

# IMPACT OF SPORTS ACTIVITIES ON STRESS AMONG UNDERGRADUATE MEDICAL STUDENTS

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## ABSTRACT

**Introduction:** Sports are voluntary or ordinary activities that individual participates in order to improve health and fitness or play as a hobby to utilize their leisure period. It is arranged either in organized or casual way or either played for the competition purpose. A higher percentage of mental health among athlete group was noted as compared to non-athlete group. According to many researches, a significant percentage of medical students are currently experiencing stress due to many circumstances that has been identified. The main highlighted source was academic load and this in turn also producing negative impact on their studies. **Objective:** The objective of this study is to determine the impact of sport activities on stress among medical students of Isra University Karachi Campus. **Methodology:** It was an observational-analytical study design. A total of 150 students were selected in this study through purposive sampling. The depression anxiety stress scale (42-item) was used to determine pre and post stress level among the participants. Data was collected before and after participating in sports from the students of MBBS, DPT, BS vision both male and female who had participated in the sports week. Students who got physically injured, not willing to participate and those withdraw themselves from sports were excluded. The pre and post data were then analyzed by paired t-test on SPSS version 22<sup>nd</sup>. **Results:** The stress level among the students before participating in sports was reported mild (14.39) while after one week, the stress level showed significant reduction to 7.95 i.e. normal. The p-value was <0.01 that means the stress level decreased among the participants after participating in sports activities. **Conclusion:** The present study revealed positive impact of students engagement in sports on their stress level. Thus physical activity showed inverse relation with stress i.e. increasing physical activity was associated with decreasing stress levels.

**Key words:** Sports activities, physical activity, psychological stress, medical students, psychological health, mental health

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## INTRODUCTION

Sport is an activity that includes all forms of physical activity, arranged either in organized or casual way in order to compete and promote physical and mental well being. These are

voluntary or ordinary activities that individual participate in order to improve health and fitness or play as a hobby to utilize their leisure period. It is the third most common leisure time activity according to the 2016 Nation Report on Leisure

Activities.<sup>1,2</sup>

Sports are widely popular across many countries and are played not only to compete but to acquire other health benefits. It has been validated through various studies about the significance of exercises and the impact of healthy physical activities has on the physical, psychological, spiritual and social well being. Individuals who participate in sports have low stress levels, improved overall health and improved social life. Other benefits includes, long life span, prevention and management of many devastating heart diseases i.e. reducing risk for coronary heart disease and myocardial infarction, increase in self-esteem and self-confidence, feeling of being attentive, out of stress, increase concentration and memory retention. Hence sport activities may benefit all aspect of human health and well ness.<sup>3</sup>

Stress has been a great topic of interest among researchers and it has been proofed that an enormous percentage of students experiencing stress in their lives.<sup>4</sup> Stress is an upset in the body's internal environment due to existing threat or perception of fear or challenge i.e. disturbance in the body's physiological functions stimulated by presence of a stressor.<sup>5</sup> Wheeler describes stress in terms of physics which refers to "the amount of force applied on an object". Similarly, the stress (force) act as a strain on the subject that has worrisome effect on physical, psychological well being.<sup>6</sup>

The number of researches has been done to determine stress level among the students. In a study, significant percentages of medical students were experiencing stress due to many circumstances that has been identified. The main highlighted source found was academic load among them and this in turn producing negative impact on their studies.<sup>7</sup> It affects the productivity of students, their ability to concentrate and generate new ideas and decreases the capability to retain information for longer period of time. Due to stress, it requires more energy and time to

concentrate on their studies that increases their frustration and at the end they become exhausted that affect their productivity in their academics.<sup>8</sup> In another study, Jacob T et al. compared the stress levels among physiotherapy students from three countries including Australia, Israel and Sweden Universities. He found high perceived stress among the students and it was derived from personal and academic sources while the main source of stress among all three universities was more or less similar i.e. Academic load.<sup>9</sup> According to Sohail N et al. higher prevalence of severe stress were found among females and moderate stress among males. The main source of stress was similar in both gender while the strategies to cope with stress were slightly different.<sup>10</sup>

Engaging in sports activities provide beneficial psychological well being. Mouloud K et al. in his study found significant results between student-athlete and student non-athlete group with higher percentage of improved mental health among the student athlete group.<sup>11</sup>

Besides many health benefits being active, students engagement in physical activities has decreased due their sedentary lifestyle and academic load. Ali K et al. in his study found that students participation in sports activities had greatly affected by academic stress. That's why the students were only conscious about their studies and had no time engaging in other activities. Moreover, lecturers believe that the students can't balance the time between them so they don't allow or encourage students about participating in sports activities.<sup>12</sup>

## **METHODOLOGY**

### **Study Design:**

An observational-analytical study design was conducted to determine impact of sports activities on stress among medical students.

### **Setting:**

It was conducted in Al-Tibri Medical College, Isra University Karachi Campus.

**Duration of Study:**

The duration of the study was of six months.

**Sample Size:**

A total of 150 students were selected for this study.

**Sampling Technique:**

Non-Probability Purposive Sampling.

**Sample Selection:**

**Inclusion Criteria:** Students of MBBS, DPT, BS who participated in sports including both male and female and willing to participate were included in this study.

**Exclusion Criteria:** Participants who get physically injured during sports activity, not willing to participate and those who withdraw themselves from sports were excluded from this study.

**DATA COLLECTION PROCEDURE**

The pre stress level among the students was measured with validated Depression Anxiety Stress Scale (DASS-42) one week before the participation in sports week. The student were then participated in different sports activities including cricket, football, volley ball, throw ball, table tennis and athletic games that was organized as an extra curriculum for continuous one week. After one week of engagement in sports activities, the post stress level was again measured with Depression Anxiety Stress Scale to determine the impact of engagement in sports on psychological stress.

**DATA ANALYSIS PROCEDURE**

The data was analyzed by using SPSS (statistical package for social sciences) software Version 22<sup>nd</sup>. Descriptive statistics was used to calculate frequency and percentages for the categorical data while mean and standard deviation was calculated for quantitative data. Paired t-test was applied to compare the differences in pre and post stress levels among the students with p-value <0.05 was considered significant.

**RESULTS**

According to the baseline characteristics, the participants included in this study were 48% males and 52 % were females. The age of the students were between 17 and 26 years while mean age was 20.93 years. Out of 150 students, 70 students were from Doctor of Physical therapy, 61 from MBBS and 19 students were from BS vision. Majority of them were from the first year i.e. 28%, 24% of them were from second year, 14% from

Mean Age	20.93 (17 min – 26 max)	
<b>Gender</b>	Male	48%
	Female	52%
<b>Medical Program</b>	MBBS	40.7%
	DPT	46.7%
	BS Vision	12.7%
<b>Year of study</b>	1 <sup>st</sup>	28%
	2 <sup>nd</sup>	24%
	3 <sup>rd</sup>	14%
	4 <sup>th</sup>	19.3%
	5 <sup>th</sup>	14.7%

third year, 19.3% from fourth year and 14.7 % from fifth year. (Table 1)

The pre and post participation stress results were compared by applying t-test and it had shown significant difference between pre and post sports participation stress values. The mean paired difference between pre and post-stress was 6.440 with t value 13.381. The p value was < 0.001 at 95% Confidence interval that means the

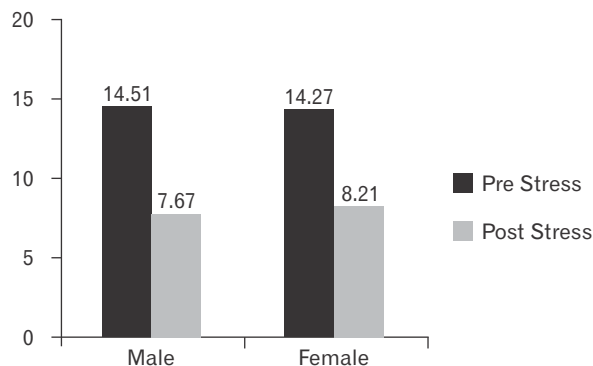
Variable	Pre Sport Participation	Post Sport Participation	Sig. (95% CI)	T value
	Mean +/- SD	Mean +/- SD		
<b>Stress</b>	14.39 +/- (7.09)	7.95 +/- (4.493)	0.000	13.381

stress level had decreased among the participants after participating in sports activities. (Table 2)

It was also observed that stress level was more in males than females and after participating in sports activities, the males showed much more

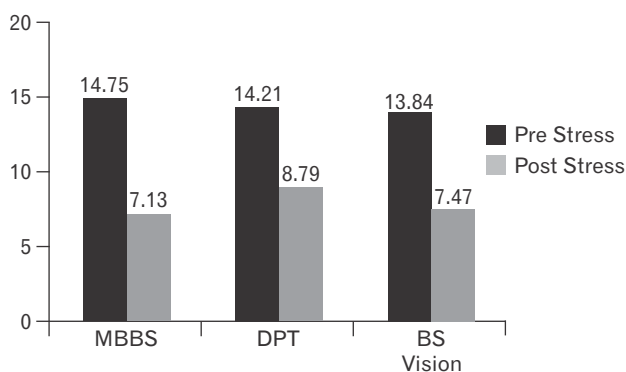
reduction in stress level than females. (Table 3, Fig 1)

Gender of the participants	Pre Stress	Post Stress
Male	14.51	7.67
Female	14.27	8.21



**Figure 1. showing mean stress values among males and females before and after sports participation**

Medical Program	Pre stress	Post Stress
MBBS	4.75	7.13
DPT	14.21	8.79
BS Vision	13.84	7.47



**Figure 2 showing mean stress values before and after sports participation among the students from different medical program**

## DISCUSSION

The present study was conducted to determine the impact of sports activities on stress among the medical students. The study revealed positive effects and showed significant results in reducing stress levels among medical students. Various

studies had investigated the stress and its related factors and it was proved that an enormous percentage of students experiencing stress. A study was conducted on stress and academic performance among medical students in which 71.6% of them were suffering from moderate stress levels and the percentage of stress level was higher in females than males.<sup>10</sup> The present study found mild stress with the major percentage of students affected was females.

A study was conducted to determine the effects of sports participation on psychological stress among females that showed significant results between control and experimental group before and after participating in sports (t value 4.169).<sup>13</sup> Another study investigated the depression among males athletes in which athlete group had showed lower levels of depression as compared to non-athlete group.<sup>14</sup> This is also consistent with the present study in which there was significant stress reduction after the sports participation.

## CONCLUSION


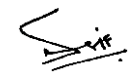
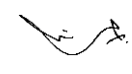

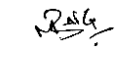
This study examined the impact of sports participation on stress among medical students of Isra university Karachi campus. On the basis of data analysis and findings of the study it was concluded that the involvement of students in sports activities had shown greater impact on reduction in the stress levels. Thus sports may be helpful in reducing stress and improving psychological well being.

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2	Muhammad Asif	Help in Literature searching	
3	Hira Islam Rajput	Supervisor	
4	Muhammad Atif Khan	Help in data analysis	
5	Muhammad Jawad Baig Chughtai	Help in data collection	
6	Amanullah	Help in writing introduction	