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Health related physical fitness among physical education professional students a comparative study

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Abstract

Purpose of the study was to find out the health related physical fitness of 100 college women, age ranges 19-20 and 21-23, studying in State Institute of Physical Education for Women, Hasting House in Alipur, under Calcutta University were selected subject randomly and divided into two groups consisting of 50 women in each. Group-I is B.P.Ed students and group-II is M.P.Ed students. The two groups were provided with same types of physical exercises, consisting of walking, jogging, floor aerobic exercises. Health related physical fitness variables are cardio vascular endurance, muscular strength, flexibility, and body composition. The results of this study proved that both group were good but M.P.Ed students are more fitness than B.P.Ed students. Even though it was found that M.P.Ed group was better than B.P.Ed, the difference between those two groups was significant at 0.05 levels, using t-test to make definite conclusion on each variables. It was observed that this study can be used in improving cardiovascular endurance, muscular strength, and flexibility among B.P.Ed students.

Keywords: Physical Exercise, Cardiovascular Endurance, Muscular Strength, Flexibility, body composition.

1. Introduction

This is probably the most popular and frequently used term in physical education and to develop physical fitness is the most important objective of physical educators. According to Nixon and Cozens (1964),^[1] it was the desire to establish a scientific approach to development of physical fitness which formed the basis of the first meeting of physical elucidators in 1885 when the profession of physical education originated.

The United States president's Council on physical fitness and sports defined the terms "physical fitness as the ability to carry out daily task with vigour and alertness, without undue fatigue, with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies" (Clarke, 1971)^[2].

During the past decade, participation in physical active for the sake of improving one's health and physical will being has increased. More and more people are jogging cycling, swimming and joining health clubs and other exercise center to receive the health benefit of vigorous physical activity. It is now fashionable to be altered in exercise apparel and socially acceptable to discuss the positive changes in one's own physical fitness that has resulted from a newly initiated exercise program.

Clarke and Clarke (1989),^[3] found that physical fitness is not a static factor and it varies from individual to individual and in the same person from time to time depending on factors. Physical fitness is probably the most popular and frequently used term in Physical Education. The most important objective of physical educators is to develop physical fitness. Fitness is the ability to live a full and balanced life. The totally fit person has a healthy and happy outlook on life. Fitness is the young man's absolute necessity. It breeds self-reliance and keeps man mentally alert. Physical fitness is essential for human beings to adjust well with his environment as his mind and body are in complete harmony

General fitness implies the ability of a person to live most effectively with his and her potentials, which depend upon the physical, mental, emotional, social and spiritual components of fitness which are highly interrelated. The primary components of physical fitness identified by the president's council on physical fitness and sports were muscular strength, muscular endurance and cardio respiratory endurance. However, later on the president council also included some other motor performance components namely agility,

speed, flexibility and balance in physical fitness. But keeping in view the general opinion of the majority of the researchers, the author has not included the components such as speed, agility, power and balance (which are more important for success in specified sports) as essential components of basic physical fitness. However, the author defines physical fitness by group of five components, namely muscular strength, muscular endurance and cardio respiratory endurance, flexibility and body composition. It is important to mention here that some experts (e.g. Clarke and Clarke, 1987^[4]; AAHPERD, 1980^[5]) call such fitness tests which include the measurement of percentage body fat, as health related physical fitness tests.

Although it is generally agreed that physical fitness is an important part of the normal growth and development of a child, a generic definition regarding the precise nature of physical fitness has not been universally accepted. Through research and scholarly inquiry, it is clear that the multi-dimensional characteristics of physical fitness can be divided into two areas: health related physical fitness and skill related fitness (N. Hastad Douglas and C. Lacy Alan, 1994)^[6].

In 2008, Sir Aires L,^[7] et al., establish physical fitness (PF) levels in a 636 school students of 11-18 year-old students (mean age of 14.5+/-1.5 years), 288 boys (45.3%) and girls 347 (54.7%), and analyse differences according to body mass index (BMI) status in overweight. Six tests from Fitness-gram battery were used. Both girls and boys with obesity performed a significantly reduced number of tests in healthy fitness zone suggesting a decrease of performances in strength and cardiovascular fitness, from normal weight status to overweight and from overweight to obesity. Boys and girls with obesity are likely to be Under HFZ than normal weight. The results suggest that obese and overweight children have low PF level compared to normal weight peers. A large number of children with normal weight were identified as well as unfit. These data also showed that a low BMI level would significantly improve some PF component.

This departure from the traditional notion of fitness has resulted in a clear differentiation between physical fitness related primarily to athletic ability. A practitioner must be aware that this dysfunction distinction has curricular implications. Understanding the distinctive features of health related and skill related fitness and the component of each will help physical education develop program goals and performance based student objectives and measure progress toward those goals. It is suggested that dichotomizing the definition of fitness should not lessen the important of each in the curricular construction.

This type of fitness has enormous benefit to our life style as it allows us to be active throughout day. For example working to the shops climbing stairs or running to catch a bus it also allows us to get involved in sports and pursuits if we have good cardiovascular fitness then our health is also good as it helps with-

1. Fat metabolism
2. Improve delivery oxygen
3. Faster removal of waste product
4. Decrease level of stress

In daily activity we must be flexible to reach for something in a cupboard, off the floor. It also helps-

- a) Prevent injury
- b) Improve posture
- c) Reduce low back pain
- d) Maintain healthy joint
- e) Improve balance during movement

1.1 Objectives of the Study

The objective of the study was to measure the health related physical fitness among college going women. To compare the Physical Education status between B. P. Ed & M. P. Ed girl's students of S.I.P.E.W., Hasting House on the basis of physical fitness variables are cardio vascular endurance, muscular strength, flexibility, and body composition. This study was conducted in a single college named State Institute of Physical Education for Women, Hasting House in Alipur, Kolkata, and West Bengal.

2. Methods

2.1 Participants

Total hundred (N=100) college women, fifty (50) in each group (B. P. Ed, Group-I and M. P. Ed, Group-II), age ranges 19-20 and 21-23, from State Institute of Physical Education for Women, Hasting House in Alipur, under Calcutta University were volunteered in this study.

2.2 Measures

The test was conducted in S.I.P.E.W., the procedure of measuring the physical fitness test was presented below:-

2.3 Physical Exercise

The two groups were provided with same types of physical exercises consisting of walking, jogging, floor aerobic exercises.

2.3 Cardiovascular Endurance (Queens College Step test)

Harvard Step Test has been modified to make it suitable for its use on college women (Clarke, 1943)^[8]. This test helps us to measure the general capacity of heart and cardiovascular system to adapt and recovered from the work. In 1973 Mc Ardle^[9] and associates also described a modified H. S. T. The test is Queens College Step test for college women.

2.4 Muscular Strength (Grip Strength)

This test is to measure the maximum isometric strength of the hand and forearm muscles. First of all maximum grip strength of all the subjects is tested with the help of grip dynamometer and recorded. The time of grip strength testing, the subject is asking the grip dynamometer over head and to squeeze it by lowering the arm steadily downwards to the right side of the body while continuing tightening the grip without letting the hand, arm or elbow touch the body. The indicator needle gives the score for the maximum grip squeeze in kg. suppose, the subjects grip strength is found 45 kg. He/She is asked to perform maximal number of grip dynamometer squeeze of 30 kg. ($45 \times 2/3 = 30$) that is at two-third of his maximal grip strength (D. K. Kansal, 1996)^[10].

2.5 Flexibility (Sit and Reach Test)

A standardized sit-and-reach box was used to assess hamstring flexibility. With shoes removed and one leg fully extended with the foot flat against the face of the box, participants were required to put one hand on top of the other and reach both hands forward along the scale four times and hold the position of the maximum reach for one second. The same procedure was repeated with the other leg.

2.6 Body composition (BMI)

Body composition can be measured through the Body Mass Index or BMI. If you are using body composition to measure your fitness goals, it is important that you use the same body fat measurement technique. The percentage of body fat a person has in comparison to his or her total body mass.

3. Result and Discussion

For the purpose of the study total 100 physical education students were selected randomly from State Institute of Physical Education For Women, Alipur, Kolkata, West Bengal.

Table 1: Mean & SD value of Quince College Step Test between M.P.Ed. & B.P.Ed. girl's student of S.I.P.E.W.

Step Test	M. P. Ed.	B. P. Ed.
Mean	158.7	167.45
SD	16.39	12.43
T Value	7.06	

From the Table 1, it is clear that the mean and SD values in Quince College step test of the M. P. Ed. and B. P. Ed. girl's student of S.I.P.E.W. were 158.7 ± 16.39 and 167.45 ± 12.43 respectively.

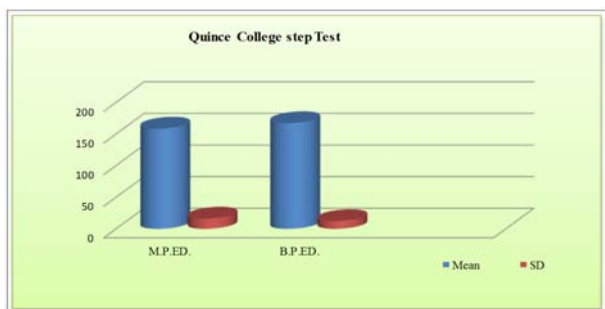


Fig I

Table 2: Mean & SD value of Grip strength between M.P.Ed. & B.P.Ed. girl's student of S.I.P.E.W.

Grip Strength	M. P. Ed.	B. P. Ed.
Mean	40.6	36.2
SD	6.4	6.52
T Value	4.20	

From the Table 2, it is clear that the mean and SD values in Grip strength of the M. P. Ed. and B. P. Ed. girl's student of S.I.P.E.W. were 40.6 ± 6.4 and 36.2 ± 6.52 respectively.

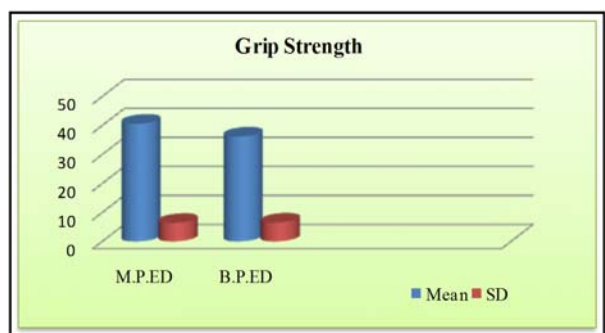


Fig II

Table 3: Mean & SD value of Sit and Reach test between M. P.Ed. & B. P. Ed. girls student of S.I.P.E.W.

Sit & Reach	M. P. Ed.	B. P. Ed.
Mean	7.61	6.84
SD	2.11	2.29
T Value	0.63	

From the Table 3, it is clear that the mean and SD values in Sit and Reach Test of the M. P. Ed. and B. P. Ed. girl's student of S.I.P.E.W. were 7.61 ± 2.11 and 6.8 ± 2.29 respectively.

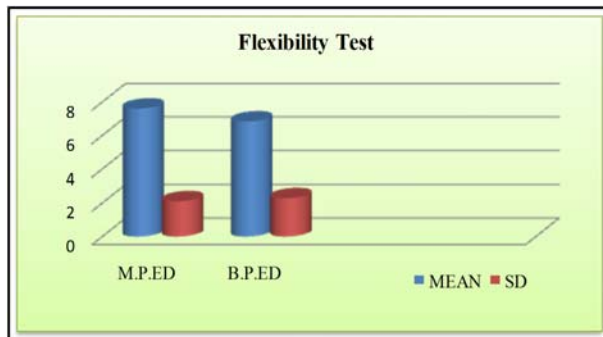


Fig III

Table 4: Mean and SD value of BMI of girls students between M.P.Ed. & B.P.Ed. of S.I.P.E.W.

BMI	M.P.Ed.	B.P.Ed.
Mean	21.76	21.05
SD	3.25	2.48
t value	0.38	

From the Table 4, it is clear that the mean and SD values in Sit and Reach Test of the M. P. Ed. and B. P. Ed. girl's student of S.I.P.E.W. were 7.61 ± 2.11 and 6.8 ± 2.29 respectively.

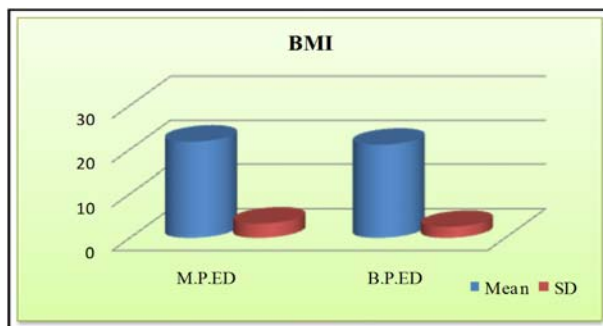


Fig IV

4. Conclusion

- The overall conclusion is that daily physical activity during adolescence and in the young adult period is significantly related to physical fitness.
- The study of health related fitness between B. P. Ed. & M. P. Ed. girls students of S.I.P.E.W., finally concluded that there is a significant difference excised at 0.05 level.
- It was proved that M. P. Ed. students are more fitness then B. P. Ed. girls students.
- It is possible to measure the physical fitness of the students through this AAHPERD physical fitness test. The results suggest that the M. P. Ed. students have more physical fitness.

5. Recommendations

There are different recommendations for further research and action for each category of variables. The priority for variables classified as consistently associated with physical activity should be to apply these findings to improving interventions. The purpose of this area of research should be to identify correlates of youth physical activity, further test promising variables in prospective studies, and then use the results to develop improved interventions that are rigorously evaluated.

- a) It should be helpful for further study and research.

- b) The results should be helpful for identification of sports talent.
- c) Similar studies of this study might be under taken involving other conditional abilities.
- d) The results of this study might be helpful for screening and training of the other players.

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