



ISSN: 2456-0057
IJPNPE 2021; 6(1): 407-409
© 2021 IJPNPE
www.journalofsports.com
Received: 04-01-2021
Accepted: 15-02-2021

Surinder Kumar Sharma
Professor, Department of
Physical Education, H.P.U.
Shimla, Himachal Pradesh,
India

Sandeep Kumar
Research Scholar, Department of
Physical Education, H.P.U.
Shimla, Himachal Pradesh,
India

Correlation between the Endurance variables and the Peak expiratory flow rate determinants of vital capacity of tribal and non tribal sportsperson

Surinder Kumar Sharma and Sandeep Kumar

Abstract

The present study investigates the correlation between the Endurance variables and the peak expiratory flow rate determinants of vital capacity of tribal and non tribal sportsperson. To solve the purpose of study 400 randomly selected sportsmen (200 tribal and 200 non-tribal) of Himachal Pradesh were taken as the sample. Null hypothesis had been framed for the present study. Endurance measured by Cooper 12 minute run/walk test and Peak expiratory flow rate measured by Spiro meter. The data was analyzed by using Statistical Package for the Social Sciences. The statically tools used for the study Karl Pearson's co-efficient of correlation.

Keywords: Peak expiratory flow rate, tribal and non tribal sportsperson, vital capacity

Introduction

Endurance, like strength, is a conditional ability. It is primarily determined by energy liberation processes. The ability of the human body to maintain a certain level of energy production forms the physiological basis of endurance. Due to its high importance for health and training and competition and also due to its physiological determinants, which can be relatively easily studied, it is an ability which has been studied in great detail and depth by the physiologists.

Endurance is the result of physiological capacity of an individual. It is the ability to continue successive movement in situation where the muscle or muscle groups are led heavily. In other words, it is the ability to do movements, with the desired quality and speed under the condition of fatigue. Endurance is the result of a physiological capacity of the individual to sustain movement over a period of time. Endurance is of two kinds. One is associated with strength, whereas the other is associated with the circulatory respiratory system. In the first type, associated with strength, the individual with endurance has the ability to continue successive movements are situation where the muscles or muscle groups being used are loaded heavily. Naturally, the stronger person able to work over a longer period of time than the weaker person however, strength in itself does not provide the entire answer to muscular endurance by developing more efficiency so that its recovery rate is faster.

Endurance is directly or indirectly of high importance in all sports. It is however not easy to define endurance which is brought into focus by presenting definitions given by several experts. There is a lot of disagreement among experts regarding the definition of different types of endurance e.g., special endurance, speed endurance, strength endurance etc.

Without an understanding of fatigue caused by training and competition load and the psycho-physiological systems involved in countering the effects of fatigue, one cannot fully grasp the nature of endurance. Because of the overwhelming contributions made by sports physiology, the psychic aspect of endurance is often overlooked. But it is important to realize that endurance is as much a product of physiological functions as of psychic functions. This fact has been proved time and again by successful endurance athletes.

Endurance is a very important ability in sports. But at the same time it is an ability whose importance is often overlooked in several sports. Endurance is the product of all psychic and physical organs and systems. No other motor ability depends so much on the working capacity

Corresponding Author:
Surinder Kumar Sharma
Professor, Department of
Physical Education, H.P.U.
Shimla, Himachal Pradesh,
India

of complete psycho-physical apparatus of human as endurance. All other performance factors depend on one or more parts of this psycho-physical apparatus and as a result are directly or indirectly affected by endurance.

Endurance training results in the improvement of functioning of various organs and systems of the human body; this in turn improves the ability to recover quickly from training and completion load. At the same time, endurance activities enable the sportsmen to better resist the fatigue i.e., to delay the fatigue. The ability to withstand fatigue and to recover faster from fatigue enables the sportsmen to tackle higher training volumes with higher intensity in a training session, week, month or year. Higher training load leads to improvement in performance. Form this point of view, therefore, endurance is of high importance. The importance of endurance for recovery assumes much more relevance during competition i.e., in between heats, rounds, matches on successive days etc

Spirometry has shown considerable growth in the past 30 years, for several reasons: (a) published standards and testing guidelines improved spirometers and software evidence that both patients and physicians have inaccurate perceptions of the severity of airflow obstruction, evidence that history taking and physical examination by themselves are not helpful in identifying patterns of lung diseases, recommendations that Spirometry be included in the assessment of patients suspected of having asthma, and recommendations for objective measurements to reduce the impact of chronic obstructive pulmonary disease.

Methodology

In the present study investigator was employed random sampling method. The sample for the present study relationship between tribal and non tribal sportsperson of Himachal Pradesh. To solve the purpose of study 400 randomly selected sportsmen (200 tribal and 200 non- tribal) of Himachal Pradesh were taken as the sample. Null hypothesis had been framed for the present study. Endurance measured by Cooper 12 minute run/walk test and Peak expiratory flow rate measured by Spiro meter. The data was analyzed by using Statistical Package for the Social Sciences. The statically tools used for the study Karl Pearson’s coefficient of correlation.

Results and Findings

Within the limitations and delimitations of the present study following results are drawn:

Table 1: Correlation between the Endurance variables and the Peak Expiratory flow rate determinant of vital capacity of tribal area

Variable		N	Mean	SD	Value of Coefficient of Correlation
Endurance	1 Mile Run / Walk	200	1.54	.500	.050
Determinant of Vital Capacity	PEFR		7.46	1.556	

Table no-1 indicate the relationship of Endurance variables with the peak expiratory flow rate determinant of vital capacity of Tribal area subjects the number of subjects in 200 (N=200).

Sample number is two hundred (N=200). Mean value of one mile run/walk test is 1.54, standard deviation is .500 whereas

mean value of vital capacity is 7.46 and SD is 1.556. Whereas coefficient of correlation between endurance and vital capacity is .050 indicating that there exists insignificant correlation between endurance and vital capacity.

Established facts that Endurance has positive and effective relationship with the peak expiratory flow rate as given in physiology of sport and exercise, chapter no 6th, page no 144, 145, 146, 147, fourth edition and year 2004, 1999, 1994 and Authored by Jack H. Wilmore, David L.costill, W. Larry Kenney. Science of sports training, chapter no 6th, page no 130, first edition and year 1997, 1995 Authored by Hardayal singh. Fundamentals of exercise physiology by G.M Scott & R.G.Brown chapter no5, page no 72, 73, Edition and year 2010.

Table 2: Correlation between the Endurance variables and the Peak Expiratory flow rate determinant of vital capacity of non-tribal area sportsperson

Variable		N	Mean	SD	Value of Coefficient of Correlation
Endurance	1 Mile Run / Walk	200	1.60	.491	-.068
Determinant of Vital Capacity	PEFR		7.20	1.662	

Table no-2 indicate the relationship of Endurance variables with the peak expiratory flow rate determinant of vital capacity of Non-Tribal area subjects the number of subjects in 200 (N=200).

Sample number is two hundred (N=200). Mean value of one mile run/walk test is 1.60, standard deviation is .491. Whereas mean value of vital capacity is 7.20 and standard deviation is 1.662. Whereas coefficient of correlation between endurance and vital capacity is -.068 indicating that there exists negative insignificant correlation between endurance and vital capacity.

Established facts that Endurance has positive and effective relationship with the peak expiratory flow rate as given in physiology of sport and exercise, chapter no 6th, page no 144,145,146,147, fourth edition and year 2004, 1999, 1994 and Authored by Jack H. Wilmore, David L.costill, W. Larry Kenney. Science of sports training, chapter no 6th, page no 130, first edition and year 1997, 1995 Authored by Hardayal singh. Fundamentals of exercise physiology by G.M Scott & R.G.Brown chapter no 5, page no 72, 73, Edition and year 2010.

References

1. Tulin Atan *et al.*, Comparison of Respiratory Functions of Athletes Engaged in Different Sports Branches, Turkish Journal of Sport and Exercise. 2012;14(3):76-81.
2. Vaithyanadane V. Plumonary function test in swimmers and non-swimmers- a comparative study, International Journal of Biological & Medical Research. 2012;3(2):1735-1738.
3. Abdollahi I, Taghizadeh A, Shakeri H, Eivazi M, Jaberzadeh S. The relationship between isokinetic muscle strength and spasticity in the lower limbs of stroke patients. Journal of bodywork and movement therapies. 2015;19(2):284-290.
4. Ouergui I, Hssin N, Franchini E, Gmada N, Bouhleb E. Technical and tactical analysis of high-level kickboxing matches. Int J Perform Anal Sport. 2013;3(2):294-309.
5. Erfle SE, Gamble A. Effects of daily physical education

- on physical fitness and weight status in middle school adolescents. *J Sch Health*. 2015;85:27-35.
6. Lahti A, Rosengren BE, Nilsson JÅ. Longterm effects of daily physical education throughout compulsory school on duration of physical activity in young adulthood: an 11-year prospective controlled study. *BMJ Open Sport & Exercise Medicine*, 2018.
 7. Waldhelm A, Li L. Endurance tests are the most reliable core stability related measurements. *Journal of Sport and Health Science*. 2012;1(2):121-128.
 8. Mukherjee S, Nayek B, Chatterjee K. A comparative study on skill related fitness between residential and non-residential school boys. *International Journal of Physiology, Nutrition and Physical Education*. 2016;1(2):77-80.
 9. Collins K, Staples K. The role of physical activity in improving physical fitness in children with intellectual and developmental disabilities. *Research in developmental disabilities*. 2017;69:49-60.
 10. Brenda B. "The relation of selected physical and psychological variables to the development of tennis player", *Dissertation Abstracts International*. 1995;56:1703-A.