

A comparative study of selected physical fitness components between state level**Wrestler and swimmers****Dr. Debabrata Sarkar**

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Aditya Kumar Paban Kumar ChoudharyResearch Scholar, Department of Physical Education, Yoga & Sports Science, GGV, Bilaspur,
C. G.,**Abstract**

The purpose of the study was to compare the selected physical fitness variables between state level Wrestler and swimmers of Ranchi, Jharkhand. A total 30 male players in which 15 from Wrestling and 15 players from swimming were selected. The age group was delimited to 20-28 years were randomly selected as subjects. The selected subjects were tested on sprinting by 30-meter dash test, explosive strength by standing broad jump test and agility by 3 x10 meter shuttle run test which was selected as criterion variable. It was hypothesized that there may be significant difference between state level Wrestler and swimmers on selected physical fitness variables. To find out the significant difference in physical fitness variables “t” test was applied and the level of significance was set at 0.05 level. The result showed that No significance differences was found in explosive strength and significance difference was found in Sprinting and agility among swimmers & wrestlers.

Keywords: Sprint, Explosive strength, Agility, Wrestler and swimmers.**Introduction**

Fitness and wellness development has taken root all over the world and offers youth a special significance. A growing number of clinical calling generals agree that maintaining good health and well-being is more enjoyable than trying to regain it, and that regular exercise is highly desirable. A person's ability to perform certain aspects of sports occupations and daily exercise, as well as overall wellbeing and prosperity, are all contingent upon their physical fitness. Fitness was defined before the current upheaval as the capacity to complete the day's activities without becoming fatigued. Physical fitness is defined as a percentage of the body's ability to perform tasks and exercises for relaxation and productivity while remaining stable. A sound body is associated with a sound mind, as I mentioned earlier. This is a widely accepted fact.

Being fit is not something that can be attained with almost no effort. To obtain it, a sincere and genuine effort is required.

The concept of physical fitness is as old as humanity, based on the idea that only the strongest and most agile invaders will survive and protect their property over time. It is an indisputable fact that individuals who are physically fitter are better able to withstand intense and unusual stress and strain than those who are less fit. Basic motions like running, throwing, climbing, jumping, lifting, and so forth call for certain physical characteristics like cardiovascular endurance, muscular strength, strength balance, and coordination.

Certain physical attributes are necessary for any intense game or sport, and each athlete should prioritize developing these attributes. These attributes are usually related to speed and the capacity to run, walk, or run more quickly. The capacity to change direction both on land and in the air is known as agility. The range of motion that the body's joints allow is known as flexibility. A muscle's strength is its capacity to press, pull, push, or squeeze. In the process of practicing sports and games, these qualities are developed depending upon the physical constitution of an individual.

Physical fitness is essential for wrestlers because it is the foundation of their performance and overall success in the sport. Wrestling requires a unique combination of strength, endurance, agility, flexibility, and mental toughness, all of which can be developed through rigorous physical training. A high level of cardiovascular fitness is required to maintain the intense, explosive bursts of energy required during matches, while muscular strength and endurance are required to perform and resist holds, lifts, and throws. Agility and flexibility are essential for quick movements, evasive manoeuvres, and balance, particularly in high-pressure situations. A wrestler's physical conditioning also aids in injury prevention, as a well-trained body is more resilient to the strains and impacts encountered in the sport. Beyond physical characteristics, mental resilience developed through rigorous physical training is equally important. The gruelling nature of wrestling training teaches athletes to push through discomfort, stay focused under fatigue, and maintain composure when facing challenges. As a result, comprehensive physical fitness not only improves a wrestler's technical abilities but also contributes to their mental toughness and strategic thinking, making it an essential component of their training regimen and competitive edge.

Swimming requires a high level of endurance, strength, flexibility, and coordination, so physical fitness is essential. Swimmers need cardiovascular endurance to sustain energy throughout races, especially in longer events. This endurance helps maintain a steady pace and reduces fatigue, allowing swimmers to perform optimally in the water. Strong muscles are

necessary for producing strong blows and kicks, as well as for maintaining proper body alignment and propulsion. These muscles are found mainly in the legs, shoulders, and core. Flexibility improves joint range of motion, which is essential for effective stroke technique and avoiding repetitive motion injuries. Furthermore, a strong core is key for stability and balance, enabling swimmers to maintain streamlined positions and reduce drag. Beyond physical attributes, fitness also influences mental toughness. A well-conditioned body can endure rigorous training, reducing the risk of burnout and boosting confidence during competitions. Proper physical fitness also aids in quicker recovery between training sessions and meets. Therefore, maintaining high levels of fitness is not only important for performance but also for overall health and injury prevention, ensuring swimmers can train consistently and perform at their best over time.

On the other hand, swimming is a wonderful game of bouncing, pulling and pushing of water by leg and hands both. Swimming is a great workout of whole body against the resistance of the water. Swimming is a good all-round activity.

So, both the games required too much quick movement, explosive strength and agility in their physical fitness level. With this view investigators want to observed that both swimming and wrestling have equal efficiency to improve the selected physical fitness components?

Objective of the Study:

The purpose of the study was to compare selected physical fitness components between state level Wrestler and swimmers from Ranchi, Jharkhand state.

Hypothesis

It was hypothesized that there may be significant difference between state level Wrestler and swimmers on selected physical fitness variables.

Methodology

Selection of Subjects:

A total 30 male players in which 15 from Wrestling and 15 players from swimming were selected from Jharkhand State, India. The age group was delimited to 20-28 years were randomly selected as subjects.

Criterion measures:

The selected subjects were tested on sprinting ability by 30-meter dash test, explosive strength ability by standing broad jump test and agility by 3 x10 meter shuttle run test which was selected as criterion variable.

Statistical Tools and Technique:

Mean and standard deviation were used as descriptive statistics and ‘t’ test was used to compare the selected groups Level of confidence was set at 0.05 level of confidence. Statistical calculations were done by using software IBM SPSS Version 27.0.

Result and discussion

Table 1 Descriptive statistics of selected physical fitness components between state level Wrestler and swimmers

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
Sprinting	Swimming	15	4.2720	.24179	.06243
	Wrestling	15	4.7147	.47640	.12301
Standing Broad Jump	Swimming	15	2.4507	.30996	.08003
	Wrestling	15	2.3287	.24931	.06437
Shuttle Run	Swimming	15	16.4813	.65193	.16833
	Wrestling	15	12.8433	.76781	.19825

Table 1 Shows that the descriptive statistics of selected physical fitness variables like Sprinting (30-meter Dash), Explosive Strength (Standing Broad Jumping) and agility (Shuttle Run) between state level Wrestler and swimmers from Ranch Jharkhand. The above table mean value shows that in Sprinting ability Wrestlers (4.7147) have more efficiency than Swimmers (4.2720), in Explosive strength somehow swimmers (2.4507) dominated in comparison to Wrestlers (2.3287) and in Agility also Swimmers (16.4813) dominated in comparison to Wrestlers (12.8433).

Table 2 ‘t’ test result of selected physical fitness components between state level Wrestler and swimmers

Independent Samples Test						
	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
Sprint	3.217	.084	3.209	28	.003	-.44267
			3.209	20.764	.004	-.44267
Standing Broad Jump	1.268	.270	1.188	28	.245	.12200
			1.188	26.770	.245	.12200
Shuttle Run	.312	.581	13.989	28	.000	3.63800
			13.989	27.283	.000	3.63800

The above table 2 shows the statistical calculations of Independent ‘t’ test of selected physical fitness components between state level Wrestler and swimmers of Ranchi, Jharkhand. For Sprinting event Significance differences was found when comparing with Swimmer and Wrestlers [‘t’ score-3.209, Sig. (2-tailed)-.003] of Ranchi, Jharkhand and Significance difference was found in Agility (Shuttle Run) due to compare between Swimmers and Wrestlers [‘t’ Score-13.989, Sig. (2-tailed)-.000]. But in Explosive strength there were no significance differences was found when comparing with Swimmers and Wrestlers [‘t’ Score-1.188, Sig. (2-tailed)-.245]

Figure 1

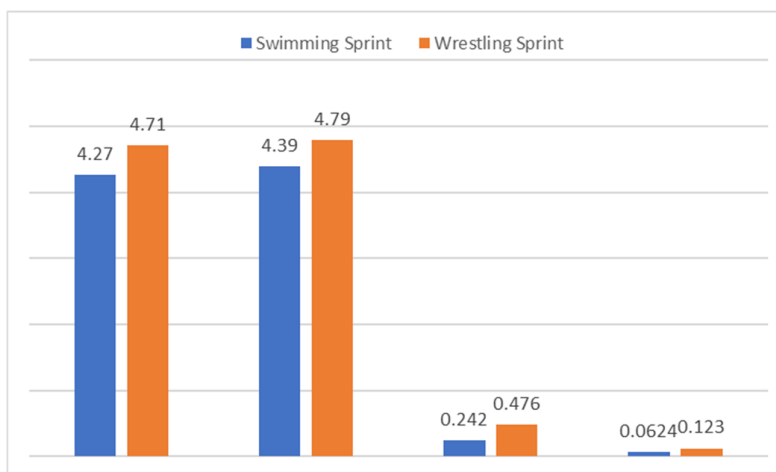
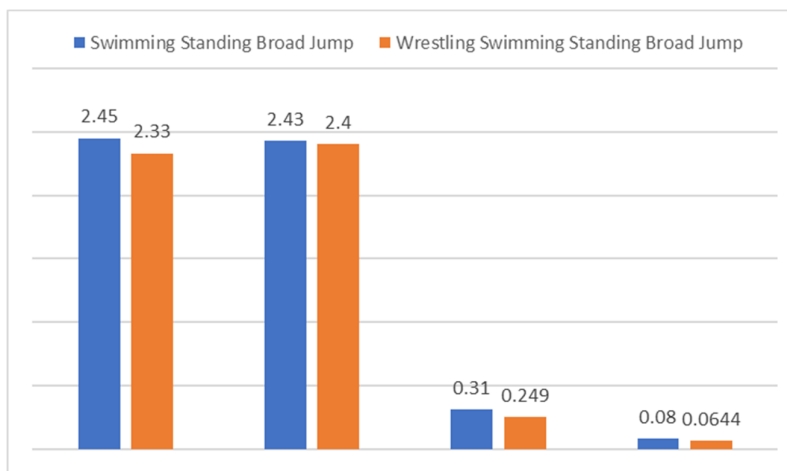


Figure 1 shows graphical presentation of Mean, median, Standard Deviation and Standard Error of Sprinting performance for Swimming and Wrestling.

Figure 2



Above figure 2 shows graphical presentation of Mean, median, Standard Deviation and Standard Error of Standing Broad Jump performance (Explosive Strength) for Swimming and Wrestling.

Figure 3

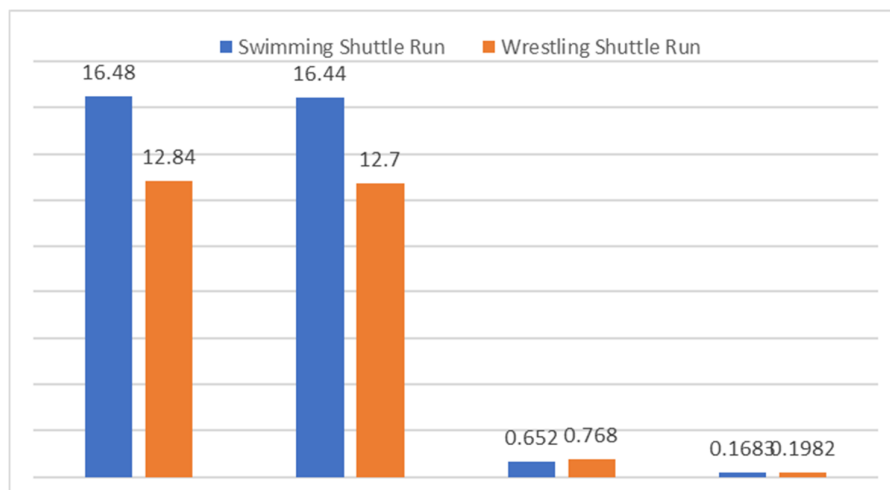


Figure 3 shows graphical presentation of Mean, median, Standard Deviation and Standard Error of Shuttle Run (Agility) performance for Swimming and Wrestling.

Discussion

Physical fitness variables are very essential in both cricket players and football players for betterment in performance. But it's requirement is Depending upon the demand of the game and each factor of physical fitness should be optimally developed. Statistical calculations shows that Wrestler's performance in Sprinting event found better than Swimmers which may find in Table 1 and Figure 1. Beside Table 2 and Figure 2 clearly depict no significance differences was found for Standing Broad Jump performance. Same result was found in sarkar, debabrata & kandar buddhadev (2021) study entitled A comparative study of selected physical fitness variables between university level cricket and football players. Explosive strength for cricket players was calculated 2.3767 with S.D. 0.22109 and football players was recorded 2.4693 with S.D. 0.25697 respectively. The obtained t-value on explosive strength is 1.059 which is less than the required table value (2.048) with 28 df and at 0.05 level of confidence. This shows that there is no significance difference exit when explosive strength is considered among cricket players and football players [2]. Lastly in Table 3 and Figure 3 clearly shows Shuttle Run performance significance difference was found, where Swimmer's agility performance was better than wrestlers. Same result was found in Ramzan Sumia's (2016), stud on selected motor fitness components among swimmers and football players and she found that there was significant difference (4.82) on agility between the swimmers (10.18, ±0.72) and footballer (9.31, ±0.37) and football players were better performer in agility than swimmers [1].

Conclusion

Within the limitations of the present study, the following conclusions are enumerated. No superiority was observed among swimmers and wrestlers in Explosive strength performance. Swimmers were found better compared to wrestlers in agility event and May be due to their sporting event. endurance type activity. Wrestlers' performance was better in sprinting event in comparison to swimmers.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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