

EFFECT OF PHYSICAL EXERCISE AS A RELIEVING FACTOR IN STRESS IN UNIVERSITY STUDENTS OF DISTRICT PESHAWAR, KPK, PAKISTAN

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ABSTRACT

Objective: Stress is an emotional and physical disturbance that makes a person feel angry and

frustrated. Physical activity reduces stress symptoms and makes one feel better mentally. The main aim of our study was to find out the relationship between physical activity and stress.

Material and Methods: An analytical cross-sectional study was conducted to collect the data from students of 5 selected universities in Peshawar through a structured questionnaire. A sample size of 374 was obtained using epi-info software. Informed consent was obtained and data were analyzed through SPSS version 20 for Windows and presented primarily in the form of frequencies, percentages, graphs, and tables.

Results: Our study showed that out of a total of 354 participants who were included in the research, 49% of them were males and 51% were females. The age group of participants was 18-25 years with a mean age of 21 years. Among the total 354 participants, 28.2% were reported to have low-stress levels, 41% with moderate, and 30.8% with high-stress levels. 22% of participants do physical exercise to relieve their stress and 58.8% do it for body fitness. There was a high % of participants with high-stress levels who weren't doing physical activity while a high % of low-stress levels are reported in students doing regular physical activity. The majority of students have the opinion that exercise is beneficial in reducing physiologic, behavioral, and psychological stress symptoms.

Conclusion: Physical exercise is significantly effective in relieving stress. Doing exercise helps to achieve stable mental health status and improves a person's body, mind, and attitude.

Key Words: Stress, Physical exercise, Mental health, university students, Awareness.

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INTRODUCTION

Stress is an emotional and physical tension that makes one feel frustrated, angry and nervous. It's the body's reaction to a harmful situation. ¹ Today stress is a prevailing problem in human society. Stress is taking a toll on people contributing to health problems, poor relationships and lost productivity at work, according to a national survey released by the American Psychological Association (APA). ² There are many stress-coping methods and one of the effective methods is physical exercise.

According to WHO (2004), physical exercise is defined as; "Any bodily movement produced by skeletal muscles that require energy expenditure.³ There is a vast correlation between physical exercise and relief of stress as proved by many surveys. Exercise increases overall health and sense of well-being which puts more activeness in your step every day. Physical exercise pumps the brain's feel-good neurotransmitter called endorphins. It reduces the negative effects of stress, increases self-confidence and improves mood. ⁴ Physical activity and exercise when undertaken regularly are highly beneficial for health and for both physical and psychological well-being⁵. Also, the survey conducted for the article found that only 17% of adults report exercising daily, and 30% of adults who exercise regularly report feeling less stressed. 53% of adults say that they feel good about themselves after exercising and 35% see it puts them in a good mood. So physical exercise has a positive influence on mental health. There is a study conducted by De Moore and Associates (2006) suggests that regular exercise is cross-sectional and associat-

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ed with lower anxiety and depression. A study in the United States showed that individuals that spend 60% of their day in physical activity were observed with fewer complications in their life relating to psychological effects. In Pakistan, most of our population including every age group is under stress due to increased workload, low socioeconomic status, and people living in substandard conditions. According to research conducted "Young studying population is under stress due to study burden. There is also a low exercise ratio in Pakistan in Dow University of Health Sciences Karachi; "Individuals who perform regular exercise had a lower frequency of depression. The rationale behind conducting this study is to find a correlation between physical exercise and stress. This research mainly aims to create general awareness about the beneficial effect of physical exercise as a stress reliever and guide the general population about it.

MATERIAL AND METHODS

A cross-sectional study was conducted from Nov 2019 to Jul 2021. A total sample of 384 was collected by convenience non-probability sampling. The age group of students included was 18-25 years. The students from 5

selected universities were recruited for the research. Data was collected after the ethical approval of the synopsis by the Institutional Research & Ethical Committee at Khyber Medical College Peshawar. Before collecting the data, the participants involved in our study were informed about the study, and consent was taken. A well-structured questionnaire was used to gather information about their stress level, physical activity level, and their opinion about exercise relieving stress symptoms. Data were analyzed using SPSS version 20 for Windows. Quantitative variables were calculated as mean and \pm SD. Qualitative variables were presented in the form of percentages and frequencies. All the data was presented in the form of tables and graphs.

RESULTS

We interviewed 354 participants from 5 selected universities in Peshawar. Out of these 354, 48.87% were males and 51.13% were females. The age group of participants involved in the study was 18-25 years. The mean age of participants was 21 years. Table 1 shows the effect of exercise and perceived stress level and Table 2 shows the effects of exercise on various symptoms associated with stress and participants' opinion.

Table 1: Physical Exercise and Perceived Stress of the Participant

Physical Exercise done by Participants in Days per Week	Perceived Stress of the Participant (PSS)			Total
	Low Stress (0-13)	Moderate Stress (14-26)	High Stress (27-40)	
No Physical Activity	15	85	86	186
	8.1%	45.7%	46.2%	100.0%
	15.0%	58.6%	78.9%	52.5%
Irregular Physical Activity	31	32	15	78
	39.7%	41.0%	19.2%	100.0%
	31.0%	22.1%	13.8%	22.0%
Regular Physical Activity	54	28	8	90
	60.0%	31.1%	8.9%	100.0%
	54.0%	19.3%	7.3%	25.4%
Total	100	145	109	354
	28.2%	41.0%	30.8%	100.0%
	100.0%	100.0%	100.0%	100.0%

Table 2: Opinion of participants about the relieving effect of exercise on stress

EFFECTS OF EXERCISE ON STRESS SYMPTOMS and PARTICIPANTS OPINION	Strongly disagree f (%)	Disagree f (%)	Neutral f (%)	Agree f (%)	Strongly agree f (%)
Q-1 Exercise improves normal sleep 6-8 hours	22(6.2%)	17 (4.8%)	44(12.4%)	123 (34.7%)	148 (41.8%)
Q-2 Exercise improves normal appetite habits	19(5.4%)	25(7.06%)	45 (12.7%)	140(39.5%)	125(35.3%)
Q-3 Exercise reduces digestive problems	30 (8.4%)	26 (7.3%)	65(18.3%)	124 (35%)	109(30.7%)
Q-4 Exercise reduces need of antidepressant medications	18 (5.1%)	30 (8.4%)	68 (19.2%)	126(35.5%)	112(31.6%)
Q-5 Exercise improves work efficiency	20 (5.6%)	13 (3.67%)	55 (15.53%)	143 (40.3%)	123 (34.7%)

DISCUSSIONS

To assess the stress level of students, the Perceived Stress Scale was used. 28.2% of 354 participants were reported to have low levels of stress, 41% were having moderate and 30.8% were having high stress among university students of Peshawar. Our results are consistent with another study done on 471 students of Tafila Technical University, Jordan. The results showed that the stress levels experienced by students were of moderate intensity (3.15 out of 5).⁶ Similarly, another study was done by Educational Psychology on undergraduate students to assess their stress. The results indicated that 77.6% and 10.4% of the students fell into the moderate and serious stress level categories, respectively. The results also claimed that study burden, examinations, and results were the highest causes of stress among students.⁷ In a nutshell, perceived stress levels were an important factor that need university administration, teachers, and parents to focus on effective psychoanalysis services along with stress management interventions that could be useful for achieving academic success and balanced life.

In the current study out of 354 participants, 25.4% were doing regular physical exercise, 22% were doing exercise irregularly and 53.5% were not following any physical exercise routine. These results show that a very less proportion of our students have a regular physical activity routine. Another study was conducted by the University of Ankara, Turkey to find out the physical activity levels of university students. Data revealed that 15% were physically inactive, 68% minimally active, and 18% sufficiently active. Physical activity levels of male students were significantly higher than those of female students ($p < 0.05$).⁸ From the results, it was concluded that physical activity was below recommended levels in a substantial proportion of students.

Our results and applied chi-square test with a significance of 0.00 (< 0.05 standard p-value) help us to conclude that physical exercise is related to stress. The correlation coefficient value -0.501 shows that the correlation between two variables is indirect which means increasing exercise levels reduces stress as indicated above. Likewise, a cross-sectional study was conducted in the USA to find out the relationship between physical exercise and mental health in a large population of 1.2 M belonging to the age group of 18 years or older, between 2011 to 2015. Results showed that respondents who did exercise had experienced fewer days (1.49 times) of poor mental health than those who didn't exercise, whereas these respondents were otherwise the same for most of their demographic data including physical health and socioeconomic status. This research also concluded that doing physical exercise of any type lowers mental health burden with a minimum reduction of stress by 11.8% and a maximum reduction of 22.3%.⁹ These results clearly signify the importance of physical exercise in stress reduction.

People do physical exercise for multiple purposes i.e., weight loss, stress relief, body fitness, good health, bodybuilding, as per doctor's advice, etc. In our study, 22% were doing it to relieve their stress while the majority (58.8%) did it for body fitness. A study was done to find out the UK university students' motives for engaging in physical activity, sports, or exercise. The motives of 736 participants (± 20.45 years of age, $SD=3.50$) regarding participation or non-participation in exercise, sports, and physical activity were measured using the Exercise Motivation Inventory-2 (EMI-2) Overall, the largest motive for engaging in physical activity was attributed to health-related reasons (i.e. positive health and weight management. It is clear that the majority of students do exercise for their body fitness.

In our study, we intended to know the awareness level of students about the effect of exercise on relieving stress symptoms. The majority of students opined for positive effects of physical activity on reducing stress and anxiety levels as shown by results in table 1.2. Due to limited time and resources this study was conducted only at five selected universities so it cannot be generalized. The sample size calculated was 384 but due to the limitation of time, we collected data from 354 participants.

CONCLUSION

Based on the results of this research, it can be concluded that physical exercise significantly reduces stress levels. Our results indicate that doing exercise helps to achieve stable mental health status and improves a person's body, mind, and attitude. We also conclude that 22% do exercise for stress reduction and 58.8% do it for fitness purposes. Most students believed in exercise's positive effects in reducing stress symptoms.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Mustafa M: Concept, planning, study design, study conduction, critical review, analysis, manuscript writing.

Farooq Y: Critical review, discussion, interpretation, manuscript writing, study conduction.

Billah MM: Analysis, critical review, study conduction.

Ahmad A: Critical Review, study conduction, interpretation.

Asghar A: Study design, study conduction.

Burki MN: Study design, study conduction.

Iftikhar B: Critical review, discussion.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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