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Comparative study on physical fitness between physical education students and general students

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Abstract

Background: Fitness has a great significant in the lives of human beings from time immemorial. Total fitness looks at the overall individual, combining the absolute levels of physiological, psychological, social and cognitive fitness. The purpose of the study was to compare the Physical fitness between physical education students and general students (age group 17-20 years).

Materials & Methods: Total 60 subjects were taken for the study from S.B.S.S Mahavidyalaya, Goaltore, Paschim Medinipur, and West Bengal. To measure the Physical fitness AAPER YOUTH FITNESS TEST BATTERY (1976) was used. The test items consisted in AAPER YOUTH fitness test i.e pull ups for boys, bent knee sit ups, standing broad jump, shuttle run, 50 yards dash and 600 yards run and walk. To compare the physical fitness between physical education students and general students (age 17-20 years) the independent t-test was conducted at 0.05 level of significant.

Results & Discussion: The findings of the present study reveals that there were significant difference found in pull ups, sit ups, standing broad jump, shuttle run, 50 yards dash and 600 yards run and walk for knowing the Arm and shoulder Strength, Abdominal strength, Leg strength, Agility, Speed and Cardio-vascular Endurance respectively.

Conclusion: On the basis of the obtained result, it has been observed that Physical education students have more Arm and Shoulder strength, Abdominal strength, Explosive leg strength, Agility, Speed and Cardio-Vascular Endurance than General students for the involvement of games and sports and doing the various types of physical activities.

Keywords: physical fitness Components, physical education students and general students.

1. Introduction

Fitness is a very broad term and has various concepts. Total fitness looks at the overall individual, combining the absolute levels of physiological, psychological, social and cognitive fitness. Motor fitness refers to the ability of an athlete to perform successfully in their sports. The components of motor fitness are speed, endurance, agility, balance, flexibility, strength and power Davis. B. *et al.* (2000) [2]. Our nation is becoming more with physical fitness. People want quality in life, and adults particularly, are becoming more concerned about their health and fitness life style. Physical activities promote physical fitness. Physical fitness has been of great significant in the lives of human beings from time immemorial. In the pre-historic times, Physical fitness was the key element of the survival of human beings. People during those times were confronted with the hostile environment and only fit individuals could survive. Hence survival of fitness is the dictum. Even the civilization of Sparta, Athens and Rome in the history of the world have stressed Physical fitness or physical training as an important objective of the educational programme Jewell Ann E, (1969) [4]. Physical fitness is the pre-requisite of the ability to perform any motor tasks in day to day life as well as in sport. It has been considered as one of the most important aspects of human existence. Physical fitness is that state of body in which a person can carry his daily duties and responsibilities efficiently and with the energy left he can enjoy hobbies and other recreational activities and can meet the unusual. "Physical fitness is the ability to do the daily task with vigor and alertness, without undue fatigue and with ample energy to engage in leisure pursuit and to meet emergency situations" (H. Harrison Clarke) [3]. It can decrease your risk of stroke, colon cancer, diabetes and high blood pressure. Regular exercise has been long associated with a fewer visits to the doctor, hospitalization and medication (Fitday, 2012) [5]. In other words, Physical fitness can be defined as the state of body in which a person can do work for a longer duration without

undue fatigue. Physical fitness not only a state of younger’s but is the reality for all ages. Physical fitness is the product of physical exercises and exercise is very much related to health and wellbeing. The capacity of performing physical activity is named as physical fitness or motor fitness. But the development of science and technology discouraging the human beings from doing vigorous activities as a result of which various physical and mental diseases are flourishing at a great speed throughout the world. The purpose of the study was to compare the physical fitness between physical education students and general students (age group 17-20 years).

The Dimensions of Physical Activity

Physical activities have five dimensions or components: intensity, frequency, duration, type and context.

- i. Intensity:** Intensity refers to the physical effort required to perform the activity, and is categorized as light, moderate or vigorous. It is expressed in absolute (objective) or relative (subjective) terms. Absolute intensity is the rate of energy expenditure during the activity session and is typically expressed as the rate of oxygen uptake. But most physiological responses to exercise are dictated by the relative intensity, which is influenced by factors such as age, gender, weight, disability, and fitness level.
- ii. Frequency:** Frequency refers to how physical activity is performed and is measured as the number of days or sessions the activity is performed within a particular time period (per day, week, or month)
- iii. Duration:** Duration describes the amount of physical activity performed within a set time period (e.g., activity session, per day, last 7 days, usual week or last year) and is typically expressed in hours or minutes. Factors such as age and intensity will influence the duration an activity is performed.
- iv. Type (Mode):** Type (Mode) of activity refers to the specific activity itself (e.g., walking, cycling, tennis), but can also be classified into broader types of activity categories (e.g., aerobic, anaerobic, weight bearing or non weight bearing, resistance or strength activities). Factors such as health, income, social and environmental surroundings will influence the type of activity chosen by an individual.
- v. Context:** Physical activity contexts refer to the purpose or circumstances under which activities are performed. Three main physical activity domains have been identified by the World Health Organization:
 - Leisure-time sport and recreation
 - Occupation
 - Transportation

Physical activity guidelines have been developed to promote the role of physical activity for cardiovascular health. For cardiovascular health, at least 30 minutes of moderate-intensity physical activity on most, if not all, days of the week is required.

2. Methodology

Subjects

Thirty (30) Physical education students and Thirty (30) general students of S.B.S.S Mahavidyalaya, Goaltore, Paschim Medinipur, West Bengal (age group 17-20 years) were randomly selected as subjects. Physical education students were those who used to take part in physical activities regularly and participate in various types of games and sports.

On the other hand, general students were those students who were not involve in physical activities or games and sports. The random sampling method and random group design were used for the study.

Test and their Measurement

On the basis of available Literature and the researcher’s own understanding the following physical fitness test were selected.

They are-

- i) Pull ups for boys,
- ii) Bent knee sit ups,
- iii) Standing broad jump,
- iv) Shuttle run test,
- v) 50 yard dash
- vi) 600 yard run and Walk

The selected variables, their test are given in Table No -1.

Table 1

Sl. No.	Measurments	Test	Unit
1.	Arm and shoulder strength	Pull Ups	count
2.	Bent knee sit ups	Abdominal strength	count
3.	Standing broad jump	Strength and power	ft
4.	Shuttle run test	Agility	Second
5.	50 yards dash	Speed	Second
6.	600 yards run & walk	Cardio-vascular endurance	Minutes

Procedure

The investigator met the selected students who were to be tested and explained them the purpose of the present investigation. He demonstrated them the various tests with respect to the selected physical fitness variables. The data were collected from thirty (30) physical education students and thirty (30) general education students of S.B.S.S Mahavidyalaya, Goaltore, Paschim Medinipur, West Bengal. The random group design and random sampling method were employed. The AAHPER youth fitness test battery was administered to measure the physical fitness components.

AAHPER Youth fitness test battery includes the following items for boys

- 1. Pull-Up ----- to measure arms and shoulder strength of the subjects
- 2. Bend knee sit-up -----to measure abdominal strength of the subjects
- 3. Standing broad jump ----- to measure explosive strength and power of the subjects
- 4. Shuttle run ----- to measure agility of the subjects
- 5. 50 yards dash -----to measure the speed of the subjects
- 6. 600 yards run & Walk -----to measure endurance of the subjects

The Age of the subjects were taken from their school record. Both the groups were same in age. For statistical analysis and Interpretation of data ‘t’- test was conducted.

Statistical Analysis

The Independent ‘t’ test was used at 0.05 level of significance. To get the final result Mean, SD, Mean Difference and ‘t’-test were calculated.

3. Results

Table 2: Mean and t-ratio of Various Fitness test of Physical education students and General students

SL. No	Variables	Physical Edu Students Mean ± SD	General Students Mean ± SD	MD	t-ratio
1	Pull ups (Boys)	16.50±2.30	11.60±2.50	4.90	4.24*
2	Bent knee Sit ups	19.35±3.25	14.80±3.42	4.55	4.14*
3	Standing Broad Jump	4.80±2.20	3.10±2.40	1.70	2.60*
4	Shuttle Run	11.20±1.25	16.30±2.25	5.10	4.32*
5	50 Yards Dash	10.20±2.24	15.45±2.35	5.25	4.76*
6	600 Yards Run and Walk	2.25±1.80	4.50±1.48	2.25	3.18*

*Significant at 0.05 level

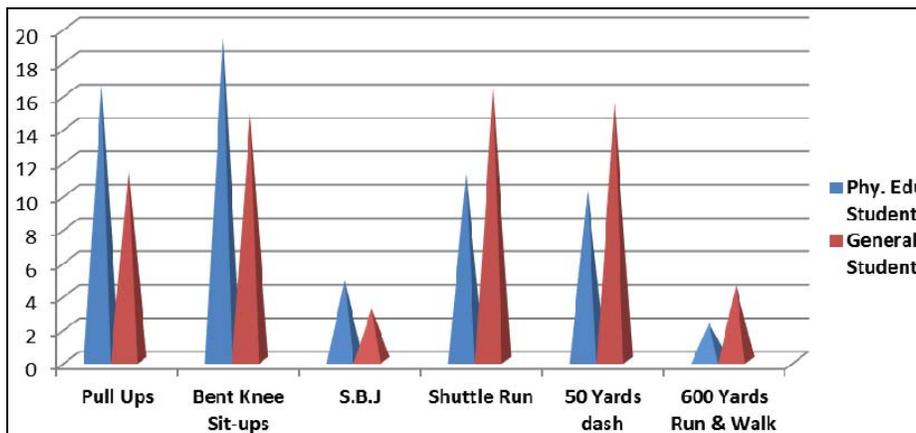


Fig 2: Graphs Showing the AAHPER Youth Physical Fitness Test between Physical Education students and General students

Table 2: It gives the information regarding selected physical fitness variables of Pull ups, Sit ups, Standing Broad Jump, Shuttle Run, 50 Yard Dash and 600 Yard Run and Walk of Physical education students and General students. Table shows that there were significant differences in all the variables of college going students. The results are significant because the calculated value of each variable was more than the table value (2.00) at 0.05 level of significant. The Mean and SD of Pull ups, Sit ups, Standing Broad Jump, Shuttle Run, 50 Yard Dash and 600 Yard Run and Walk of both students were (16.50±2.30) & (11.60±2.50), (19.35±3.25) & (14.80±3.42), (4.80±2.20) & (3.10±2.40), (11.20±1.25) & (16.30±2.25), (10.20±2.24) & (15.45±2.35) and (2.25±1.80) & 4.50±1.48) respectively. The ‘t’-test was applied and t-value of Pull ups, Sit ups, Standing Broad Jump, Shuttle Run, 50 Yards Dash and 600 Yards Run and Walk were 4.24, 4.14, 2.60, 4.32, 4.76 and 3.18 respectively which were significant at 0.05 level of confidence with df (58).

4. Discussion

From the result of the study it has been observed that there were significant differences found in the physical fitness variables like pull ups, sit ups, standing broad jump, shuttle run, 50 yards dash and 600 yards run and walk for knowing the Arm and shoulder Strength, Abdominal strength, Leg strength, Agility, Speed and Cardio-vascular Endurance respectively. Physical education students have more Arm and Shoulder strength, abdominal strength, explosive leg strength, Agility, Speed and Cardio-Vascular Endurance than General students because of the involvement of games and sports and doing the various types of physical activities. The term motor fitness is usually used synonymously with physical fitness. It is limited phase of physical fitness. Kansal (1996) [6] referred “motor fitness as the efficiency of basic movement in the addition of physical fitness”. Motor fitness refers to the ability

of an athlete to perform successfully in their sports. The components of motor fitness are speed, endurance, agility, balance, flexibility, strength and power Davis. B. *et al.* (2000). [2] The Mean and SD of Pull ups, Sit ups, Standing Broad Jump, Shuttle Run, 50 Yard Dash and 600 Yard Run and Walk of both students were (16.50±2.30) & (11.60±2.50), (19.35±3.25) & (14.80±3.42), (4.80±2.20) & (3.10±2.40), (11.20±1.25) & (16.30±2.25), (10.20±2.24) & (15.45±2.35) and (2.25±1.80) & 4.50±1.48) respectively. The ‘t’-test was applied and t-value of Pull ups, Sit ups, Standing Broad Jump, Shuttle Run, 50 Yards Dash and 600 Yards Run and Walk were 4.24, 4.14, 2.60, 4.32, 4.76 and 3.18 respectively which were significant at 0.05 level of confidence with df (58).

5. Conclusion

Many research studies have been done on the usefulness of physical fitness. It is proved that fitness has a significant and healthy impact on the life style of the man. The findings of the study revealed statistically significant in the respect of all selected physical education students.

On the basis of the results obtained from the present empirical investigation and within the limitation, the following conclusions may be drawn.

- The Physical education students have more Arm and Shoulder strength in comparison to General students.
- The Physical education students have more Abdominal strength in comparison to General students.
- The Physical education students have more Leg strength in comparison to General students.
- The Physical education students have more Agility in comparison to General students.
- The Physical education students have more Speed in comparison to General students.
- The Physical education students have more cardio-vascular endurance in comparison to General students.

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