WATER POLO GAME: A COMPARATIVE STUDY OF MEN'S NATIONAL TEAM BETWEEN INDONESIA AND SINGAPORE IN THE 28TH SEA GAMES 2015

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui statistik pertandingan dan aktivitas para pemain dari tim nasional polo air Indonesia dibandingkan terhadap tim nasional polo air Singapura pada Sea Games ke-28 tahun 2015. Data penelitian dikumpulkan dengan menggunakan instrumen yang diadopsi dari studi Escalante dan Platanou yang meneliti mengenai statistik pertandingan dan aktivitas gerak pemain polo air. Hasil penelitian menunjukkan bahwa tim nasional polo air Singapura memiliki jumlah gol lebih banyak dan memiliki jumlah aspek pelanggaran yang lebih rendah dibandingkan dengan tim Indonesia. Selain itu, timnas Indonesia lebih banyak bertahan dan tidak melakukan penyerangan ketika bertemu lawan. Sebaliknya, pada tim Singapura tim pertahanan tidak banyak melakukan kontak fisik ketika bertemu dengan lawan.

Kata kunci: olahraga, polo air, sea games

ABSTRACT

The purpose of the study was to find out match statistics and the activity of the players of the Indonesian water polo national team and the Singapore water polo national team. The population and samples were the Indonesian men's water polo national team and the Singapore men's water polo national team that competed in the 28th Sea Games in 2015. The data in this research were collected using an instrument adopted from the study of Escalante and Platanou relating to match statistics and motion activity of water polo players. The results of the study show that the Singapore water polo national team has a greater number of total goals and has a lower number of aspects in fouls. In addition, Indonesian national team, many swimming craw offence position, when defense position is much contact with opponent. In constrast, Singapore national team offence position is not much swimming crawl and defense position does not occur much contact with opponent.

Keywords: sport, water polo, sea games

Introduction

Water polo is a team of water sports, which can be considered a combination of swimming, wrestling, soccer and basketball (Snyder, 2008). The SEA Games (Southeast Asian Games) is a sports event held every two years and involves 11 Southeast Asian countries and at the 28th SEA Games competes 36 sports, one of which is water polo. The achievements of the Indonesian water polo team can be assessed very well at that time because the Indonesian water polo in the Asian Games event won four bronze medals and once won a silver medal and was won by the GANEFO Indonesia could get a gold medal. But in Southeast Asia, Indonesia has not been able to break the dominance of the Singapore water polo team as a Sea Games gold medalist. From the last 3 Sea Games, 2011, 2013 and 2015, Indonesia was only able to win a silver medal as the highest achievement in the Sea Games event and never won a gold medal during the Sea Games.

There are four aspects of the exercise that need to be considered and trained: physical training, technical training, and mental training. To achieve sports performance the need to acquire specific skills and physiological complex adaptations during preparation is

highlighted". In addition, an analysis of the running of a water polo match is needed to review the course of the match to see the potential and disadvantages of each athlete. As we know in sports, we have used analysis as a guideline for designing strategies to win a match. Data from this analysis can also be a report material for team management in navigating the competition being carried out (Andrian, 2014).

Water polo was developed in the mid-nineteenth century in England by William Wilson. Water Polo is one of the oldest sports teams of the modern Olympic Games, with European teams' teams mainly winning the golden medals (Lupo et al., 2011). Due to different regulations some European countries did not participate. In 1914, most of the US team agreed to adjust to international regulations (D'Auria & Gabbett, 2008). Water Polo is the longest running sports team in the modern Olympics, having made its debut in the 1900 Paris Olympic Games". Water polo games are handball games that are played on the surface of the water. The number of body segments involved with each shot, it is important that more extensive extension of caterpillar attention is crossed a range of water polo shots in the implementation of the arm is more

dominant in the game such as when shooting, passing and swimming, all members of the body are allowed to play the ball but there are certain rules that are applied in the game such as not allowing the ball to use both hands except the goalkeeper and not being allowed to hit the ball with a fist (Yaghoubi, et al , 2014).

Number of body segments involve ved with each shot, it is clear that more upper extremity musc reports are examined a cross of a range of water polo shots" in the implementation of the use of more dominant arms in the game such as shooting, passing and swimming, all limbs are permitted for the ball but there are certain rules that are applied in the game such as cannot hold the ball using both hands except the goalkeeper and not allowed to hit the ball with a clamp (Yaghoubi, et al , 2014). Like most sports, the main purpose of water polo is to simply enter as many balls as possible to win the game. However, the strategy used to score goals is far more complicated. Polo is a team sport that requires cooperation and not individually to successfully enter a ball or win a match. Strategy in the game is very necessary, one of which is offense and defense strategy. However, the strategies used to score the goals are much more complex. In addition, the water polo

is a sport team that requires working together rather than individually to succeed. Teams usually attack or defend six direct players with three players drawn 2 meters and 3 players around the 5 meter line. This formation combines different movements to achieve the highest percentage of shots to score attacks, and keep the area alone so as not to concede when defending. There is a lot of teamwork and players must be familiar with each other how their teammates want their passes.

Determination of the strategy itself is based on problem solving analysis. The analysis here is the analysis carried out in water polo matches. We understand that analysis is an attempt to find tactical details and individual or group strategies, as well as being used by tactics as part of determining strategies and tactics needed in water polo sports. Therefore, in a match or championship, the need for documentation or records of matches then the source can be analyzed, recorded and evaluated. Understanding the meaning, purpose, and importance of tactical analysis, will have a framework and references before moving on to the next section. Many study has been conducted in analysing a water polo players which is focusing on exploring the time-motion of

international water polo player (Platanou, and Geladas, 2006). This research found that optimal designing of the stimulus training in water polo should be based on the players' activities during the game as well as the physiological demands that arise from these activities (Platanou & Geladas, 2006). Here, they divided players into three categories, namely forwards (forwards), center defenders (center defenders), and attackers.

A study conducted by Yolanda Escalante in 2012 gives an overview of statistics and compares the statistics of teams that have won and teams that have suffered losses (Escalante, et al., 2012). In the research that the author will do to obtain statistical data the authors will observe four matches from the Indonesian men's water polo national team from the start of the elimination round to the final and the authors will observe four matches of Singapore's men's water polo national team from the start of the final until the final total matches are observed eight matches. Research conducted by Platanou, T. Time-Motion Analysis of International Level Water Polo Player. Providing an analysis of the activity of water polo players while competing, Platanou analyzes the FINA CUP match in Athens 1997, Platanou measures the activity of

water polo players by classifying players into three positions (center forwards, attackers and center defenders). The results of the study show that the frequency and duration of player activity depend on the position of the player (Platanou & Geladas, 2006). It was found that the frequency and duration of different activities depend on players' position. Menanwhile, research conducted by Yolanda (Escalante, et al., 2012) shows Water Polo Game-Related Statistics in Women's International Championship provides an overview of water polo match statistics and compares match statistics for teams that have won and suffered losses. The results showed that the team that won the victory had better values in aspects (center goals, power play goals, 5-m goals, counterattacks goals, and assists) and had lower values in aspects of fouls. Statistics will differentiate the winning and losing teams. Winning teams have higher values for offensive playing aspects (center goals, power play goals, 5-goal goals, counterattacks goals, and assists) and lower values for turnover fouls. Also winning teams have higher values for defensive actions (steals, blocked shots, goalkeeper-blocked shots, goalkeeper-blocked inferiority shots, and goalkeeper blocked 5-m shots).

Other research provides an overview of the analysis of the physiological demands of water polo players during a match (D'Auria, S. & Gabbett, T., 2008). This team analyzed the video of international women's water polo matches at the 13th FINA championship Women's Water Polo World Cup in Perth in 2002. From the results of the study it was found that midfielders (center and center back) duration of wrestling was longer and duration of swimming more little compared to outside players. Whereas the duration of the duration of the player is less physical and the duration of swimming is longer than the center (center and center back). As the shorter bout average duration for swimming in outside players and longer average bout duration of wrestling in center players. Outside players have longer and more frequent levels of swimmers who have greater average duration than other level 3 activities

In Indonesia, especially in the All Indonesia Swimming Association (PRSI) there is no data on the analysis of motion activities and match statistics. The results of this study were applied in player motion activity data and game statistics during matches. Therefore the results of this study are more specific and more appropriate for each individual who has different needs

even though water polo sports are a team. Based on this observation and experience, the author wants to explain and obtain data or scientific evidence from the research entitled Water Polo Match Analysis of the Indonesian National Team of Men and National Water Polo of Singapore Son at the 28th Sea Games of 2015.

Methods

1. Participants

The population used in the study was 26 athletes consisting of 13 athletes from the men's Singapore national water polo team and 13 athletes from the Indonesian men's water polo national team. The entire population in this study amounted to 26 athletes, which means less than 100. Based on these opinions, all members of the population must be taken, thus the sampling or sampling technique used in this study is total sampling.

2. Procedures

The population used in the study was 26 athletes Both Scoring sheets table 3.1, table 3.3 are used to record and observe video recordings of matches of the Indonesian water polo national team and the Singapore water polo national team. 8 matches were observed, consisting of 4 matches for the Indonesian water polo team and 4 matches for the Singapore

water polo team during the 28th Sea Games.

1) Data Collection Procedure

Scoring sheet table is a scoring sheet to classify the motion activity of water polo players by calculating the number and average time obtained to observe one match requires 6 observers, each observer specifically observes one activity.

2) Data Collection Procedure

Scoring sheet table is a match statistics scoring sheet to collect data in the form of numbers by recording the number / percentage of successes and failures during a match. In its implementation, one observer is needed for one match.

3. Instruments

The instrument used to collect data is using a scoring sheet with several variables. In this study the authors used three scoring sheets, the first of which was to look at the player's movement activities, the second and third to see match statistics.

1) Scoring sheet to see player activity

In looking at the activity of water polo players when playing there are seven observed variables then recorded as revealed by Platanou ((Platanou & Geladas, 2006)).

2) Scoring sheet to see statistic matches using variables revealed by Escalante, et al. (2012, p. 476).

Measuring instruments using a scoring sheet are facilities that make it easier for the author to obtain and document data. In addition to the scoring sheet above, the author uses audio-visual videos.

3) Software KINOVEA

To assist in analyzing match videos the author uses the kinovea application, the use of the kinovea application serves to record the time of each water polo player's activity when competing.

Results and Discussion

Comparative study of the activity of the Indonesia Men Water Polo team to the Singapore team shos that Indonesia does 22 offensive fouls and 34 exclusions, this is a violation that causes losses to the team if a player does offensive fouls, namely violations committed when attacking / offence, then possession will move to the opponent (Table 1). For exclusions is a serious violation if a player commits the violation, it will be issued temporarily and the team must play without a player issued for 20 seconds, Indonesia records 34 exclusions, which means that on average every Indonesian match fouls about 8 times.

Table 1. Statistical Analysis of the Indonesian Water Polo National Team Match at the 28th Sea Games of 2015

Name of Tim	Indonesia

Competition		Sea Games 28th 2015
Goals Shots	✓	46
	x	65
Action goals	✓	9
	x	19
Centre goals	✓	13
	x	10
Power play goals	✓	10
	x	16
5-m goals	✓	3
	x	18
Penalty goals	✓	3
	x	0
Counter attack goals	✓	1
	x	0
Assists		16
Offensive fouls		22
Steals		16
Blocked shots		0
Won sprints		5
Timeouts		11
Exclusions		34
G.B shots	✓	41
	x	30
G.B Action Shots	✓	13
	x	7
G.B centre Shots	✓	8
	x	3
G.B Inferiority shots	✓	9
	x	7
G.B 5-m shots	✓	2
	x	2
G.B penalty shots	✓	3
	x	4
G.B Counter-attack shots	✓	1
	x	2

Comparion of the results of the Singapore national team matches from four matches during the Sea Games k2-28 in 2015 was shown in Table 2. From the data it can be seen that the Singapore water polo national team made a total of 134 goals shots with as many as 61 shots to goals, this is the number of goals the most obtained compared to the goals obtained by other teams. 61 goals created by the Singapore national team are obtained from 26 goals, center 13 goals, power 10 goals, 5 goals, 5 goals, Penalty 1 goals and 8 goals counter attack. Goals created from the center are the highest percentage, as many as 42% of the goals of the Singapore national team were created through the center.

Table 2. Statistical Analysis of Singapore Water Polo National Team Match at the 28th Sea Games in 2015

Name of Tim		Singapore
Competition		Sea Games 28th 2015
Goals Shots	✓	61
	x	73
Action goals	✓	26
	x	43
Centre goals	✓	13
	x	14
Power play goals	✓	10
	x	4
5-m goals	✓	4
	x	10
Penalty goals	✓	1
	x	1
Counter attack goals	✓	8
	x	3
Assists		15
Offensive fouls		19
Steals		27
Blocked shots		2
Won sprints		3
Timeouts		2

Exclusions		26
G.B shots	✓	24
	x	16
G.B Action Shots	✓	4
	x	5
G.B centre Shots	✓	3
	x	4
G.B Inferiority shots	✓	7
	x	5
G.B 5-m shots	✓	7
	x	
G.B penalty shots	✓	
	x	2
G.B Counter-attack shots	✓	1
	x	1

Analysis of match statistic of the Indonesian national team and the Singapore national team at the 28th Sea Games in 2015 found that almost all various aspects of the Singapore national team performed better than the Indonesian national team (Table 3). In four matches during the 28th Sea Games in 2015, the total goals were created by the Singapore national team as many as 134 goals shots and the Indonesian national team had 111 goals shots, of which the Singapore national team more often attempted shots on the opponent's goal.

Table 3. Comparative Analysis Results Match Statistics of Indonesia and Singapore National Team at the 28th Sea Games in 2015

| Competition	Sea Games 28th 2015	
Name of Tim	Indonesia	Singapore
Goals Shots	✓ 46	61
	x 65	73
Action goals	✓ 9	26
	x 19	43
Centre goals	✓ 13	13
	x 10	14
Power play goals	✓ 10	10
	x 16	4
5-m goals	✓ 3	4
	x 18	10
Penalty goals	✓ 3	1
	x 0	1
Counter attack goals	✓ 1	8
	x 0	3
Assists	16	15
Offensive fouls	22	19
Steals	16	27
Blocked shots	0	2
Won sprints	5	3
Timeouts	11	2
Exclusions	34	26
G.B shots	✓ 41	24
	x 30	16
G.B Action Shots	✓ 13	4
	x 7	5
G.B centre Shots	✓ 8	3
	x 3	4
G.B Inferiority shots	✓ 9	7
	x 7	5
G.B 5-m shots	✓ 2	7
	x 2	
G.B penalty shots	✓ 3	
	x 4	2
G.B Counter-attack shots	✓ 1	1
	x 2	1

In terms of productivity goals, the Singapore national team was able to get as many as 61 goals from 134 goals shots, and the Indonesian national team was able to get as many as 46 goals from a total of 111 goals shots. The lost possessions occurring in Indonesian team might cause

by divergent offensive abilities to maintain ball possession and defensive skills to steal the opposite ball possession (Lupo et al, 2012; Platanou et al., 2007; Platanou, 2006; Platanou & Gelandas, 2006).

The number of goals is very important because the 28th game system uses competition where all teams meet if there is a team that wins and the same point will be calculated based on the total number of goals. The process of making Singapore goals better, Singapore goals recorded were obtained from action goals 26 goals,

center 13 goals, power play 10 goals, 5-m 4 goals, Penalty 1 goals, and 8 attack counter attacks. The goals of the Indonesian national team are obtained from action goals 9 goals, center 13 goals, power play 10 goals, 5-m 3 goals, Penalty 3 goals, and counter attack 1 goals.
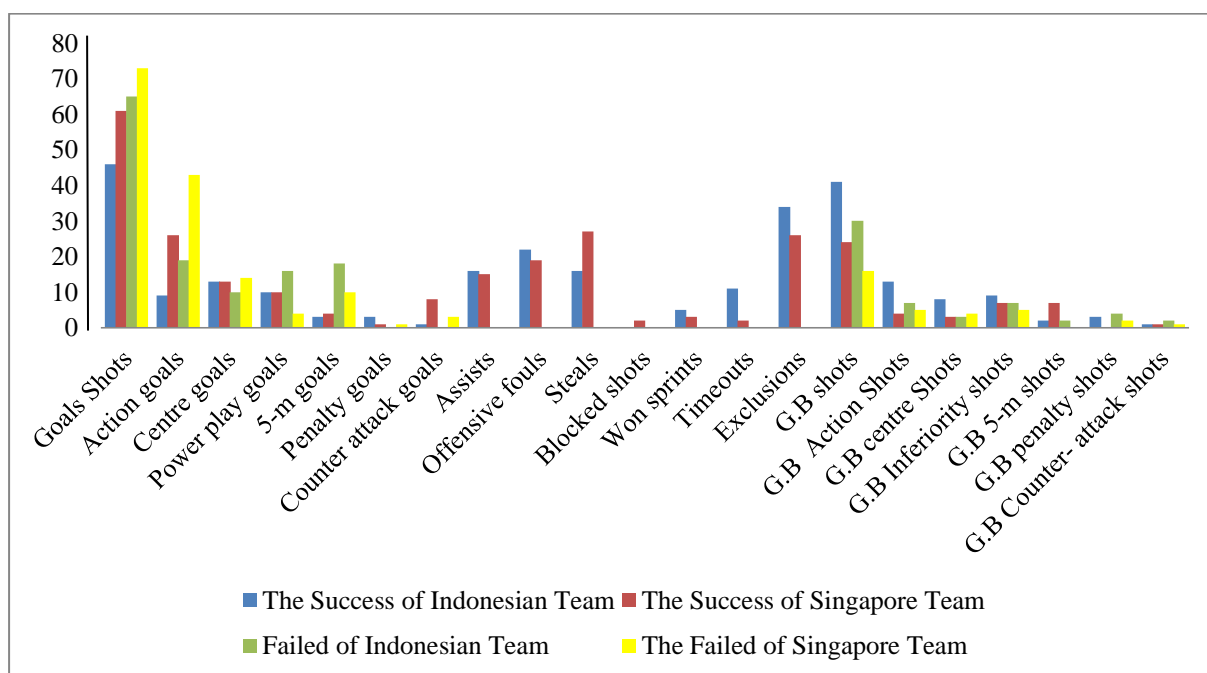
Figure 2. Statistical Comparison of Indonesia and Singapore Matches at the 28th Sea Games in 2015

Based on the results of analysis of match statistics and analysis of motion

activities that have been described there are several aspects that need to be improved

1) The productivity goals of the Indonesian national team need to be

improved. The Indonesian national team is only a penalty goals and draw center goals and power play goals. There are 3 scoring processes that need to be improved: a) Action Goals, which are incoming balls printed by offense players (players other than centers); b) 5-m Goals, which are incoming balls that can be printed outside of 5 meters (goals scored from direct shot); c) Counter Attack Goals, which are incoming balls that can be printed during a counter attack.

2) Reducing the number of offensive fouls and fouls exclusions. The Indonesian national team performs 22 offensive fouls and 34 exclusions, this is a type of violation that results in losses for the team, if a player does offensive fouls ie violations committed when offensive positions then possession will move to opponents and exclusions fouls are a serious offense if a player commits the offense will be temporarily released and the team must play without a player who is issued for 20 seconds.

3) The surviving transition needs to be improved. The transition to attack and defense of the Indonesian national team is not balanced. When making a transition, it lasts slower than when making an attack transition.

4) Transition attacks attacking with the ball / dribbling Indonesian national team is lacking. The number of attacking with the ball / dribbling of the Indonesian national team lost to the number of attacking with the ball / dribbling Singapore national team. Attacking with the ball / dribbling is very important in water polo games, Attacking with the ball / dribbling is the beginning of the attack process to function as a regulator of attacks to be more varied.

Conclusion

Based on the results of data processing and analysis, the conclusions from the research on the analysis of the match of the Indonesian men's water polo national team and the Singapore national men's water polo team at the 28th Sea Games in 2015 are as follows: 1) In the 28th Sea Games in 2015, the results of the study showed that the Singaporean national water polo team had more total goals than the total goals obtained by the Indonesian national water polo team, and had better value in the aspect of scoring goals. (action goals, 5-goals, counter attacks goals, and assists) and have a lower number of aspects in

fouls; 2) In the 28th Sea Games in 2015 the Indonesian water polo national team was male when in the position of attack / offence there were many swimming crawls. When in a defensive position / defense there is a lot of physical contact (contact with opponent) in other words when defending the Indonesian national team conducts strategy press zone; 3) The 28th Pad Sea Games in 2015 the men's Singapore water polo national team when in an offensive position did not make a lot of swimming crawls and played positions. When in a defensive / defense position there is not much physical contact (contact with opponent) in other words when the Indonesian national team defends its strategy zone marking.

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