P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJIF): 5.93
IJPESH 2025; 12(5): 72-74

https://www.kheljournal.com
Received: 19-06-2025
Accepted: 21-07-2025

Baladurga M
Department of Physiotherapy, College of Physiotherapy, Sri Ramakrishna Institute of Paramedical Science, Coimbatore, Tamil Nadu, India

R Porkodi
Department of Physiotherapy (Neurology), College of Physiotherapy, Sri Ramakrishna Institute of Paramedical Science, Coimbatore, Tamil Nadu, India

Corresponding Author:
Baladurga M
Department of Physiotherapy, College of Physiotherapy, Sri Ramakrishna Institute of Paramedical Science, Coimbatore, Tamil Nadu, India

Influence of aerobic and anerobic exercise on physical and mental well being amoung depressed physiotherapy students

Baladurga M and R Porkodi

Abstract
This study aimed to evaluate the depression is a widespread mental health disorder that adversely impacts students' academic performance, social relationships, and overall well-being. Exercise has been recognized as a promising non-pharmacological intervention for managing depressive symptoms. This study aimed to compare the effects of aerobic and anaerobic exercise on depression among physiotherapy students. A total of 30 participants aged 19–25 years with depressive symptoms, identified using the Beck Depression Inventory (BDI), were selected and divided into two groups: Group A (aerobic exercise) and Group B (anaerobic exercise), each consisting of 15 subjects. Both groups participated in structured exercise sessions lasting 60 minutes, three times per week, over a 10-week period. Pre- and post-intervention BDI scores were analyzed using paired and unpaired t-tests. Results indicated a significant reduction in depressive symptoms in both groups, with Group A (aerobic exercise) showing greater improvement than Group B (anaerobic exercise). The findings suggest that while both exercise modalities are beneficial, aerobic exercise is more effective in reducing depression, emphasizing its potential role as a primary therapeutic strategy in young adults.

Keywords: Depression, aerobic exercise, anaerobic exercise, physiotherapy students, beck depression inventory (BDI), mental health, non-pharmacological intervention

1. Introduction

- Depression is mood that involves a persistent feeling of sadness and interest. It is different from the mood fluctuations that people regularly experience as a part of life.
- To WHO depression is the leading causes of ill health disability worldwide. According More than 300 million people are now living with depression, an increase of more than 18% in 2005 to 2015.
- Major depressive disorder (MDD) is a multidimensional common, Often severe mental disorder with an age of onset below the age of 30 in most affected individuals.

2. Aerobic and anaerobic exercise

- Generally, exercises are divided into two types of aerobic and anaerobic exercises. In fact, aerobic and anaerobic exercises exert different changes on physiology of the body. However previous studies conducted to show what type of exercise can be a proper modulator for mental indices have revealed contradictory results [4].
- Exercise in all of its forms has been found to be beneficial in the treatment of physical disorder, but recently, there has been a growing interest in the role of exercise in treating mental illness as well [7].
- Aerobic exercise makes use oxygen in low-intensity, long duration workouts [7].
- Anaerobic exercise don't make use of oxygen and primarily focus on high-intensity, short –duration workouts [7].

2.1 Materials required

- Treadmill
- Cycling

- Dumbells
- Skipping rope

2.2 Study setting
- Sri Ramakrishna Multispeciality Hospital

2.3 Study design
- Quasi-experimental study

2.4 Sample size
- Based on selection criteria 30 objects were selected and divied into 2 groups with 15 subjects
- GROUP A: Aerobic exercise

GROUP B: Anaerobic exercise

2.5 Sampling method
- Convenient sampling

2.6 Study duration
- One year

2.7 Treatment duration

Three sets of 20repetition were performed three times for about 10 weeks. The total
treatment duration per session in 60 minutes.

2.8 Selection criteria

Inclusion criteria
- AGE: 19 to 25 years
- Female and male subjects
- Subjects will to participate in the study
- BDI more than or equal to 11
- Students who are not have major physical health issues

Exclusion criteria
- Unstable vital signs
- Musculoskeletal problems
- Recent surgery
- Other psychiatric disorder
- Non cooperative subjects
- History of unstable cardiovascular conditions
- Subjects using psychiatric drug for depression

2.9 Outcome measures

Beck depression inventory scale.

Independent Variable
- Aerobic exercise
- Anaerobic exercise

Dependent variable
- Depression
- Physical and mental health

2.10 Measurement tool

BDI – Beck depression inventory scale

2.11 Procedure
- **Sample Size:** 30 participants diagnosed with depression (BDI ≥ 11).
- **Sampling Method:** Convenient sampling.
- **Study Design:** Quasi-experimental study.
- **Grouping**

a. Group A: 15 participants – Aerobic exercise.
b. Group B: 15 participants – Anaerobic exercise.

- **Intervention Duration:** 10 weeks, 3 sessions per week, 60 minutes per session.
- **Group A (Aerobic Exercise):** 3 sets of 20 repetitions (cycling, walking, running).
- **Group B (Anaerobic Exercise):** 3 sets of exercises (weightlifting, skipping, push-ups, pull-ups).
- **Assessment Tool:** Beck Depression Inventory (BDI) – pre- and post-intervention.
- **Statistical Analysis:** Paired and unpaired t-tests used to compare within-group and between-group differences.

.

2.12 Treatment techniques

a. Warm-up (10 min): Stretching of upper and lower limbs, full-body mobility exercises.

b. Group A – Aerobic Exercise:
- Cycling (5–10 min, 65–80% VO_2 max)
- Running (5–12 min, progressive intensity)
- Walking (8–15 min, 70–80% max HR)

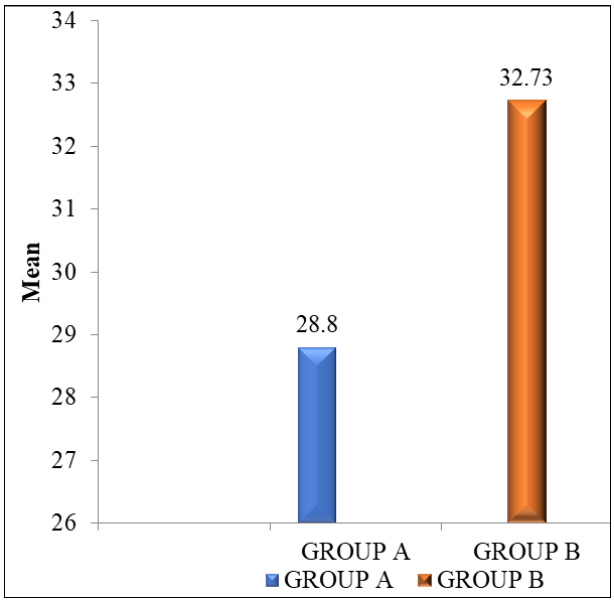
c. Group B – Anaerobic Exercise:
- Weightlifting (bench press, leg curl; 2–3 sets, 8–12 reps)
- Skipping (1–3 min with rest, repeated 4–8 min)
- Push-ups (2–5 sets, 6–10 reps)
- Pull-ups (1–5 sets, 3–12 reps)

d. Cool-down (10 min): Stretching and relaxation movements.

3. Results

Pre-test and post-test values of the study were collected and assessed for variations in improvement and their results were analysed using independent t test and parried t test. The statically analysis of the study showed that aerobic exercise is effective than anaerobic exercise for depression.

Comparison of results



4. Discussion

The study compared the effects of aerobic and anaerobic exercise on depression among 30 participants diagnosed using the Beck Depression Inventory (BDI). Subjects were divided into two groups of 15 each: Group A (aerobic exercise) and Group B (anaerobic exercise). Both groups trained three times

per week for 10 weeks, with 60-minute sessions.

Pre- and post-intervention BDI scores showed significant improvement in both groups; however, Group A demonstrated greater reduction in depressive symptoms compared to Group B. Statistical analysis using paired and unpaired t-tests confirmed a significant difference between the two groups. The calculated t-values were 18.430 (aerobic) and 11.260 (anaerobic), both higher than the table value of 1.761, leading to rejection of the null hypothesis.

Overall, findings indicate that while both aerobic and anaerobic exercises are effective in reducing depression, aerobic exercise is comparatively more beneficial for improving mental health outcomes in young adults.

5. Conclusion

The study was done was done to find out treatment strategy for depression. this study was designed to assess the effectiveness of aerobic and anaerobic exercise on in individual with depression.

Based on statistical analysis,2 groups shows clinically significant effects particularly aerobic exercise reduction in depression.

Aerobic exercise and Anaerobic exercise are efficient in relieving symptoms of depression on Beck depression inventory scores on individual basis. But comparatively aerobic exercise is more effective than anaerobic exercise as which proves the alternative hypothesis.

References

1. Regier DA, Hirschfeld RM, Goodwin F, Burke JD, Lazar JB, Judd LL. The NIMH depression awareness, program: structure, aims, and scientific basis. 1988.
2. World Health Organization. Depression and other common mental disorders: global health estimates. 2017.
3. McIntyre RS, Filteau M-J, Patry S. Treatment resistant depression: definition, reviews of the evidence, and algorithmic approach. 2013.
4. Kianian T, Saber S, Aghamohamadi F. The impact of aerobic and anaerobic exercise on the level of depression, anxiety, stress and happiness of non-athlete male. 2018.
5. Ferrari AJ, Somerville AJ, Vos T. Global variation in the prevalence and incidence of major depressive disorder: a systematic review of epidemiological literature. 2012.
6. Knappen J, Vancampfort D. Evidence for exercise therapy in the treatment of depression and anxiety.
7. D and Mote E. Aerobic and anaerobic exercise in relation to anxiety and depression. 2023.
8. Miri J, Salehi M, Abdi A. A comparative study of the efficacy of cognitive group therapy and aerobic exercise in the treatment of depression among the students. 2016.
9. Krishner C, Colby LA. Therapeutic exercise foundation and techniques. 6th ed. Davis Plus; 2011.