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THE EFFECTS OF PHYSICAL ACTIVITY ON ANXIETY AND DEPRESSION IN COLLEGE STUDENTS

[1]VENU ANAND DAS VAISHNAV, [2]SACHIN PRADHAN, [3]ABHA GROVER

[1]ASSISTANT PROFESSOR, DEPARTMENT OF PHARMACY, KALINGA UNIVERSITY, RAIPUR, INDIA. ku.venuananddas@kalingauniversity.ac.in, 0009-0005-3775-6156

[2]ASSISTANT PROFESSOR, DEPARTMENT OF PHARMACY, KALINGA UNIVERSITY, RAIPUR, INDIA.
ku.sachinpradhan@kalingauniversity.ac.in,0009-0009-4095-1496

[3]ASSISTANT PROFESSOR, NEW DELHI INSTITUTE OF MANAGEMENT, NEW DELHI, INDIA., E-MAIL: abha.grover@ndimdelhi.org, https://orcid.org/0009-0008-2828-2149

Abstract

Because of the negative consequences of medication therapy and other unfavourable outcomes, physical exercise is considered an auxiliary strategy in many psychiatric treatments, which always include rehabilitation training or non-drug intervention strategies. Numerous studies have demonstrated the therapeutic effects of exercise in lowering clinical populations' levels of anxiety and depression. The advantages of exercise for mental health are, however, rarely discussed in non-clinical settings. By carefully compiling and assessing research on the impact of physical exercise on depression and anxiety in non-clinical populations, this meta-analysis seeks to determine whether physical exercise intervention as a non-drug means can effectively improve college students depressed and anxious moods. This article may stimulate readers' interest and aid in their understanding of sport and exercise psychology by combining kinesiology and psychology, as well as psychotherapy and sport. According to the Meta-Analysis, college students who exercise report feeling less anxious and depressed. Engaging in physical activity is a non-medical method for college students to fully grow and enhance their mental health. To help college students adjust to complementary and alternative therapy, more research should look at how various sports and exercise routines impact their negative feelings.

Keywords: Physical Activity, Meta-Analysis, college students, anxious moods

1. INTRODUCTION

Between 5% and 70% of teenagers and young adults globally are predicted to suffer from anxiety or depression at some point in their lives. Study, strained relationships, runaway behavior, and financial challenges are some of the factors that contribute to mental health problems. Negative sentiments among young people usually revolve around the deterioration of their learning or performance skills [6]. Executive function and attention deficit issues are more common among college students, who are also more prone to experience anxiety and depression. These issues can result in mental retardation and memory impairment. Some college students have been compelled to either remain in school or be quarantined as a result of the COVID-19 epidemic [2]. Even though uarantine is a good way to stop infectious diseases from spreading, studies have shown that it can make people afraid, anxious, and depressed and hurt their mental health. It is widely acknowledged that college students frequently experience stress, anxiety, and despair. A person must adjust to new conditions and feel "separated" from their family for the first time when they enter school [4]. Potential study stressors including academic pressure, interpersonal interactions, and future uncertainties will cause emotional instability. Students will be unable to focus on their studies and grow fully as a result of these influences, which will result in depressive and anxious moods. According to the findings of the researchers, planned exercise can effectively alleviate college students' negative emotions. Mental health can be maintained and improved through physical activity [1]. Additionally, mental disorders can be eliminated through physical excitement and mental vitality. Additionally, the study found that engaging in physical activity would result in feelings of pleasure, self-confidence, and contentment—the exact opposite of depression's symptoms [3]. One feature of physical activity and a major contributor to its appeal is that it enables college students to enjoy sports and create intense emotional experiences [5]. Psychological mechanisms explain how exercise can boost one's sense of self-worth

and self-esteem. Moderate exercise is a lot of fun, and social support is easier to acquire when one can connect with others.

2. REVIEW OF LITERATURE

Different mechanisms have an impact on the functions of various sports events. Exercise is important for college students' health and ability to control their negative emotions. According to a number of pilot studies, college students' stress, anxiety, and depression levels can be somewhat decreased by a brief aerobic exercise intervention, which supports the body's and mind's normal development [8].Academic institutions can rapidly adopt aerobic exercise, traditional Chinese exercise, and meditation as efficient methods to reduce the symptoms of depression in college students, per a meta-analysis of physical activity and depression in college students [7]. Frequent aerobic exercise has been shown to lower physical and mental stress, anxiety, and depression, which may safeguard college students' mental health [15]. We out a meta-analysis to show that in a nonclinical population, more physical activity helps prevent and lessen the symptoms of clinical depression and anxiety [9]. Numerous research have demonstrated the positive effects of physical activity on mental health; however, none of them have specifically examined college students who are experiencing high levels of cognitive strain [11]. However, none of the current randomized controlled trials have evaluated the effects of different exercise durations, times, and types on anxiety and depression. In order to overcome constraints, meta-analysis is utilized to present evidence based on the body of current research in the analytical approaches [10]. According to the study, college students who are anxious and depressed can benefit from physical activity [14]. Exercise decompression, which includes both prevention and early intervention, may lower the prevalence of anxiety and depression among college students [12]. As anticipated, we have demonstrated a correlation between the duration of the intervention, training frequency, and the type of physical activity and the degree of depression and anxiety relief [13]. Among the several elements that contribute to adaptation anxiety are changes in one's living circumstances and the restructuring of interpersonal connections. Professional learning becomes more confusing while choosing a career. It could end up being the main source of issues for college students, causing them to feel emotionally stressed and leading them to assume that emotional regulation is essential at this time. It has been demonstrated that two important neurotransmitters, serotonin and norepinephrine, improve mood and depressive symptoms, promote nerve healing, and boost neuron survival. Exercise has been demonstrated to raise norepinephrine and serotonin levels in both humans and animals. determined that engaging in physical activity creates a platform for emotional expression [16]. It may elevate an individual's mood by promoting the release of neurotransmitters. The individuals felt more stable, had less interpersonal stress, and engaged in fewer compulsive behaviours as a result of being able to release their anxiety and extra energy.

3. MATERIALS AND METHODS

Different types of physical activity have different benefits on lowering unpleasant feelings. Team-oriented, adversarial physical activities have a higher effect on lowering anxiety and sadness because they allow people to freely express their emotions. These findings are consistent with ours. Depending on their particular needs, college students can select the appropriate physical activity events. This study is similar to one that showed playing basketball dramatically reduces depressive symptoms. Basketball's emphasis on teamwork has led to a substantial improvement in personal self-esteem throughout the competition. College students' unhappiness and poor self-esteem can be significantly reduced by technique-oriented, difficult, and beautiful activities as well as by listening to rhythmic music. It was hypothesized that yoga would help people who weren't clinically depressed maintain a stable mood and reduce their depression. One finding supported that study: Health Qigong had a larger effect size than yoga. By controlling the body and breathing, Health Qigong eliminates inner turmoil. Anxiety and depression were found to be significantly different before and after the intervention, according to the findings. Regular aerobic exercise helps people's mental health in a number of ways, the most important of which is that it lessens the negative effects of depression and anxiety. They can increase positive reactions, which can boost self-esteem, spirit, and mood. We examine the relationship between several aspects of physical activity and unpleasant feelings in college students. The findings indicate that moderate exercise frequency and duration, along with one or more "appropriate" exercise events that are beneficial for mood regulation, can significantly lower the risk of anxiety and depression. The results of our study are expanded upon and evidence is synthesized. The study's findings were consistent with previous clinical studies that demonstrated that, over the course of 12 weeks, 60 minutes of exercise twice a week significantly reduced participants' depressive symptoms. Analysed the impact of performing a variety of physical exercises on college students' improvement in depression. This study demonstrated that self-efficacy would be enhanced and dopamine and serum base secretion would rise in proportion to exercise frequency. Additionally, it will elicit

positive feelings, strengthening one's resistance to depression. Worldwide, the prevalence of mental illnesses has increased over the past few decades. Depression is one of the many mental illnesses that affect people all over the world. About 280 million people worldwide suffer from depression, which might overtake all other diseases in terms of economic and social burden and become the primary cause of disability by 2030. People from all walks of life can be impacted by the prevalent mental condition known as depression. Long stretches of melancholy or a decline in interest or enjoyment in things are its defining characteristics. Interactions between biological, psychological, and social factors cause depression. Depression is more common in people who have suffered from abuse, a major loss, or other upsetting situations. Depression symptoms can also be exacerbated by difficulties in professional and academic settings. Individuals who have either graduated and entered the workforce or are pursuing fundamental and professional higher education are considered college students. The term "college student" refers to those who have not yet graduated but are enrolled in professional or basic higher education programs. College students typically range in age from 18 to 22, while this range is flexible and will be impacted by individual learning, grade skipping, and the academic environment. Signs of at least one mental health condition may be present in almost half of college students. College students face significant life transitions, including moving away from their family, learning to live independently, making new acquaintances, and managing more academic obligations. Rising stress, anxiety, and depression levels are often accompanied by challenges for college students.

4. RESULT AND DISCUSSION

This study used statistical software to evaluate bias and combine effect sizes. Since the original literature used in this study was unable to demonstrate scale consistency in the measurement of depressive indicators, all of the data had to be uniformly translated using standardized mean difference (SMD) and 95% confidence intervals (CI). The SMD is calculated by dividing the final combined standard deviation (SD) value by the difference between the means of the measures obtained before and after the intervention. The problem of various scales utilizing distinct measuring units is resolved by this technique. The Cochrane Q-test was used in this study to determine the level of heterogeneity based on the I2 value. In this study, there is no significant heterogeneity if the measured I2 value is less than or equal to 50% and $P > 0.1$.

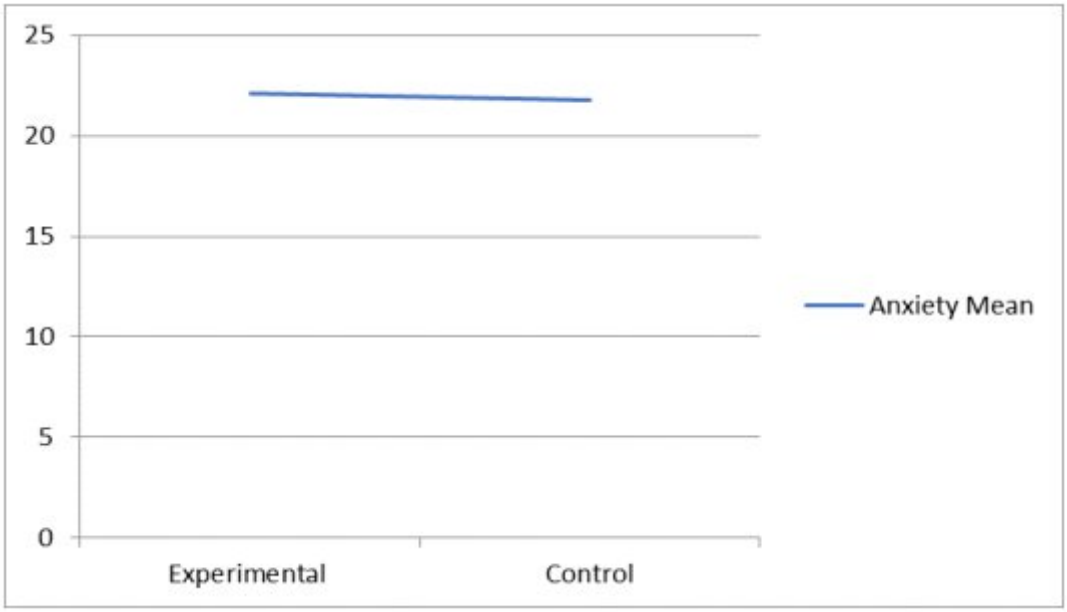

Figure 1: Average of Anxiety scores of experimental and control groups

In the end, funnel plots and a random effects model were used in this study to evaluate the results' reliability and publication bias. A following the deduplication procedure.

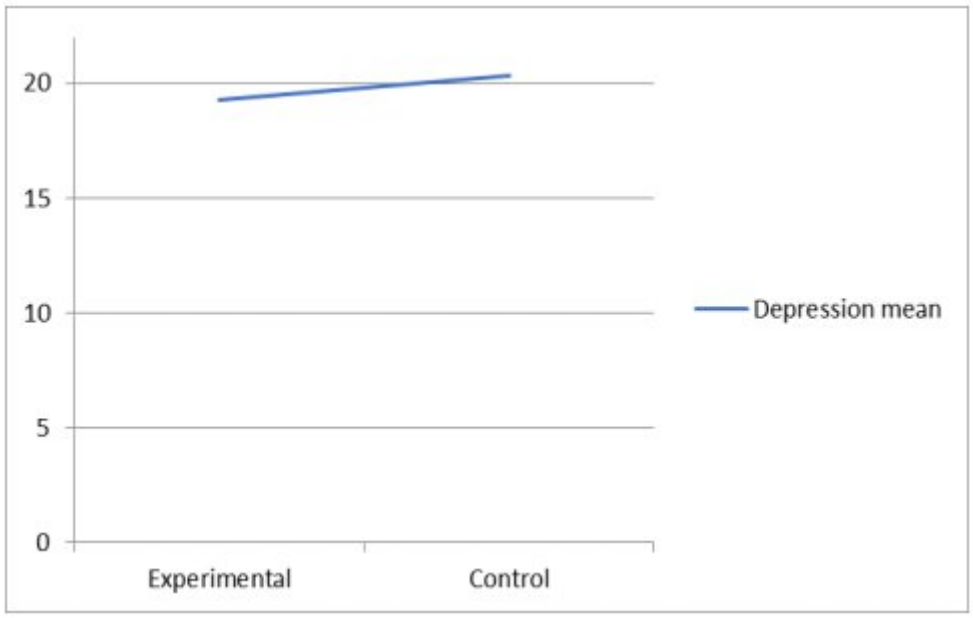

Figure 2: The mean of depression of experimental and control group

Following a preliminary screening procedure, 31 articles in all were acquired. Eight articles were chosen for the study after a thorough review that included reading every article and removing those that did not meet the requirements for a randomized controlled trial (RCT), such as those with inadequate study designs, intervention/control groups, research purposes, or outcome measures, or those with data that was not easily accessible. The meta-analysis of the eight papers in this study includes ten studies in total.

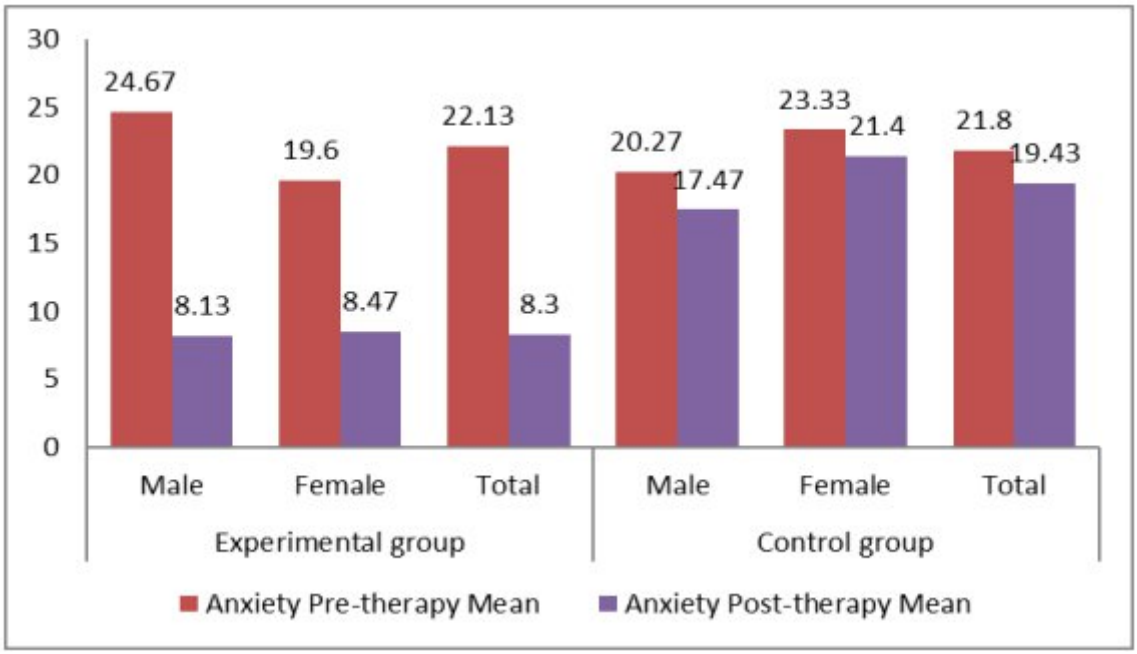

Figure 3: Mean and SD scores of Experimental and Control groups on Anxiety

There were 231 people in the control group and 264 in the intervention group, for a total sample size of 495. The intervention cycles last anywhere between four and twelve weeks. There are one to five sessions per week, and the intervention lasts anywhere from ten to ninety minutes.

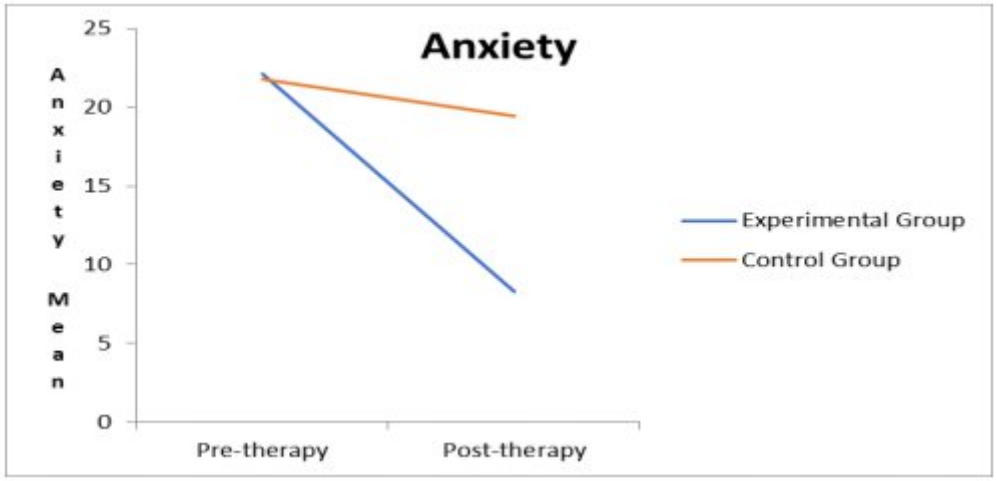

Figure 4: Comparison of Pre and Post therapy mean of Experimental

The majority of the interventional therapies focused on resistance training and aerobic exercise. The Cochrane Collaboration created a technique to assist researchers, physicians, and decision-makers in recognizing possible bias that can compromise the validity of study findings. The Cochrane Risk of Bias Tool includes six different categories of bias: reporting bias, attrition bias, detection bias, performance bias, selection bias, and additional types of bias.

5. CONCLUSION

The results of the investigation can be summed up as follows: Anxiety and depression are significantly reduced by physical activity. Lastly, exercise is a treatment for sadness and anxiety, and the design of the program is crucial. The main goal must be to increase the experiment's intrinsic validity. Exercise is always a sign of a healthy lifestyle and has a big impact on people's mental health and psychological development. We'll take a close look at its core values and operations. Studies that mandate college students participate in exercise behaviours that are most beneficial in lowering anxiety and depression should be part of future study. Prospective studies or randomized trials ought to validate our findings and elucidate cause-and-effect relationships. There are several policy ramifications for these findings. Our results offer suggestions regarding how representatives of pertinent schools and universities should address college students' public psychology. This study suggests that regular exercise and happy feelings can be therapeutically beneficial for those with poor mental health. This outcome is consistent with other research that found regular exercise is linked to improving immunity, reducing the likelihood of psychological pain, and maintaining emotional stability to any extent.

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