Body Mass Index Profile and Men Athlete Canoeing Performance Number 1000 Meter

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Article Info

Abstrak

Penelitian ini bertujuan untuk mengetahui profil indeks massa tubuh (IMT) dan Performa Atlet Putra Nomor Canoeing 1000 Meter. Penelitian ini merupakan penelitian Deskriptif dengan jumlah sampel sebanyak 19 atlet pada pemusatan latihan nasional untuk persiapan Asian Games 2018. Instrumen yang digunakan adalah tes antropometri dan tes performa atlet nomor Canoeing 1000 meter dengan ergometer canoeing. Data dianalisis dengan menggunakan teknik statistik deskriptif. Hasil penelitian menunjukkan bahwa rata-rata IMT atlet berada pada kategori ideal dan performa atlet berada pada kategori cukup. Dari hasil penelitian ini diharapkan dapat menjadi refleksi baik bagi pelatih maupun atlet sendiri dalam upaya meningkatkan performa sesuai dengan target yang diharapkan.

Abstract

This study was aimed at determining the profile of body mass index (BMI) and performance of men athlete Canoeing Number 1000 Meter. This research is a descriptive study involving 19 athletes in the national training camp, for the preparation of the 2018 Asian Games, as the samples. The instrument used were an anthropometric test and a performance test for a 1000 meter canoeing athlete with a canoeing ergometer. Data were analysed by using descriptive statistical techniques. The results showed that the average BMI of the athletes was in the ideal category and the athlete's performance was in the moderate category. The results of this study are expected to be a reflection for both the coaches and the athletes as an effort to improve performance to meet the expected targets.

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INTRODUCTION

Rowing sport is a sport that orientates on the target of achievement by analyzing factors needed to gain high achievements, including anthropometry, biological age, and physical fitness (López-plaza, Alacid, Muyor, & López-miñarro, 2017). Rowing sport requires a high anaerobic and aerobic capability, coordination, concentration, the endurance of stress and fatigue, and good postures, including height, size of limbs, and long arms (Raharjo, 2006). Another research argues that there is a positive relationship among the power of arms, hip flexibility, and the confidence of the result of rowing achievement in the strong current kayak slalom (Sumarsono, 2017).

Canoeing is an Olympic sport that competes the speed of the rowing athlete in a linear lane (water without flows) at the distance of 1.000m, 500m, 200m and recognized by international federation named International Canoe Federation. Canoeing is divided into two disciplines, including Canoe (C) and kayak (K). The difference is laid on the position in the boat and the type of stroke. In Canoe (C), the athlete paddles on one side while kneeling on one knee, while in kayak (K), the athlete paddles at both left and right sides in sitting position (Hamano, Ochi, Tsuchiya, Muramatsu, & Suzukawa, 2015). In rowing sport, an athlete should be able to hold the stroke until the finish line, thus another ability of the canoeing athlete is the general endurance.

In most sports, the status of the athlete ability is known by testing their initial ability as the part of prediction of their future ability, including the research conducted to predict the speed by finding out the strength and power profiles of the athletes (Cronin & Hansen, 2005), physiologic and anthropometrics characteristics of national, state, and beginner volleyball athlete of Australia (Gabbett & Solutions, 2007), the anthropometric and bio motor aspects among young elite women athletes in tennis, skating, swimming, and volleyball (Leone, Lariviere dan Comtois, 2002).

The importance of knowing the Body Mass Index of a person is to depict a general description of their health status (Sande, dkk., 2001; Senbanjo & Oshikoya, 2010) since the Body Mass Index that falls in obesity or overweight category is directly correlated with various health problems. Obesity and overweight are serious problems for the health of the society (Djalalinia, Qorbani, Peykari, & Kelishadi, 201a5) and could cause various diseases such as hypertension, diabetic mellitus, and also cause the psychological problem such as confidence (Deckelbaum, Williams, & Christine, 2001).

An athlete should have a prime condition during the tournament, so that they have a high performance during competition. Besides owning the technical and mental capabilities, they also should have a good physical condition. One of the techniques to depict the physical condition of the athletes is through their Body Mass Index. Therefore, the Body Mass Index of the athlete should get a special attention from the trainers. The importance of depicting the Body Mass Index profile of the athlete is to find out the body composition or the status of the Body Mass Index whether it is in the ideal category, underweight category, or even obese category (Wibowo dan Hakim, 2019).

The description of the Body Mass Index profile and the athlete performance are important to be described as the information for the trainer and the athlete themselves for the reflections in the tournament preparation. Therefore, the purpose of this study was to find out the Body Mass Index profile and the men athlete canoeing performance Number 1000 Meter.

METHODS

The method used in this study was the descriptive method. The samples of this study were 19 men rowing athletes of the national canoeing team of the national centralized training for Asian Games 2018 preparation. The instruments used in this study were the anthropometrics test to find out the Body Mass Index and the performance test of the Canoeing Number 1000m athlete by using a canoeing ergometer. Body Mass Index is an anthropometrics measurement by measuring the ratio of weight (kg) and squared height (m2) which is aimed at finding out whether a person is in the health body weight compared to their height. Before conducting the measurement, the athletes removed the accessories or other equipment that might cause bias in the result of measurement. After measuring the height and weight, the body mass index can be calculated.

In the performance test, every participant completed the performance test for 1000m by using a canoeing ergometer with 24 hour rest required before the test. The test was started by stretching and warming up to prevent injuries. During the test, the athletes received visual reports of cumulative distance, velocity, stroke speed, and time travelled (Yang, Lee, Hsu, & Chan, 2017).

When the data collection process of the 19 athletes was completed, the data were then analyzed by using the descriptive statistics technique with the SPSS version 23 program.

RESULT AND DISCUSSION

The data of the research described the body mass index and the athlete performance in canoeing Number 1000 m. The descriptive data summary of the research is as follows:

Table 1. The Description Summary of Canoeing Athletes Number 1000 Meter

BMI	Frequency	Percentage (%)	Category
<16	0	0%	Severe underweight
16·0–16·9	0	0%	Moderate underweight
17·0–18·49	0	0%	Mild underweight
18·5–24·9	16	84%	Normal
25–29·9	3	16%	Overweight
30–34·9	0	0%	Obese class I
35–39·9	0	0%	Obese class III
>40	0	0%	Obese class III
Total	19	100%	
Average	24.34		
Min	23.04		
Max	25.50		
Standard Deviation	0.66		

The table 1 shows that the minimum body mass index score gained by the athletes was 23.04 kg/m² and the maximum score was 25.50 kg/m². The highest frequency data of the athlete body mass index gained were 16 persons in the normal category and the rest 3 persons

in the overweight category. Moreover, the average of the athlete body mass index was 24,34 and the standard deviation was 0.66. The percentage of the body mass index result of the canoeing men athlete number 1000 meter is shown in Figure 1.
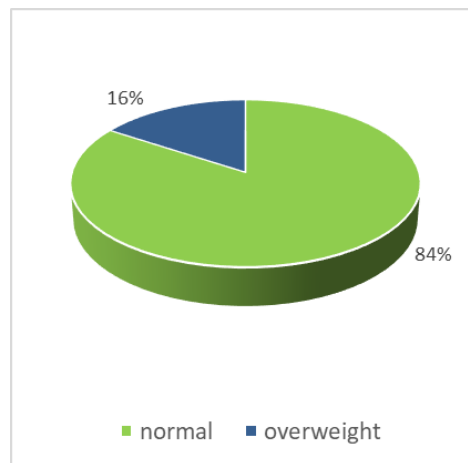

Figure 1. The Percentage of Body Mass Index Result of the Canoeing Men Athletes Number 1000 Meter.

Table 1. The Description Summary of Canoeing Athletes Number 1000 Meter

Performance Achievement	Frequency	Percentage (%)	Category
<249	0	0%	Excellent
250-259	2	11%	Good
260-269	14	74%	Fair
270-299	1	5%	Poor
> 300	2	11%	Very Poor
Total	19	100%	
Average	269.72		
Min	258.6		
Max	308.4		
Standard Deviation	13.20		

Figure 1 describes the specific percentage of the body mass index result of the men canoeing athletes number 1000 meter. In general, the men canoeing athletes were in the normal category (84%), while 16 % of the athletes were in the overweight category. It means that there was no athlete in the obese category. Furthermore, the performance description of the canoeing men athletes number 1000m is depicted in the table 2.

Table 2 depicts that the performance average of the canoeing athletes number 1000m is 269.72 seconds

and the standard deviation is 13.20. Most of the athletes were in the fair category. The table shows that 74% (14 athletes) were in the fair category, 11% (2 athletes) were in the good category and very poor category, and 5% (1 athlete) was in the poor category. There was no athlete in the excellent category. Specifically, the performance description of each athlete can be seen in Figure 2.
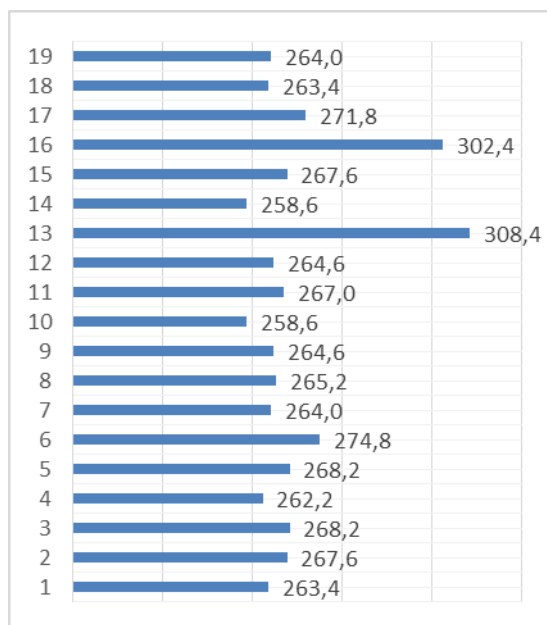

Figure 1. Performance Gain of the Canoeing Athletes Number 1000 Meter (in second)

Figure 2 shows the specific result of the athlete performance. The lower the score or the time, the better the athlete's performance. The figure 2 shows that the best performance was gained by sample 10 and sample 14, while sample 13 gained the lowest performance. In addition, the percentage achievement of the athlete performance can be seen in figure 3.

According to the total number of the athletes (19 persons), 16 athletes were in the ideal category or normal category and 3 athletes were in the overweight category, which means that an extra attention should be given to the three athletes with overweight category. Meanwhile, related to the performance achievement of the athletes, 14 athletes were in the fair category and more attention should be given to athletes who were in the poor and very poor category.
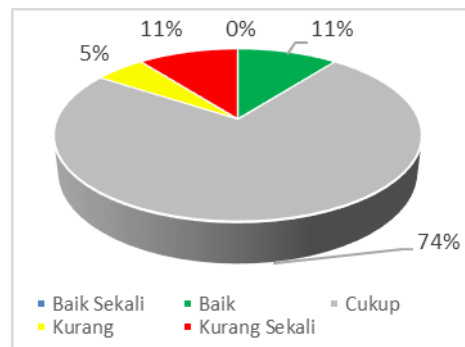

Figure 1. The Performance Percentage of the Canoeing Athletes Number 1000 Meter

Maintaining the Body Mass Index to be in the ideal status is important to gain a maximum performance, although some sports require a special body weight such as in the martial sport, sumo sport for example (Raharjo, 2006; Wibowo & Hakim, 2019). Another research states that anthropometry and bio motor aspects have important roles in sport (Leone, dkk., 2002). The findings of the research strengthen the view that knowing the description of the athlete capability is important for the trainers, so that they could use a proper training pattern that suits the initial ability of the athlete.

CONCLUSION

According to the literature review, the result and discussion of the body mass index of men canoeing athletes Number 1000 meter were in the normal and overweight category in general. There was no athlete in the underweight nor obese category. Meanwhile, the athlete performance was mostly in fair category. There was no athlete who gained excellent performance. The results of this study are expected to be reflections for both trainers and athletes as the effort to improve their performance to achieve the expected targets. For the researchers, further research is expected to describe other descriptions that support the athlete performance such as power, endurance, and other aspects related to rowing sport, especially canoeing Number 1000 meter.

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