International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Comparison of Speed and Strength Endurance Between Boxing and Judo Players

Naorem Sonson Singh[1], Kh. Rajen Singh[2]

[1]Research Scholar, Department of Physical Education and Sports Science,
Dhanamanjuri University, Imphal, Manipur, India
Email: sonsonnaorem@gmail.com
[2*]Professor, Department of Physical Education and Sports Science,
Dhanamanjuri University, Imphal, Manipur, India
Email: rajenkhumanthem12@gmail.com

Abstract:
Background: Boxing and judo require highly demanding physical fitness and efficiency. Physical fitness maintains the performance level of the players.
Objective: The purpose of the study is to compare the speed and strength endurance between the boxing and judo players.
Method: Forty (N=40) male players, twenty (N=20) each from boxing and judo players, were randomly selected. The ages of the subject's range between 15 to 20 years. The subject of the study has participated in at least a state-level tournament. The players of boxing and judo are selected from different reputed clubs and academies of Manipur. The 30-meter dash and sit-up test are used to collect the pertaining data of speed and strength endurance of the players. The data on speed and strength endurance were expressed in seconds and numbers in one minute. The descriptive analysis and the independent t-test statistical technique are used to analyze the data. The level of significance was at $P \leq 0.05$.
Result: Significant differences in speed and strength endurance were found between boxing and judo players, as obtained 't' = 3.90, 3.20 was greater than the tabulated 't' = 2.02 at the 0.05 level of confidence ($p \leq 0.05$).
Conclusion: Significant differences were found in speed and strength endurance between boxing and judo players. Boxing players have higher speed abilities and strength endurance than the judo players.

Keywords: Speed, Strength Endurance, Boxing, and Judo.

1. Introduction

Physical fitness is the most important factor to enhance the best performance level of every athlete. Physical fitness is required for every game and sport. High physical fitness maintains a faster recovery rate and reduces injury risk by increasing stamina, strength, flexibility, balance, and coordination. Speed is the ability of quickness to move quickly from one point to another by the body (1). Strength-endurance is characterized by the ability of the individual to perform a certain number of repetitions of an exercise or a technical gesture during a certain period or until the failure, by the time of maintenance of a certain movement in the same prescribed rhythm and with the same efficiency (2), or by the ability to develop strength for a prolonged period and maintain a high-intensity muscular effort between thirty seconds and

two minutes (3). For Martin et al. (4), strength-endurance performance depends on two fundamental characteristics, which would be the maximum force, related to the domain of a particular load and the duration of the domain of this load, which would depend on the performance of the metabolism of the musculature in terms of energy transfer. Thus, the longer the tension time with a certain load that promotes the increase in muscle fatigue, the better the gains in relation to strength endurance due to the great metabolic mobilisation (5). Strength endurance is influenced by factors such as muscle mass, muscle fibre type, and cardiovascular fitness (6).

Boxing, as a sport characterized by intense physical confrontation, has high requirements for the strength and speed qualities of athletes, and in order to be able to improve their game performance, athletes also make speed and strength a key aspect of improvement, and synchronize explosive power and reaction ability training, which can significantly improve their performance on the playing field through the effective use of technical movements (7). In striking combat sports, as in the case of boxing, it seems likely that increases in dynamic strength-endurance improve the boxer's ability to execute combat movements repeatedly, such as, for example, the direct and the cross, which are attack movements, influencing the number of hits made, and consequently the score of points in favour of the attacker (8,9). Judo players exhibit high levels of strength endurance, allowing them to execute multiple throws and grappling exchanges during a match (10). Judo players need strength endurance to execute multiple throws and grappling exchanges (11).

2. Objective

The objective of the present study is

i. To determine the status of speed and strength endurance of boxing players
ii. To determine the status of speed and strength endurance of judo players.
iii. To investigate the significant differences in speed and strength endurance between the boxing and judo players

3. Methodology

3.1 Selection of Subject

For the present study, forty (N=40) male players, twenty (N=20) each from boxing and judo players, were randomly selected. The ages of the subject's range between 15 to 20 years. The subject of the study has participated in at least a state-level tournament. The players of boxing and judo are selected from different reputed clubs and academies of Manipur.

3.2 Collection of Data

The 30-meter dash and sit-up test are used to collect the pertaining data of speed and strength endurance of the players. The data on speed and strength endurance were expressed in seconds and numbers in one minute.

3.3 Data Analysis

The descriptive analysis and independent t-test are used for checking the essential characteristics of the data and significant mean differences in speed and strength endurance between the boxing and judo players. The level of significance was at $P \leq 0.05$.

4. Result

The pertaining data of speed and strength endurance were treated using descriptive analysis to find the mean (M) and standard deviation (SD), respectively. The independent t-test was used to find out the significant mean differences in speed and strength endurance between the boxing and judo players, as shown in Tables 1 and 2.

Table 1: Descriptive and Mean Comparison of Speed Between Boxing and Judo Players

Variables	Groups	N	Mean	SD	MD	SED	t-value	df	Sig. (p-value)
Speed	Boxing	20	3.59	0.25	0.39	0.10	3.90	38	0.00
	Judo	20	3.98	0.39					

Significant at 0.05, where tabulated $t_{(0.05)}$ (38) = 2.02

Table 1 reveals that the mean (M) and standard deviation (SD) of speed in boxing and judo were 3.59±0.25 and 3.98±0.39, respectively. Significant differences in speed were found between boxing and judo players, as obtained 't' = 3.90 was greater than the tabulated 't' = 2.02 at the 0.05 level of confidence ($p \leq 0.05$). The graphical presentation of the mean comparison of speed between the boxing and judo players is shown in Figure 1.

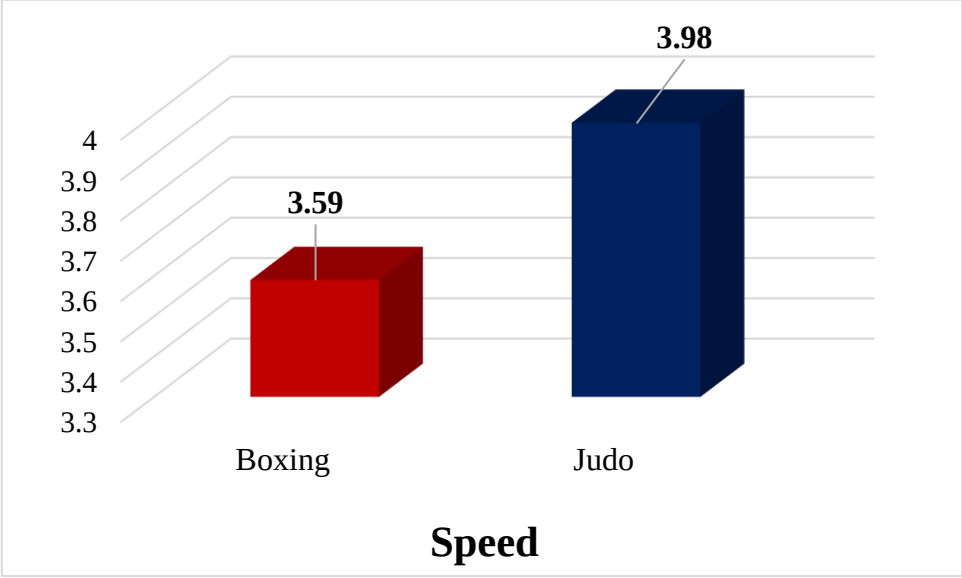


Figure 1: Mean Comparison of Speed Between Boxing and Judo Players

Table 2: Descriptive and Mean Comparison of Strength Endurance Between Boxing and Judo Players

Variables	Groups	N	Mean	SD	MD	SED	t-value	df	Sig. (p-value)
Strength Endurance	Boxing	20	55.05	7.65	7.85	2.45	3.20	38	0.00
	Judo	20	47.20	7.84					

Significant at 0.05, where tabulated $t_{(0.05)}$ (38) = 2.02

Table 2 reveals that the mean (M) and standard deviation (SD) of strength endurance in boxing and judo players were 55.05±7.65 and 47.20±7.84, respectively. Significant differences in strength endurance were found between boxing and judo players, as the obtained 't' = 3.20 was greater than the tabulated 't' = 2.02 at the 0.05 level of confidence ($p \leq 0.05$). The graphical presentation of the mean of strength endurance between the boxing and judo players is shown in Figure 2.

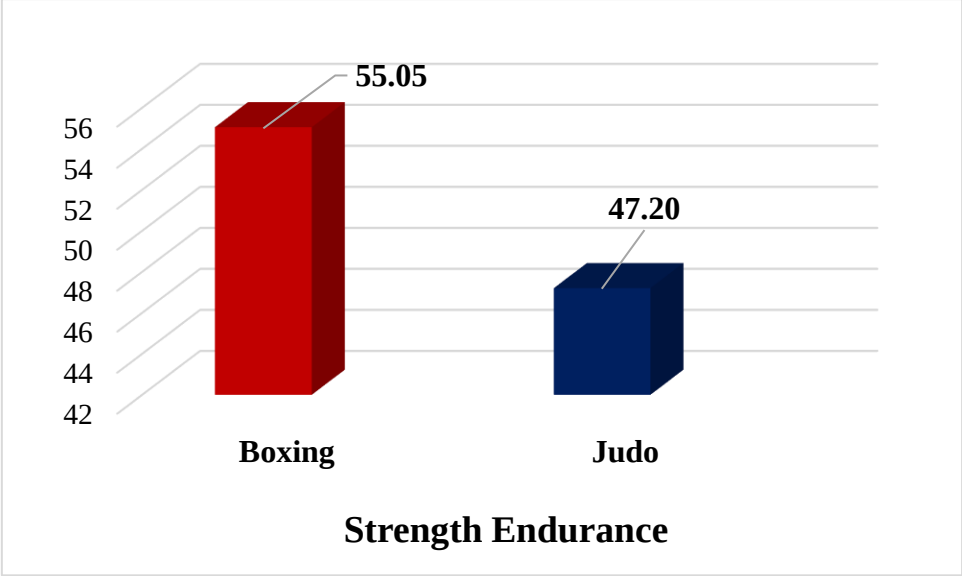


Figure 2: Mean Comparison of Strength Endurance Between Boxing and Judo Players

5. Discussion of Finding

The finding of the study reveals that the independent 't' test results show there were significant differences in speed between boxing and judo players. The findings mean that the values of boxing players have significantly higher speed performance than those of the judo players. The reason might be that boxing players have quick reflexes with high-speed action performance. Boxing players have higher ability in high-speed performance with better agility and power for the offensive and defensive in every action performance. So, boxing players have significantly higher speed performance compared to judo players. The previous study also supports this study, as male boxing players were faster as compared to the judo players (12). Boxers have significantly better speed performance compared to judokas (13).

In the case of strength endurance, significant difference was found between the boxing and judo players. The mean value of boxing players has significantly better performance of strength endurance than the judo players. The results might be that boxing players need strength endurance to maintain high-intensity punches for rounds. Boxing demands strength, endurance, and continuous output and explosive bursts of energy over a duration. Boxer had more endurance than the judokas (14).

6. Conclusion

The findings of the present study showed significant difference in speed and strength endurance between the boxing and judo players. The mean values of speed and strength endurance of boxing players are significantly higher than those of the judo players.

REFERENCES:

1. **Robert V.** Hockey," Physical fitness: The Pathway to Healthful Living" P.P.-93-94
2. **Zatsiorsky VM, Kraemer WJ, Fry AC.** Science and practice of strength training. Human Kinetics. 2020.
3. **Yoon J.** Physiological profiles of elite senior wrestlers. Sports Med. 2002;32(4):225–233.
4. **Martin D, Carl K, Lehnertz K.** Manual de teoria do treinamento esportivo. Phorte; 2008.
5. **American College of Sports Medicine.** American College of Sports Medicine position stand: progression models in resistance training for healthy adults. Med Sci Sports Exerc. 2009;41(3):687.
6. **Sikorski W. Mickiewicz G. Gierczuk D. & Dornowski M.** The relationship between selected motor abilities and functional readiness of Greco-Roman wrestlers. Archives of Budo. 2013;9:239-245
7. **Bu X.** Experimental Study on the Effect of Speed Strength Training on the Special Strikes of Chinese Female Boxers. Journal of environmental and public health. 2022;5912231.
8. **Blažević S**. Evaluation of boxers' conative status contribution to the success of specific motor structures. Sport Sci. 2009;2(2):96–101.
9. **Cordes K**. Boxing: reasons to strength train for amateur boxing. Strength Cond J. 1991;13(5):18–21.
10. **Franchini E. Sterkowicz S. Meira Jr CM & Gomes MV.** Tackle characteristics and their changes during the 2010 FIFA World Cup. Journal of Sports Sciences. 2013;31(8), 862-872.
11. **Khaithi Kh, Pungding LA.** Comparative Study of Speed, Agility and Strength Endurance Between Judo and Wrestling Players. Journal for Re-Attachment Therapy and Developmental Diversities. 2023;6(1):1987-1991.
12. **Sunil KD.** Speed comparative study among boxing and judo players. A Journal of Advances in Management IT & Social Sciences. 2017;7(12):49-52.
13. **Anilkumar N.** Comparative study of selected physical components of male boxers, wrestlers and judokas. International Journal of Physical Education, Fitness and Sports. 2013; 2(4): 46-48.
14. **Kuldeep T. & Surinder KS**. Comparative study of selected physical fitness variables of university gold medalist judokas and boxers. International Journal of Physical Education, Sports and Health. 2017; 4(4): 135-137.