

Conference Paper

The Effect of Futsal Training toward Vo₂max on Teenager Students at Mts Darulmutaalimin Kadungora District in Garut Regency

Iba Suprabasa¹, Sri Mulyati Rahayu², Rd. Siti Jundiah², and Ali Hamzah³¹Student of Nursing Program, Bhakti Kencana University Bandung, Indonesia²Bhakti Kencana University Bandung, Indonesia³Poltekkes Kemenkes Bandung, Indonesia

Abstract

Background: Futsal is a sport that played by the team with the aim to obtain the pleasure, the physical fitness and also to achieve the optimal performance. The Futsal is able to make someone more fit as well. A person's fitness can be measured by how much VO₂max value. VO₂max is the ability of the heart and lungs supplying the oxygen throughout the body for a long time. The factors that effect of VO₂max value one of them are futsal sport makes people move and if it is done regularly and discipline will make the work of the heart and lungs increases and makes the amount of blood per beat contents being pumped throughout the body increasing, there was an increase in VO₂max. **Objectives:** The study aims to identify the effect of futsal training on VO₂max MTS students Darul mutaalimin Kadungora District Garut District 2018. **Methods:** The type of research used pre-experiment with the design of "one group pretest posttest" with the amount of population were as many as 109 students, the sample were 20 students, and using the random sampling technique. Data collection was carried out by direct observation of the distance traveled by students for 12 minutes. The analysis method used the Parameters T-Test analysis because data were normally distributed. **Results:** The results showed the average VO₂max value before doing the futsal training were 32.44 and after doing the futsal training, the average VO₂max value was 36.70. VO₂max value increasing this was significant with P-Value (0.000) < (0.05). **Conclusion:** This showed that there was an effect of futsal training on VO₂max. The suggestion for Darulmutaalimin Garut MTS is that necessary to do extra extracurricular futsal sports to improve student fitness so that students are not easily become sick, more active and diligent in daily learning process.

Keywords: Futsal Training, Student, VO value₂max

Corresponding Author:

Sri Mulyati Rahayu
ayusry72@yahoo.com

Received: 22 September 2019

Accepted: 4 October 2019

Published: 10 October 2019

Publishing services provided by
Knowledge E

© Iba Suprabasa et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICHT 2019 Conference Committee.

OPEN ACCESS

1. Introduction

Darulmutaalimin junior high school is private school located in Garut City that hold extra curriculum program such as, *Pramuka*, dance, First Aid Teenager (PMR), Drum band. Unfortunately this school does not hold physical sport extra curriculum program, it may

be the school has not had the court and facilities for basketball, volley ball, futsal, and badminton etc. Even though, there are 325 students that 175(53,8%) who like sport, 22(6,8%) student who like playing volleyball, 7(8,3%) students like playing basketball, 17(5,2%) students like playing, 109(33,5%) students like playing futsal and apart of the student were as many as 150(46,1%) like reading, writing, singing and excreta.

There school were 10 boys students who usually do not attend the classes were caused by sick. One of the programs to improve the students' fitness is to imply the physical sport regularly, because if we do it well and discipline make our body fresh and health. There is a method to know someone's fitness by measured $VO_2\text{max}$ value. There is not futsal game as the extra curriculum program at school because there is no facility and budget for it. As we know that futsal game is the favorite game sports for teenagers. Extra curriculum program is an addition lesson held by school and done out of school time schedule which has a positive value and improve physical health of body for students who keep strong and being not easy to get sick and tired in doing their daily activities. The role of nurses in improving teenager health are as promotive and preventive of health. The good physic could be measured in providing oxygen consumption which indicated by increasing of maximal oxygen volume ($VO_2\text{max}$). based on the reasons above, it is able to conclude that the researcher is interested in studying about "The effect of futsal game training toward $VO_2\text{max}$ on teenagers at Darulmutaalimin Junior High school in Garut City".

2. Method

The type of research used pre-experiment with the design of "one group pretest posttest" with the amount of population were as many as 109 students, the sample were 20 students, and using the random sampling technique. Data collection was carried out by direct observation of the distance traveled by students for 12 minutes. The analysis method used the Parameters T-Test analysis because data were normally distributed. The data collecting was participative observation. Observation is a planning activity which included observing and recorded the amount of activities and its levels that have a correlation with the cases are being studied. Meanwhile participative is a activity which the researcher involve directly in that activity.

Therefore there are additional instruments that used in collecting data which consist of the instruments that had been callibrated by using measurement tools(Watches and sizer)

3. Result

The research result that before done futsal game training (pretest) the value was $VO_2\text{max}$ it was >50 only one person (5%), and $VO_2\text{max}$ value 33-39 as many as 7 (33.33%) people, and the value of $VO_2\text{max}<27$ were as many as 6 (28,57%) people. The rate of $VO_2\text{max}$ before intervention as many as 32, 44 was included in less category.

The research result that before done futsal game training (pretest) the value was $VO_2\text{max}$ it was >50 only one person (5%), and $VO_2\text{max}$ value 33-39 as many as 7 (35%) people, and the value of $VO_2\text{max}<27$ were as many as 6 (30%) people. The rate of $VO_2\text{max}$ before intervention as many as 32, 44 was included in less category.

TABLE 1: Result pre-test $VO_2\text{max}$ value before done futsal game training for teenager at Darulmutaalimin Junior High school in Garut City 2018.

No	$VO_2\text{max}$ Value	amount	%
1	<27	6	30
2	27-32	3	15
3	33-39	7	35
4	40-50	3	15
5	>50	1	5
Total		83	100.0
Average $VO_2\text{max}$			32,44

Meanwhile, the research result after intervention with $VO_2\text{max}$ that >50 were as many as 2 (10%) people, and value of $VO_2\text{max}<27$ were as many 2 (10%) people. And $VO_2\text{max}<27$ 33-39 were as many as 8 (40%) people. The average of $VO_2\text{max}$ value has been done after futsal training 36.70

TABLE 2: Result post-test $VO_2\text{max}$ value after done futsal game training for teenager at Darulmutaalimin Junior High school in Garut City 2018.

No	$VO_2\text{max}$ Value	amount	%
1	<27	2	10
2	27-32	4	19,5
3	33-39	8	40
4	40-50	4	19,5
5	>50	2	10
Total		20	100.0
Average $VO_2\text{max}$			36,70

4. Discussion

At Darulmutaalimin junior high school, there is no futsal extra-curriculum program so that cardio respiration endure is weak. It is caused of cardio function of students unnormal or irregular. We know that playing futsal can increase the function of cardio and make good supply of blood, but if it is not done the futsal training to the students, the VO_2 max will be low beat for students' cardio. A few of respondents have VO_2 max value that had >50 only 1 (5%) student, and almost a part of students had VO_2 max 33-39 value were as many as 7(35%) people, and 6(30%) respondents who had VO_2 max 33-39. The average of VO_2 max value before futsal training intervention 32, 44 included into less category. It is caused of respondents did not do the training unregularly. They do it in leisure time only. And after intervention of futsal training, there were a few students have VO_2 max value that had >50 were as many as 2 (10%) people, and respondents who had VO_2 max <27 value were as many as 8 (40%) people. The average of VO_2 max after futsal training intervention was 36.70 included into moderate category. It is caused by students who playing futsal always move and make the cardio and lungs get increasing to supply the total of blood and hemoglobin. The increasing of blood and hemoglobin volume is known that correlated to VO_2 max value. It showed that futsal training proved affect toward the increasing of VO_2 max value. There are student who had steady or normal of his VO_2 max value was caused his position futsal game as a goal keeper. Its position made him not many movements so that there was no significant cardio and lungs increasing.

5. Conclusion

There is an effect of futsal training during a month in 12 times meeting toward the value of VO_2 max students at Darulmutaalimin High school Kadungora district in Garut Regency 2018.

Acknowledgments

We would like to thank of contributor and to head of higher education Bhakti Kencana University who is responsible for funding for this research.

References

- [1] Agustini, Ni Nyoman M dan Ni luh K.A.A. (2013). Remaja Sehat Melalui Pelayanan Kesehatan Peduli Remaja Di Tingkat Puskesmas. *Jurnal Kesehatan Masyarakat. Kesmas* 9 (1) 66-73. 2832-6213-1-PB.
- [2] Apriantoro. (2014). Pengaruh Latihan Small Side Games Terhadap Peningkatan Vo2Max Pada Siswa SMP Peserta Ekstrakuriruler Sepakbola Di SMP Negeri 4 Sleman. *Skripsi Apriantoro 10601244205*. Yogyakarta
- [3] D. Berdejo-del-Fresno, R. Moore, And M. W. Laupheimer. (2015). Vo2Max Changes In English Futsal Players After a 6-Week Period Of Specific Small-Sided Games Training. *American Journal Of Sports Science and Medicine*. Vol 3, no.2: 28-34. Doi: 10.12691/ajssm-3-2-1
- [4] Dariyo, Agoes. (2004). Psikologi Perkembangan Dewasa Muda. Jakarta: PT Gramedia Widiasarana Indonesia
- [5] Dhewangga, Wisnu. (2014). Pengaruh Peningkatan Intensitas Latihan Futsal Terhadap Vo2Max. *Google Scholar*. Surakarta.
- [6] Fenanlampir, Albertus dan Muhammad Muhyi Faruk. (2015). Tes Dan Pengukuran Dalam Olahraga. Yogyakarta: CV Andi Offset
- [7] Firshein, Richard N. (2010). Langkah Revolusioner Sembuh Dari Asma. Yogyakarta: PT Bentang Pustaka
- [8] Gibson, John. (2003). Fisiologi Dan Anatomi Modern Untuk Perawat. Jakarta: EGC.
- [9] Guyton dan Hall. (2007). Buku Ajar Fisiologi Kedokteran. Jakarta: EGC
- [10] Hidayat, A. (2007). Metode Penelitian Keperawatan dan Teknik Analisis Data. Jakarta: Salemba Medika
- [11] Leite, Werlayne. (2016). Physiological Demands In Football, Futsal And Beach Soccer: A Brief Review. *European Journal Of Physical Education and Sport Science*. Vol 2. Physiological Demands In Football, Futsal And Beach Soccer: A Brief Review
- [12] Lhaksana, Justinus. (2011). Taktik Dan Strategi Futsal Modern. Jakarta: Be Champion (Penebar Swadaya Group)
- [13] Mulyana, Boyke. (2013). Ilmu Kesehatan Olahraga. Bandung: PT Remaja Rosdakarya
- [14] Murhananto. (2006). Dasar - Dasar Permainan Futsal. Yogyakarta: Kawan Pustaka
- [15] Muttaqin, Arif. (2008). Buku Ajar Asuhan Keperawatan Klien Dengan Gangguan Sistem Pernafasan. Jakarta: Salemba Medika
- [16] Notoatmodjo, Soekidjo. (2010). Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta

- [17] Rini, (2017).Metode Penelitian. Malang: UB Press.
- [18] Rumuat, E.Y. (2017). Gambaran Volume Dan Kapasitas Vital Paru Dan Volume Oksigen Maksimum (Vo2max) Pada Atlet Futsal Fallentars Di Kota Manad Tahun 2017.Google Scholar. 706-1390-1-1-SM. Manado.