

# TECHNICAL SKILLS DIFFERENCES BETWEEN WINNING AND LOSING MATCH IN SEPAKTAKRAW THAILAND LEAGUE

Kacha Udomtaku<sup>1,3</sup>, Kurusart Konharn<sup>2,3\*</sup>

<sup>1</sup> Exercise and Sport sciences program, Graduate school, Khon Kaen University, Khon Kaen, Thailand

<sup>2</sup> School of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen, Thailand

<sup>3</sup> Research Center in Back, Neck, Other Joint Pain and Human Performance (BNOJPH), Khon Kaen University, Khon Kaen, Thailand

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## Abstract

The analysis of technical skills in sepaktakraw player during competition is important guidelines for planning training program. The aim of this study was to compare the differences of technical skills between winner and loser team in Sepaktakraw Thailand League. The video was record in 28 sets (14 matches) in Sepaktakraw Thailand League players by two hi-speed cameras video behind the court and perfect view of the side court. The 13 technical skills (service in, service ace, service out, services net, serve all, success first ball, unsuccessful first ball, successful feeding, unsuccessful feeding, success strike, unsuccessful strikes, successful blocking, and unsuccessful blocking) had evaluated. Independent sample t-test was performed to compare between winning and losing team. Results showed the winning team was significant differences with losing team for serve net, success strike and success blocking ( $p < 0.05$ ). These findings provide valuable data for trainers and athletes for training in some specific essential skills as important factors for winning in a match.

**Keywords:** Technical skills, Winning, Losing, Sepaktakraw, League

## INTRODUCTION

Sepaktakraw is a kind of sport combining skills of playing ball with gymnastic and quickness as same as volleyball. Parts of the body including head, chest, feet, and thighs are allow players to use in order to move the ball over the net on the court with the same size as double badminton court (Jawis et al., 2005). The defense team has to kick sepaktakraw ball towards the front of the net, trying to make their 3 best hits, and beat the opponent by setting and spiking the ball (International Sepaktakraw Federation, 2009). In one team, consists of 3 players with different positions (Abdul Rashid Aziz, 2003) to scores 21 points for the winning in each set. The first team who reach 2 winning sets is the winner of the game (The Takraw association of Thailand, 2014). Currently, Thailand is best ranked team in the world (Sulaiman et al., 2014). Moreover, all Thailand national team players are participated in the Thailand League.

There was an analysis of players' capability during playing in the game using modern tool for both individual and team playing sports (Vaz et al., 2010) in order to provide basic information regarding basic variables, factors, technical skills, statistics of playing results in training and competition (Gñmez et al., 2009). The analysis of skills and capability of the players during competition is effective variables regarding the factors in game (Molik et al., 2017) and can

identify variables between the winner and loser team (Ibáñez et al., 2009) either their own team or opponents (Manrique & González-Badillo, 2003) (Mara et al., 2012) (Lago-Peñas et al., 2011). Therefore, the results of the study may benefit for coaching to train planning and also developing strategies in competition game.

According to volleyball which is played ball over the net as a sepaktakraw do, a previous study indicated that technical skills is one of the most important variables that associated with winning or losing in the matches of male volleyball in Olympic Game 2008. It was found that the team to make score from serving (5.11 balls), from blocked opponent hit (7.48 balls) and make score from receiving the ball (51.79 balls) were all affective factors to make the team win in male volleyball in Olympic Game 2008 (Patsiaouras et al., 2011). In University Elite Sepak Takraw Tournament of Thailand showed team which manages to reach the final points in the normal game can win in the set. It also was found that, in one match, the winning team performed services in  $20.9 \pm 4.14$ , services out were  $4.00 \pm 1.0$ , and service aces  $0.71 \pm 0.49$  balls compared to the losing team, which  $18.6 \pm 2.8$ ,  $8.4 \pm 2.8$  and  $0.29 \pm 0.49$  respectively. In term of blocking, the winning team performed  $4.1 \pm 1.8$  successful blockings compared to the losing team that only did in  $3.0 \pm 2.6$  balls. The values presented reference for coaches to determine teams' weaknesses and strengths (Sulaiman et al., 2014). As sepaktakraw being affected by frequent

changes of rules for playing, but there has no previous study conducted in Sepaktakraw Thailand League which the highest league in Thailand. The objective of this research was therefore to compare the differences technical skills between winner and loser team properly fit into the current rules in Sepaktakraw Thailand League 2019.

**METHODS**

**Procedure**

An hour before the competition, all players of Sepaktakraw Thailand League 2019 were measured their anthropometric data. Then, the game were recorded during the simulating game, 28 sets (14 matches) by two camera video (Canon kiss X4, Japan) behind and sides of the court. Researcher was selected the 2 winning matches for analysis excepted the extra. To establish reliability of data collected, researchers were double-checked observing on technical skills variables (Intraclass Correlation Coefficient : ICC = 0.95). The data were collected via Kinovia

**RESULTS**

**Table 1.** Baseline characteristic of the participants.

	Server			Feeder			Striker		
	Win (n=12)	Lose (n=12)	p-value	Win (n=12)	Lose (n=12)	p-value	Win (n=12)	Lose (n=12)	p-value
Aged (years)	26±3.26	26.14±5.08	0.361	30.28±8.28	26.42±4.61	0.041*	25.42±4.57	23.82±3.19	0.16
Experience (years)	4.71±2.49	4.42±1.51	0.22	5.57±3.77	4.8±2.26	0.046*	4.28±2.05	3.14±1.86	0.46
Dominant leg (n)	R=11, L=1	R=12	-	R=12	R=12	-	R=10, L=2	R=11, L=1	-
Weight (kg.)	74.37±14.61	78.58±8.07	0.071	65.78±9.92	65.41±5.97	0.12	72.7±7.46	69.53±6.2	0.711
Height (cm.)	180.1±5.41	179.77±4.1	0.165	165.36±3.26	166.82±6.1	0.21	174.39±4.37	173.21±6.19	0.361
Body fat (%)	10.92±5.8	14.25±3.37	0.031*	13.14±5.34	13.12±3.6	0.168	12.1±3.53	11.91±3.56	0.764
Waist circumference (cm.)	80.17±10.1	81.41±5.59	0.92	79.02±10.13	79.19±4.98	0.151	68.9±21.77	77.83±5.48	0.047*
Length of leg (cm.)	94.37±3.83	95.97±3.52	0.151	87.2±2.91	86.82±4.6	0.073	93.67±3.9	91.91±4.94	0.14

\* Significant level at p<0.05, \*\* Significant level at p<0.01, R= Right side, L=Left side

In table 1, the participants' characteristics as means and SD between the winning and losing team. The results presented the significant difference on body fat (p<0.05) in the server. The feeder of winning team was older and had more experiences than the losing team (p<0.05). In addition, the striker in losing team had waist circumference in greater than the winning team (p<0.05).

0.8.15 program (<https://www.kinovea.org/download.html>). There were 13 technical skills as the previous study (Sulaiman et al., 2014); service in, service ace, service out, services net, serve all, success first ball, unsuccessful first ball, successful feeding, unsuccessful feeding, success strike, unsuccessful strikes, successful blocking, and unsuccessful blocking. This study was approved by the ethical committee of Khon Kaen University #HE622157.

**Statistical analysis**

The analysis was expressed by using mean and standard deviations for the baseline characteristics and all technical skills. Differences in movement activity with different positions (server, feeder, and striker) were analyzed using a One-way analysis of variance (ANOVA) and Bonfereroni multiple comparison. Independent sample t-test was used to compare the differences between the winning and the losing team. The statistical significance was set at p<0.05.

Table 2 shows the winning team was significant difference for serve net, success strike and success blocking (p<0.05) compared with the losing one. The results of positive indicators showed that the technical skills such as service in (26±4.69), service ace (2.78±2.29), successful first ball (21±6.78), and successful feeding (20.42±7.12) have the great chances of winning.

**DISCUSSION**

According to player positions, the feeders were older and had more experiences, and following by server and striker, respectively. While, they needed to move within short period for setting the ball, but jumping, hitting the ball, and blocking had less found during the match. Therefore, they may having some less injury. The feeders played necessary role in making good decision to predict the direction of the ball,

playing experience play a major role for being setters (González-Silva et al., 2017). While the server has the maximum height, length of dominant leg and weight among those three positions, because taller players can gain more advantage to control the serving ball (Singh & Sandeep, 2015). Feeder has smaller size and lower balance point appropriate for changing the direction of movement rapidly (Duncan et al., 2006). In contrast, the percentage of fat is higher than other places, this may be associated to participation in a short-moving game.

**Table 2.** Differences technical skills between the winning and losing teams.

	Winning		Losing		p-value
Serve in	26±4.69	Min 16 Max 36	24.06±6.31	Min 12 Max 34	0.64
Serve ace	2.78±2.29	Min 3 Max 7	2.41±1.08	Min 1 Max 4	0.56
Serve out	2.42±2.74	Min 4 Max 6	2.64±2.41	Min 4 Max 8	0.93
Serve net	5.4±3.02	Min 3 Max 13	8.78±4.24	Min 5 Max 15	0.01*
Serve all	37.84±3.34	Min 30 Max 42	37.92±3.61	Min 30 Max 42	0.44
Successful first ball	21±6.78	Min 10 Max 35	20.92±7.2	Min 7 Max 33	0.99
Unsuccessful first ball	5.92±3.42	Min 2 Max 10	7.78±2.5	Min 3 Max 12	0.19
Successful feeding	20.42±7.12	Min 11 Max 32	20.34±6.56	Min 8 Max 31	0.36
Unsuccessful feeding	0.53±0.74	Min 1 Max 5	0.75±0.96	Min 3 Max 7	0.56
Successful strike	15.28±5.6	Min 7 Max 25	13±4.54	Min 5 Max 23	0.04*
Unsuccessful strike	5.56±2.88	Min 2 Max 10	6.7±3.18	Min 4 Max 12	0.57
Successful blocking	4.28±2.66	Min 0 Max 6	1.64±1.54	Min 0 Max 4	0.01*
Unsuccessful blocking	12.64±5.12	Min 7 Max 21	13.56±5.98	Min 7 Max 24	0.43

\* Significant level at p<0.05, \*\* Significant level at p<0.01, All variables were evaluated in time(s).

The main finding of this study was found that difference technical skills between winning and losing team are as follows: firstly, the importance of serve net indicate a high error with serve players, which was happed in quite often comparing with the total score match. For elite players in Sepaktakraw Thailand League 2019, attacking with serve is important since there was linked to the mistakes when serving and the ball do not cross over the net. Because they want to make the ball in the nearest to the top of net, in order that the ball can move fast and difficult to predict the direction. However, frequent unforced error serve can lead to the team in losing (Djurovic et al., 2009) because player loses in many points averagely (Vute, 1999).

Secondly, success strike is the main duty of striker to kick the ball to touch the court by escaping the block. Striker takes played a major role (15.28±5.6 times/match) in the team more than other 2 positions, and can up to 25 times in winning team. Interestingly, when comparing with the ratio of score per set, attacking in front of the net was differently specified by the standing area including left, middle and right of the net (Palao et al., 2007). Imagination of striker and good position of block are all effective factor to victory (Majlesi Ardehjeni et al., 2013). Consequently, in order to increase and remain the effective of strike, strikers should have a good physical fitness regarding to lower extremity power, muscular endurance, flexibility and

reaction time (Chen et al., 2018). Success strike can be made by the feeder and server as one of strategy which is difficult for the opponent to predict and able to make score as well. Finally, although blocking the opponent striking ball is difficult to perform (Castro et al., 2011) but successful blocking play some advantage for the team (Buscá & Febrer, 2012). It seems that block creates the situations to the striker in opponent team. Successful blocking of winning team was approximate 62% different with losing team.

A more frequent number of serve ace were demonstrated some important advantage over the opponent (O'Donoghue & Ingram, 2001). While many serving in has significant potential in winning (Silva et al., 2014) because when the ball go over the net, the opponent team needs to work harder to success in receiving the first ball, feeding the ball and strike (Marszałek et al., 2018). Interestingly, the error serving and unsuccessful first ball are related to the lower

possibility of winning, coaches and teams therefore should be put these points for training. These findings provide valuable informations to keep some essential skills during playing Sepaktakraw country league. Moreover, any lower divisions of athletes may apply these evidences to develop their ability as their league elite athletes.

## PRACTICAL ASPECTS

In modern sepaktakraw, the first serving ball is an important tool for attacking since it can score or even makes the difficulty for the opponent to play back. Coaches and athletic trainers should focus on training serve for sure and improve their tactics. Successful strike and successful blocking from striker can increase the possibilities for scoring.

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**Corresponding author:**

Kurusart Konham, PhD., PT.  
 Address: School of Physical Therapy,  
 Faculty of Associated Medical Sciences,  
 Khon Kaen University, Khon Kaen, Thailand 40002  
 Tel.: +66-81-7571147  
 Fax: +6643202085  
 Email: [mf\\_thailand@yahoo.com](mailto:mf_thailand@yahoo.com)