

A Comparative Study On The Selected Physical Fitness Components Of Bs Physical Education Students

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ABSTRACT

Physical fitness refers to a person's ability to carry out physical activities and perform daily tasks without undue fatigue. The desired populations of the study were 1st semester and BS 7th semester students of the Department of Sport Sciences and Physical Education, University of the Punjab Lahore, Pakistan. The random sampling technique was applied to recruit the students. The sample size of the study was n=40 students, comprising 20 males from the 1st semester and 20 males from the 7th-semester physical education department. Different adopted standard tests were administrated to find out the physical fitness status of students. In this study, results indicated that accordingly to speed, strength, endurance, agility and flexibility had a significant difference ($P < 0.05$) between the 1st Semester vs the 7th Semester. The results also revealed that 7th Semester students were more physically fit than 1st Semester students. These findings suggest that regular exercise and physical activity can have a positive impact on a person's overall physical fitness level, and that physical education programs in universities may contribute to the improvement in physical fitness among students.

Index Term: Agility, Flexibility, Endurance, Speed and Strength.

INTRODUCTION

Physical fitness has been seen as an important part of everyday life for as long as people have been around. Because of this, the ancient people relied heavily on their own physical prowess, stamina, and vitality to survive (Manmeet Gill et al., 2010). They required demonstrations of certain fundamental athletic abilities, such as strength, speed, stamina, flexibility, and agility for running, leaping, and throwing, as well as

climbing for the perseverance of hunting, collecting food, and constructing a shelter for their survival (Delgado & Gómez, 2016). In relation to the aforementioned concept, the International Journal of Behavioral, Social, and Movement Science (IJBSMS, 2012) defines physical fitness as being as old as mankind, keeping in mind that survival of the fittest has always been the case because only strong and agile invaders can defend themselves and their property. Physically fit individuals are more able

than those who are less physically fit to withstand extreme and abnormal stress and strain. Running, throwing, climbing, leaping, and lifting are fundamental movements that call for certain physical abilities such as muscular strength, muscular endurance, cardiovascular endurance, strength, balance, and coordination (Sarkar & Kandar, 2022).

In light of this, the global organization's expert committee defined physical fitness as the capacity to engage in a variety of physical activities without becoming too exhausted, including traits crucial to the individual's health and well-being (Billinger et al., 2014). Physical fitness is described by Clarke, Harrison, and H. (1971) as the capacity to do daily work with vigor and alertness without undue exhaustion and sufficient energy for leisure activities to handle everyday situations and unanticipated catastrophes. Similarly, consistent engagement in a variety of activities improves physical health. A high degree of physical fitness is thus preferred for a full and productive life (Rodriguez-Ayllon et al., 2019). Yet, sedentary lifestyles and inadequate physical fitness have an adverse effect on both health and day-to-day functioning (Kim et al., 2020). Each individual has a unique degree of physical fitness, which might alter depending on the circumstance, where they work, and other factors. Also, there is a connection between a person's daily activities and degree of fitness, which determines where to set the bar for ideal fitness (Teixeira et al., 2012).

Physical fitness may be defined physiologically as the body's capacity to adapt to and recover from demanding exercise (Kamla-Raj, 2010). For the majority of people, increasing physical activity improves physical fitness. In light of the fact that physical fitness is mostly not defined by patterns of recent weeks or months, physical activity and physical fitness are so tightly connected. Because environmental variables, notably physical activity, account for a greater portion of the variance in fitness than

genetic influences, genetic contributions to fitness are nevertheless significant (De Geus et al., 2014). In sports, where physically fit individuals are able to execute at a greater relative intensity than their competitors, the relationship between physical fitness and activity has been demonstrated.

In order to ascertain the current state of physical fitness, a comparative study was directed on BS 1st and 7th semesters students of physical education to find out the significant difference in their physical fitness components like speed, strength, endurance, agility, and flexibility scores.

RESEARCH METHODOLOGY

The present study was conducted in the Department of Sport Sciences and Physical Education, University of the Punjab, Lahore' Students to check the physical fitness status of BS 1st and 7th semesters students comparatively. A total no. of 40 students, ages 19-25 years were selected n=20 from each semester morning and evening through a random sampling technique. The exclusion criteria were histories of their health and orthopedic problems, such as episodes of hamstring injuries, fractures, surgery, or pain in the spine or hamstring muscles over the past three months. The following five standardized physical fitness tests were administrated to determine the physical fitness levels of students:

1. speed test
2. strength test
3. endurance test
4. agility test
5. flexibility test

The comparison was observed between BS 1st and 7th Semesters students in Speed, Explosive Leg Strength, Cardio-Vascular Endurance, Agility and Flexibility in this study. The following tests were used for collecting data: 1. for speed, the students were asked to run as fast as they can up to 40 yards and the results were recorded to the nearest 1/10th second. 2. Standing Broad Jump

was administered to measure explosive leg strength and the results were recorded in feet and inches. 3. Cardio-Vascular Endurance was measured through 600 yards run & walk test and results were recorded to the second or minute. 4. 4×10 yard Shuttle Run test was administered to measure agility and the results were recorded to the nearest 1/10th seconds. 5. Sit and Reach test was directed to measure the flexibility levels of

students. The procedure of each fitness component was administrated as it was explained by the sports scientists. In the statistical procedure, the arithmetic mean, standard deviation, and independent "t" test were used to compare the data and significant level set at 0.05 level of confidence.

RESULTS

Table 4.1: Anthropometric parameters of the participants of the study

Variable	Classes	n	M/SEM
Age	1 st Semester	20	19.04±.31
	7 th Semester	20	21.01±.21
Height	1 st Semester	20	1.72±.11
	7 th Semester	20	1.64±.12
Weight	1 st Semester	20	65±1.23
	7 th Semester	20	64±1.29
BMI	1 st Semester	20	18.90±.27
	7 th Semester	20	19.04±.45

Table 4.2. Comparative analysis of physical fitness of BS 1st and 7th Semester students

Variables	Classes	N	Mean	P-value
Speed	1 st Semester	20	6.67±.34	***
	7 th Semester	20	5.23±.43	
Strength	1 st Semester	20	34±.13	***
	7 th Semester	20	31±.21	
Endurance	1 st Semester	20	1.31±.24	***
	7 th Semester	20	1.26±.23	
Agility	1 st Semester	20	9.31±.14	***
	7 th Semester	20	9.98±.21	
Flexibility	1 st Semester	20	19±.13	

7 th Semester	20	21±.14	***
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Significant level $P < 0.05$

In Table 4.2 results indicated that accordingly to speed, strength, endurance, agility and flexibility had a significant difference ($P < 0.05$) between the 1st Semester vs 7th Semester. The results also revealed that 7th Semester students were more physically fit than 1st Semester students.

DISCUSSION

The results of the study showed that there were significant differences ($P < 0.05$) in physical fitness between the first and 7th semesters of students. Specifically, there were improvements in speed, strength, endurance, agility, and flexibility over time. The findings of this study support the idea that regular exercise and physical activity can have a positive impact on a person's overall physical fitness level. It is important to note that the physical education program at the university may have contributed to the improvement in physical fitness among the students. However, it is also possible that other factors such as diet and lifestyle habits may have played a role in the student's physical fitness level.

The improvement in speed observed in this study may be attributed to the fact that the students had been participating in regular physical activity and training, which likely enhanced their neuromuscular coordination and motor control. This finding is consistent with previous research that has shown a positive correlation between regular exercise and improved speed (Firth et al., 2017).

The increase in strength observed in the eighth semester may be attributed to the fact that the students had been engaging in resistance training as part of their physical education

program. Previous research has demonstrated that resistance training can have a positive impact on strength and muscle mass (Fragala et al., 2019).

The improvement in endurance observed in this study may be attributed to the fact that the students had been participating in regular cardiovascular exercise, which likely enhanced their cardiovascular fitness and improved their endurance levels. This finding is consistent with previous research that has shown a positive correlation between regular cardiovascular exercise and improved endurance (Kenney et al., 2021).

The improvement in agility observed in this study may be attributed to the fact that the students had been participating in regular agility training, which likely improved their neuromuscular coordination and reaction time. This finding is consistent with previous research that has shown a positive correlation between agility training and improved agility (Sheppard et al., 2006).

The improvement in flexibility observed in this study may be attributed to the fact that the students had been participating in regular stretching exercises as part of their physical education program. Previous research has demonstrated that regular stretching exercises can have a positive impact on flexibility (Logan et al., 2018).

CONCLUSION:

In conclusion, the results of this study suggest that there is a significant difference in the physical fitness level of university students between their first semester and the seven semesters. Specifically, there was an

improvement in speed, strength, endurance, agility, and flexibility in the seven semesters as compared to the first semester. These findings suggest that regular exercise and physical activity can have a positive impact on a person's overall physical fitness level and that physical education programs in universities may contribute to the improvement in physical fitness among students.

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