodes might raise anxiety levels. Alcohol withdrawal can cause hyperventilation which can disrupt blood chemistry and cause symptoms that can be mistaken for those of anxiety disorders (Kushner et al.1990)

## AEROBIC EXERCISES

Any physical activity that makes you sweat forces you to breathe more forcefully, and increases your rest is considered an aerobic exercise. It fortifies your heart and lungs while training your cardiovascular system to better handle and distribute oxygen throughout your body. Regular aerobic exercise offers several health benefits, including enhancing heart and circulatory health and lowering stress, tension, anxiety, and depressive symptoms.

There will be three types of aerobic training classes

- Spinning
- Energy classes
- Body combat (kicks, punch, pushups, body – weight, squats)

## AEROBIC EXERCISE FOR STRESS AND ANXIETY REDUCTION

Physical activity and exercise can improve a person's mental health and capacity to deal with stressful situations. For instance, exercise inhibits immunosuppressants brought about by stress. Hormones that cause stress will be reduced during aerobic exercise. It has various advantages and effects on the body's cardiovascular and metabolic systems. Exercise serves as a time out or distraction from one's stressors causes a calming effect and improves positivity. There will be a reduction in serotonin after aerobic exercise which causes further reduction of depression (effect of selective aerobic exercises on depression Ahmad Hemet-Far). Enhancing or maintaining the ability of circulatory and respiratory systems to supply oxygen during prolonged aerobic exercise, is the major objective to reduce stress, anxiety, and depression.

## 2. Objectives

- To identify stress and anxiety among alcohol withdrawal patients by using DASS scale.
- To find out the effectiveness of conventional therapy among alcohol withdrawal patients in control group.
- To administer an effective aerobic training program among alcohol withdrawal patients in the experimental group.
- To find out and correlate whether this aerobic

training protocol is effective for stress and anxiety relief among alcohol withdrawal patients.

## 3. Methods

### RESEARCH DESIGN

Quasi-experimental type of study.

### SAMPLE TECHNIQUE

Alcohol withdrawal persons above the age of 17 were recruited through the convenience sampling technique from the Chennai deaddiction centre.

### SAMPLE SIZE

Thirty (30) alcohol withdrawal persons were divided into 15 in the experimental group and 15 in the control group.

### SAMPLE SETTING

The sample set was done in Chennai deaddiction center, mangadu.

### VARIABLES

Independent variable: Aerobic training program.

Dependent variables: Stress and anxiety.

### SELECTION CRITERIA

#### INCLUSION CRITERIA

- 18 to 30 years of age.
- Only males are included.
- Persons with stress and anxiety.

#### EXCLUSION CRITERIA

- Age above 30 years are excluded.
- Females with alcohol withdrawal symptoms.
- Persons with other psychiatric conditions.

### MEASUREMENT TOOLS / MATERIAL REQUIRED:

DASS 21 (depression, anxiety, and stress rating scale) The purpose of the DASS 21 scale. It is a set of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. The depression scale assesses devaluation of life, self-deprecation, and lack of interest. The anxiety scale assesses autonomic arousal, situational anxiety, and subjective experience of anxious affect. The stress scale assesses agitated, irritability, overreaction, and impatient.

### VALIDITY

The concurrent validity of the DASS-21 scale scores has been supported by moderate to high correlations ( $R_s=.40$  to  $.65$ ) with related measures of depression and anxiety.



## RELIABILITY

Studies have reported good estimates of internal consistency reliability for the original scale scores (range=.82 to .97) of the DASS -21 in clinical and non-clinical samples.

The positive and negative affect schedule is 20 items of different emotions. It consists of 20 statements related to the overall feelings of individuals. The items are answered on a five-point scale ranging from strongly agree to strongly disagree.

## DURATION OF THE STUDY

Three sessions per week for three months with a 45-minute duration (36 sessions)

## PROCEDURE

A total of thirty (30) populations were selected according to the inclusion criteria. The alcohol withdrawal persons with stress and anxiety were measured by the DASS-21 scale. The samples were divided into fifteen (15) samples in the experimental group and (15) fifteen samples in the control group. The intervention that is given to the sample is mild to severe levels of stress and anxiety. The pre-test and post-test were collected from both the control and experimental groups. The experimental group receives aerobic training exercise whereas the control group does not receive aerobic training exercise.

## INTERVENTION PROTOCOL

Each session starts with an introduction about the aerobic exercise to be done along with the warm-up and warm-down phase and is winded with feedback.

Evaluation of protest.

Introduction about myself and the participants.

Jumping jacks.

Rope crossing.

March in a place for 10 sec.

High knees and relax.

Mountain climbing with music.

Butt kickers with side bent.

Toe tough along with jumps.

ABS side bent.

Burpees and walking lunge.

Side twist and touch the ground.

Knees cross and hands rise.

Fast feet and line hops.

Cat and camel stretch along with music.

Wide leg side squat, relax and follow up.

Jumping jacks.

Rope crossing.

March in a place for 10 sec, relax and continue.

High knees and hand lift.

Mountain climbing with music.

Butt kickers and side bent.

Toe touch and cross jumps.

ABS side bent.

Burpees and walking lunge.

Hip twist and touch the ground.

Kness cross and hand raise.

Fast feet and line hops.

Cat and camel stretch along with mu sic.

Wide leg squat.

Jumping jacks

Mountain climbing with music.

Burpees and walking lunge.

Butt kicks and cross bents.

Fast feet and line hops.

## 4. Results

TABLE 4.1 - Statistical analysis of pre-test and post-test in the control group

Test	Mean	SD	N	Z value	p value
Cntr_Pre_Stress	28.9333	4.46361	15	3.482	0.00*
Cntr_Post_Stress	25.2	4.05674	15		
Cntr_Pre_An timer	17.2	4.82849	15	3.508	0.00*
Cntr_Post_An timer	14.2667	4.52717	15		

\*Significant at 5% alpha level

Since the p-value is less than 0.05, an alternate hypothesis is accepted. Hence, there is a statistically significant difference between pre-test and post-test scores in the Control Group of the DASS. This suggests that the intervention received by the control group had significant improvement.

Figure No 4.1 - Comparison of pre-test and post-test of DASS in the control group

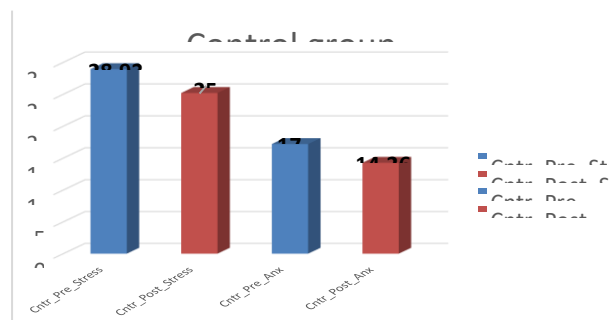




TABLE 4.2 - Statistical analysis of pre- test and post-test of DASS in experimental

Test	Mean	SD	N	Z value	p-value
Expt_Pre_Stress	28.1333	4.50185	15	-3.472	0.001*
Expt_Post_Stress	21.0667	3.99046	15		
Expt_Pre_Anxiety	18.5333	3.50238	15	-3.421	0.001*
Expt_Post_Anxiety	10.9333	3.19523	15		

\* Significant at 5% alpha level

In the Experimental group, since the p-value is less than 0.05, an alternate hypothesis is accepted. Hence, there is a statistically significant difference in the Experimental Group between pre-test and post-test scores of DASS. This suggests that the intervention received by the Experimental group had significant improvement.

Figure No 4.2 – Comparison of pre-test and post-test of DASS in the experimental group

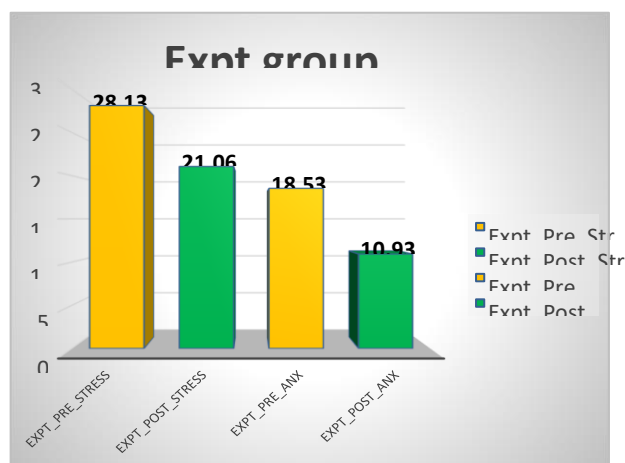


TABLE 4.3 - Statistical analysis between the post- test scores of the control and experimental group

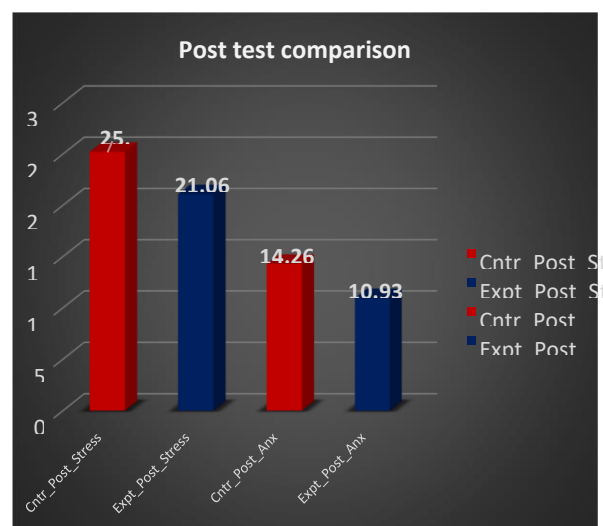
Group	Mean	SD	N	Z value	p-value
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Cntr_Post_Stress	25.2	4.05674	15	2.364	0.018*
Expt_Post_Stress	21.0667	3.99046	15		
Cntr_Post_Anxiety	14.2667	4.52717	15	2.094	0.036*
Expt_Post_Anxiety	10.9333	3.19523	15		

\*Significant at 5% alpha level

Since the p-value is less than 0.05, an alternate hypothesis is accepted. Hence, there is a statistically significant difference in post-test scores between the Experimental and Control Groups of the DASS. This suggests that the intervention received by the experimental group had a better improvement when compared to the control group. This suggests that the intervention received by the experimental group had more improvement when compared to the control group.

FIGURE NO 4.3- Comparison between post-test of DASS in the control and experimental groups.



## 5. Discussion

The study aims to determine the effect of aerobic training programs on reducing stress and anxiety among persons with alcohol withdrawal syndrome. The study was conducted for an intervention period of 3 months for alcohol withdrawal persons with stress and anxiety. A total of (30) alcohol withdrawal persons with stress and anxiety were selected using selection criteria described in the methodology and randomly allocated to the



experimental and control groups in each of fifteen (15) samples. The age of the selected samples ranged from 18 to 30 years including males. Both the control and experimental group patients were assessed by the depression anxiety stress scale (DASS 21). The experimental group underwent aerobic training program intervention for a period of 3 months with three sessions per week lasting for forty-five (45) minutes, whereas the control group received conventional occupational therapy. After 3 months of intervention, the post-test evaluation was done for both experimental and control groups and scores were calculated and results were analyzed.

**Table 4.1 and figure 4.1** showed the statistical analysis of the pretest and post-test of the DASS 21 scale in the control group. Since the p value of 0.001 is less than 0.05, there is a significant improvement in the control group on the application of conventional occupational therapy intervention between pre-test and post-test scores of the DASS 21 scale. Conventional occupational therapy like creative art, music therapy, progressive muscle relaxation, meditation, and yoga was given to see a slight improvement in the control group.

**Table 4.2 and figure** shows the statistical analysis of the pre-test and post-test DASS 21 in the experimental group. Since the value 0.001 is lesser than 0.05, there is a statistical improvement in the experimental group on the application of aerobic training program intervention between pre-test and post-test scores of the DASS 21 scale. An aerobic training program was very effective in reducing stress and anxiety among alcohol withdrawal persons as there is a significant improvement was seen in them. They were really satisfied with aerobic exercises compared to other exercises. Some patients due to stress issues cannot perform throughout the therapy session.

**Table 4.3 and figure 4.3** show the statistical analysis of the post-test of DASS 21 in the control and experimental group. Since the p-value is less than 0.05 alternate hypothesis is accepted. Hence there is a statistically significant difference in post-test scores between the control and the experimental group of the DASS 21 scale after the application of both conventional occupational therapy as well as aerobic training program.

### Conclusion

This study concluded that the use of aerobic training program can be interpreted in occupational therapy to reduce stress and anxiety among persons with alcohol syndrome. The study also shows that the most alcohol withdrawal persons were satisfied while giving alcohol training program along with drug therapy. Combining

aerobic exercises with occupational therapy reduces stress and anxiety. Also, it shows significant improvement in self-esteem, emotional regulations and builds mutual support. By doing aerobic exercises regularly the individuals will have a healthy life. It can also help alcohol withdrawal individuals to get rid of other withdrawal complications such as delirium tremens.

### LIMITATIONS & RECOMMENDATIONS

#### LIMITATIONS

1. The duration of the study was shorter.
2. The study was done on a small sample size.
3. As this study was done for alcohol withdrawal person's gathering of people is difficult.

#### RECOMMENDATIONS

1. The study can be done for a larger sample.
2. It can also be done for female samples.
3. This study can also be applied for other conditions such as cannabis withdrawal, cigarette withdrawal.

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