

Association Between Mental Health And Physical Activity Among College Students In Nawabshah

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ABSTRACT

To determine the levels of Mental Health and Physical Activity and to examine the association between mental health and physical activity among college students in Nawabshah.

A study was done with 400 college students from colleges in Nawabshah aged 16 to 19. We used a method to choose the students for the study. The study used a questionnaire called Depression, Anxiety and Stress Scale-21 (DASS-21) to check health. Another questionnaire called International Physical Activity Questionnaire–Short Form (IPAQ-SF) was used to check how active the students were. The data from the study was analyzed using a software called SPSS version 21. The study looked at the students basic information. Summarized it using simple statistics. The study then checked if there was a connection, between how active the students were (MET-minutes/week) and their mental health. This was done using a test called Pearson correlation analysis.

The participants' average age was 17.23 ± 0.93 years. Of all individuals, 57.8% engaged in low to moderate physical activity, while 42.3% reported high levels of physical activity. indication of depression and anxiety were common, with moderate-

to-extremely severe depression observed in 37.3% and moderate-to-extremely severe anxiety in 46.0% of students. Physical activity showed a negative but non-significant correlation with depression ($r = -0.095$, $p = 0.058$) and stress ($r = -0.042$, $p = 0.398$). However, a statistically significant negative correlation was detected between physical activity and anxiety ($r = -0.104$, $p = 0.037$).

Keywords: Physical activity, Stress, Depression, Anxiety, Mental health, College Students, IPAQ, DASS-21

INTRODUCTION

Any skeletal muscle-driven bodily motion that necessitates the use of energy is referred to as physical activity. (1) Compared to boys, adolescent girls exhibited lower levels of activity; 78% of boys and 85% of girls did not exceed WHO standards. (2) Approximately 4.5 million young people in the UK between the ages of 11 and 25 are regarded as physically inactive. (3) Furthermore, 62.5% of participants in 38 nations having PA data were highly active, 20.2% were moderately active, and 17.3% were lowly active. (4) Because many people in Pakistan have sedentary lifestyles, PA levels are still inadequate. (5) Additionally, exercise has been connected with a decrease in anxiety and depression in kids and teenagers. (6) College life can be greatly impacted by stress, worry, and depression, which highlights the need for in-depth research to better assist upcoming students. (7) In 47 countries, the global prevalence of anxiety was found to be 11.4%. (8) According to available data, 10% of CS suffer from severe mental health concerns, and 20% to 30% exhibit psychological disorder tendencies. (9) College students' contentment and capacity to make constructive contributions to society are based on their mental health. College students frequently face intense psychological and emotional demands since they are the engine of social and national advancement. (10) The two most common mental health conditions impacting kids and teenagers are depression and anxiety. Since these illnesses are more commonly reported in this age range than any other psychiatric issues, they pose a serious threat to general well-being and good development throughout the formative years. (11)

A condition of wellbeing that enables people to manage life's stressors is referred to as mental health, use their abilities effectively, and function productively in learning, work, and society. (18) Depression, which is a form of mental health disturbance, is prevalent among adolescent populations (21). The disorder is marked by ongoing low mood, emotional distress, reduced motivation, and a variety of symptoms that include both psychomotor and cognitive difficulties. (22) depression strongly linked to adverse physical health outcome, including cardiovascular illness, metabolic complication. (22) A large scale meta-analysis of 49 longitudinal cohort studies, representing more than 1.8 million person year of observation, demonstrated that individual engagement in higher level of physical activity exhibited a 17% lower likelihood of developing depression analyzed with those who were less active. (22) These effects occur through several neurobiological pathways, such as reduced activity in the amygdala, increased activation of the ventrolateral prefrontal cortex, and stronger functional connections between the amygdala and prefrontal cortex. Additionally, alterations in serotonin and noradrenaline levels are commonly observed

in people with depression and anxiety, and pharmacological treatments targeting these neurotransmitters are associated with advancement in mood and reductions in anxiety symptoms. (23) Stress is understood as the body's natural reaction to challenging or threatening situations that require increased effort. (24) Stress can also hinder adjustment to school life, leading to negative attitudes toward school, aggressive behavior, and a higher likelihood of mental health problems. (25) Worldwide, nearly one in seven adolescents aged 10-19 is affected by mental disorder (WHO). Physical activity is widely acknowledged as beneficial for both physical and psychological health, as it helps reduce stress, alleviates depressive symptoms, decreases anxiety, and protects against cognitive decline. (26)

Academic stress is a significant problem. It can be described as an individual's general response to internal or external pressure that disrupts normal academic activities. Academic stress is important to study because it is closely linked to stress experienced later in professional life. (27) Research on exercise, anxiety, and depression indicates that regular physical activity plays a significant role in reducing anxiety levels and enhancing mood through both psychological and physiological mechanisms. (28) Physical activity enhances mental health by balancing serotonin levels and stimulating the release of neurotransmitters like endorphins, which contribute to positive adaptations in brain structure. (12) (13). Strong evidence for the psychological advantages of regular exercise is provided by the well-documented link between PA and MH. (14) Because they are going through a major transition from youth to adulthood, CS are seen as a unique group. (15) College students' overall development and healthy growth are greatly influenced by their mental health. (9) This study focuses on college students in Nawabshah, a population in which this association has not been previously explored. In Pakistan, physical inactivity is highly prevalent, with 75.2% of medical students reporting no regular exercise and over half experiencing extreme stress (16). Mental health problems show a negative association with physical activity, while approximately 81% of the population does not engage in the recommended amounts of activity. (17)

METHODOLOGY

In order to evaluate the relationship between physical exercise and mental health among college students in Nawabshah, Pakistan, a cross-sectional study was carried out. Government Girls Degree College and Government Boys Degree College in Nawabshah were among the public and private institutions where the study was conducted. Following permission from Peoples University of Medical & Health Sciences for Women's (PUMHSW), Nawabshah and Institute of Physical Therapy and Rehabilitation Science's Institutional Review Board (IRB), data collection was placed over a six-month period. Convenience sampling was used to recruit 400 students in total. The study comprised students between the ages of 16 and 19 who were enrolled in first and second years of intermediate institutions. Students who had previously been diagnosed with psychological illnesses, were using psychotropic drugs, were physically incapacitated and unable to engage in physical activity, or were unwilling to participate were also eliminated.

Data was collected using three sections of a standardized questionnaire. The first part of the study had a form that asked people about their age, gender, and what year they were

in school, where they lived and what college they went to. The next part looked at things like walking sitting around intense exercise and regular activity using a questionnaire called the International Physical Activity Questionnaire–Short Form. The people in the study also filled out a survey called the Depression, Anxiety and Stress Scale-21 to see how they were feeling. Before we started collecting any information each person in the study gave us their permission, in writing. People who took part in the study were told what the study was about and how to fill out the questionnaires. We collected the data while the researchers were present to make sure everything was correct and complete. The data was put into a Microsoft Excel sheet. Then we looked at the data using the Statistical Package for Social Science, which is also called SPSS, version 21. We used numbers to sum up the results of the study. We looked at the numbers and how much they varied, which is called the standard deviation to understand the numbers. We also looked at percentages. How often things happened to understand the other kind of data. We used the Pearson correlation test to see if there was a connection, between things.

RESULTS

A total of 400 Students took part in the research. The participants' average age was 17.23 ± 0.93 years. Among the respondents, 60.5% (n = 242) were male and 39.5% (n = 158) were female. Equal proportions of students were enrolled in HSC-I (50.0%) and HSC-II (50.0%). With respect to residence, 52.8% (n = 211) of the participants belonged to urban areas, whereas 47.3% (n = 189) were from rural areas. The majority of participants were enrolled in government boys degree college (61.3%), followed by government girls degree college (38.8%) table1.

Based on physical activity levels, 25.5% (n = 102) of participants were classified as having low physical activity, 32.3% (n = 129) reported moderate physical activity, while the largest proportion, 42.3% (n = 169), fell into the high physical activity category. Assessment of depression revealed that 46.8% of participants were categorized as normal, 16.0% as mild, 23.8% as moderate, 5.5% as severe, and 8.0% as extremely severe Regarding anxiety, 39.8% of students were classified as normal, while 14.3% exhibited mild anxiety, 34.0% moderate anxiety, 10.5% severe anxiety, and 1.5% extremely severe anxiety. Stress levels indicated that the majority of students (90.8%) were within the normal range, whereas 7.8% experienced mild stress and 1.5% reported moderate stress .table2.

The association between mental health ratings and overall physical activity (MET-minutes/week) was investigated using Pearson correlation analysis. Physical activity demonstrated a negative but non-significant correlation with depression scores ($r = -0.095$, $p = 0.058$) and stress scores ($r = -0.042$, $p = 0.398$). However, a statistically significant negative correlation was observed between physical activity and anxiety scores ($r = -0.104$, $p = 0.037$), indicating that higher levels of physical activity were associated with lower anxiety levels. Overall, the findings indicate that while physical activity was inversely related to depression and stress, these relationships were not statistically significant. In contrast, physical activity demonstrated a significant inverse relationship with anxiety, suggesting a potential protective role of physical activity against anxiety symptoms among adolescents table3

Online ISSN

3007-3197

Print ISSN

3007-3189

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Table. 1. Demographic Characteristics of Participants (N=400)

	N	Mean	Std. deviation
Age (years)	400	17.23	0.926

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE(%)
Gender	Male	242	60.5
	Female	158	39.5
Class	HSC-I	200	50.0
	HSC-II	200	50.0
Population	Urban	211	52.8
	Rural	189	47.3
College Name	Govt Boys Degree College	245	61.3
	Govt Girls Degree College	155	38.3

Table. 2

VARIABLE	Frequency	Percentage
Categories of Physical activity		
Low	102	25.5
Moderate	129	32.3
High	169	42.3
Categories of depression		
Normal	187	46.8
Mid	64	16.0
Moderate	95	23.8
Severe	22	5.5
Extremely Severe	32	8.0
Categories of stress		
Normal	363	90.8
Mid	31	7.8
Moderate	6	1.5
Categories of anxiety		
Normal	159	39.8
Mid	57	14.3
Moderate	136	34.0
Severe	42	10.5
Extremely Severe	6	1.5

Table. 3. Association between physical activity and mental health

Physical activity		normal	mild	moderate	Severe	Extremely severe	p-value
							0.058
Low	Depression	47	13	25	8	9	
Moderate		58	20	32	5	14	
High		82	31	38	9	9	
							0.037
Low	anxiety	39	19	31	12	1	
Moderate		50	15	49	11	4	
High		70	23	56	19	1	
							0.398
Low	stress	89	12	1	0	0	
Moderate		118	8	3	0	0	
High		156	11	2	0	0	

DISCUSSION

I looked at how physical exercise affects health in college students in Nawabshah, Pakistan. What I found was that most students said they had stress levels.. A big group of students had feelings of anxiety and sadness. Physical exercise and mental health are really important for college students. The connection between exercise and mental health is something that we should think about. College students, in Nawabshah, Pakistan need to know about exercise and mental health. A significant portion of pupils also participated in low to moderate levels of physical activity. Exercise is negatively correlated with stress, anxiety, and depression, according to the current study. Teenagers who were more physically active had fewer anxiety symptoms; however, this association was only statistically significant for anxiety. This finding is consistent with past studies that found a significant negative correlation between physical activity and anxiety, suggesting that regular exercise may reduce anxiety by improving mood control and reducing physiological stress reactivity. (29)

Physical activity and stress and depression were found to be negatively correlated in the current study, however these relationships were not statistically significant. Similar findings from earlier research have indicated modest or non-significant associations between teenage stress or depression symptoms and physical exercise (30). Variations in study design, age groups, cultural background, and the effects of academic and psychosocial stresses that may affect mental health in addition to physical activity could all account for these disparities.

Overall, the findings suggest that physical activity may have a protective impact, particularly against anxiety in college students. Encouraging regular exercise in learning environments could be a helpful strategy for improving mental health. Further long-term study is recommended to ascertain the causal relationships between physical activity and mental health outcomes.

CONCLUSION

This study looks at college students in Nawabshah, Pakistan. It finds that physical exercise and mental health issues are related in a way. When college students in Nawabshah Pakistan do exercise they have fewer mental health issues. The study shows that doing activity regularly can help prevent anxiety in teenagers. This is because the study found a connection between doing a lot of physical activity and having fewer anxiety symptoms. There is also a connection between activity and stress and depression. However this connection is not strong enough to be sure that physical activity is the reason for the difference. This means that things other than activity may also affect mental health outcomes for college students, in Nawabshah, Pakistan.

Physical activity is really good, for people. It can help them feel better and be happier. When kids do activity regularly it can help them feel less anxious. We should make sure kids do activity at school. Physical activity is a way to help people feel better. We need to do studies on physical activity to see how it can help college students feel better. Physical activity can really make a difference in the lives of individuals. We should keep looking at how physical activity can help people, young individuals feel better and be happier.

LIMITATIONS AND STRENGTH OF THE STUDY

The ability to identify causal relationships between physical activity and mental health outcomes is limited by the cross-sectional methodology. Convenience sampling may limit how broadly the results may be applied to all college students. Self-reported questionnaires were used to collect data on mental health and physical activity, which may have been impacted by recall and reporting bias. Because the study was restricted to a few Nawabshah colleges, it might not accurately represent the circumstances in other areas. There was no assessment of potential confounding variables including sleep patterns, academic burden, food habits, or socioeconomic background.

The study's comparatively high sample size ($n = 400$) improves the findings' statistical power and dependability. The accuracy and comparability of the results with previous research are strengthened by the use of standardized and validated instruments (DASS-21 and IPAQ-Short Form).

The study provided important local information on the connection between physical exercise and mental health, focusing on an understudied teenage group in Nawabshah. Ethical approval and supervised data collection improved the credibility and quality of the collected data.

RECOMMENDATIONS

Educational institutions should promote regular physical activity through structured sports programs, exercise sessions, and active breaks to support students' mental well-being. Physical activity should be encouraged as a low-cost, non-pharmacological strategy for reducing anxiety among college students. Awareness programs ought to be carried out to educate students about the mental health benefits of an active lifestyle.

Colleges should collaborate with health professionals to integrate physical activity

Online ISSN

3007-3197

Print ISSN

3007-3189

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promotion into student wellness and mental health initiatives. Future studies ought to make use of longitudinal or interventional study designs to establish causal relationships between physical activity and mental health outcomes. Further studies should include additional psychosocial and lifestyle factors to better understand their influence on depression and stress.

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Online ISSN

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