

# Physical Conditions of the Unmuh Jember Martial Arts in Preparation for POMPROV II East Java

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**Abstract:** Muhammadiyah University of Jember is currently preparing its students to compete in POMPROV II East Java 2023. One of the efforts being made is to hold joint physical training. To determine their physical readiness, tests and measurements of physical conditions are needed. 15 male and female athletes from tae kwon do and pencak silat sports were the respondents in this study. The physical components taken included leg muscle explosive power (standing broad jump), sprint (30 m), agility (Illinois agility test), strength (push ups and sit ups) and aerobic endurance (multistage fitness test). This study aims to determine the physical condition of the University of Muhammadiyah Jember martial arts which is currently preparing for POMPROV II East Java 2023. Of the six physical components, two components of the two martial arts are in the poor category, namely sprint 30 m and vo2max for both male and female athletes. Agility is considered poor only for male athletes from both sports. Princess agility including average. While the other components are in the good category and some even reach excellent. While there is still time for POMPROV II East Java, a proper training program is needed to improve the physical condition of Jember Muhammadiyah University student athletes.

**Keywords:** physical condition; self-defense; pomprov

## INTRODUCTION

Sport is one of the fields to introduce a country more broadly in the international arena. A country that has sports achievements will automatically be recognized by other countries. Through sporting achievements, the flag of a country is hoisted along with the national anthem. Various countries around the world are seriously preparing to excel in sports as high as possible. Developed countries such as the United States, Canada, Australia and New Zealand foster sports competitions between universities carried out professionally by generating high profits and having many health benefits both physically and mentally (Mahendra, 2007) .

The guidance and development of Indonesian achievement sports has been carried out for a long time and in stages, including at the student level. Biannual multi-event sports championships between students such as the national-level student sports week called the National Student Sports Week (POMNAS) have been held since 1990 in Yogyakarta. The parent organization that oversees is BAPOMI (Indonesian Student Sports Board). Collaborative support

from various parties including university leaders must be carried out, such as participating in championships (Law of the Republic of Indonesia Number 11 of 2022 Concerning Sports, 2022) as an effort to advance sports in Indonesia.

Before competing at POMNAS, student athletes usually take part in inter-student championships at the provincial level. This championship is called the Provincial Student Sports Week (POMPROV). In 2023, POMPROV in East Java (East Java) will be held in Jember Regency. Competing 19 sports with 166 race numbers (Bapomi East Java Province, 2023) . POMPROV is the first step to recruit prospective athletes who will compete at the national and even world level which is called the Universiade with the organizers of the Fédération Internationale du Sport Universitaire (FISU).

At POMPROV East Java 2023 this time, the Muhammadiyah University of Jember (Unmuh Jember) is participating in three of martial arts namely Tae Kwon Do, Pencak Silat and Karate. Meanwhile, Tarung Degrees did not send its athletes because they did not yet have students who were Tarung Degrees athletes. In the previous POMPROV edition, Unmuh Jember only won 1 bronze medal from the Tae Kwon Do sport in the Poomsae category.

Anthropometry and prime physical condition greatly influence athlete achievement (Arazi et al., 2016) . Martial sports such as Tae Kwon Do, Pencak Silat and Karate require physical fitness such as aerobic, anaerobic, explosive muscle power, good flexibility in competition (Aziz et al., 2002; Bridge et al., 2014; Chaabène et al., 2012 ) .

As an effort to improve its performance, Unmuh Jember is serious about facing the 2023 East Java POMPROV. One of the preparations made is the physical component of the athletes. To determine the athlete's physical readiness, tests and measurements are needed to determine the extent to which the Jember Unmuh athlete's physical condition is facing POMPROV East Java 2023.

## **METHODS**

The research subjects involved 15 Unmuh Jember martial arts students who are members of the Student Activity Unit (UKM) and are preparing to take part in POMPROV II East Java 2023 totaling 15. There are 7 Pencak Silat divisions (4 females 3 males) and Tae Kwon Do totaling 8 ( 4 girls 3 boys). Several physical components were carried out with tests and measurements on May 24 2023 between 15.00 – 17.15 at the Unmuh Jember football field . Measurement tests include Body Mass Index (WHO Western Pacific Region, 2000) , Standing Broad Jump (Rahman, 2021) ,

30 m Sprint (Mackenzie, 1995) , Illinois Agility Test (Roozen, 2004) , Normal Push Up for Men (Huerta et al. al., 2020) and modified push ups for women (Mackenzie, 2001) , Sit Up (Huerta et al., 2020) and the Multistage Fitness Test were then converted to vo2max values using a calculator from Brianmac (Mackenzie, 1999) . Height and weight measurements were taken on different days. Descriptive analysis used in research uses the average and is given an assessment whether it is included in the poor or good category. Furthermore, a comparison was made between Tae Kwon Do and Pencak Silat for each gender.

## RESULTS

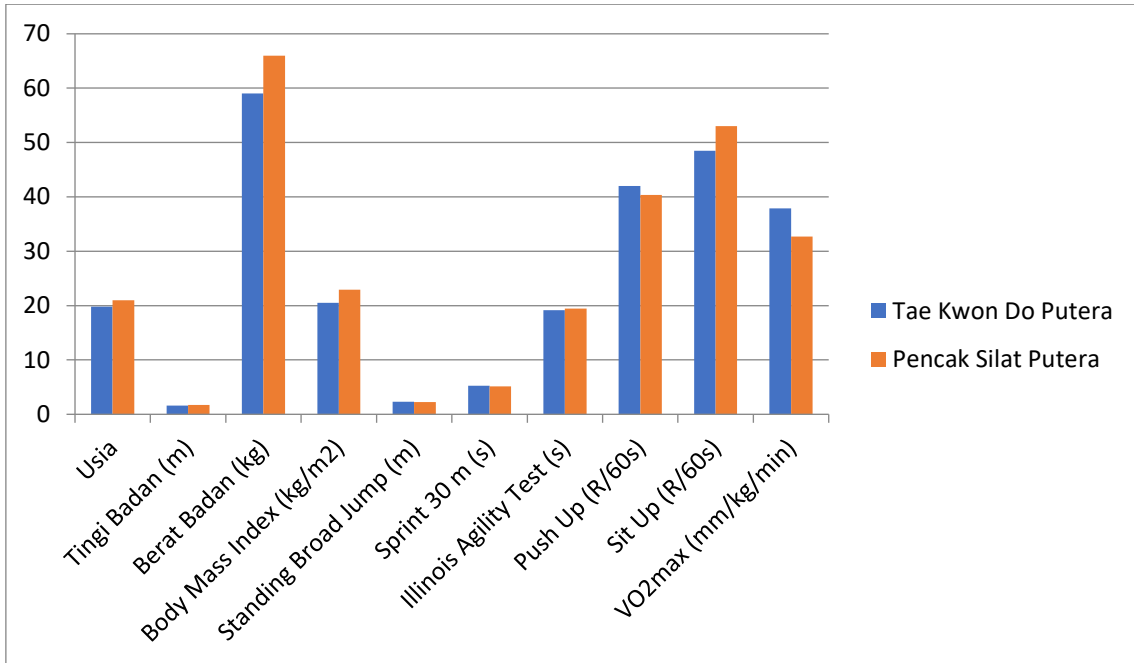
The test and measurement results are presented in the form of table 1 below . Anthropometric characteristics and physical conditions are presented in one table. In the table, each gender is distinguished between Tae Kwon Do and Pencak Silat.

**Table 1** . Average Test Results for Measurement of the Physical Conditions of the Jember Unmuh Martial Sports

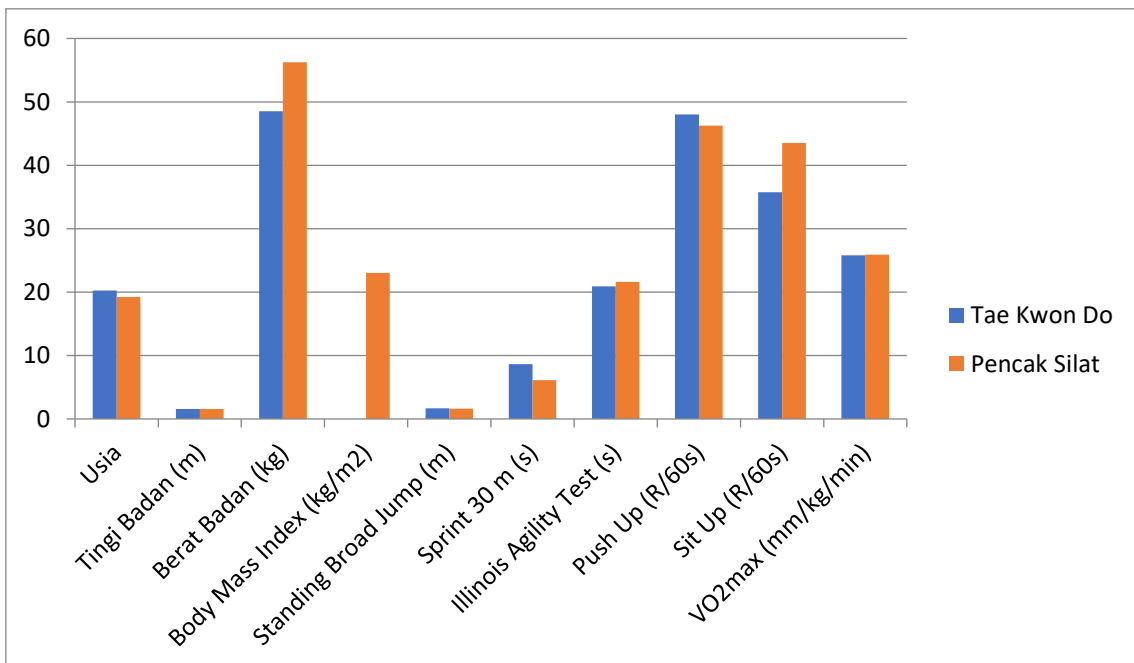
	Man		Woman	
	Taekwondo	Martial arts	Taekwondo	Martial arts
Age	19,8	21.00	20,25	19.25
Height (m)	1.62	1,7	1.56	1.56
Weight (kg)	59.0	66	48.50	56,25
Body Mass Index (kg/m <sup>2</sup> )	20,49	22.92	20.03	23.03
Classification	Normal	Normal	Normal	Normal
Standing Broad Jump (m)	2.25	2,26	1.66	1.65
Classification	good	Excellent	good	good
Sprint 30m(s)	5,27	5,16	8,64	6,14
Classification	Poor	Poor	Poor	Poor
Illinois Agility Test(s)	19,18	19.47	20.90	21.63
Classification	Poor	Poor	Average	Average
Push Ups (R/60s)	42	40,33	48	46,25
Classification	very good	very good	good	good
Sit Ups (R/60s)	48.5	53	35.75	43.5
Classification	very good	Excellent	good	very good
VO2max (mm/kg/min)	37,9	32,7	25,8	25,9
Classification	Poor	Poor	Poor	Poor

The subjects of this study were student athletes who are members of UKM Tapak Suci (Pencak Silat) and Tae Kwon Do at the Muhammadiyah University of Jember. They are preparing for POMPROV II East Java 2023. Six physical components are being collected. Of the six components, two of them (Pencak Silat and Tae Kwon Do) fall into the poor category, namely the 30 m sprint and vo2max for both male and female athletes. Agility is considered poor only for male athletes from both sports. Princess agility including average. While the other components are in

the good category and some even reach excellent. To make it easier visually presented in graphical form in Figure 1 and Figure 2.



Picture 1 . Results Graph of Male Athletes



Picture 2 . Results Graph of Female Athletes

For male athletes, when compared between Tae Kwon Do and Pencak Silat, there is a balance. Tae Kwon Do excels in three components, namely Illinois Agility, Push Up and VO2Max. Meanwhile, Pencak Silat excels in the Standing Broad Jump, 30 m Sprint and Sit Up components.

Tae Kwon Do female athletes with Pencak Silat are also balanced. Both excel in three components. Tae Kwon Do excels at Standing Broad Jump, Illinois Agility and Push Up. Pencak Silat excels in Sprint 30 m, Sit Up and VO2Max.

## **DISCUSSION**

Running speed is poor because the characteristics of martial arts do not require sprints. Not to mention student athletes, martial arts athletes (fighting degrees) who will appear at the PON (National Sports Week) are also poor (Fariz et al., 2019) . Even though running speed is not dominant, elite Tae Kwon Do athletes are fast, which is less than 5 seconds (Khayyat et al., 2020; Tabben et al., 2014) . Sprints are one of the talent identification test items in pencak silat (Syaifullah & Doewes, 2020) . Thus, sprinting ability is also important in martial arts to be developed in a training program (Subekti et al., 2021) . Sprint training can increase kick speed and power (Tsania et al., 2022) . Resistance training can also be used as a training method to increase speed (Zouita et al., 2023) .

The female student athlete in the two sports mentioned above shows average agility. Meanwhile, the son of the poor. It could be that the Illinois agility test is not suitable for martial arts. Tae kwon do already has a TSAT (taekwondo specific agility test) (Achana et al., 2018) . Agility can be increased if you pay attention to body weight, fat percentage , hydration status, and daily physical activity level (Subak et al., 2022) . The plyometric training program needs to be included by the trainer during training ( et al., 2015) .

Vo2max taekwondo is higher than that of pencak silat. This is in line with the results of a study on Singaporean athletes (Aziz et al., 2002) . VO2Max is affected by age, body mass index, and body fat (Bayzid, 2019) . By maintaining anthropometry and practice, it is not impossible that a championship title will come.

## **CONCLUSION(S)**

The conclusion of this study is that the body mass index of both martial sports is normal. Of the six physical components, two components of the two martial sports are in the poor category, namely the 30 m sprint and vo2max for both male and female athletes. Agility is considered poor

only for male athletes from both sports. Princess agility including average. While the other components are in the good category and some even reach excellent. While there is still time for POMPROV II East Java, a proper training program is needed to improve the physical condition of Jember Muhammadiyah University student athletes.

## Conflict of Interests

The author 's declares no conflict of interest..

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