



Constructing Norms for selected Physical Fitness Test Battery as a Gauge for Sports Potential among Kabaddi Players

Raj Kumar Sharma¹ and Bahadur Singh² and Kanwar Mandeep Singh³

¹Punjabi University, Patiala, Punjab, INDIA

²S.D. College, Barnala, Punjab, INDIA

³Guru Nanak Dev University, Amritsar, Punjab, INDIA

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Abstract

The purpose of this study was to construct norms for selected physical fitness test battery as a gauge for sports potential among kabaddi players. For the purpose of the present study, sixty (N=60), male kabaddi players of Punjabi University, Patiala between the age group of 18-25 years (Mean \pm SD: age 22.93 \pm 1.53 years, height 174.33 \pm 3.53 m, body mass 73.30 \pm 3.16kg) volunteered to participate in the study. The Handgrip Strength Test was used to measure Muscular Strength, Vertical Jump Test was used to measure Muscular Power, Chin up Test was used to measure Muscular Endurance, 20 Meter Dash Test was used to measure Running Speed, Illinois Agility Test was used to measure Running Agility, Standing Long Jump Test was used to measure Jumping Ability, Overhead Medicine Ball Throw test was used to measure Throwing Ability, Sit and Reach Flexibility Test was used to measure Flexibility and Stork Balance Stand Test was used to measure Balance. In order to construct the norms, Percentile Scale was used. Further, the scores were classified into five grades i.e., very good, good, average, poor and very poor.

Keywords: Norms, physical fitness test battery, kabaddi players.

Introduction

Factors that determine the level of an individual's physical fitness are multidimensional and hierarchical. More contemporary terminology has defined physical fitness as a set of attributes that people have or achieve that relate to their ability to perform physical activity¹. Physical fitness, one of the key requirements for good health, is a complex area. Speculation continues as to what factors contribute to physical fitness. The literature supports three vital factors: cardiorespiratory endurance, muscular endurance, and muscular strength². On the other hand, a number of measurable components do contribute to physical fitness. The most frequently cited components fall into two groups: one related to health and the other related to skills that pertain more to athletic ability³. Participation in sport and physical activity is influenced by a variety of factors. The increase in sedentary lifestyles, the decrease in work-related physical activity, and reduced leisure-time activity identifies a trend towards physical inactivity⁴. The construction of norms of athletic excellence evidenced in sports activities cemented communities of participation who valorized rigorous sorts of physical discipline in preparation for athletic competition and in expressing the highest degree of athletic skill. For this, research is systematically conducted to identify the factors that help in achieving mastery of skill, which a player can attain through proper coaching and evaluation⁵. Performance is inherent in competition. According to Renew's⁶, "Performance is a key note of all the sports-its basic principle, as the sports has become prestigious aspect to prove one's

superiority over others". Many physical education students are haphazardly exposed to sports skills and physical fitness test battery in ways that lack adequate development and keeping in view that Fitness testing normative data (norms) is indispensably needed in each sport the present study was conducted with the purpose to construct norms for selected physical fitness test battery as a gauge for sports potential among Kabaddi Players.

Material and Methods

Subjects: For the purpose of the present study, sixty (N=60), male kabaddi players of Punjabi University, Patiala between the age group of 18-25 years (Mean \pm SD: age 22.93 \pm 1.53 years, height 174.33 \pm 3.53 m, body mass 73.30 \pm 3.16kg) volunteered to participate in the study. All the subjects were informed about the objective and protocol of the study. The details of subjects are exhibited in figure-1.

Methodology: The handgrip strength test was used to measure muscular strength, vertical jump test was used to measure muscular power, chin up test was used to measure muscular endurance, 20 meter dash test was used to measure running speed, illinois agility test was used to measure running Agility, standing long jump test was used to measure jumping ability, overhead medicine ball throw test was used to measure throwing ability, sit and reach flexibility test was used to measure flexibility and stork balance stand test was used to measure balance.

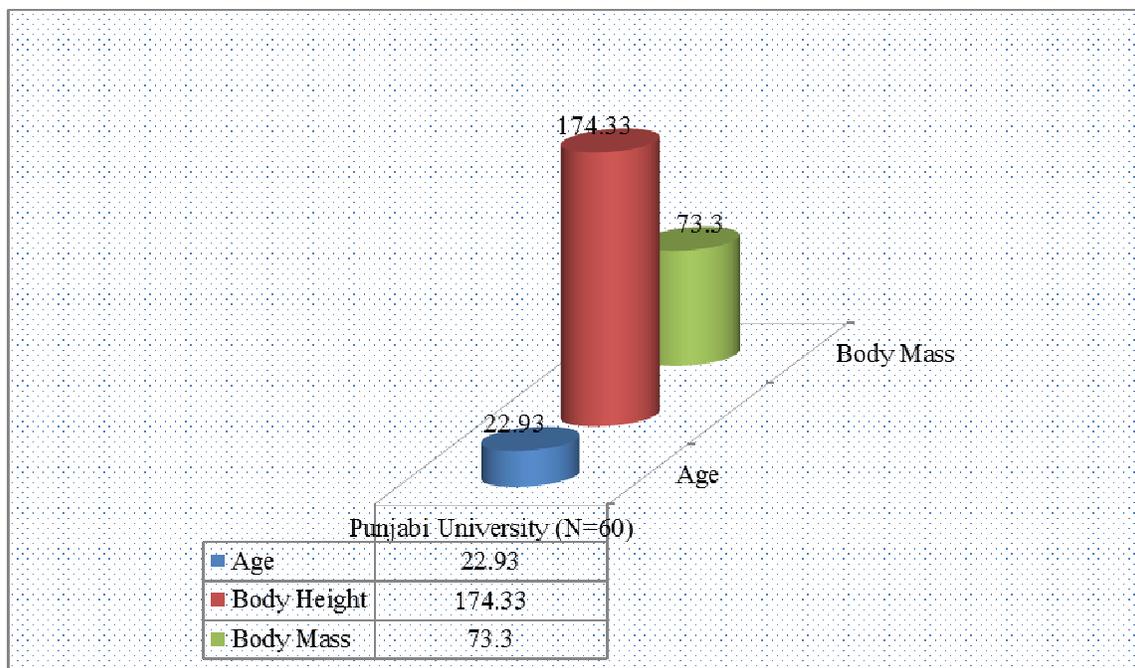


Figure-1
Subject's Demographics

Statistical Technique Employed: The data, which was collected by administering tests, was statistically treated to develop for all the test items. In order to construct the norms, Percentile Scale was used. Further, the scores were classified into five grades i.e. very good, good, average, poor and very poor.

Results and Discussion

For each of the chosen variable, the result pertaining to descriptive statistics (mean and standard deviation) and percentile plot (Hi and Low) of selected physical fitness test items of kabaddi players (N=60) of Punjabi University, Patiala are presented in the following tables:

Table 1 shows that in muscular strength, the mean score was 48.383 and standard deviation score was 3.68. In Muscular Power, the mean score was 45.167 and standard deviation score was 2.16. In muscular endurance, the mean score was 5.7167 and standard deviation score was 1.19. In running Speed, the mean score was 4.5800 and standard deviation score was 0.119. In running agility, the mean score was 17.280 and standard deviation was 0.596. In Jumping Agility, the mean score was 228.70 and standard deviation was 5.72. In throwing ability, the mean score was 12.117 and standard deviation score was 1.25. In Flexibility, the mean score was 3.3167 and standard deviation score was 1.05. In balance, the mean score was 32.300 and standard deviation score was 6.03 of Kabaddi Players. The descriptive statistics (Mean and Standard Deviation) of selected

physical fitness test items of kabaddi Players (N=60) of Punjabi University, Patiala has been presented graphically in figure 2.

Table-1
Descriptive Statistics (Mean and Standard Deviation) and Percentile Plot (Hi and Low) of selected Physical Fitness Test Items of Kabaddi Players (N=60) of Punjabi University, Patiala

Sr. No.	Test Items	Mean ± Standard Deviation		Hi	Low
		Mean	SD		
1.	Muscular Strength	48.383	3.68	55.00	42.00
		Mean	SD		
2.	Muscular Power	45.167	2.16	50.00	41.00
		Mean	S.D		
3.	Muscular Endurance	5.7167	1.19	8.000	4.000
		Mean	SD		
4.	Running Speed	4.5800	0.119	4.800	4.300
		Mean	SD		
5.	Running Agility	17.280	0.596	18.30	16.00
		Mean	SD		
6.	Jumping Ability	228.70	5.72	245.0	221.0
		Mean	SD		
7.	Throwing Ability	12.117	1.25	15.00	10.00
		Mean	SD		
8.	Flexibility	3.3167	1.05	5.000	1.000
		Mean	SD		
9.	Balance	32.300	6.03	43.00	23.00
		Mean	SD		

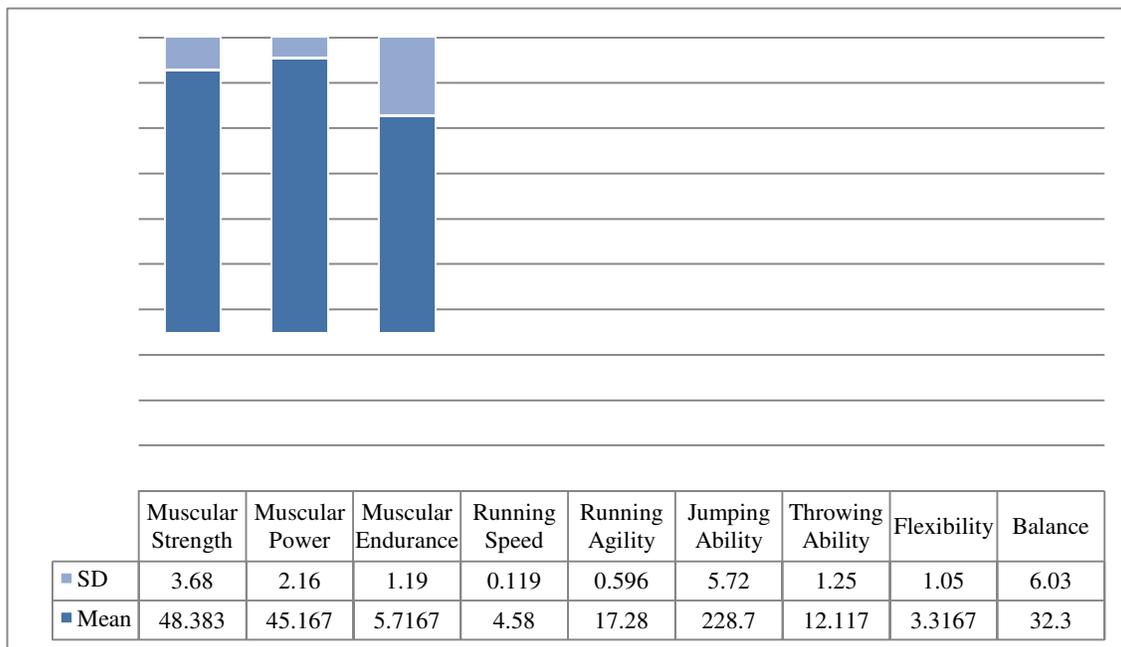


Figure-2

Descriptive Statistics (Mean and Standard Deviation) of selected Physical Fitness Test Items (i.e., a. Muscular Strength, b. Muscular Power, c. Muscular Endurance, d. Running Speed, e. Running Agility, f. Jumping Ability, g. Throwing Ability, h. Flexibility and i. Balance) of Kabaddi Players (N=60) of Punjabi University, Patiala

Table-2

Grading for Kabaddi Players of Punjabi University, Patiala (N=60) for the Physical Fitness Test Item.

Test Items	Very Poor	Poor	Average	Good	Very Good
Muscular Strength	Less than (<) 41.023	41.023-44.703	44.703-52.063	52.063-55.743	Greater than (>) 55.743
Muscular Power	Less than (<) 40.847	40.847-43.007	43.007-47.327	47.327-49.487	Greater than (>) 49.487
Muscular Endurance	Less than (<) 3.337	3.337-4.527	4.527-6.907	6.907-8.097	Greater than (>) 8.097
Running Speed	Greater than (>) 4.818	4.818-4.699	4.699-4.461	4.461-4.342	Less than (<) 4.342
Running Agility	Greater than (>) 18.472	18.472-17.876	17.876-16.684	16.684-16.088	Less than (<) 16.088
Jumping Ability	Less than (<) 217.26	217.26-222.98	222.98-234.42	234.42-240.14	Greater than (>) 240.14
Throwing Ability	Less than (<) 9.617	9.617-10.887	10.887-13.367	13.367-14.617	Greater than (>) 14.617
Flexibility	Less than (<) 1.217	1.217-2.267	2.267-4.367	4.367-5.417	Greater than (>) 5.417
Balance	Less than (<) 20.24	20.24-26.27	26.27-38.33	38.33-44.36	Greater than (>) 44.36

Distribution of Grades Under Normal Distribution: For each of selected physical fitness test items of kabaddi players of punjabi university, patiala (N=60) five types of classification/grades i.e., very poor, poor, average, good and very good have also been prepared under normal distribution. Grades have been presented in table 2.

The values listed in table 2 gives a guide to expected scores for kabaddi players of Punjabi University, Patiala (N=60) for the physical fitness test item. In muscular strength, the scores below 41.023 are considered very poor, from about 41.023-44.703 is considered poor, 44.703-52.063 is considered average, 52.063-55.743 is considered good and the scores above 55.743 are considered very good. In muscular power, the scores below 40.847 are considered very poor, from about

40.847-43.007 is considered poor, 43.007-47.327 is considered average, 47.327-49.487 is considered good and the scores above 49.487 are considered very good. In muscular endurance, the scores below 3.337 are considered very poor, from about 3.337-4.527 is considered poor, 4.527-6.907 is considered average, 6.907-8.097 is considered good and the scores above 8.097 are considered very good. In running Speed, the scores above 4.818 are considered very poor, from about 4.818-4.699 is considered poor, 4.699-4.461 is considered average, 4.461-4.342 is considered good and the scores below 4.342 are considered very good. In running agility, the scores above 18.472 are considered very poor, from about 18.472-17.876 is considered poor, 17.876-16.684 is considered average, 16.684-16.088 is considered good and the scores below 16.088 are considered very good. In jumping

Ability, the scores below 217.26 are considered very poor, from about 217.26-222.98 is considered poor, 222.98-234.42 is considered average, 234.42-240.14 is considered good and the scores above 240.14 are considered very good. In Throwing Ability, the scores below 9.617 are considered very poor, from about 9.617-10.887 is considered poor, 10.887-13.367 is considered average, 13.367-14.617 is considered good and the scores above 14.617 are considered very good. In flexibility,

the scores below 1.217 are considered very poor, from about 1.217-2.267 is considered poor, 2.267-4.367 is considered average, 4.367-5.417 is considered good and the scores above 5.417 are considered very good. In balance, the scores below 20.24 are considered very poor, from about 20.24-26.27 is considered poor, 26.27-38.33 is considered average, 38.33-44.36 is considered good and the scores above 44.36 are considered very good.

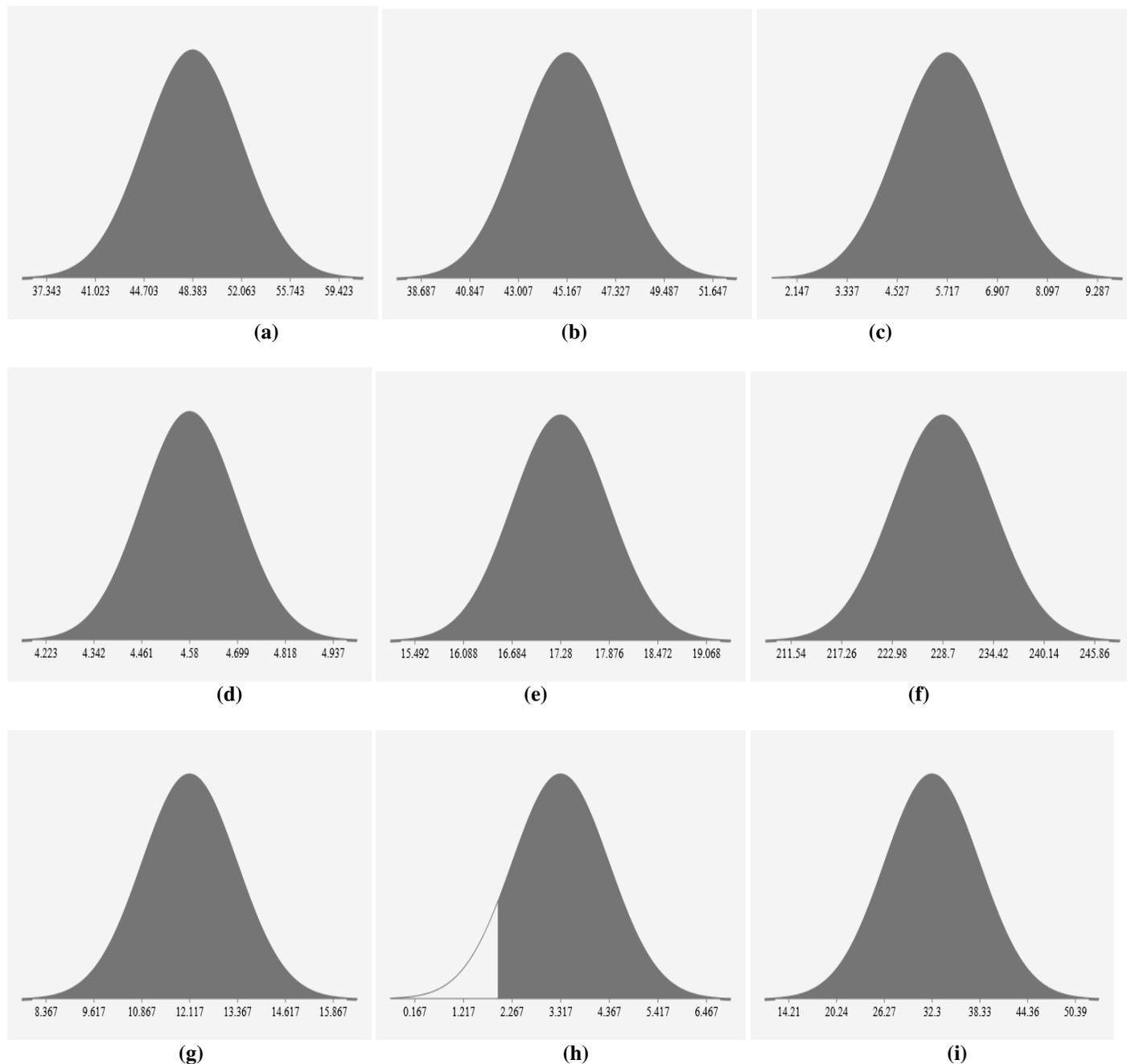


Figure-3

Normal distribution of selected Physical Fitness Test Items (i.e., a. Muscular Strength, b. Muscular Power, c. Muscular Endurance, d. Running Speed, e. Running Agility, f. Jumping Ability, g. Throwing Ability, h. Flexibility and i. Balance) of Kabaddi Players (N=60) of Punjabi University, Patiala

Conclusion

Based on the findings of this study, the following conclusions were drawn: In Muscular Strength, the scores below 41.023 are considered very poor, from about 41.023- 44.703 is considered poor, 44.703-52.063 is considered average, 52.063-55.743 is considered good and the scores above 55.743 are considered very good. In Muscular Power, the scores below 40.847 are considered very poor, from about 40.847-43.007 is considered poor, 43.007-47.327 is considered average, 47.327-49.487 is considered good and the scores above 49.487 are considered very good. In Muscular Endurance, the scores below 3.337 are considered very poor, from about 3.337-4.527 is considered poor, 4.527-6.907 is considered average, 6.907-8.097 is considered good and the scores above 8.097 are considered very good. In Running Speed, the scores above 4.818 are considered very poor, from about 4.818-4.699 is considered poor, 4.699-4.461 is considered average, 4.461-4.342 is considered good and the scores below 4.342 are considered very good. In Running Agility, the scores above 18.472 are considered very poor, from about 18.472-17.876 is considered poor, 17.876-16.684 is considered average, 16.684-16.088 is considered good and the scores below 16.088 are considered very good. In Jumping Ability, the scores below 217.26 are considered very poor, from about 217.26-222.98 is considered poor, 222.98-234.42 is considered average, 234.42-240.14 is considered good and the scores above 240.14 are considered very good. In Throwing Ability, the scores below 9.617 are considered very poor, from about 9.617-10.887 is considered poor, 10.887-13.367 is considered average, 13.367-14.617 is considered good and the

scores above 14.617 are considered very good. In Flexibility, the scores below 1.217 are considered very poor, from about 1.217-2.267 is considered poor, 2.267-4.367 is considered average, 4.367-5.417 is considered good and the scores above 5.417 are considered very good. In Balance, the scores below 20.24 are considered very poor, from about 20.24-26.27 is considered poor, 26.27-38.33 is considered average, 38.33- 44.36 is considered good and the scores above 44.36 are considered very good.

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