

## Analysis of differences in physical fitness levels of extracurricular futsal students: Survey studies on urban and rural environments

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### Abstract

**Background and Study Aim** Maintaining physical fitness is essential to perform daily tasks with the required level of efficiency. By being physically fit to design an ideal training plan. This study aims to determine the profile and differences in the level of physical fitness in futsal extracurricular students in urban and rural environments.

**Material and Methods** The method in this study used a quantitative approach through surveys with researchers providing a physical test and measurement (TKJI) for 13-15 year old to futsal extracurricular students. This research was conducted at SMP Negeri 11 Pontianak City and SMP Negeri 3 Sukadana, Kayong Utara Regency. Purposive sampling technique in determining the sample so that 40 students were sampled. To see the difference through the normality prerequisite test stage, homogeneity test and t test. Data analysis was assisted by using the SPSS Version 26 application.

**Results** According to the study findings, the average physical fitness score of futsal extracurriculars in urban areas was 12.50, while the average in rural environments was 15.15. Furthermore, a significant difference between urban and rural extracurricular futsal contexts is shown by a significance value of  $0.000 < 0.05$ .

**Conclusions** This finding supports the hypothesis that the level of physical fitness necessary for extracurricular futsal varies significantly between urban and rural areas. This study provides evidence that futsal extracurricular students in rural areas have better physical fitness than students in urban areas. These findings can be a reference for sports practitioners to be able to develop exercise programs to improve the physical fitness of children aged 13-15 years, especially for playing futsal.

**Keywords:** physical fitness, extracurricular futsal, urban environment, rural environment

### Introduction

Coronavirus Disease pandemic or commonly referred to as Covid- 19 has had a considerable impact on people's lives throughout the world, such as closing office areas, places of worship [1], schools [2], universities and sports venues [3, 4, 5, 6]. The impact of the Covid -19 pandemic is also explained in the article which states that there has been a decline in various aspects, one of which is sports [7]. The Covid -19 pandemic has also made people rarely do physical activity because they have to do their work at their homes [8]. Sport is a physical activity that can be done by various people in all age ranges from children to adults [9, 10].

Governments in various countries also require their citizens to implement mandatory isolation regulations in their respective homes to reduce the increasing number of Covid -19 [11, 12, 13, 14]. As was done by the Peruvian government on March 15, it obliges its people to isolate in their respective homes [15]. From various studies explaining changes in all aspects of life caused by Covid -19 [16], one of them also affects the world of sports [5, 6, 17]. Experts in the health sector have found a significant reduction in daily physical activity carried out by the community [18]. It was even clearer in Chile in March 2020, the involvement of athletes, children and youth in education, physical activity and sport has decreased [19], and a decline in physical fitness has also occurred [20].

The results of research data regarding the level of physical activity in modern children show

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unfavorable results [21]. During the quarantine period, the level of physical activity carried out by students and most women in urban areas was higher than rural women [15]. Based on the facts presented, the reduction in physical activity carried out by some groups can lead to a decrease in the level of physical fitness. Physical fitness is related to health which is influenced by several factors, including socioeconomic status and body weight [22]. Hughes argues that sport contributes highly to psychological, emotional, and physical well-being [6], and that sport has benefits in improving physical health and can also reduce the risk of disease [23].

Based on these reviews, it has been explained that exercise plays an important role in keeping the body fit. The truth about this explanation has been proven by several studies, that physical activity carried out through sports has a positive effect on physical fitness [24, 25, 26]. Therefore, it is very important to maintain physical fitness so that you can carry out various activities to the fullest. Lack of physical activity such as moving can cause decreased body health [27], which is estimated as one of the risk factors for various health problems and stress experienced [28].

Not only that, but health is also affected by various types of food, including junk food [29], foods that contain nutrients, and physical activity can also affect [30]. Research conducted by Oktaviani & Wibowo stated that physical fitness affects academic achievement and mental health for students [31]. The reality on the ground shows that the time students get to do physical activities at school is relatively short, so that most students have less physical abilities [32]. Based on the existing explanations, it is important to know the appropriate needs and physical fitness of students [33]. Because of the intense activities carried out so that by increasing their physical fitness so that it can bring good factors for physical endurance.

The problem that is currently happening in schools in extracurricular activities is not having proper plans, goals and objectives for carrying out physical fitness tests [34]. Based on the results of extracurricular teacher interviews, students' physical fitness problems have not been seen. This statement is clarified by Suryadi's research that extracurricular activities in schools do not yet have precise goals and objectives [35]. In addition, extracurricular teachers only focus on the training programs provided, but do not or have never conducted physical fitness tests to measure students' abilities. Although research conducted by Suryadi has made comparisons of physical fitness, his research has not found a comparison regarding physical fitness from different cities and schools [35]. Where a recent study has examined the motor skills of students in hilly and coastal areas [36]. Therefore, this study seeks gaps from previous research and adds research updates.

Where by looking at the physical fitness of students in urban and rural environments, this will provide an overview for coaches or sports teachers to design appropriate training programs. So this is also the reason why this research is important to do. This study aims to determine the profile and differences in the level of physical fitness in futsal extracurricular students in urban and rural environments.

## Materials and Methods

### *Participants*

The subjects in this study were all male students who took part in futsal extracurriculars aged 13-15 years. This research was conducted at Junior High School 11 Pontianak City and Junior High School 3 Sukadana, Kayong Utara Regency. Purposive sampling technique in determining the sample so that 40 students were sampled. The sample consisted of 20 urban futsal extracurricular students at Junior High School 11 Pontianak and 20 students from a rural environment at Junior High School 3 Sukadana.

### *Research Instruments*

The method in this study used a quantitative approach through surveys with researchers providing a physical test and measurement (TKJI) for 13-15 year olds to futsal extracurricular students. The instrument used in this study was TKJI aged 13-15 years to measure students' physical fitness [37, 38]. The tests used include the 1000 meter long distance test, the 50 meter sprint test, the 60 second lying down test, the body lift test, and the upright jump test.

### *Statistical analysis*

Data analysis used in this study was descriptive, it aims to determine the level of physical fitness of futsal extracurricular students in urban and rural areas. Then, to see the difference through the normality prerequisite test stage, homogeneity test and t test. Data analysis was assisted by using the SPSS Version 26 application. The categorization in this study uses TKJI norms according to [39]. TKJI norms can be seen in table 1.

Table 1. TKJI Norms Age 13-15

Mark	Classification
22-25	Very well
18 - 21	Good
14 - 17	Currently
10 - 13	Not enough
5 - 9	Less Once

## Results

This table 2 provides a detailed description of the sample physical fitness assessment data based on research findings..

The results in Table 2 demonstrate that the average value of physical fitness in extracurricular futsal in the urban environment is 12.50, whereas it is 15.15 in the rural area. Based on these findings, rural futsal extracurricular students have a higher average value of physical fitness than urban futsal extracurricular students.

Prior to performing the difference test, the Shapiro-Wilk test formula was used to perform a normality precondition test. The results showed that urban futsal extracurricular had a significant value of  $0.265 > 0.05$  and rural futsal extracurricular had a significant value of  $0.260 > 0.05$  (tabl. 3). On the basis of this result, we can conclude that the data is regularly distributed.

The significance result for the homogeneity test in Table 4 is  $0.648 > 0.05$ . The findings indicate that the data is homogeneous. Following that, a different test will be performed, in this case utilizing the Independent Samples Test formula.

The significant value of the t test research completed following the precondition test was  $0.000 < 0.05$  (tabl. 5). This finding supports the hypothesis

that the level of physical fitness necessary for extracurricular futsal varies significantly between urban and rural areas.

According to the descriptive percentage results in the Indonesian physical fitness test for male students of futsal extracurricular urban environment, there are 6 students in the moderate category with a percentage of 30%, 13 students in the less category with a percentage of 65%, and 1 student in the very less 5% (tabl. 6).

Furthermore, the descriptive percentage results on the Indonesian physical fitness test for male extracurricular futsal students in rural environments are as follows: 3 students in the poor category with a percentage of 15%, 16 students in the moderate category with a percentage of 80%, and 1 student in the good category with a percentage of 5%. To clarify the results are attached in Figure 1 below.

### Discussion

This study aims to determine the profile and differences in the level of physical fitness in futsal extracurricular students in urban and rural

**Table 2.** Descriptive Value Results

Physical fitness	N	Minimum	Maximum	Means	std. Deviation
Urban	20	9.00	15.00	12.50	1.57
Rural	20	13.00	18.00	15, 15	1.46

**Table 3.** Shapiro-Wilk Normality Test

Physical fitness	Group	Statistics	df	Sig.
Futsal extracurricular	Urban	0.942	20	0.265
	Rural	0.942	20	0.260

**Table 4.** Test of Homogeneity of Variance

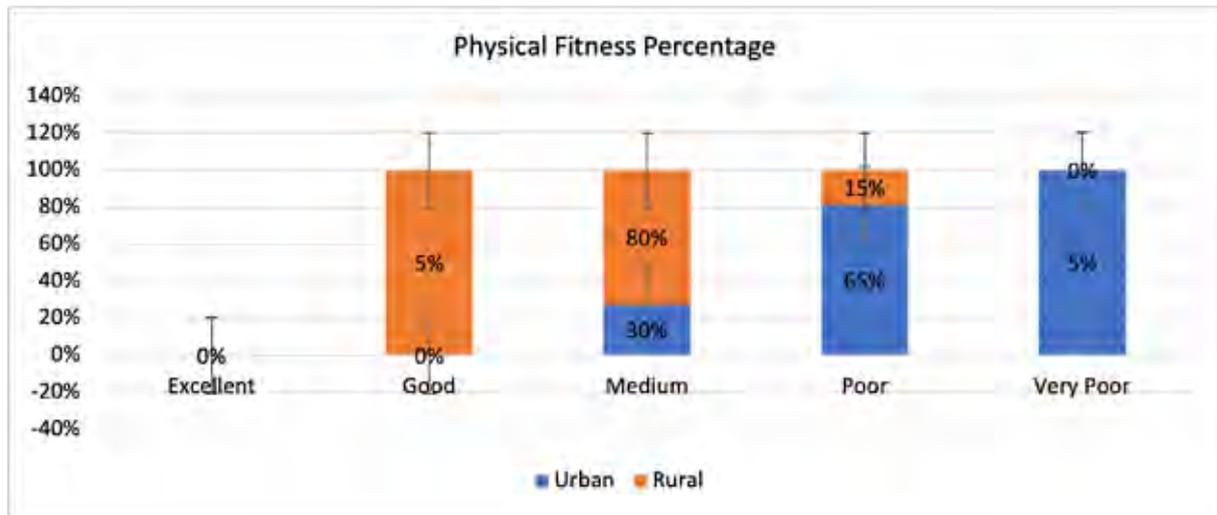
Physical fitness	Results	Levene Statistics	df1	df2	Sig.
Futsal extracurricular	Based on Means	0.211	1	38	0.648

**Table 5.** Independent Samples Test

Results	Variants	F	Sig.	t	df	Sig. (2-tailed)
Physical fitness	Equal variances assumed	0.211	0.648	-5, 521	38	0.000
	Equal variances not assumed			-5, 521	37, 795	0.000

**Table 6.** Physical fitness test results for extracurricular students

No	Mark	Classification	Urban	Percentage	Rural	percentage
1	22-25	Very well	0	0%	0	0%
2	18-21	Good	0	0%	1	5%
3	14-17	Currently	6	30%	16	80%
4	10-13	Not enough	13	65%	3	15%
5	5-9	Less Once	1	5%	0	0%



**Figure 1.** Differences in Physical Fitness Extracurricular Futsal in Urban and Rural Environments

environments. The results obtained show that there are differences in futsal extracurricular activities in urban and rural environments. The results of the average score prove that the urban environment futsal extracurricular is worth 12.50 less than the rural environment futsal extracurricular has a value of 15.15 or there is a difference of 2.65. In addition, the significance value shows a significant difference between futsal extracurricular students in urban and rural environments. Where the results show that the rural environment has better physical fitness. Previous research in his study obtained results that the level of physical fitness in students in rural areas was better than in urban areas [40]. Research from [35] also proves that there is a significant difference in the average value of physical fitness between futsal and basketball extracurriculars.

In line with research on physical fitness in futsal and basketball conducted by [41] produced a significant difference. These results were reinforced by Syahputra's research, where there was a significant difference between students who took part in sports extracurricular activities and did not take part in sports [42]. Another study in his research proved that there were significant differences in the level of gross motor skills of students in hilly and coastal areas [36]. Differences also occur in male and female students [43].

Based on the results obtained, it shows a low level of physical fitness, therefore it is necessary to carry out various methods or multi-component training programs so that physical fitness is maintained. Doing regular exercise can encourage physical fitness to a better level [44, 45], and nutritious food intake needs to be considered [46]. A research study conducted by [8, 47] circuit training and interval training exercises can have an effect on students' physical fitness. The results that have been carried

out by several researchers explain that activities that involve all members of the body or physically by exercising can maintain and improve one's physical fitness.

Therefore, it is necessary to measure through physical fitness tests to determine the level of physical fitness possessed by students who take part in extracurricular activities or not. The limitations in this study lie in the activities carried out before the test took place, whether the test was tough or not, and differences in the education system. This is because studies on physical fitness interventions are rarely carried out in schools, and further research can introduce regular exercise [48].

### Conclusions

The results of this study have a strong foundation regarding differences in extracurriculars for students aged 13-15 years on the basis of references from previous research and listed in the results and discussion. This study shows that there are significant differences in the average level of physical fitness of futsal extracurricular students in urban and rural environments. This study provides evidence that futsal extracurricular students in rural areas have better physical fitness than students in urban areas. These results may also be influenced by environmental factors and activities before conducting the test. The results that have been obtained can of course provide new references related to student physical fitness. It is hoped that this research can provide an overview of sports practitioners and educators in providing treatment so that the physical fitness of extracurricular students is maintained. The next research recommendation is to develop an exercise program to improve the physical fitness of children aged 13-15 years, especially for playing futsal.

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High School 11 Pontianak and Junior High School 3 Sukadana.

## Conflict of interest

There is no conflict of interest.

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