



## Comparison of speed and endurance between short and long distance runner of Kashmir Division

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### ABSTRACT

The main idea and aim of this comparative study is to assess and compare the speed and endurance among long distance and short distance athletes of Kashmir division. For this comparative study (60) subjects were selected, 30 athletes were long distance runner and 30 were short distance runner all were selected from Kashmir division city which were selected randomly from various districts of Kashmir division for the study. The statistical criteria used for selecting the subjects was through simple random sampling. All the athletes from both the categories were of the age ranged between 25-35 years. To compare and analyze the speed and endurance among long distance and short distance athletes of Kashmir division. Of the athletes of both the groups two different tests or equipments were used. For speed a digital Stop watch for recording the distance covered per unit time and for endurance Heart Rate count. Vo2max. Bench for Cardiovascular was used. The comparison analysis of data was done by using statistical technique 't'- test for finding the significance difference speed and endurance of long and short distance runner of Kashmir division the level of significance was set at 0.05 levels ( $p < 0.05$ ). The calculated means and standard deviation of speed and endurance of long distance distance athletes of Kashmir division selected variables of industrial inhabitants viz. speed ( $12.82 \pm 1.07$  endurance VO2 Max is ( $58.24 \pm 7.25$  ) and the findings means and standard deviation of selected variables of short distance athletes of Kashmir division in speed ( $13.87 \pm 2.93$ ), endurance ( $448 \pm 66.39$ ), Hence the Non-industrial inhabitants were found with sound cardio respiratory capacities as compared to Industrial Inhabitants the difference might be due to the pollution of industries which directly or indirectly affects the population (people) residing in industrial area.

**Keyword:** Speed; endurance; short distance runner; long distance runner; stop watch resting heart rate; vo2max

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### INTRODUCTION

Athletes generally display maximal or submaximal efforts and make 1-7 seconds of short sprints (Bradley et al., 2009). Speed is one of the most important motoric features for many sports branches. Therefore, it must be improved at early ages (Polat, 2009). Therefore, sports scientists have heavily focused on studying physical profiles of the players as well as their physiological profiles (Albay, Tutkun, Ağaoğlu, Canikli, & Albay, 2008). Workout capacity showing up through the use of anaerobic energy transfer systems of skeletal muscles during maximal and submaximal physical activity is defined as “anaerobic capacity”. Anaerobic workout is a type of physical activity which means revealing explosive power, which is a workload over anaerobic threshold value and which manifests itself with fatigue. It is impossible to continue anaerobic activity for a long time (Yıldız, 2012). The anthropometric and physiological examinations contribute to the preference of the player and the training model to be applied as well as forming a foresight in the targeted success. Today, sportsmen should be faster, more skillful,

higher quality in terms of anthropometric and physiological capacities in all branches (Ersöz et al., 2016). Physical fitness can be a determinative factor in enhancing the performance and ability. Speed is the ability to perform a movement within a short period of time (Jullien, Bisch, Largouët, Manouvrier, Carling, & Amiard, 2008). Speed training is an important football related skill related component of physical fitness which enables a player to move from one point to another with faster response time. It has been shown that to improve speed each athlete needs to work on acceleration, starting ability, stride rate, speed endurance, and stride length (Sandford, Kilding, Ross, & Laursen, 2019). Athletics is an human competitive sports requiring physical skills, and training systems that prepare athletes for competitive performance. Athletic sports or competitions are competitions that are primarily based on human physical competition, which demand qualities of stamina, fitness and skill. Athletic sports form the bulk of popular sporting activities, including motorsports, precision sports, extreme sports and animal sports, among other major forms. Athletic competition, as one of the earliest types of sports, is prehistoric and includes an important part of the ancient Olympic Games, as well as equestrian events with the word "athletic" derived from the ancient Greek: (athlete) Which means "competition." Athletic sports were organized at the end of the 19th century limited to the top speed of the body in a limited time. It is used in many sports, which usually involve running, as a way to reach a goal or goal or to avoid or catch an opponent. Human physiology suggests that a runner's near-top speed may not be due to a decrease in the phosphocreatine stores in the muscle for more than 30–35 seconds, and perhaps more than a professional level at another level, Sprinters start the race considering the running conditions. Starting the block before moving forward and slowly moving into an upright position as the race moves forward and gains momentum. The position of the set varies depending on the start. The use of initial blocks allows the sprinter to perform an increased isometric preload; This creates a pre-tension to the muscle that is injected into the subsequent forward drive, making it more powerful. Physical alignment is of critical importance in producing optimal amounts of force. Ideally the athlete should start in a 4-point stance and drive forwards, stopping using both legs for maximum force production. Athletes remain in the same lane on the entire track in all sprinting events, with the sole exception of the 400 meters home. The race up to 100 meters largely focuses on accelerating an athlete's maximum speed. All sprints beyond this distance involve an element of rapid endurance.

Long distance running, or endurance running, a form of continuous running at a distance of at least 3 km physically, it is largely aerobic in nature and requires stamina as well as mental strength. In present human society, long distance running has many benefits People can engage in it for physical benefits, for body exercise, for recreation, as a means of travel, for economic reasons. Or for cultural reasons. Long distance running can also be used as a means to improve cardio health, it improves aerobic fitness by increasing the activity of enzymes and hormones that stimulate muscles and heart to work more efficiently Endurance is often a component of physical military training and has historically been so. Professional running is most commonly found in the field of sports, although in pre-industrial times foot messengers ran to give information about distant places. Distance running can also serve as a bonding exercise for family, friends colleagues, and has even been associated with nation building. The social element of distance has been associated with improved performance. The aim of this comparative study was to assess and compare speed and endurance between long-distance and short-distance athletes of the Kashmiri division.

## RESEARCH METHODS

This type of research is an experimental study by comparing speed and endurance in long-distance and short-distance athletes in the Kashmir division. The subjects in this study were 60 athletes consisting of 30 long-distance runners and 30 short-distance runners from the Kashmir division. The subjects were chosen by using simple random sampling method. The age of the subjects ranged between 25-30 years. The various apparatus that were used for the collection of data were as under a digital Stop watch for recording distance covered per unit time during pulse rate count. Vo2max. Bench for cardiovascular endurance.

## RESEARCH RESULT

The data is obtained from Sixty (60) subjects i.e. 30 short distance runner and 30 long distance runners. The data of each subject was recorded separately for both the variables referred for statistical analysis. All analyses were performed using Statistical software for comparison was (SPSS,) and Microsoft Excel (2007). All data is presented as mean  $\pm$  SD unless otherwise stated. For all analysis the critical -level was set at 0.05 and also the degree of freedom is also be kept in mind for the calculation of tabulated 't' which is then compared with the calculated 't'. This is used for testing of hypothesis which was given by the researcher at the beginning.

If the value of the calculated 't' is more than the tabulated 't' then the hypothesis of the researcher will be accepted and if the value of the calculated 't' is less than that of tabulated 't' then the hypothesis of the researcher will be rejected. Acceptance or rejection of hypothesis doesn't matter as it is not in control of researcher. The finding of this particular research is given below for both the variables

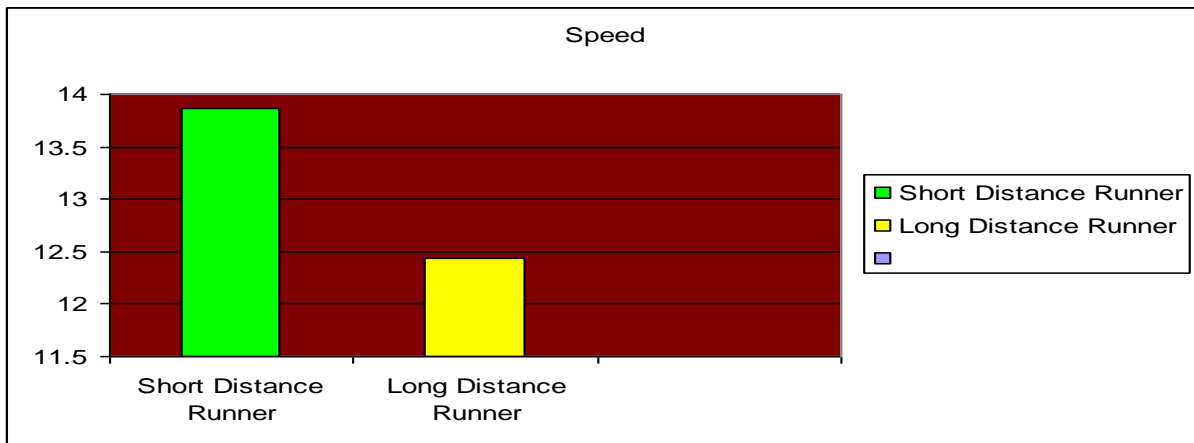
**Table 1. Comparison of Speed Between Short and Long Distance Runners**

Group	Average	S.D.	M.D.	D.F.	O.T.	T.T.
Short Distance Runner	13.86	2.96				
Long Distance Runners	12.44	1.04	1.43	58	2.3	2.00

**\*Level of Significance = 0.05**

**Tabulated 't' 0.05 (48) = 2.00**

Table-1 reveals that there is variance in means of speed per unit time between short distance and long distance runner group, because the mean of speed in short distance runner is 13.86, greater than long distance runner which is 12.44 and their mean difference is 1.43. To check the significant difference of speed between short and longdistance runner of Kashmir group the data was checked and analyzed by applying 't' test. Before applying 't' test, standard deviation is calculated between short and long distance runners is 2.96 and 1.04 respectively. After applying 't' test it was found that there is much variance in speed between short and long distance runner of Kashmir division because value of calculated 't' (2.3) which is greater than tabulated 't' (2.00) at 0.05 level of significance, which indicates or shows that there is a much variance in speed between short and long distance runner of Kashmir Division.



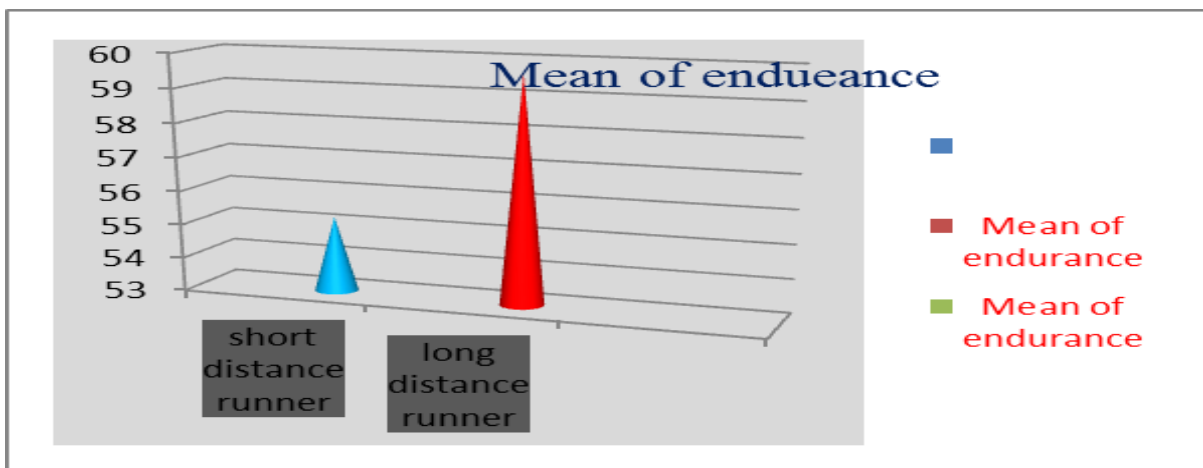
Graph 1. Graphical Representation of Mean variation of speed between short and Long Distance Runner of Kashmir Division

Table 2. Endurance Between Short Distance and Long Distance Runner of Kashmir Division

Group	AVERAGE	S.D.	M.D.	D.F.	O.T.	T.T.
Short Distance Runner	55.24	4.53	4.41	58	2.52	2.00
Long distance runner	59.65	7.05				

\*Level of Significance = 0.05  
 Tabulated 't' 0.05 (38) = 2.00

Table-4 reveals that there is variation in mean in means of endurance between short distance and longdistance runner group, because the mean of endurance in short distance runner is 59.65, greater than long distance runners which is 55.24 and their mean difference is 4.41. To check the significant difference of speed between short and long distance runner of Kashmir group the data was checked and analyzed by applying 't' test. Before applying 't' test, standard deviation is calculated between short and long distance runners is 4.53 and 7.05 respectively. After applying 't' test it was found that there is much variation in endurance between short and long distance runner of Kashmir division because value of calculated 't' (2.3) which is greater than tabulated 't' (2.00) at 0.05 level of significance, which indicates or shows that there is a much variation in endurance between short and long distance runner of Kashmir division.



Graph-2. Endurance Between Short Distance and Long Distance Runners of Kashmir division

## DISCUSSION

It was presumed that there would be significant difference in the physical and physiological variables the study was delimited to speed and endurance between long distant runners and short distance runners the study was further delimited to short and long distance runners of Kashmir division. The main observation of the present study was done with accuracy with respect to research ethics and scientific principles the observation was short distance runners were found with good speed and long distance runners was found with good endurance capabilities. All this has been shown below in research results. Bhat (2014) also conducted a study related to above said variables on different subjects for comparison and the result of the study had significant differences in both the variables. Franchini, Del Vecchio, Matsushigue, and Artioli (2011) has conducted study on physiological variables among various groups for comparison and the study also shown significant differences in physiological variables in various sports players.

## CONCLUSION

Based on statistical analysis, it can be concluded that there is a significant difference in the speed of short distance runners and long distance runners, short distance runners are faster than long distance runners in the Kashmir division as long distance runner endurance is found to be much better than short distance runners. From result of this survey type of study we come to this conclusion that short distance were better in speed and not good in endurance and long distance were better in endurance but not good in speed, the reason behind it might be the training load.

Although the researcher followed the ethics of the study with cautiousness but still some limitations were there which were not under control of researcher. There was not control on the prevailing environmental conditions. The food and other habits were not in the control of researcher. The family background and weather conditions were not in control of researcher.

In the light of results obtained and conclusions drawn, the following recommendations are made for future investigations and for practical applications:

1. It is strongly recommended to verify and check out the speed of different game players in where speed plays vital role.
2. It is recommended for long distance runners to gear up for endurance training for better performance.

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