



ORIGINAL RESEARCH PAPER

Physiotherapy & Rehabilitation

EFFECT OF AEROBIC EXERCISE ON SLEEP DEPRIVATION AND QUALITY OF LIFE AMONG YOUNG ADULTS

KEY WORDS: sleep deprivation, aerobics , breathing, sleep quality ,duration of sleep.

Manjula. S

MPT, Asst Prof, School Of Physiotherapy, Vistas, Thalambur, Tamil Nadu-600130,India

Dr. P. Senthil Selvam*

PHD, Prof, HOD, School Of Physiotherapy, Vistas, Thalambur, Tamil Nadu-600130,India *Corresponding Author

ABSTRACT

Background Sleep is one of our vital needs and plays a crucial role in maintaining our physical, intellectual and emotional health. Exercise improves the quality of sleep, mood and quality of life among young adults with sleep deprivation. **Aim Of The Study** The aim of the study is to assess the effect of aerobic exercise on sleep deprivation among young adults. Both the groups were given exercises for a duration of one session consisting of 5 to 10 minutes for a period of 5 days per week for 6 weeks. **Methodology** It is an experimental study. 50 samples who fulfilled the inclusion and exclusion criteria were recruited for the study. The pre and post test was done by using outcome of insomnia severity scale (ISI). They were divided into two groups namely group A 25 samples (control group) and group B 25 samples (experimental group). The aerobic exercise was given for 25 samples of experimental group and breathing exercise was given for the 25 samples of control group. **Outcome Measures** Insomnia severity index **Result** There is statistically greater improvement in experimental group in which the subjects were given Aerobic exercises.

INTRODUCTION:

Sleep is one our basic needs and plays a very important role in maintaining our physical intellectual and emotional health. Sleep can be divided into rapid eye movement [dream stage]and non rapid movement [slow wave sleep].Sleep deprivation are common in work condition as rotating shift and prolonged to work hours in sustained military operation. Academic research investigating sleep intervention demonstrate that sleep complaints benefit from exercise.

Inadequate or unsatisfactory sleep is becoming a serious health issue of the modern living. The rush to meet the targets in the work, nuclear family, urban life style, frequent travel to different time zone, shift work, long distance of journey between home and work place are all contributing havoc to the health and becoming a slow killer. Good and adequate sleep improves the quality of life. Sleep helps the brain to work properly, improve memory and provide longevity.

Inadequate sleep can lead to physical and mental health problems such as injuries, loss of productivity and even a risk of death due to diseases like high blood pressure premature ageing diabetes, anxiety disorders are also some other problems associated with less sleep. Aerobic exercise has been tested in multiple studies as non pharmacological intervention for sleep in young adults.

Aim Of The Study:

The aim of the study is to assess the effect of aerobic exercise on sleep deprivation and quality of life among young adults.

Research Design And Methodology:

An experimental study design was conducted with 50 samples, who fulfilled the inclusion and exclusion criteria.

Inclusion Criteria:

- Population = young adult volunteers
- Intervention = Either traditional physical exercise
- Comparisons = suitable non physically active control group
- Outcomes= validated subject

Exclusion Criteria:

1. Investigated poor sleep quality in the presence of another pathological disease involved
2. Samples already proceeding exercises such as ,relaxation or music exercise

Procedure:

The total 50 samples, who fulfilled the inclusion and exclusion criteria were recruited for the study. Written informed consent was obtained from the samples. The procedure was explained to the samples, they were divided into two groups namely group A -25 samples (control group) and group B -25 samples (experimental group). The breathing exercise was given for the 25 samples of control group and aerobic exercise was given for the 25 samples of experimental group . Both the groups were given exercise for duration of one session consisting of 5 to 10 minutes for a period of 5 days per week for 6 weeks.

Group A (control Group)-abdominal Breathing Exercises:

1. Lie down with legs straight and slightly apart. Point toes outward, put arms at your side gently, make sure your palms are facing up, and close your eyes.
2. Place one hand on your stomach and the other on chest.
3. Notice which hand rises the most as you inhale.
4. If the hand on chest rises the most as you inhale, focus on filling your stomach (bottom of your lungs) full of air before you reach the top. The easy way to do this is to try abdomen to rise as you breathe. Over time, this gets easier.
5. Continue breathing like this for a period of time such as 5 or 10 minutes. Practice this type of breathing regularly, such as once a day

Group B [Experimental Group] - Aerobic Exercise

The 25 samples were treated with aerobic exercise .The conditioning period [4-6weeks] of the exercise intervention was under the supervision of an exercise physiologist .The conditioning protocol included exercise sessions four times per week with the following specifications.

Walking :

walking is awesome aerobic exercise as we can do it just about anywhere without looking like we're working out. Squeeze in a few brisk 10-minute walks before and after work and at lunchtime. Use the step counter on your phone or a fitness tracker to monitor your steps. Set a goal 10,000 steps per day, 1,000 more per day than averaged last month.

Duration Of Sleep : 30 TO 60 mins 2 or 3 times per week

Swimming :

Swimming is a great workout that's also no-impact, especially if your joints complain when you're walking or running.

Start with laps using one stroke (the freestyle is great for

newbies). Add more when you feel up to it, like the breaststroke, the backstroke, or (for more advanced swimmers) the butterfly.

Rest between laps as needed, and never swim alone or without a lifeguard present.

Duration And Frequency:

10–30 minutes, 2–5 times a week. Try to increase your duration by 5 minutes each week.

Aerobic Strength Circuit:

Circuits keep you moving to get your blood pumping, and they build strength in major muscle groups. Using this strength and cardio circuit or build your own with classic moves, performing each for 1 minute at a time:

- squats
- lunges
- push-ups
- planks
- glute bridges

Walk or jog in place at the end of each circuit for a little active rest, and repeat the circuit 2 or 3 times. Feel free to rest for a few minutes (no more than 5) between rounds.

Duration And Frequency: 15–25 minutes, 3–5 times period .

Running/Jogging

If you're new to running, start slow and alternate walking and running for 1 minute at a time —Aim for shorter sessions a couple of times a week at first, and then add more as you get stronger .

Duration And Frequency: 20–60 minutes, 2 or 3 times per week

CONCLUSION :

The study concluded that both the groups were effective in improving quality of sleep and increasing the duration of sleep. However it is, group A (experimental group) was more effective in improving quality of sleep.

REFERENCES :

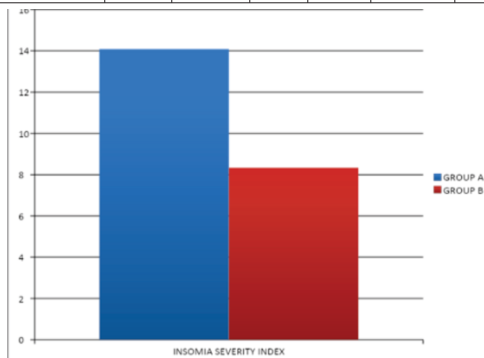
1. Wunsch K, Kasten N, Fuchs R(2017). The effect of physical activity on sleep quality, well-being, and affect in academic stress period
2. Aoiike DT, Baria F, Kamimura MA, Ammirati A, Cuppari L. Home-based versus center-based aerobic exercise on cardiopulmonary performance, physical function, quality of life and quality of sleep of overweight patients with chronic kidney disease.
3. Roveda E, et al. Protective effect of aerobic physical activity on sleep behavior in breast cancer survivors. Integr Cancer Ther. 2017;16(1):.
4. Dolezal BA, Neufeld EV, Boland DM, Martin JL, Cooper CB. Interrelationship between sleep and exercise: A systematic review Adv Prev Med. 2017
5. Sateia MJ, et al. Clinical practice guideline for the pharmacologic treatment of chronic insomnia in adults: an American Academy of sleep medicine clinical practice guideline. J Clin Sleep Med. 2017

Table 1: Group A (Breathing Technique)

| SL. NO | NAMES | MEAN VALUE | | SD VALUE | | T-VALUE | P-VALUE |
|--------|-------------------------|------------|-------|----------|------|---------|---------|
| | | PRE | POST | PRE | POST | | |
| 1 | INSOMNIA SEVERITY INDEX | 21.2 | 14.08 | 1.91 | 2.13 | 12.58 | <0.0001 |

Table 2: Group B (Aerobic Exercise)

| SL. NO | NAME | MEAN VALUE | | SD VALUE | | T-VALUE | P-VALUE |
|--------|-------------------------|------------|------|----------|------|---------|---------|
| | | PRE | POST | PRE | POST | | |
| 1 | INSOMNIA SEVERITY INDEX | 16.68 | 8.33 | 4.32 | 2.01 | 8.762 | <0.0001 |



Graph : Representing The Post Mean Values Of Group A And B

RESULT :

This study result showed that there is a statistically greater improvement in experimental group in which the subjects were given aerobic exercises.