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## Small-Sided Game Training Using The Pyramid Principle to Increase Aerobic Endurance

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### Abstract

Objectives of the research This For know influence exercise small-sided games to improvement ability aerobics with apply pyramid principle. Research This conducted at the Academy Persib U-18 2024. Methods used in study This is experimental method with design in research This that is Pre-Experimental Design with pattern (pre-test, post-test design), and carried out technique taking sample using the Random assignment technique. The results of study This existence significant influence to improvement ability aerobics with use pyramid principle of 6% of the pre-test and post-test and obtained The sig value is 0.001 so there is significant influence method exercise small-sided games with use pyramid principle. Based on the data obtained researchers is existence significant influence method exercise small-sided games with use pyramid principle against improvement ability Power stand aerobics.

**Keywords:** Football, Small sided games, Aerobics, VO2Max

### INTRODUCTION

Systematic in game football at the moment This start changed in a number of year final with style play more dynamic and more fast. If you see the years previously football at the moment This Can it is said Modern football is characterized by duration more ball contact short with increased passing rate as well as density more players high, and more transitions fast and improvement speed games, which are proven with increases of 15% and 35% respectively in ball speed and passing speed (Ancira-Moreno N; Lamadrid-Figueroa H, 2002) . during match official players football completed 9 and 14 km, so need for coaches For increase skills technical, tactical and stimulus physiological during training must developed with use method Small sided games (SSG) in game football (Owen et al., 2020)

Durability aerobics relate with ability somebody in do activity in long duration and avoid opportunity occurrence tired, then from That in game football, fitness physical condition is very dependent on capacity aerobics, during match professional football, players go through total distance 9–14 km (Mohr et al., 2003) With Thus, the capacity aerobics increase distance traveled during matches, number of sprints, and interactions with the ball . While Power anaerobic resistance related with ability explosive body in move fast and repeat repeat with existence interlude time Rest. Somebody with capacity good anaerobic, will own efficient heart, effective

lungs, circulation good blood anyway, so muscles capable Work in a way Keep going continuously without existence excessive fatigue (Giriwijoyo, 2017).

Therefore That known that competition football emphasizes metabolism aerobic and anaerobic while demand activity intensity high (Selmi et al., 2020) Because player football will Lots do explosive movements in a way Keep going continuously with duration long time in A This is what makes the match intensity in game become more high, with matter the Already can confirmed that need Power stand good aerobics and anaerobics become very important capital For play football in this modern era.

One of the more effective training strategies fun, effective, and economical time For increase performance resilience aerobics player is training game side small or small sided game (SSG), which is simultaneously involving patterns and types movement actual, awareness technical-tactical, and fitness physical below condition simulated games . Small side games too present In a way as method training that has been develop from exercise conditioning without the ball developing capacity physique , to methods and exercises new capable at a time increase ability physique as well as skills technical and tactical, special For demands match modern football.

Small-sided game is the right exercise, many coach has evolve going to training physique integrated with objective For maximize time training during player controlling the ball . **Small sided games are the most used** and innovative For train, because in a way simultaneously Lots skills used and resemble conditions at the time actual match, analysis This give a number of indications and recommendations for the coaches team football (Francesco Sgrò et al., 2018).

**1** SSG is also called as a conditioning game based skills or training game -based in football with a number of small players in every side, played on a larger field small from field normal and with manipulated rules. Use exercise This in a way consistent during a number of Sunday possibility will push change in fitness status they (Hammami et al., 2018) .

System pyramid exercises have implementation in system load, burden for the initial set light and in the next set increase heavy. (Nurtamami & Sulistyarto, 2022) Number of sets in system pyramid restricted up to 5 sets, Rest between each set is 3 to 5 minutes. On the system This athlete lift burden from greater intensity low with test little. (Malinda et al., 2019) (Farhiah et al., 2019) The pyramid method is one of the system exercises that are viewed own best effect in improvement power. novelty in study This is use pyramid method in increase ability Power stand aerobics in sport football use small side games practice.

#### **METHOD**

The method used in this research is the experimental method with the design in this

research, namely Pre-Experimental Design with a pattern (pre-test, post-test design). Ten player Academy football Persib Bandung under 16 years old participate in study. This instrument in study is YoYo intermittent recovery test level I which has been tested validity and reliability (Deprez et al., 2014).

YoYo intermittent recovery test level I run back and forth with 20 meters distance between the start line, turn and finish, speed will be more increasing controlled by audio that sounds like a tape recorder, every round sample run has time Rest active for 10 seconds which consists of 2x5 m jogging, When the sample fails 2x reach the finish line appropriate time then the sample stops. No may continue. Procedure do YoYo recovery level 1 consists of from 4 runs with speed of 10-13 km/h (0-160 m) and 7x runs at 13.5-14 km/h (160-440m), after That speed gradually increased in speed by 0.5 km/h after 8 runs ( i.e. after 760,1080,1400,1720 m, etc. ) until fatigue. The runners run on a marked path with cone or cones with 2 meters wide and 20 meters long, another cone is placed 5 meters behind the finish line For mark distance during recovery. Before sample test Warm up 6-20 minutes. (Krustrup et al., 2003)

The program provided in study this is 15 meetings for 5 weeks with divided into 3 sessions exercise per week with one of them principle exercises that must be done apply that is principle progressive overload with method raise the number of volumes in the set is Exercise duration. Amount player in game This as many as 5v5 and with an area of 35x40 and with 3 repetitions in 1 set and technique data analysis in research This use statistical test to test data values start and test end. Analysis done use help IBM software ( SPSS ) Statistics version 26.

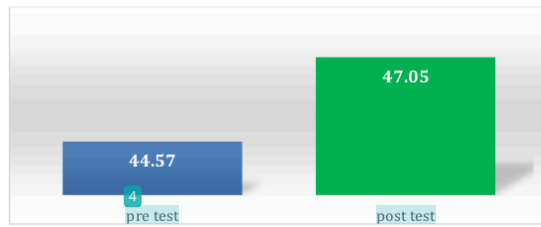
## RESULTS AND DISCUSSION

### Result

From the results of research on the effect of small-sided game training using the pyramid principle on increasing aerobic endurance capacity. Measurements using the YoYo intermittent recovery test level I, the average sample of researchers experience improvement in ability aerobic, average ability aerobics When the pre-test is medium and after treatment with small sided game program with the principle of the average pyramid occurs rise and fall category Good.

**Table 1. YoYo intermittent recovery test level I norms (Saputra et al., 2023)**

No	Mark	Classification
1	48.1-53.9	Very well
2	44.2-48	Good
3	41.0-44.1	Currently
4	37.1-40.9	Not enough



**Figure 1. Pre-test and post-test ability diagram aerobics with use YoYo intermittent recovery test level I**

Study This aim For know influence from exercise *small-sided game* with pyramid principle. Figure 1 shows that the results of the diagram above there is significant influence method exercise *small-sided game* with use pyramid principle against ability aerobics with use *YoYo intermittent recovery test level I*. Pre-test results with an average VO<sup>2</sup>Max capacity of 44.57 and post-test results with an average VO<sup>2</sup>Max capacity 47.05.

**Table 2. Paired Test**

<sup>8</sup>  

Paired Sample t test					
	Mean	Standard Deviation	Std. Error Mean	df	Sig. (2-tailed)
Pyramid	24,80000	15.33188	4.84837	9	< 0.001

<sup>16</sup> Table 1 shows the paired sample t-test pretest-posttest pyramid data, that from the data obtained sig value (2-tailed) obtained as big as < 0.001 then reject H1 or accept H0, meaning there is significant influence from exercise *small sided game* against increase VO<sup>2</sup>Max.

## Discussion

Football is sports that are dynamic because in sports the nature is dynamic Lots there is movement like change direction, acceleration and jumping. (Hartoto, 2018) lots of sports in demand by people all over the world very much complex Because the players need skills technical, tactical and ability physique. (Helgerud et al., 2001) ability good physique own great opportunity For reach high achievement. (Fadli et al., 2023 ) Because in game football, power stand aerobics, speed, agility, strength and power explosion assessed as indicator determinant superior performance so that existence demands effort increase Power stand appropriate aerobics with characteristics game football with use method exercise *small sided game*, form exercise *Small sided games* are played in a larger area. small, with modified rules and with more players A little than game football In fact. (Arianto & Setyawan, 2019) Training method very complex *small sided game* when used as method soccer training Because existence element skills techniques, tactics and skills condition physical. *Small sided games* a lot used coach For develop

Technical skills, tactics and the main ones used For Power resistance and repair condition physical. (Setiabudi, 2016) with situation game with the amount not enough of 11 ( eleven ) and the size of the field more small. (Priambodho, 2021 ) because those are the players required Keep going move in a way fast moment condition attack or endure in more games small from usually. (Nugroho, nd)

*Small sided games* have function For stimulate improvement intensity compared to with field full, In addition to increasing intensity, treatment exercise *small sided games* can also be cause change behavior tactical in playing. (Nugroho, nd) exercise *small sided game* can trigger response beat heart around 90% to 95% of beat heart maximum. (Kelly & Drust, 2009) Conditioning in form many *small sided games* done as activity For increase health and performance physical, because in a way physiological exercise *small sided game* can increase pulse heart, acid existing lactate in blood as well as Can increase *rating of perceived exertion* (RPE) which can give benefits to players when do activity moment exercise and when compete in duration a longer time, because That *small sided game* becomes more popular in develop ability aerobics. (Nugroho, nd)

Practice method pyramid is exercise with method raise burden moment do one set. Along with addition load, amount repetition reduced. on the system This athlete do burden from more intensity low Then in a way gradually going to to more intensity high and followed with subtraction amount repetition. (Wibowo et al., 2020) (Prasetyo & Nasrulloh, 2017) This pyramid method is very popular used by coaches in improve and develop exercise strength. (Indra & Kiram, 2020 ) because That news in study This that researchers use pyramid method for increase ability Power stand aerobics in sport football with use form exercise *small-sided games*. From the results study proven the pyramid principle can increase an average of 6% of ability Power stand aerobics with form exercise *small-sided game*.

## CONCLUSION

Small sided game training applied with the pyramid principle is proven effective in increase Power stand aerobics athlete young. method This can made into an attractive and effective alternative even novelty in the training program For increase fitness physique athletes, small side game training with use the pyramid principle can increase ability Power stand aerobics. Research more carry on required For explore other possible variables influential, such as ability anaerobic or improvement technique games and strategies.

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