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Comparison of motor fitness components between academic and professional courses of male physical education students in West Bengal

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Abstract

The purpose of the present study was to compare the motor fitness components between academic and professional courses of male undergraduate physical education students in West Bengal. Total eighty (80) male subjects were randomly selected of which forty (40) from professional course of B.P.Ed. students of N.B.S. Mahavidyalaya, Bishnupur, Bankura district and Garhbeta College, Garhbeta, Paschim Medinipur district rest of forty (40) from academic course of undergraduate physical education students were selected from five different undergraduate colleges affiliated under Vidyasagar University and Bankura University for this study. The age group of the subjects was ranged from 19 to 25 years. All the subjects were informed about the aim and methodology of the study and they volunteered to participate in this study. The motor fitness components were assessed by the Barrow General Motor Fitness Test (1954). The components of this test include Wall Pass Ability, Zigzag Run, Medicine Ball Put, Softball Throw, Standing Broad Jump and 60 Yard Dash. The mean, standard deviation and mean differences were obtained through Statistical Package for Social Studies, (SPSS, Version 20, Inc., and Chicago, Illinois). To check the difference of mean scores between academic and professional courses of male undergraduate student in West Bengal the Independent Sample t-test was applied. The level of significance was set at 0.05. The results of present study indicated that male physical education students of professional course had significantly better in Wall Pass Ability ($p < 0.05$), Medicine Ball Put ($p < 0.05$), Softball Throw ($p < 0.05$) and Standing Broad Jump ($p < 0.05$) as compared to male physical education students from academic course but no significant differences exist in Zigzag Run and 60 Yard Dash between academic and professional courses of male undergraduate physical education students in West Bengal.

Keywords: Motor Fitness, Wall Pass, Zigzag Run, Medicine Ball Put, Softball Throw, Standing Broad Jump, 60 Yard Dash

Introduction

The performance of players is influenced by many factors such as level of physical fitness, physiological and psychological abilities, technique, physique, body size, body composition and application of bio-mechanical principles (Ortega *et al.* 2008) [7]. The relationship of sports performance with the physical, psychological and physiological abilities has been the thrust area for researchers from decades. There have been thousands of attempts by the researcher to develop a consistent physical and psychological and physiological profile of athletes, to be reliably used to different athletes to predict the sports performance (Ketelaar *et al.* 2009) [4]. Why physical fitness and motor fitness are very important for better performance in games and sports? Is it probable to measure athletic potential and predict future success in games and sports? Early researchers operated on the theory that as there were tests for assessing the innate ability of intelligence in the cognitive domain, there must also be a way to measure innate motor ability in the psychomotor domain. Motor fitness and its components play an important role in different fields of human activity has already been well brought out. Since games and athletic, including provide ideal situation for challenge; competition and evolution. The situation in which motor fitness and its components thrive there is justification for planning studies which aim at exploring the relationship of this important factors with performance in skill (Gupta, 2014) [2]. Motor fitness is gauged by performance and this performance is based

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on a composite of many factors. The most commonly motor fitness factors are speed, muscular strength, muscular endurance, muscular power, circulatory respiratory endurance, flexibility and agility. Motor fitness is one of the multidimensional construct of physical fitness which is defined as a “set of attributes that people have or achieve that relates to the ability to perform physical activity”. The components of motor or skill-related fitness are important for successful performance in all sports and motor skills and include movement control factors of balance and coordination, and force production factors of agility, power, speed, and reaction time. These are distinct from but interrelated to, the health-related fitness components of cardiovascular fitness, muscular strength, muscular endurance, flexibility, and body composition.

Motor fitness refers to the efficiency of basic movements in addition to the physical fitness. The five motor abilities were recognized as components of physical fitness (Singh, 1991)^[8]. These were strength, endurance, speed, flexibility and coordinative abilities (Matwejew, 1981)^[5]. These elements of motor fitness are usually reflected in motor performances such as running, jumping, dodging, climbing, swimming, lifting weights and carrying loads for a prolonged period of time. According to (Kansal, 1996)^[3], “the individual not only physically fit but also possesses good motor control and body coordination in addition to excelling in the specific skills of his/her game of specialization.” (Thakur and Sinha, 2010)^[9] pointed out that, “world’s topmost sporting nations are very much conscious on fitness factors which are supposed to play a dominant role in its future performance in sports and games.” (Natraj and Kumar, 2006)^[6] pointed out that, “successful performances of skill components of motor abilities contribute independently and interdependently. The role of motor abilities for successful sports performance can’t be disputed. Strength, endurance, speed, flexibility, agility and co-coordinative abilities are the prerequisites for motor action in all sports. The improvement and maintenance of these components are very important in sports training.”

Different findings of research already have provided an understanding about the importance of physical fitness in the successful performance of games and sports. Considering the physical fitness importance among athletics and due to the dearth of researches in India related to the importance of

motor fitness in different games and sports as well as physical education, the present study aimed to compare the Motor Fitness components between academic and professional courses of undergraduate male physical education students in West Bengal.

Methodology

Subjects

The sample consisted of eighty (N=80) male physical education students of which forty (N₁=40) from academic course and forty (N₂=40) from professional course of B.P.Ed. Students were participated in this study. Academic course of undergraduate physical education male students were randomly selected from five different undergraduate colleges from Vidyasagar University and Bankura University and twenty each professional course of BP Ed. Students were selected randomly from two different professional training colleges of NBS Mahavidyalaya affiliated under Bankura University and Garhbeta College affiliated under Vidyasagar University in West Bengal. The age of each subject was calculated from the date of birth as recorded in their college registered.

Tools

The Barrow General Motor Fitness test (Barrow, H.M. 1954) consists the following items were selected to record the Motor Fitness components between academic and professional courses of male physical education students in West Bengal. The test item includes Wall Pass, Zigzag Run, Six Pound Medicine Ball Put, Softball Throw, Standing Broad Jump and 60 Yard Dash.

Statistical Analysis

For the purpose of analysis of data descriptive statistics the mean, standard deviation and mean difference were obtained through the Statistical Package for Social Studies, (Version 20, SPSS Inc., and Chicago, Illinois). To check the difference of mean scores between academic and professional courses of male undergraduate physical education students in West Bengal the Independent-Samples t-test was applied. The level of significance was set at 0.05.

Results

Table 1: Shows the comparison of mean \pm S.D., mean differences and t-values of motor fitness components between academic and professional courses physical education male students.

Motor Fitness Components	Academic Course (N=40)	Professional Course (N=40)	M.D.	t-value	Sig. (2- tailed)	S/ NS
	Mean \pm S.D.	Mean \pm S.D.				
Wall Pass Ability (No. of wall pass in 15 sec.)	7.42 \pm 1.17	8.22 \pm 1.07	-0.80	-3.180	0.002	S
Zigzag Run (Second)	25.78 \pm 1.36	25.52 \pm 1.18	0.26	-0.901	0.370	NS
Six lb. Medicine Ball Put (Feet)	40.12 \pm 2.32	42.42 \pm 3.13	-2.30	3.727	0.000	S
Softball Throw (Feet)	37.45 \pm 2.65	39.65 \pm 2.72	-2.20	3.656	0.000*	S
Standing Broad Jump (Inch)	84.20 \pm 3.52	89.35 \pm 5.12	-5.15	5.235	0.000*	S
60 Yard Dash (Second)	7.65 \pm 0.32	7.55 \pm 0.37	0.10	-1.256	0.213	NS

Table value of t^{*} for df (78) at 0.05 level of confidence = 1.99.

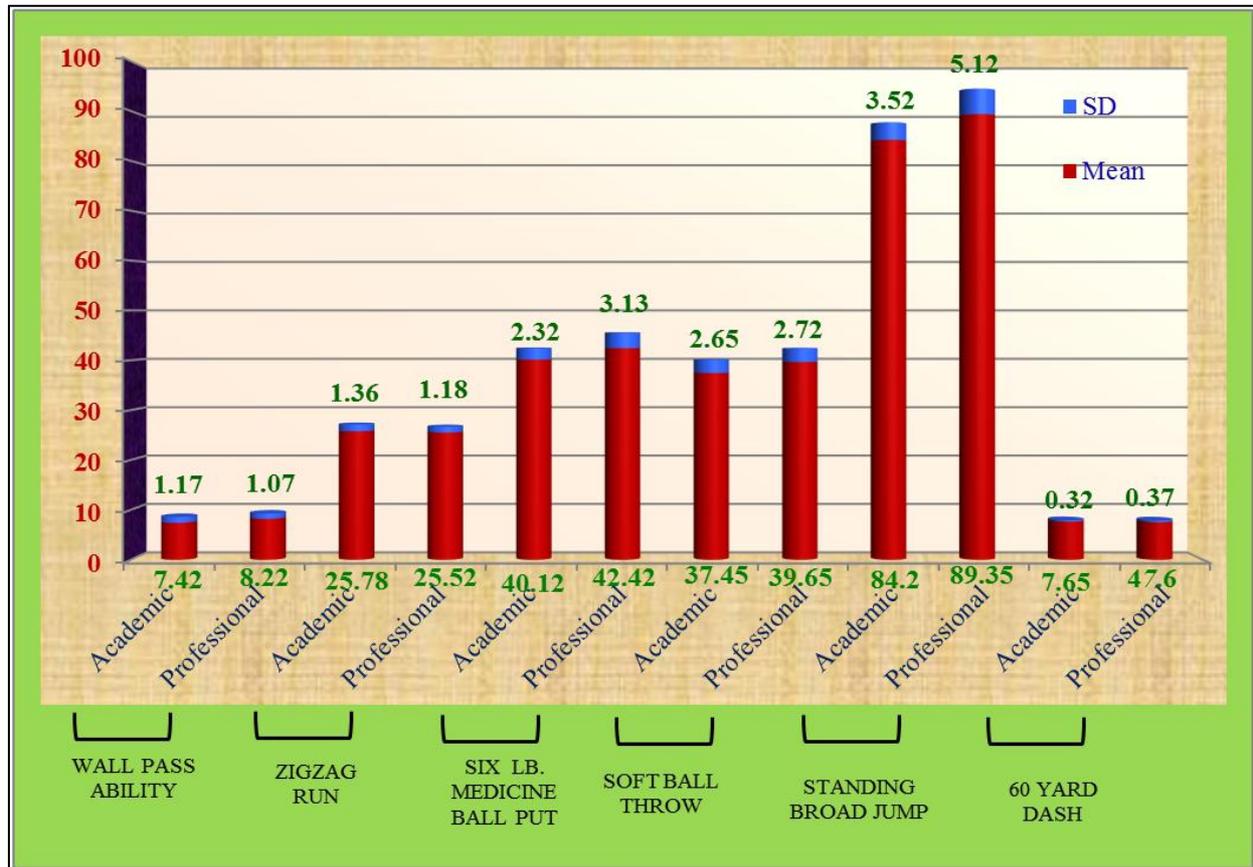


Fig 1: Graphical representation of motor fitness components between academic and professional courses physical education male students.

Discussion of Findings

In the present study motor fitness components of academic and professional courses of male physical education students in West Bengal have been evaluated and compared with each other. The perusal of table-1 indicates that the mean and standard deviation scores of Wall Pass Ability of academic and professional courses of male physical education students were 7.42 ± 1.17 and 8.22 ± 1.07 numbers in 15 second respectively. There was a significant difference exist in Wall Pass Ability between the mean scores of academic and professional courses of male physical education students, since the calculated t-value -3.180 was higher than the tabulated t-value 1.99 which was required to be significant at 78 degree of freedom with 0.05 level of confidence. It shows that professional course of male physical education students have performed significantly better in Wall Pass Ability of Motor Fitness component for measuring coordinative ability than the academic course of male physical education students in West Bengal.

The analysis of data in table-1 pertaining to the comparison of Zigzag Run between academic and professional courses of male physical education students in West Bengal reveals that the mean and standard deviation score of Zigzag Run 25.78 ± 1.17 second of academic course of male physical education students have been shown higher than that of mean and standard deviation score of Zigzag Run 25.52 ± 1.18 second of professional course of male physical education students in West Bengal. The 't'- value testing for the significance of mean differences between the academic and professional courses of male physical education students came out to be insignificant as the calculated 't' = -0.901 value is less than tabulated 't' value, 't'.05 (78) = 1.99, though the score of Zigzag Run of Motor Fitness component for measuring agility for professional course of male physical education students

have shown better than the academic course of male physical education students.

Table-1 reveals that there was a significant difference between the mean scores of academic and professional courses of male physical education students in Six Pound Medicine Ball Put of Motor Fitness component, since the calculated t-value 3.727 was higher than the tabulated t-value 1.99 which was required to be significant at 78 degree of freedom with 0.05 level of confidence. It shows that professional courses of male physical education students have performed significantly better in Six Pound Medicine Ball Put for measuring shoulder girdle strength than the academic course of male physical education students in West Bengal.

The result have been shown in table-1 indicates that significant difference exist in Softball Throw between academic and professional courses of male physical education students in West Bengal. The academic course of male physical education students have been shown their mean and standard deviation score 37.45 ± 2.65 feet whereas the professional course of male physical education students have been shown their mean and standard deviation score 39.65 ± 2.72 feet. The 't' value 3.656 as shown in the table-1 was found significantly higher than the table value of 1.99 which was required to be significant at 0.05 level of confidence. The findings of Softball Throw performance clearly indicated that professional course of male physical education students performed better in Softball Throw than the academic course of male physical education students in West Bengal.

The perusal of table-1 indicates that the mean and standard deviation scores of Standing Broad Jump of academic and professional courses of male physical education students were 84.20 ± 3.52 and 89.35 ± 5.12 inches respectively. There was a significant difference exist in Standing Broad Jump between the mean scores of academic and professional courses of male

physical education students, since the calculated t-value 5.235 was higher than the tabulated t-value 1.99 which was required to be significant at 78 degree of freedom with 0.05 level of confidence. It shows that professional course of male physical education students have performed significantly better in Standing Broad Jump of Motor Fitness component for measuring explosive power of legs than the academic course of male physical education students in West Bengal.

The analysis of data in table-1 pertaining to the comparison of Zigzag Run between academic and professional courses of male physical education students in West Bengal reveals that the mean and standard deviation score of Zigzag Run 25.78 ± 1.17 second of academic course of male physical education students have been shown higher than that of mean and standard deviation score of Zigzag Run 25.52 ± 1.18 second of professional course of male physical education students in West Bengal. The 't'- value testing for the significance of mean differences between the academic and professional courses of male physical education students came out to be insignificant as the calculated 't' = -0.901 value is less than tabulated 't' value, 't'.₀₅ (78) = 1.99, though the score of Zigzag Run of Motor Fitness component for measuring agility for professional course of male physical education students have shown better than the academic course of male physical education students.

Table-1 reveals that the mean and standard deviation scores of 60 Yard Dash of academic and professional courses of male physical education students were 7.65 ± 0.32 and 7.55 ± 0.37 second respectively. The results shows professional course of male physical education students were performed better in 60 Yard Dash of Motor Fitness component for measuring speed than the academic course of male physical education students, but calculated t-value -1.256 have been found insignificant in 60 Yard Dash of Motor Fitness component between academic and professional courses of male physical education students in West Bengal.

Conclusion

On the basis of the data the motor fitness components of Wall Pass Ability, Six Pound Medicine Ball Put, Softball Throw and Standing Broad Jump were having significantly better in favor of professional courses of male undergraduate physical education students in West Bengal. Whereas Zigzag Run and 60 Yard dash were found non-significant between academic and professional courses of male undergraduate physical education students in West Bengal.

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