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Relationship between Body Mass Index and Body Fat with Cardiovascular Endurance of Futsal Athletes

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INTRODUCTION

- Futsal is a five-on-five sport played with feet, except for the goalkeeper who can use his hands.
- Body mass index is a means of measuring a person's nutritional status
- Fat is one of the most important sources of energy needed by humans to carry out daily activities. Humans have a body that requires balanced fat levels.
- Cardiovascular endurance is the ability of the heart, blood vessels, and lungs to provide a sufficient amount of nutrients and oxygen to cells to meet the demands of long-term physical activity.
- Futsal players with a lower or higher BMI may experience differences in terms of their endurance on the field. A low BMI can signify less body fat, which might favor better physical endurance and mobility during matches. On the other hand, players with a high BMI may have more body fat, which could affect their endurance due to the extra weight they have to carry.

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Problem Formulation

1. Is there a relationship between body mass index and cardiovascular endurance of futsal athletes?
2. Is there a relationship between body fat and cardiovascular endurance of futsal athletes?
3. Is there a relationship between body mass index and body fat with cardiovascular endurance of futsal athletes?

Research Objectives

1. To determine the relationship between body mass index and cardiovascular endurance of futsal athletes.
2. To determine the relationship between body fat and cardiovascular endurance of futsal athletes.
3. To determine the relationship between body mass index and body fat with cardiovascular endurance of futsal athletes.

Research Design

The method used is descriptive quantitative with a correlational design.

Population

The population in this study were all SMAT Al-Mashum Mardiyah futsal players.

Sample

The sample used was 15 futsal players of SMAT Al-Mashum Mardiyah.

Sampling Technique

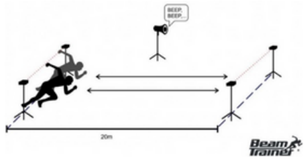
The sampling technique in this study used a total sampling.

Research Instruments

Body Weight Measurement Instrument

Microtoise

Skinfold Calliper



Bleep test

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RESULT

Correlation coefficient of BMI (X1) with cardiovascular endurance (Y)

Correlation	R count	R table	Description
X1. Y	0.691	0.514	Significant

Based on the results of the study, it shows that x1 with y has r count of 0.691 where r count is greater than r table of 0.514.

Correlation coefficient of Body Fat (X2) with Cardiovascular Endurance (Y)

Correlation	R count	R table	Description
X2. Y	0.646	0.514	Significant

Based on the results of the study, it shows that x2 with y has r count of 0.649 where r count is greater than r table of 0.514.

Correlation coefficient of BMI (X1) and Body Fat (X2), with Cardiovascular endurance (Y)

Correlation	R count	R table	F count	F table	Description
X1.X2. Y	0.723	0.514	6.573	3.89	Significant

Based on the results of the study, it shows that the relationship between x1, x2 with y has a relationship as large as the correlation between r count 0.723 greater than r table 0.514 and the price of f count 6.573 greater than f table 3.89.

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DISCUSSION

DISCUSSION 1

body mass index with cardiovascular endurance has a significant coefficient relationship and has a strong relationship. Thus, for the first problem formulation shows that body mass index affects the endurance of an athlete.

DISCUSSION 2

Body fat with cardiovascular endurance has a significant coefficient relationship and has a strong relationship. Thus, for the second problem formulation shows that body fat affects the endurance of an athlete.

DISCUSSION 3

Body mass index and body fat with cardiovascular endurance have a significant coefficient relationship and have a strong relationship. Thus, for the third problem formulation shows that body mass index and body fat affect the endurance of an athlete.

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CONCLUSION

There is a significant relationship between body mass index and cardiovascular endurance of futsal athletes.

There is a significant relationship between body fat and cardiovascular endurance of futsal athletes.

There is a significant relationship between body mass index and body fat with cardiovascular endurance of futsal athletes.

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