8 (2) (2021) 44 - 47

Journal of Physical Education, Health and Sport

http://journal.unnes.ac.id/nju/index.php/jpehs

Relationship between Body Mass Index (BMI) and Body Fat Level Against the Physical Fitness of Kabaddi Athletes during the Covid-19 Pandemic

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History Article

Received September 2021
Approved November 2021
Published vol 8 no 2 2021

Keywords

BMI; Fat level; Fitness; Kabaddi

Abstract

Kabaddi is a traditional sport that originated in India. Kabaddi sport in Indonesia has grown rapidly since the appearance of this sport for the first time at the 2008 Asian Beach Games (ABG) in Denpasar Bali. With the outbreak of the COVID-19 pandemic, people's activities have been disrupted without exception for athletes' activities in exercising. Reflecting on the situation of the COVID-19 pandemic, coaches raise perceptions and concerns about the behavior of athletes who are not monitored due to the infrequent meetings that are usually held in joint training. This study aims to determine the relationship between body mass index and body fat levels on the physical fitness of Indonesian Kabaddi Athletes. The research sample consisted of 24 Indonesian Kabaddi Male Athletes. The results showed that the simultaneous relationship between body mass index and body fat content on physical fitness was not significantly correlated as indicated by the value of p> 0.05. Based on this, it can be concluded that there is no significant relationship between body mass index and body fat content on the physical fitness of Indonesian Kabaddi Athletes.

How to Cite

Subekti, M., Et al. (2021). Relationship between Body Mass Index (BMI) and Body Fat Level Against the Physical Fitness of Kabaddi Athletes during the Covid-19 Pandemic. *Journal of Physical Education, Health and Sport*, 8 (2), 44-47.

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p-ISSN 2354-7901
e-ISSN 2354-8231

INTRODUCTION

Kabaddi is a traditional sport originating from India (FOKSI, 2018). The sport of Kabaddi in Indonesia has grown rapidly since the appearance of this sport for the first time at the 2008 Asian Beach Games (ABG) in Denpasar Bali. (Santika & Subekti, 2020). The achievements that have been obtained by Indonesian athletes in the Kabaddi Sports Branch are not mere figments. The bronze medal for the Asian Beach Games I in 2008, the bronze medal for the Asian Beach Games II in 2012, the silver medal for the Beach Kabaddi Thailand Open 2019, and the bronze medal for Martial Art Indoor Kabaddi in Korea in 2019 are historical marks made by Indonesia in the Kabaddi sport.

With the outbreak of the COVID-19 pandemic, people›s activities have been disrupted without exception for athletes› activities in exercising (Sadikin & Hamidah, 2020). Athletes are obliged to keep their bodies in good condition. Regarding the disruption of the athlete›s training program due to the COVID-19 pandemic, we are concerned about the athlete›s physical condition, especially physical fitness. This is in accordance with what was expressed by Santika et al (2020) which reveals about the disruption of the physical condition of the body due to the COVID-19 pandemic.

We all know that physical fitness is the basic foundation that supports athlete achievement, without adequate physical fitness it is impossible for athletes to perform techniques well and maximally. (Erliana & Hartoto, 2019; Tirtayasa et al, 2020; Piyana et al, 2020). Physical fitness in kabaddi sports consists of cardiovascular endurance, hand muscle strength, leg muscle strength, back muscle strength, shoulder muscle strength, arm muscle endurance, explosive power, agility, and reaction speed (Santika & Subekti, 2020).

A good physique is produced by a good and continuous exercise program. This is in accordance with the opinion Subekti et al (2021) & Sumerta et al (2021) which says to achieve the ideal physical condition for an athlete must practice according to the rules of physical conditions and systematically and gradually. This is of course so that the body we train is intended to get good results, not the other way around.

Reflecting on the situation of the COVID-19 pandemic, coaches raise perceptions and concerns about the behavior of athletes who are not monitored due to the infrequent meetings that are usually held in joint training. The coach›s concern is more focused on the athlete›s diet that does not meet the rules set by the coach in the sense that the athlete›s food consumption is greater than the proportion of exercise at home . Relevant research on body mass index was also conducted by Adnan et al (2013) who examined the relationship between Body Mass Index and blood sugar levels, where in this context the role of body mass index cannot be separated from a person›s nutritional status.

Based on the above background, the researchers made a research title entitled The Relationship of Body Mass Index (BMI) and Body Fat Levels to the Physical Fitness of Indonesian Kabaddi Athletes in the Covid 19 Pandemic Period.

METHOD

This study is a correlational study, which intends to determine the relationship between body mass index (BMI) and body fat levels on the physical fitness of Kabaddi athletes during the covid 19 pandemic, by describing several variables related to the problem being studied. (Sugiyono, 2013). The research subjects were male athletes from Kabaddi Indonesia. The object of the research is the male athletes who are determined by the saturated sampling technique, namely taking the entire population of Kabaddi Indonesian male athletes. This research was conducted from May to June 2021 at GOR Lyla Bhuana Denpasar.

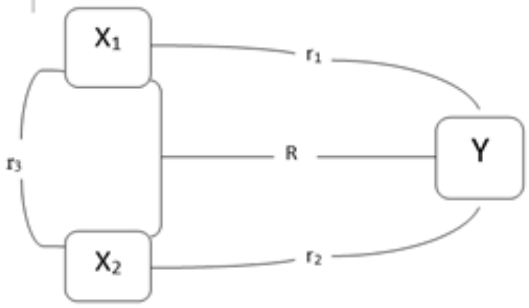

Figure 1. Research Design

Information :
X1 : Body mass index
X2 : Fat Level
Y : Physical Fitness
r : Product Moment Correlation Coefficient
R : Multiple Correlation Coefficient

The analytical technique used in this research is to use correlational techniques. The data processing method uses statistical correlation analysis to analyze whether there is a relationship between Body Mass Index and Body Fat Levels on Physical Fitness. The data is processed using

computerization with the SPSS version 16 system.

The components measured include Body Mass Index, Body Fat Content and Physical Fitness. Physical fitness in this case is related to the biomotor components contained in Kabaddi sports including: 1) Cardiovascular Endurance, 2) Hand Muscle Strength, 3) Leg Muscle Strength, 4) Back Muscle Strength, 5) Shoulder Muscle Strength, 6) Endurance Arm Muscles, 7) Limb Muscle Explosiveness, 8) Body Agility, and 9) Reaction Speed (Subekti & Santika, 2021; Adiatmika & Santika; 2016).

RESULTS AND DISCUSSION

Based on the correlation test conducted between Body Mass Index and Body Fat Levels on Cardiovascular Endurance, the R value of 0.23 was obtained with a significance value of 0.56. The correlation test conducted between Body Mass Index and Body Fat Levels on Hand Muscle Strength obtained an R value of 0.14 with a significance value of 0.80. While the correlation test of Body Mass Index and Body Fat Levels on Leg Muscle Strength obtained an R value of 0.16 with a significance value of 0.74.

The results of the correlation test conducted between Body Mass Index and Body Fat Levels on Back Muscle Strength obtained an R value of 0.24 with a significance value of 0.53. The correlation test conducted between Body Mass Index and Body Fat Levels on Shoulder Muscle Strength obtained an R value of 0.18 with a significance value of 0.70. Correlation test conducted between Body Mass Index and Body Fat Levels on Arm Muscle Endurance obtained the R value of Explosive Power of the Legs and obtained an R value of 0.22 with a significance value of 0.58.

Furthermore, the results of the correlation test conducted between Body Mass Index and Body Fat Levels on Explosive Power of Limb Muscles obtained an R value of 0.22 with a significance value of 0.58. The correlation test conducted between Body Mass Index and Body Fat Levels on Body Agility obtained an R value of 0.24 with a significance value of 0.53. And the correlation test conducted between Body Mass Index and Body Fat Levels on Reaction Speed obtained an R value of 0.15 with a significance value of 0.78.

Provisions in making decisions, especially on whether or not there is a relationship are regulated in a rule with the following values :

Table 1. Interpretation of R Value Correlation Coefficientv(Riduwan, 2008)

Coefficient Interval	Relationship Level
0,00-0,19	Very low
0,20-0,39	Low
0,40-0,59	Enough
0,60-0,79	Strong
0,80-1,00	Very strong

Based on the grouping of data obtained above, it can be written in accordance with **Table 2** below :

Table 2. Correlation Coefficient Interpretation Level R Value Relationship between Body Mass Index and Body Fat Levels on Physical Fitness

Physical Fitness	R	Connection
Cardiovascular Endurance	0,23	Low
Hand Muscle Strength	0,14	Very Low
Limb Muscle Strength	0,16	Very Low
Back Muscle Strength	0,24	Low
Shoulder Muscle Strength	0,18	Very Low
Arm Muscle Endurance	0,22	Low
Limb Muscle Explosive Power	0,22	Low
Body Agility	0,24	Low
Reaction Speed	0,15	Very Low

If the significance value (p) < 0.05 then the relationship is significant. Meanwhile, if the significance value (p) > 0.05 then the relationship is not significant. Based on the analysis carried out, the following results were obtained :

Table 3. Significance Level (p) Relationship between Body Mass Index and Body Fat Level on Physical Fitness

Physical Fitness	Sig. (p)	Connection
Cardiovascular Endurance	0,56	Not significant
Hand Muscle Strength	0,80	Not significant
Limb Muscle Strength	0,74	Not significant
Back Muscle Strength	0,53	Not significant
Shoulder Muscle Strength	0,70	Not significant
Arm Muscle Endurance	0,58	Not significant
Limb Muscle Explosive Power	0,58	Not significant
Body Agility	0,53	Not significant
Reaction Speed	0,78	Not significant

Based on the results **Table 3** above, it shows that there is no simultaneous relationship between Body Mass Index and Body Fat Levels on Physical Fitness because the p value > 0.05.

In this case, physical fitness which consists of 9 body biomotor components is not fully influenced by body mass index and body fat content. It has been shown by the data above that the results are not significant. This is contrary to the results of several studies such as research Adnriani (2016) which examines the relationship between body mass index and physical activity to the maximum oxygen volume in which there is a significant and significant relationship. In research Febriyanti et al (2015) also resulted in the opposite of this study, where the research conducted was related to the relationship between body mass index and physical activity on cardiovascular endurance in students of the Faculty of Medicine, Udayana University with research results showing a strong and significant relationship.

CONCLUSION

Based on the results and discussion above, it can be concluded that there is no correlation between body mass index and body fat content on physical fitness. This is evidenced by the low and insignificant relationship obtained.

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