



Comparative Studies On Attitude Towards Selected Physical Fitness Parameters Among General Degree Students & Physical Education Students In West Bengal

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Abstract:

The aim of this study is to promote sports culture among the people especially among the general degree students. Adolescence is a sensitive state for adapting and growing emotions and giving shape of personality. Sports are a key for opening door to discover both physical and psychological strengths and weaknesses and it promotes responsible behavior, forms character and identity and enhance overall wellbeing of adolescents. From a purely behavioral perspective, sport is a highly functional activity that can teach us how to adapt and survive in the real world. This includes the development of leadership skills and Qualities, respect for authority, competitiveness, cooperativeness, sportsmanship, self-confidence and reducing anxiety. For this research, here selected two groups, Physical Education and General Degree students personnel as comparison group for understanding the true effect of Sports participation on Social, Emotional, Health Home and Financial aspects as well as to learn more about the effect of sports participation on Body Mass Index, Fat % and on Physical Fitness components of the subjects viz. Speed, Strength, Agility & Flexibility and to encourage all sedentary students for participation in sports activities.

Keywords: Attitude, Physical, Fitness, Education, Students

INTRODUCTION:

Although they are related, physical exercise and physical fitness are two entirely different ideas. Physical fitness is a biological or physical property or characteristic, whereas physical activity is a behavior. [1] The history of fitness is complex and extensive. The concept of fitness refers to a person's capacity for physical effectiveness at work and recreation as well as their readiness for unforeseen hazards or devastation. [2] Physical fitness is the ability to

continue working hard while quickly returning to a healthy state. A person's level of strength, speed, endurance, agility, and flexibility will determine how this turns out. A person's level of physical fitness depends on a number of variables, including their surroundings, lifestyle, diet, and body etiquette. Any nation or people's first priority is their state of fitness or condition. [3] The word "physical fitness" refers to an individual's entire dynamic physiological state, which can range along a continuum from peak human performance to severe disabilities and mortality. A variety of fitness-related skills must be developed. These include balance, flexibility, strength, power, speed, and the proper management of body weight. They also include muscular endurance. [4] There is a chance that an athlete will have a lot of one element and very little of another. Additionally, when considering a variety of sports, some elements assume a significant significance, such as the necessity of flexibility in gymnastics or the significance of strength in weightlifting. In fact, the majority of sports call for varying degrees of contribution from a number of fitness-related elements [5].

RESEARCH METHODOLOGY:

Formation of Objectives:

The study was taken up by the investigator to study and compare the Physical fitness and attitude of the physical education students and general degree students in West Bengal, keeping in view the objectives of the study.

Sample Selection:

After surveying in West Bengal colleges, three hundred and twenty subjects (320 = 160 physical education students and 160 general degree students) were randomly selected after building rapport with concerned Sports teachers, Principals and Directors of different colleges in West Bengal. Investigator himself took the sample from identified physical education and general degree student's categories, belonging to rural and urban areas. Out of selected 320 subjects, three (3) physical education students and fifteen (15) general degree students did not co-operate during administration of the physical fitness tests.

Break-up of Sample:

Group	Rural	Urban	Total
Physical Education students	71	86	157
General Degree students	72	73	145
Total	143	159	302

Tools Used for the Present Study:

1. **Shuttle Run** to measure the Coordinative abilities while running and changing quick directions and body positions in speed.
2. **50 Yards Dash/Run** to measure the speed capacity of the subject.
3. **Pull-Ups** to measure the muscular strength.
4. **Modified Sit and Reach** to measure Flexibility.
5. **Anthropometry** (Anthropometric rod and weighing machine) to measure the height and weight of the subjects respectively to calculate of Body Mass Index (BMI).
6. **Lafayette/Vernier's digital skin fold caliper** to measure the subcutaneous adipose tissue (Fat %).
7. **Bell's Adjustment Inventory** translated into Urdu by Qadri (1964) comprised of five factors: Social, Emotional, Health, Home and Financial, to measure Adjustment level of subjects.

Adding up the four skin fold values to get total value.

- Calculating the Body Density (**BD**) by using **Durnin and Womersley (1974)**

formula appropriate to the age of the subjects.

The formula is as follows:

$$\text{BD} = 1.1620 - 0.0630 \log (\text{Biceps} + \text{Triceps} + \text{Sub-scapular} + \text{Suprailiac}).$$

(For 17 - 19 years).

$$\text{BD} = 1.1631 - 0.0632 \log (\text{Biceps} + \text{Triceps} + \text{Sub-scapular} + \text{Suprailiac}).$$

(For 20 - 29 years).

When Body Density was then calculated with the help of the above formulas, it was then converted to measure Fat % by the following formula devised **SIRI (1965)**:

$$\text{Body Fat \%} = (4.95/\text{Body Density} - 4.50) \times 100$$

Where: D = Density 4.95 and 4.5 are the constants calculated by SIRI (1961) using the assumptions on the density of Fat Mass and Fat Free Mass.

Note: This calculation is not suitable for children below 15 years of age, because they are still growing and not reached their full height.

Body Fat Percentage Categories

In males, mean percentage body fat ranged from 22.9% at age 16–19 years to 30.9% at age 60–79 years. In females, mean percentage body fat ranged from 32.0% at age 8--11 years to 42.4% at age 60–79 years.

The table below from the American Council on Exercise shows how average percentages differ according to the specified groups and categories.

Category	Women	Men
Essential fat	10% to 12%	2% to 4%
Athletes	14% to 20%	6% to 13%
Fitness	21% to 24%	14% to 17%
Acceptable	25% to 31%	18% to 25%
Obese	32% or higher	26% or higher

Bell's Adjustment Inventory by **Qadri (1964)** comprised of five factors: i. Social, ii. Emotional, iii. Health iv. Home and v. Financial to measure Adjustment level of subjects.

The main five areas of the inventory are explained as under:

1. **Social Adjustment:** Items connected with this area mainly seek information regarding the satisfactory quality of one's behavior.
2. **Emotional Adjustment:** This area explains the most important psychological aspect responsible for satisfactory adjustment in life.
3. **Health Adjustment:** This area explains the items focusing on the deviations in terms of health criteria.
4. **Home Adjustment:** The items in this area probe into the home conditions of the subject and their relationship among the family members.
5. **Financial Adjustment:** This area probe the financial difficulties faced by students in their day today life.

Administration of the Inventory Test

Before the administration of the test, instructions appearing on the first page on the first page of respective manual of the test were read out and explained to the students. The test having 90 questions with no time limit for this questionnaire. Usually the subjects complete the questionnaire within 30 to 45 minutes. After the administration of the test, the booklets were collected from the students for next process viz scoring.

Scoring Procedure

The returns of the Personality Inventory were scored with the help of a set of Punctured Keys, prepared by the investigator for each area and per page. Scoring with the help of the key was very simple. On every key for an area holes were punched for "Yes" and "No" at the top and at the bottom and above these holes the page number of the form was inscribed. The scorer had to adjust on each page the key for a particular area, count the tick marks through the holes and assign **1 mark (One Mark)** to each tick (✓) visible through the hole. Having counted the score for each area the scorer had to count and ring the dots given in the profile at the front page of the inventory. Each dot represents a score of **1**. The areas were serially arranged as A (Social), B (Emotional), C (Health), D (Home) and E (Financial). By adding the scores of each area, a profile chart was made to give comparative picture of the extent of adjustment of each individual in various areas. The higher the score, the more maladjusted is the individual. In this way all the forms filled in by the student were scored. Then the scores of the individual in each area, his total score, as well as other variables such as subject's age, parentage, monthly income of parent, hall of residence, Category (Physical Education/General Degree - Rural/Urban), Educational Qualification and Participation in sports in case of physical education students were transformed to a tabulation sheet.

Norms for Male Students

Extent of Adjustment	Social	Emotiona l	Health	Home	Financia l	Total
Highly Adjusted	0-4	0-1	0-1	0-1	0-1	0-12
Adjusted	5-7	2-4	2-3	2	2	13-18
Moderately Adjusted	8-9	5-7	4-5	3	3	19-26
Maladjusted Adjusted	10-12	8-10	6-7	4-5	4-5	27-35
Highly Mal adjusted	13-20	11-20	8-20	6-20	6-10	36-90

Statistical Treatment

After the scoring of the collected data of Physical fitness components and Adjustment factors was completed, the data was subjected to statistical analyses by using Mean, Standard Deviation and t-test. For proper presentation of data, bar diagrams and line graphs were also plotted.

ANALYSIS OF DATA AND INTERPRETATION:

Analysis of the data is a process of inspecting, cleaning, transforming and modeling data with the goal of discovering useful information, suggesting conclusions and supporting decision making. Analysis means categorizing, manipulation of data to reach at a solution of research problems. The tabulated data have no meaning unless these are analyzed by applying appropriate statistical techniques. Analysis of data means studying the tabulated data in order to determine the inherent fact of meanings. It involves breaking up of the complex factors into simpler parts and putting them in new arrangements for the purpose of interpretation.

In order to make proper statistical analysis in the present study and to reach the logical conclusions, the investigator has sought the expert opinion of different statisticians and supervisor. The investigator has made an attempt to test the objectives of primary education through different tools and techniques and to study the extent to which these objectives have been realized.

Keeping in view the objectives of the study, the statistical treatment viz: Mean, S.D, and 't'-test was employed. In the present study, the investigator has tried to handle the statistical data carefully in order to draw out interferences and conclusions and to make the results transparent. Figures, bar diagrams and line graphs have also been plotted to substantiate the results. The analysis of the data of the present study is prescribed in the tables and figures on the following comparisons:

1. Comparisons between Physical Education and General Degree students on:

A. Physical Fitness:

- BMI
- Fat Percentage
- Components of Physical fitness

B. Adjustment viz. Social, Emotional, Health, Home and Financial

C. Composite Score of Adjustment.

2. Comparisons between Urban Physical Education and Urban General degree students on:

A. Physical fitness:

- BMI

- Fat Percentage
- Components of Physical fitness
- B. Adjustment viz. Social, Emotional, Health, Home and Financial
- C. Composite Score of Adjustment.
- 3. Comparisons between Rural Physical Education and Rural General degree students on:
 - A. Physical fitness:
 - BMI
 - Fat Percentage
 - Components of Physical fitness
 - B. Adjustment viz. Social, Emotional, Health, Home and Financial
 - C. Composite Score of Adjustment.
- 4. Comparisons between Rural and Urban Physical Education students on:
 - A. Adjustment viz. Social, Emotional, Health, Home and Financial
 - B. Composite Score of Adjustment.
- 5. Comparisons between Rural and Urban General degree students on:
 - A. Adjustment viz. Social, Emotional, Health, Home and Financial
 - B. Composite Score of Adjustment.

DISCUSSION AND CONCLUSION:

Physical Education and General Degree Students

It has been found that there is significant mean difference between Physical Education and General Degree students on Body Mass Index of Fat dimension level. Physical Education students were found to possess less Body Mass Index (BMI).

1. It has been found that there is significant mean difference between Physical Education and General Degree students on Fat percentage level. Recommended fitness category of Fat (adipose tissue) percentage ranges from 14% to 17%.
2. It has been found that there is significant mean difference between Physical Education and General Degree students on factor Shuttle Run (Agility, a measurable component of Physical fitness scale). Physical Education students were found to possess agile body, having good coordinative abilities and flexibility as compared to general degree students who were found to possess stiff body.
3. It has also been found that there is significant mean difference between physical education and general degree students on factor 50 Yard Dash test, (Speed, a measurable component of physical fitness scale). Physical Education students were found to have more speed than their counterparts. Physical Education students were found to be habitual runners. On the

other hand general degree students experience breathlessness and second wind due to lack of fitness and speed.

4. It has been found that there is significant mean difference between Physical Education and general degree students on variable of Pull-Ups test (strength, a measurable component of physical fitness scale). Physical Education students were found to possess muscular body. Their upper body was found to have good shoulder strength. In the contrary, Physical Education students were found to have weak upper body.

5. It has been found that there is significant mean difference between Physical Education and General Degree students on variable of Modified Sit and Reach test (flexibility, a measurable component of physical fitness scale). Physical Education students were found to have flexible body. On the other hand General Degree students have stiff muscles in their body.

6. It has been found that there is significant mean difference between Physical Education and General degree students on factor Social Adjustment. Physical education students were found more social, because they get more exposure of participating in different Sports/Social activities with different people of community. On the other hand general degree students were found socially maladjusted, avoid social gatherings, shy and having feeling of loneliness. They are unable to express their point of view in social functions.

7. It has been found that there is significant mean difference between Physical Education and General Degree students on factor of Emotional Adjustment. Physical Education students were found emotionally well adjusted than their counterparts. In contrary General Degree students remain confined to the four walls, were found depressed, unstable, irritating with full of worries and anxieties.

8. It has been found that there is significant mean difference between Physical Education and General Degree students on factor of Health Adjustment. Physical Education students were found healthier and well nourished as compared to their counterparts General Degree students who suffer from many ailment and abnormal physique due to their sedentary life.

9. It has been found that there is significant mean difference between Physical Education and General Degree student son factor of Home Adjustment. Physical Education students were found well adjusted at home than their counter parts. On the other hand General degree students were found having many problems like inter- family attachments, fixation, and unpleasant home life which are an outcome of peculiar and weird family circumstances.

10. It has been found that there is not significant mean difference between and General Degree students on factor of Financial Adjustment.

11. It has been found that there is not significant mean difference between Physical Education and General Degree students on Composite score of Adjustment.

12. Physical Education students were found well adjusted as compared to their counterparts. General Degree students were found having undue pressure and narrow range of social environment.

Urban Physical Education and Urban General Degree students

13. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on Body Mass Index of Fat dimension level. Urban Physical Education students were found to possess less Body Mass Index (BMI).

14. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on Fat percentage level. Fat/adipose tissue percentage of Urban Physical Education students ranged from 14% to 17% which is a fitness category.

15. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Shuttle run test (agility- Physical fitness components). Urban Physical Education students were found agile and quick in coordinative ability as compared to Urban General Degree students.

16. It has also been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor 50 Yard Dash test (Speed component of Physical Fitness). Urban Physical Education students were found to have good quality to perform fast movement to cover maximum distance in shortest possible time as compared to Urban General Degree students. On the other hand Urban General Degree students have less speed ability.

17. It has also been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Pull-Ups (Strength, component of Physical Fitness). Urban Physical Education students were found to have exceptional strength than their counterparts.

18. It has also been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Modified sit and Reach test, (flexibility component of physical fitness). Urban Physical Education students were found to have flexible body and joints than Urban General Degree students.

19. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Social Adjustment. Urban Physical

Education students were found more social, adjustable in any environment, never face difficulty to give an oral report before class. They do not feel a sense of loneliness. In contrary Urban General Degree students were found socially maladjusted facing difficulty while speaking in front of their class or in the college assembly.

20. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Emotional Adjustment. Urban Physical Education students were found emotionally more adjusted, stable, not concerned with their personal worries or anxieties. Without getting disturbed and distracted. In contrary, Urban General degree students get irritated easily, regret at their actions, feel depressed and worried all the time, which in turn hampers their academic achievement.

21. It has been established that there is significant mean difference between Urban Physical Education and Urban General Degree students on factor Health Adjustment. Urban Physical education students were found proper nourished, well adjusted, and physically & mentally healthier. In contrary Urban General Degree students suffer from many ailments frequently like common cold, spells of dizziness and skin diseases.

22. It has been found that there is significant mean difference between Urban Physical Education and Urban general degree students on factor Home Adjustment. Urban Physical Education students were found well adjusted at Home, living in congenial and lively atmosphere. On the other hand Urban general degree students have usually disturbing environment in their homes. Siblings often disturb each other and had frequent family quarrels among their relatives.

23. It has been revealed that there is significant mean difference between Urban Physical Education and Urban general degree students on factor Financial Adjustment. Urban Physical Education students were found financially well adjusted getting financial support from parents/Guardians. On the other hand Urban general degree suppress their desires due to non availability of finances. They are being engaged by their parents/Guardians in earning livelihood. Their demands of life get crushed due to non-availability of finance.

24. It has been found that there is significant mean difference between Urban Physical Education and Urban General Degree students on Composite score Adjustment. Urban Physical Education students were found well adjusted because they have a sense of personal freedom, find healthy atmosphere around them, prove their metal well and achieve more than their potential as compared to Urban General degree students.

Rural Physical Education and Rural General Degree Students

25. It has been found that there is significant mean difference between Rural Physical Education and Rural General degree students on Body Mass Index of Fat dimension level.

Rural students were found to possess less Body Mass Index (BMI) than their counterparts. It has been found that Rural Physical Education students increase Lean Body Mass (LBM).

26. It has been found that there is significant mean difference between Physical Education and General degree students on Fat percentage level. Rural Physical Education students have less percentage of Fat/adipose tissue than Rural General degree students.

27. It has been found that there is significant mean difference between Rural Physical Education and Rural General degree students on factor Shuttle run test (agility, one of the measurable components of Physical fitness). Rural Physical Education students were found to be more agile. While as Rural General degree students were found to have lesser amount of coordinative abilities.

28. It has been found that there is significant mean difference between Rural Physical Education and Rural General Degree students on factor 50-Yards Dash test (speed, one of the measurable components of Physical fitness). Rural Physical Education students were found habitual of working in the farms and fields for long hours and walk miles in their fields, having strong muscles than Rural General degree students.

29. It has been found that there is significant mean difference between Rural Physical Education and Rural General Degree students on factor Pull Ups test (strength, one of the measurable components of Physical fitness). Rural Physical Education students were found having good muscular strength as compared to Rural General Degree students.

30. It has been found that there is significant mean difference between Rural Physical Education and Rural General Degree students on factor Modified Sit and Reach test (flexibility, one of the measurable components of Physical fitness). Rural Physical Education students were found more flexible body than their counterparts.

31. It has been found that there is significant mean difference between Rural Physical Education and Rural general degree students on factor Social Adjustment. Rural Physical Education students were found more social. They obey the moral code of conduct, participate in different group activities, and leave from any congregation with proper permission. In contrary Rural general degree students were found socially maladjusted having anti social tendencies, feeling a sense of loneliness and hesitation in dealing with the mob.

32. It has been found that there is significant mean difference between Rural Physical Education and Rural general degree students on factor Emotional Adjustment. Rural Physical Education students were found emotionally well adjusted. They don't lag behind, and not concerned with their personal worries. On the other hand Rural General degree students get irritated easily and leave their task midway. They are always disappointed and fed up with themselves.

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33. It has been found that there is significant mean difference between Rural Physical Education and Rural General degree students on factor Health Adjustment. Rural Physical Education students were found healthier. They don't lag behind if any difficult Physical task is given to them. On the other hand Rural general degree students suffer from ailments like Cold, unusual Heart Rate/ palpitation, headache and brain disorders.

34. It has been found that there is significant mean difference between Rural Physical Education and Rural general degree students on factor Home Adjustment. Rural Physical Education students were found well adjusted in the family having pleasant Home Life, cooperative parents, and feelings of home security. On the other hand general degree students face many problems of inter-family attachments, feel lack of real affection and love in their home.

35. It has been found that there is no significant mean difference between Rural Physical Education and Rural general degree students on financial Adjustment.

36. It has been found that there is significant mean difference between Rural Physical Education and Rural General degree students on Composite score of Adjustment. Rural Physical Education students were found well adjusted than Rural General degree students.

Urban and Rural Physical Education Students

37. Urban and Rural Physical Education students do not differ so far as Social Adjustment is concerned.

38. Urban and Rural Physical Education students do not differ so far as Emotional Adjustment is concerned.

39. Urban and Rural Physical Education students do not differ so far as Health Adjustment is concerned.

40. It has been found that there is significant mean difference between Urban and Rural Physical Education students on factor Home Adjustment. It was found that Rural Physical Education students were more adjusted at home. Rural Physical Education students usually come from families of healthy environment, having enjoyable family life. On the other hand Urban Physical Education students suffer from domestic dissatisfaction, uncongenial atmosphere problems of inter-family relationships, attitudes or jealousy.

41. Urban and Rural Physical Education students do not differ so far as Financial Adjustment is concerned.

42. Urban and Rural Physical Education students do not differ so far as Composite score of Adjustment is concerned.

Urban and Rural General Degree Students

43. Urban and Rural General Degree students do not differ so far as Social Adjustment is concerned.
44. Urban and Rural General Degree students do not differ so far as Emotional Adjustment is concerned
45. Urban and Rural General Degree students do not differ so far as Health Adjustment is concerned
46. Urban and Rural General Degree students do not differ so far as Home Adjustment is concerned
47. Urban and Rural General Degree students do not differ so far as Financial Adjustment is concerned.
48. Urban and Rural General Degree students do not differ so far as Composite score of Adjustment is concerned.

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