

Correlation of Physical Activity with Depression and Anxiety in College Students

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ABSTRACT

Mental health issues are increasing in severity and number on college campuses. The objective of this study is to find out the symptoms of anxiety and depression and relationship of physical activity with these symptoms.

Introduction: Anxiety and depression among college students are a cause of concern. Research survey on college students reports at any given time there will be 10 to 20 % of student population suffering from psychological problems (Anxiety & Depression). Depression is a major mental disorder with symptoms including exaggerated and persistent sadness, anhedonia, cognitive impairments, and a negative procession bias as well as somatic symptoms (insomnia and fatigue). Anxiety can be the result of complex emotional states, such as tension, worry, and uneasiness, that arise from upcoming situations that could pose a danger or threat in college students. Severe perceived anxiety and depression can associate with worse academic achievement and worse physical health, as well as higher rates of psychiatric and impulsive disorders. This paper briefly describes the research carried out especially regarding impact of anxiety & depression on physical activity in college students.

Methodology: A cross-sectional-questionnaire based study was conducted among college students. A total of 112 students completed this survey and were included in the analysis. Propensity to Psychological mood disorders was assessed by using a short version Depression, Anxiety and Stress Scale-21 (DASS-21), along with international physical activity questionnaire to measure physical health of students. The study group consisted of 100 students, ages 19–23 years. Each was asked to complete two questionnaires; Depression, Anxiety and Stress Scale (DASS 21) containing 21 questions, and the International Physical Activity Questionnaire (IPAQ) containing 7 questions.

Result: Statistical Analysis was done by using SPSS 20.00 version and Spearman's rho test was applied. For the correlation between physical activity and depression r value was found out to be weakly correlated ($r = -0.294$) and level of significance was found to be $p < 0.05$. For physical activity and anxiety, r value was found to be weakly correlated ($r = -0.294$) and level of significance was found to be $p < 0.05$. Similarly, r value for anxiety and depression was found to be very strong ($r = 1.0$) and level of significance was found to be $p < 0.05$. Level of significance was kept at 5% and confidence level 95%.

Conclusion: Hence from this study we concluded that very strong correlation was found between anxiety and depression and weak correlation between physical activity, anxiety and depression was found in college students.

Keywords: Anxiety, Depression, Physical Activity, College Students

INTRODUCTION

College and university students are usually seen highly depressed and suffering from anxiety. High levels of depression and

anxiety such as those found in college and university students, show significant correlations with numerous negative consequences and behaviors, which can

include increased body mass, sleep disturbances, alcohol consumption, addiction to drugs and reduced physical activity. (1) Although mental illness can be present at any stage of life, there can be multiple reasons of why college students are prone to suffer from depression and anxiety. Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioral components. This unpleasant feeling is typically associated with uneasiness, fear, or worry. It is a generalized mood condition that occurs without an identifiable triggering stimulus, while many symptoms of depression include, persistent sad, anxious or empty feelings, feelings of hopelessness, feelings of guilt, worthlessness and/or helplessness, irritability, restlessness, and loss of interest in activities or hobbies.(2) University students are a special group of people as they are in a transitory period, from adolescence to adulthood and it can also be considered as one of the most stressful times in everyone's life.(2) During college, students experience many significant transition, including new lifestyle, friends, roommates, exposure to new cultures and alternate ways of thinking. In college, competition is much more significant. So, there is the palpable source of stress is necessary for personal growth to occur, the amount pressure to do well, whether the demands come from parents or the of stress can overwhelm a student and affect the ability to cope.(3) Students mental health and well-being are important not only in its own right but also as a factor contributing to the larger society's well being. Mental disorders among student population varies from 2% to as high as 50%. Recent studies on student well-being have shown that one can find that every 10 students, one will have mental disorders such as anxiety and depression. (3) There are many factors which can trigger these symptoms in college students such as time pressure, fear of failure, struggle to establish identity, pressure of academic excellence and tough competence. Emotional problems such as feel inferior to others, not able to think

properly, worrying too much, feel life is not worth living. Feel anxious without any apparent reason. (3)

Any skeletal muscle-driven movement that involves the use of energy is termed as "physical activity". (6) Many researchers have been interested in the advantages of physical activity and various studies have shown that exercise not only lowers the risk of health illnesses, but also other mental and behavioral issues. By decreasing the amount of time spent engaging in physical activity like walking, gyming, etc. university students have negative impacts on their mental and physical health. (7) Lack of physical activity is related to low energy expenditure which can also lead to number of health issues, such as obesity or metabolic syndrome. (8)

MATERIALS & METHODOLOGY

A cross-sectional observational study was undertaken among college students. The study recruited those who were willing to participate and between the ages of 18 and 25. A total of 112 students completed the survey and were included in the analysis. All the students were explained about the study and consent was taken for those who were asked to fill the Questionnaire for depression, anxiety and physical activity level, which was a valid and responsive instrument that can serve as a diagnostic tool to determine the level of depression, anxiety and physical activity. The International Physical Activity Questionnaire (IPAQ) for physical activity and DASS 21(depression, anxiety and stress scale) questionnaire for depression and anxiety.

The DASS 21 distinguish well-define features of depression, physical arousal and psychological tension and agitation. It is a 21-item self-report, the items are scored on a 4-point scale ranging from 0 (did not apply to me at all) to 3(applied to me very much, or most of the time). Seven items comprise of each of 3-scale: depression (example item- "I couldn't seem to experience any positive feeling at all"), anxiety (e.g.- "I experienced breathing difficulty") and stress (e.g. "I find it hard to wind down"). DASS 21 has an

intra-class reliability of 0.90.⁽⁴⁾

The International Physical Activity Questionnaire is a seven-item self-report tool that evaluates physical activity across four different domains during the past seven days. International physical activity questionnaire has an intra-class reliability of 0.80.⁽⁵⁾ The frequency and duration of vigorous activity, moderate activity, and walking are assessed. Participants also report the quantity of time they spend sitting during the course of a week, but this information is not analyzed as part of physical exercise. By combining the stated frequency and length of each type of activity, the amount of time spent each week on strolling, moderate exercise, and intense activity is calculated. By adding the three categories of above-mentioned tasks, the total amount of physical exercise per week is determined.

INCLUSION CRITERIA:

- Both Male & Female
- Age = 18-23 years
- Willing to participate in study.

EXCLUSION CRITERIA:

- Any metabolic disorder like Diabetes, Hypertension, etc.
- Any Cardio Respiratory condition
- Postural deformity
- Neurological disorder
- Current Illness like cough, cold, etc
- College students doing vigorous workout on daily basis

RESULT

Data was analyzed using SPSS software version 29. The normality of the data was assessed using the Kolmogorov-Smirnov test. Since the data was found to be not normally distributed, it is appropriate to use non-parametric tests.

To determine the correlation between depression, anxiety and physical activity levels, Spearman's correlation test was applied. A strong significant negative correlation found between depression, anxiety and physical activity. [r value= -0.294, p value=0.01] The chosen significance level for the study was set at $p < 0.05$. This indicates that a correlation coefficient with a p-value below 0.05 would be considered statistically significant.

		Depression	Anxiety	IPAQ
Depression	Correlation co-efficient	-	0.487	-0.294
	Level of significance		<0.001	<0.001
Anxiety	Correlation co-efficient	0.487	-	-0.269
	Level of significance	<0.001		<0.001
IPAQ	Correlation co-efficient	-0.294	-0.269	-
	Level of significance	<0.001	<0.001	

Nonparametric Correlations

TABLE 1: r value of correlation between depression and physical activity

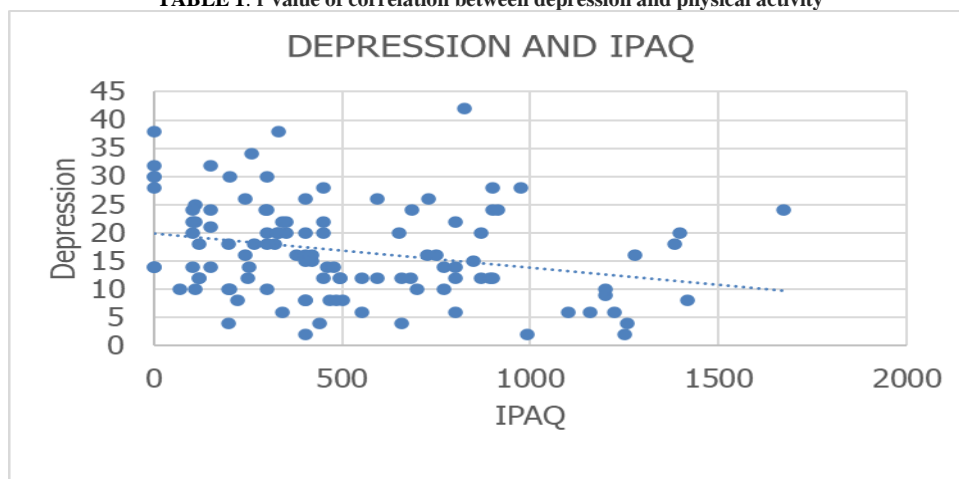


TABLE 2: r value of correlation between anxiety and physical activity

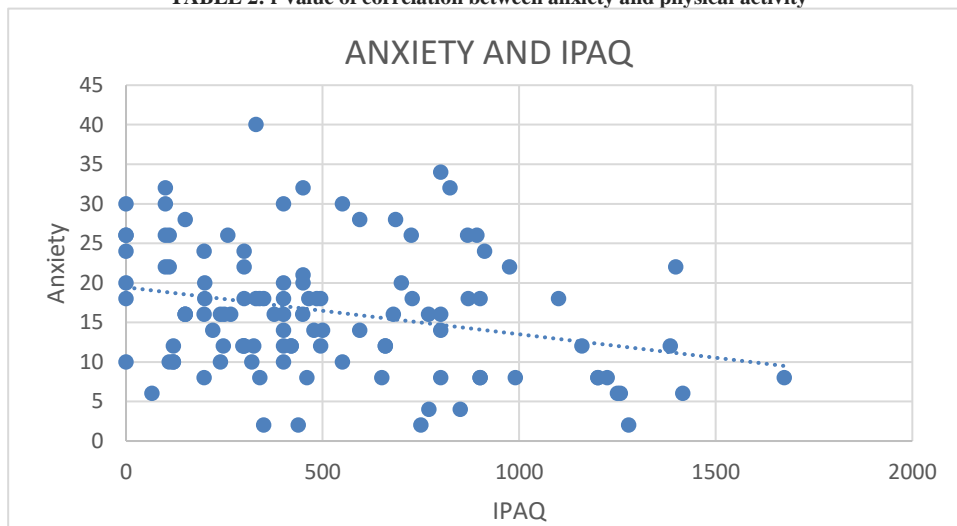
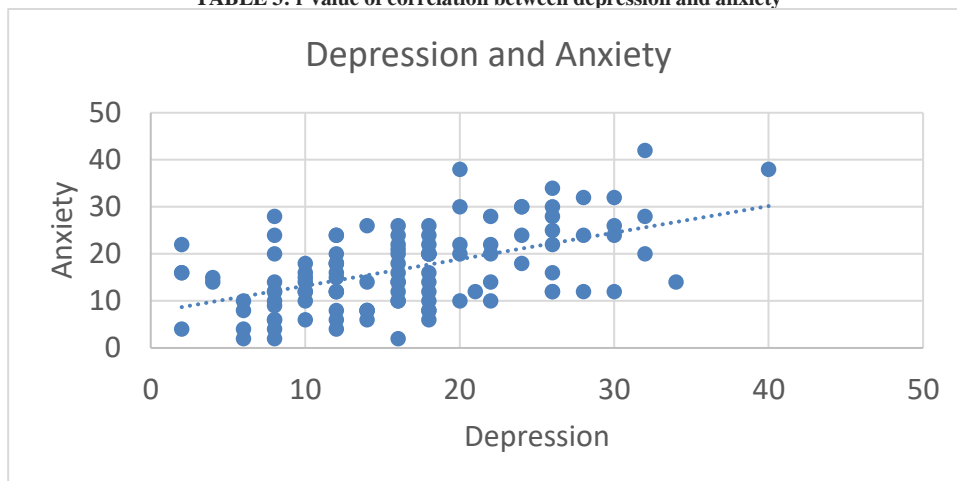


TABLE 3: r value of correlation between depression and anxiety



DISCUSSION

The present study's findings indicate that significant negative relationship found between depression, anxiety and physical activity levels among college students. Study showed that physical activity was significantly lower among students with high level of depression and anxiety. The findings of this study can have significant implications for public health interventions and educational programs aimed at promoting good mental health and increasing physical activity levels among young adults in India.

In the year 2023, Lili Li et al hypothesized depression and anxiety symptoms of college students which were closely related and co-occurrence was common. Students with high

level of physical activity had milder symptoms of anxiety and depression.

In the year 2020, Aleksandra M. Rogowska et al confirmed that a significant proportion of Ukrainian students experience high levels of anxiety and depression. Both anxiety and depression are, to some extent, related to gender and physical activity, but the relationship is rather weak though statistically significant.

In the present study we found that high levels of depression and anxiety such as those found in college and university students, show significant correlations with numerous negative consequences and behaviors, which can include increased body mass, sleep disturbances, alcohol consumption, addiction to drugs and reduced physical activity.

CONCLUSION

The present study showed that physical activity was significantly lower among students with high and moderate level of anxiety and depression and therefore found a relationship between depression, anxiety and physical activity among college students. Study has found a weak negative relationship between depression, anxiety and physical activity and a strong positive relationship between anxiety and depression. It is widely recognized that high level of anxiety and depression can lead to sedentary behavior and reduced engagement in physical activities. This study has some limitations that the research is done across Ahmedabad city Further study can be done in larger area can be taken, Gender wise prevalence can be taken. Future research could explore the underlying factors that contribute to depression, anxiety among college students.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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