



## **A CROSS-SECTIONAL ANALYSIS OF SKILL RELATED PHYSICAL FITNESS COMPONENTS OF KAYAKING AND ROWING PLAYERS**

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### **Abstract:**

The present study was focused to contrast the level of Skill-Related Physical Fitness components of Kayaking and Rowing players. For this purpose, eighteen (N=18), male college level Kayaking and Rowing players of age group 18-25 years participated in the study. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. They were divided into two groups: Group-A: n<sub>1</sub>=9 kayaking players and Group-B: n<sub>2</sub>=9 rowing players. It is to measure the skill related physical fitness (agility, balance, coordination, power and speed) male inter- college kayaking and rowing players. To determine the significant differences between kayaking and rowing, unpaired t-test was employed for data analyses. It is concluded from the above analysis the study can be concluded that no significant difference were found among Kayaking and Rowing players on the sub-variables; Agility, Balance, Coordination and Power variables of physical fitness and highly Significant difference was found on Speed variable of physical fitness.

**Keywords:** skill related physical fitness, kayaking, rowing players

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## 1. Introduction

The Physical fitness benefits of participating in regular physical activity and maintaining physical suitability are widely established (Department of Health, 2004, United States Department of Health and Human Services, 2008, Singh and Singh, 2017). Rowing and Kayaking are categorized as a speed sport and known to be the most physically demanding of all endurance sports. There are the sports that put tremendous demands on the upper body and trunk muscular-skeleton (Tesch, 1983). It also requires a combination of technical skills, motor coordination, physical fitness; cardiovascular endurance and anaerobic fitness. For a sportsman to achieve competitive success in any sport an adequate level physical fitness should be achieved. It also requires a combination of technical skills, motor coordination, physical fitness, cardiovascular endurance and anaerobic fitness. For a sportsman to achieve competitive success in any sport an adequate level physical fitness should be achieved. Existing studies (Bishop, 2000; Fry and Morton, 1991; Gray et al., 1995; Tesch, 1983) advocate that flat-water kayakers have higher maximal aerobic and anaerobic capacities and muscular strength of upper-body depending on the type of contest and the distance covered

There are two ways of propelling a boat, with a fix blade paddle, used on the rowing, or with a two blades paddle used to propel the kayak in which athletes are seated in the cockpit of the boat with legs partially extended outright (Michael, Smith & Rooney, 2009). Taking into account the prospective role of physical features while investigating paddlers utilizing the aerometry approach, all participants overcome the equal resistance in order to execute work, irrespective of body mass (Bishop, 2000; Van Someren et al., 1999). Specified that fitness is an essential component of health (Eisenmann et al, 2005), examining the skill-related physical fitness levels of kayaking and rowing players could be useful for taking high performance in any kind of competition. Therefore, the present study, aims to evaluate the difference between skill-related physical fitness (agility, balance, coordination, power and speed) parameters of the kayaking and rowing players.

## 2. Selection of Subjects

For the purpose of the present study, eighteen (N=18), male college level Kayaking and Rowing Players between the age group of 18-25 years were selected purposively. The subjects were further assigned into two groups: Group-A: male inter-college Kayaking Players ( $n_1=9$ ); Group-B: Male inter-college Rowing Players ( $n_2=9$ ).The details for all study subjects are presented in Table 1:

**Table 1:** Demographics of the study sample

Sample Size (N=18)		
Variables	Group-A Kayaking(n <sub>1</sub> =9)	Group-B Rowing(n <sub>2</sub> =9)
Age	23.55	22.77
Height	170.55	176.66

### 2.1 Selection of Variables

A feasibility analysis as to which of the variables could be taken up for the investigation, keeping in view the availability of tools, adequacy to the subjects and the legitimate time that could be devoted for tests and to keep the entire study unitary and integrated was made in consultation with experts. With the above criteria in mind, the following skill- related physical fitness components and their respective test are presented in table 2.

**Table 2:** Details of variables and their respective tests

Component	Test
Agility	Illinois Agility test
Balance	Stork stand test
Coordination	Eye hand coordination test
Power	Standing broad jump
Speed	50 meter dash

### 2.2 Statistical Procedure Used

Statistical analysis was performed using SPSS version 16.0 for windows (SPSS Inc, Chicago, IL, USA). All the descriptive data pertaining to physical fitness variables was reported as mean and standard deviation. An independent sample t-test was used to compare the mean values of Skill-related physical fitness variables between Kayaking and Rowing inter-college player. Significance levels were set at  $p < 0.05$ .

### 3. Results

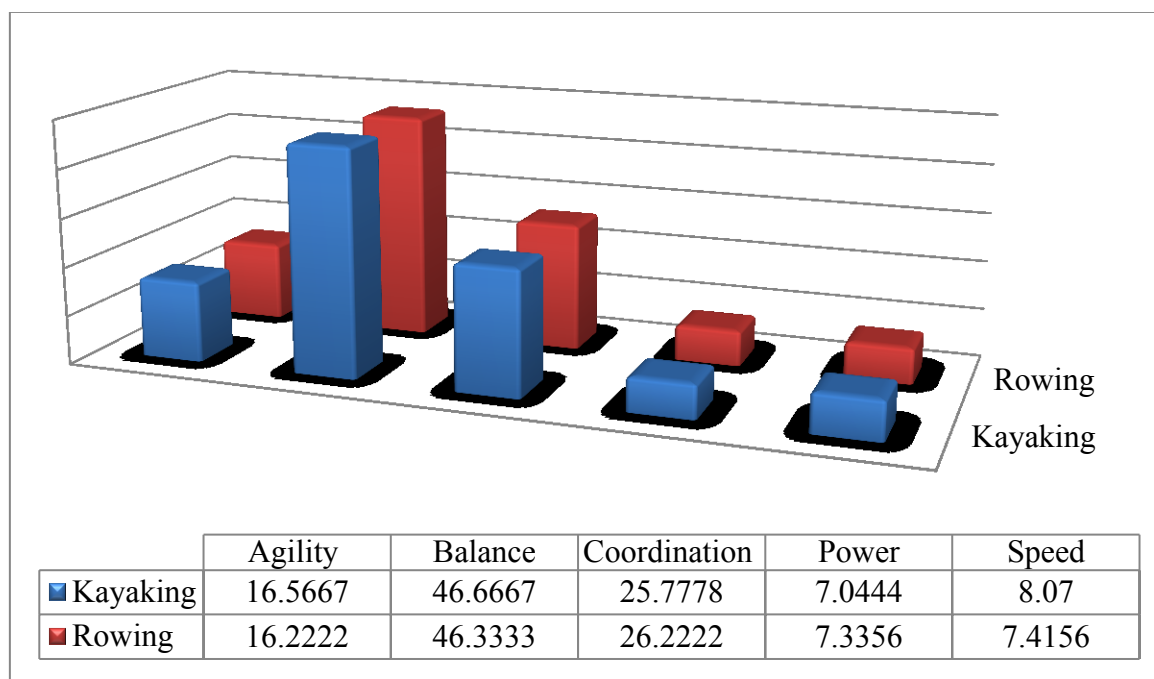
**Table 3:** Descriptive Statistics (Mean & Standard Deviation) of skill related Physical Fitness Components of Kayaking and Rowing Players

in TalComponent	Kayaking		Rowing		p-value
	Mean	SD	Mean	SD	
Agility	16.5667	0.4950	16.2222	0.6888	0.369
Balance	46.6667	2.5000	46.3333	1.5811	0.217
Coordination	25.7778	1.9221	26.2222	1.7159	1.7159

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Power	7.0444	0.4447	7.3356	0.2527	0.130
Speed	8.0700	0.5350	7.4156	0.07844	0.001*

Table 3 shows that in Agility, the mean score was 16.5667 and standard deviation score was 0.4950. In Balance, the mean score was 46.6667 and standard deviation score was 2.5000. In Coordination, the mean score was 25.7778 and standard deviation score was 1.9221. In Power, the mean score was 7.0444 and standard deviation was 0.4447. In Speed, the mean score was 8.0700 and standard deviation was 0.574 of skill related Physical Fitness Components of Kayaking. In Rowing Agility, the mean score was 16.2222 and standard deviation score was 0.6888. In Balance, the mean score was 46.3333 and standard deviation score was 1.5811. In Coordination, the mean score was 26.2222 and standard deviation score was 1.7159. In Power, the mean score was 7.3356 and standard deviation score was 0.2527. In Speed, the mean score was 7.4156 and standard deviation was 0.07844.



**Figure 1:** Graphical representation of means of Skill-related Physical Fitness Components of Kayaking and Rowing Players

#### 4. Discussion

The purpose of the present study was to investigate the difference between skill-related physical fitness level among the inter-college Kayaking and Rowing players of Guru Nanak Dev University, Amritsar. The findings revealed that no mean differences were noticed between kayaking and rowing players with regard to the variable agility,

balance, coordination and power. However, the variable speed showed significant differences between the both groups and it was found that rowers possessed better Speed than Kayakers. The results might be due to that Rowers utilize both upper and lower extremity muscle groups resulting in more power liberation and consequently faster mobilization whereas Kayakers use upper trunk muscles only (López-Plaza et al, 2017). The present results regarding speed are in agreement with the similar study done on Kayakers and Rowers (Singh, 2014). Another study compared the physical fitness variables among Kayakers and Canoeists and reported that Kayakers were significantly better than canoeists (López-Plaza et al, 2017). In another study, Singh (2014) compared the dispositional flow state between the above said groups and found that Kayakers had better flow state than Rowers. However, when compared for adjustment level, a previous study found that both groups were indifferent (Singh, 2014).

## 5. Conclusion

On the basis above analysis the study can be concluded that no significant difference were found among Kayaking and Rowing players on Agility, Balance, Coordination and Power variables of physical fitness and highly Significant difference was found on Speed variable of physical fitness.

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