



Impact of Physical Activity on Mental Health among College-Going Students

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Abstract: This study explores the effect of regular physical activity on mental health among college-going male students. A total of 25 participants, aged 18 to 25, were selected from different colleges in Gwalior. Over a period of six weeks, they participated in a structured physical activity program consisting of jogging, stretching, and aerobic exercises. To assess their mental health, two standard tools—DASS-21 (for Depression, Anxiety, and Stress) and WHO-5 Well-being Index—were used before and after the intervention. The results showed a significant improvement in mental health parameters. Depression, anxiety, and stress levels decreased, while emotional well-being improved. These findings support the importance of including regular physical activity in student routines to promote mental wellness in a simple, accessible, and non-medical way.

Keywords: Physical Activity, Mental Health, College Students, Depression, Anxiety, Stress, Well-being, DASS-21, WHO-5, Non-sporting Youth

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INTRODUCTION

In today's time, mental health problems are increasing among college students. Many students are facing stress, anxiety, and depression. According to the World Health Organization (WHO), one out of five young people suffers from mental health issues. In India also, many students are mentally disturbed due to study pressure, competition, and personal problems. The COVID-19 period made this worse because students had to stay at home and were away from normal college life. The biggest problem is that very few students take help for their mental health, either because they are afraid or don't know how to get help.

Physical activity is not only good for the body, but also for the mind. When we do regular exercise or physical movement, our brain releases happy chemicals like serotonin and endorphins. These chemicals help us to feel better, reduce stress, and improve sleep. Doing regular walking, yoga, or sports can also improve self-confidence and reduce loneliness. Many researchers have proved that physical activity can be used as a natural and simple way to improve mental health.

College students often feel pressure from studies, family expectations, and future career plans. Social media also adds to their mental stress. Those students who do not play sports or are not physically active become more lazy and sad. They don't even realize how their habits are affecting their mental health. That is why non-sporting students need special attention and help.

This research paper will study how daily physical activity affects the mental health of college students who are not doing any sports. It will mainly focus on their levels of depression, anxiety, and stress using a short questionnaire called DASS-21. It will also check their general well-being using WHO-5 Wellbeing Index.

The aim is to see if regular activity can help students feel better mentally and reduce their stress.

REVIEW OF LITERATURE

Many studies from India and other countries have shown that physical activity has a positive effect on mental health. According to a study published in *The Lancet Psychiatry* (2018), people who did regular physical activity had 43% fewer days of poor mental health compared to those who were inactive. This shows that even simple physical movement can improve mental well-being.

In another study by Singh et al. (2016), done on Indian college students, it was found that students who participated in yoga or walking sessions for four weeks had reduced anxiety and improved sleep quality. They also reported feeling more fresh and energetic during the day.

A 2020 research by Patel and Thomas showed that doing aerobic exercises like jogging and skipping three times a week helped reduce symptoms of depression in young adults. This is because such activities help in releasing “feel-good” hormones in the body.

A study conducted by the National Institute of Mental Health (NIMHANS) in Bangalore in 2022 found that physical inactivity is one of the leading causes of rising stress and low confidence among urban youth. They recommended that colleges should include daily physical activity as a part of their timetable, especially for non-sporting students.

Similarly, WHO (World Health Organization) in its Global Action Plan (2019) recommended at least 150 minutes of moderate physical activity per week to reduce the risk of depression, anxiety, and other mental disorders.

One more study done by Sharma and Mehta (2019) in Delhi found that students who did physical activity in groups (like Zumba, dance or outdoor games) showed better improvement in their mental health than those who did exercise alone. This shows that the social part of physical activity also matters a lot.

Overall, the above studies suggest that physical activity is not only good for physical fitness but also a powerful and natural way to improve mental health among college students.

METHODOLOGY

Participants

The study was conducted on 25 male college-going students, aged between 18 to 24 years. All participants were from non-sporting backgrounds, meaning they were not involved in any kind of regular sports training or structured physical activity. The participants were randomly selected from two colleges and one private university in Gwalior. Before the start of the study, each participant gave written informed consent.

Design of the Study

This research followed a pre-test and post-test experimental design. Mental health parameters were measured before and after the physical activity program using two reliable tools:

1. **DASS-21** (Depression Anxiety Stress Scales – 21 items)

2. WHO-5 Well-Being Index

Intervention: Physical Activity Program

All participants took part in a structured physical activity program for 6 weeks. The session was conducted daily for 45 minutes, 6 days per week. The routine included:

- **Warm-up:** 5–7 minutes.
- **Aerobic Exercise:** Brisk walking or jogging (10 minutes)
- **Yoga and Stretching:** Basic postures for flexibility (15 minutes)
- **Group Games or Rhythmic Activity:** Light sports, or fun activities (10 minutes)
- **Cool down and breathing relaxation:** 5 minutes

The sessions were held in the morning to ensure fresh participation and minimal academic interruption.

Assessment Tools

- **DASS-21 Scale:** A 21-item questionnaire divided into three sections to measure depression, anxiety, and stress. It is widely used and scientifically validated.
- **WHO-5 Well-Being Index:** A short 5-item questionnaire developed by the World Health Organization to measure general emotional well-being and life satisfaction.

Both tools were filled by each participant **twice** — before starting the intervention (Pre-Test) and after completing the 6-week program (Post-Test).

Data Collection and Statistical Analysis

All questionnaire responses were collected and recorded using Microsoft Excel. For each parameter (depression, anxiety, stress, and well-being), the **mean and standard deviation (SD)** were calculated. To compare the **pre-test and post-test scores**, a **paired t-test** was applied. A **p-value < 0.05** was considered statistically significant. Graphs were used to visually show the difference in scores before and after the intervention.

RESULTS

After six weeks of structured physical activity, the mental health scores of all 25 male participants were analyzed using pre-test and post-test data. The scores were calculated using the DASS-21 and WHO-5 Well-Being Index questionnaires.

The results showed clear improvement in all four parameters:

1. Depression scores decreased significantly.
2. Anxiety scores reduced to a noticeable extent.
3. Stress levels dropped.

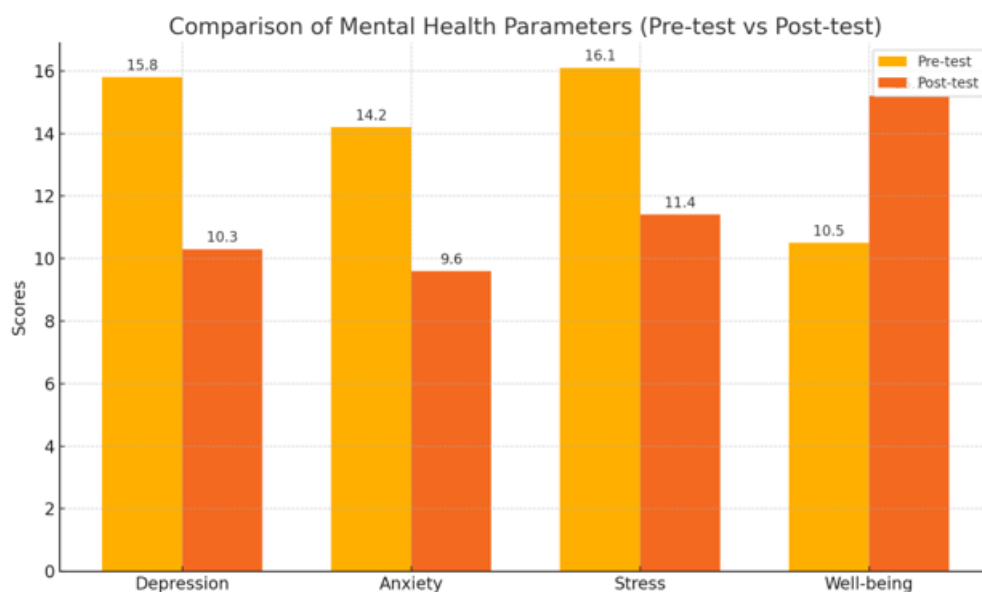
4. General well-being scores (measured by WHO-5) increased.

The statistical analysis was done using paired t-test.

Table -1 : Summary of Results

Parameter	Pre-test Mean \pm SD	Post-test Mean \pm SD	t-value	p-value	Result
Depression	15.8 \pm 4.2	10.3 \pm 3.7	6.12	< 0.001	Highly Significant
Anxiety	14.2 \pm 3.9	9.6 \pm 3.5	5.43	< 0.001	Highly Significant
Stress	16.1 \pm 4.5	11.4 \pm 3.8	5.88	< 0.001	Highly Significant
Well-being	10.5 \pm 2.6	15.2 \pm 3.1	7.01	< 0.001	Highly Significant

These results indicate that after six weeks of daily physical activity, the students experienced significant reduction in negative mental health symptoms (depression, anxiety, stress) and a marked increase in their emotional well-being.



Graph -1 Comparison of Mental Health Parameters (pre-test Vs. Post-test)

DISCUSSION

The purpose of this study was to assess the impact of regular physical activity on mental health among college-going male students who were not involved in sports or structured fitness programs. The study specifically measured four psychological parameters — depression, anxiety, stress, and general well-being — using standardized tools (DASS-21 and WHO-5 Well-being Index) before and after a six-week physical activity intervention.

The results clearly show a statistically significant improvement in all parameters. Let us understand what this means in detail:

1. Reduction in Depression Scores:

The mean depression score reduced from 15.8 to 10.3. This suggests that regular physical movement, combined with group activity and routine, has a positive influence on mood, motivation, and emotional stability. Physical activity releases endorphins and improves neurotransmitter function, which are known to reduce depressive symptoms.

2. Reduction in Anxiety:

The anxiety score fell from 14.2 to 9.6. Exercise is known to help regulate the autonomic nervous system, improve breathing patterns, and lower cortisol (stress hormone) levels. This reduces physical symptoms of anxiety such as restlessness, tension, and fatigue.

3. Reduction in Stress:

Stress scores came down significantly from 16.1 to 11.4. When students engage in a fixed routine that includes physical exertion, it provides both a mental distraction and a biological mechanism to reduce accumulated stress. Group participation may have added to emotional support.

4. Increase in Well-Being:

The well-being score improved from 10.5 to 15.2. This indicates that students not only experienced a reduction in negative emotions but also felt more positive about life, themselves, and their future. Regular movement helps in better sleep, sharper cognition, and enhanced social interaction, all of which contribute to improved life satisfaction.

These findings are consistent with earlier global research which has shown that aerobic exercises, yoga, and moderate-intensity physical activity can significantly enhance mental health, especially in young adults who are otherwise under academic or social pressure.

Additionally, this study supports the idea that physical activity is not only a tool for physical fitness, but also a non-pharmacological and cost-effective approach to mental health improvement in educational institutions. Importantly, this improvement was achieved within just six weeks, without any need for medication or professional therapy.

CONCLUSION

This study concludes that a structured, six-week physical activity program has a significant positive impact

on mental health among non-sporting college-going male students. The program resulted in decreased levels of depression, anxiety, and stress, along with increased levels of emotional well-being.

These findings suggest that physical activity should be actively promoted among college students — especially those not engaged in sports — as part of routine academic life. It can serve as a preventive mental health tool, improve quality of life, and reduce the risk of psychological issues in the long term.

Further studies with a larger and gender-diverse population can help generalize these results and support educational policy reforms in favor of mandatory physical wellness programs in colleges and universities.

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