

Activity Profile during Action Time between Winners and Losers of Young Male Silat Tempur Athletes

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Abstract

Background and aim. The purpose of current study was to describe the detailed activity that occurs during the fight time of silat bouts between winners and losers among young male athletes in national silat tempur competition.

Problem. There is less research that specifically describes the activity involved in silat tempur that specifically describes the activity which contributes to the winning and losing in competition of this combat sport.

Methods. Seven publicly video recording of young male silat matches from various categories have been analysed using notational analysis technique by Shapie and co. [1]. Each video was observed twice separated by 48 hours. An intra-operator reliability study revealed that the total action has a high intra observation through intraclass correlation coefficient ($ICC \geq 0.95$). The ICC for the outcome actions were total Hit Target (HT) (1.00), total Hit Elsewhere (HE) (0.995) and total Miss Opponent (MO) (0.99).

Results. The result showed that the total HT was the highest percentage with 50.6%. The total HE recorded 32.5% and 16.9% for total MO. The winners (51%, 79 actions) performed more actions compare to losers (41%, 55 actions). The winners also recorded (69%, 48 actions) more than the losers (31%, 22 actions) on the overall outcome of HT. Hit target outcome was the main indicator to the result (contributes points) in silat match. The winners have higher frequency from the total outcome and total actions (79 actions from 136 actions).

Conclusions. It was concluded that this is the first study that describes the activities in detail in national silat tempur competition (youth). The approach used here would be useful to apply to give

greater understanding of the type and frequency of actions in silat matches.

Key words: notational analysis, silat tempur, combat sports,

1. Introduction

Martial arts are a combat sport of traditions and practices, which made for a variety of reasons such as self-defence, spiritual development, competition, physical health and fitness, entertainment, and mental and physical [2]. Silat is a martial art of East Asian origin that can have both artistic and contact variations; with the contact version like both judo and taekwondo in that it is weight-classified, unarmed and full contact [3], but with unique movement patterns and scoring systems [1,4]. There are two types of sparring competition in silat: Silat Olahraga [2] and Silat Tempur [5,6]. The silat olahraga competition consists of two divisions based on age and weight either in male or female categories; youths (aged 15 to 18-year-old) and adult (aged 18 to 35-year-old) [6]. According to Shapie and Anuar [7] Silat Tempur has two categories for children and teenager to participate in this competition. The first category is children aged from 7 to 13-year-old. The male and female exponents start from class A (20 – 22 kg) to free class (50 kg above). Overall, there are 11 classes for both male and females from age 7 to 13-year-old category, differentiated by 2 kg for each class. The second category is teenager aged from 14 to 15-year-old. The category starts from class A (26-30 kg) to free class (61 kg above). This category is differentiated by 5 kg for each class with 8 classes for males and females.

The high intensity and intermittent nature in Silat Olahraga [3, 4] suggested that the competition was not appropriate to children. The arena of Silat Olahraga was big (9 x 9 meter) [2] compared to one straight-line (4 x 9 meter) for Silat Tempur [5]. The arena of Silat Tempur was similar with fencing platform which aimed to ease the exponents to perform the simple silat techniques such as punching and kicking in competition [6,7]. Silat tempur is one platform to establish and to develop young athletes who have the courage, skills in martial arts techniques and tactical in sports [5].

However, there is less research that specifically describes the activity involved in silat tempur that specifically describes the activity which contributes to the physiological demands of this combat sports. Therefore, the objectives of this study are to describe the detail activity that occurs during the fight time of silat match, especially between winners and losers among young male athletes.

2. Materials and Method

Match Analysis

A publicly available video recording of seven male silat matches from the national silat tempur competition in Malaysia (Pertubuhan Seni Gayung Fatani Malaysia) was used for the analysis. This was seven matches of male by different classes respectively. Video sequences were repeated where necessary and the playback rate was reduced to 50% to allow accurate measurement of each offensive and defensive movement category. The video could be paused and played back frame-by-frame for ease of use. The system developed by Shapie and co [1] was used to identify five different types of actions performed by the silat tempur athletes during the match. The commencement and completion of each individual action was recorded. However, only five techniques were used in silat tempur; block, punch, kick, catch and topple. The total outcome has been notated in Hit Elsewhere (HE), Hit Target (HT) and Miss Opponent (MO). The frequency, mean and percentage of total time actions subsequently calculated. An intra-operator reliability study of fights was undertaken to establish the reliability of the method.

Motion Categories

Silat exponents motions were coded into 14 different types of categories in silat olahraga [1]. However, in silat tempur only five techniques were used and defined as follows:

Punch: The punch ‘tumbuk’ attack is done by a hand with a closed fist hitting the target. In silat, punching is often used to fight the opponent. It can be a straight punch ‘tumbuk lurus’ or uppercut ‘sauk’ to the exponent’s body. [2].

Kick: The kick ‘tendang / terajang’ is an attacking movement which is performed with one leg or two legs simultaneously. A kick can be aimed at any target. It can be front kick ‘tendang depan’, sidekick ‘depak’ or semi-circular side kick ‘tendang lengkar’ [2].

Block: The blocking movements begin with the posture position ‘sikap pasang’: the exponent stands straight with his hands around his body or close to his chest. Blocking or parrying ‘tangkisan’ can be done using arms, elbows, and legs with the purpose to block off or striking back at any attack [2].

Catch: The catch ‘tangkapan’ is done by using the hand to obstruct the opponent from carrying out an attack. The silat exponent is able to prevent himself from being attacked by pointing the attack which he has caught to another direction. A catch which twists or drags the opponent is forbidden. Also, a catch which could break the part which is being held such as the leg and waist is also forbidden. These regulations exist to protect the silat exponents [2].

Topple: There are various ways of toppling down one’s opponent. For example, a silat exponent ‘pesilat’ can either push, shove the opponent’s back leg from the bag or from the side, shove, hit, kick, strike or punch to make the opponent lose his balance. Every fall is considered valid as long as the silat exponent topples his opponent down without wrestling or he is able to overpower the opponent whom he has brought down [2].

Reliability of Observation

The author analysed all the actions and simultaneously classified each change of motion in a single match. Two observations were done separated by 48 hours. It requires experienced silat practitioners to analyse the data as the movement of both exponents is fast, needing close inspection [1]. The classification of movements was subjective with action being classified according to the instruction given by the referee.

Statistical Analysis

Data generated from the notational analysis was observed and will be the counted frequency [1]. All the raw data generated by the author was exported into Microsoft Excel Spreadsheet and then

transferred into SPSS for further detail analysis. Statistical analysis was conducted by using Statistical Package for Social Scientist, version 20 (IBM SPSS 2). The descriptive statistic was used to analyse the performance indicator of both contestants during the competition. Matched-Samples t-test was used to compare performance indicators between winning and losing contestants. All the statistical data have been proceeded by using the statistical package for social science version 22 (SPSS version 24.0) which its significant value was set as $p < 0.05$.

3. Results and Discussion

Table 1 shows the summary of the intra-operator reliability study revealed that strong agreement with the intraclass correlation (ICC) with values more than 0.07 on the total actions, total hit elsewhere (HE), total hit target (HT) and total miss opponent (MO). Each of these reliability results was recorded in Table 1. Table 2 shows the actions performed during the spar and their outcome in the match. Table 3 shows the frequency profile of actions and table 4 shows the frequency profile of outcome between winners and losers.

Table 1 Reliability of silat data (95% CI)

Variable	Intraclass correlation coefficient	
	Single measures	Average measures
Total Actions	0.957 (0.878 – 0.987)	0.979 (0.935 – 0.993)
Total Hit Elsewhere (HE)	0.995 (0.983-0.998)	0.997 (0.992-0.999)
Total Hit Target (HT)	1.000 (0.999-1.000)	1.000 (0.999-1.000)
Total Miss Opponent (MO)	0.999 (0.998-1.000)	1.000 (0.999-1.000)

A matched-samples t-test revealed that there were significant different between winners and losers only on hit target outcomes ($t = 2.690$, $df = 6$, $p < 0.05$) with the winners performing more hit target actions proportionately than the losers.

Table 2 Frequency action and outcome recorded during silat tempur matches.

Exponent	Outcome			Total
	Hit Elsewhere	Hit Target	Miss Opponent	
Block	1	16	2	19
Punch	17	33	6	56
Kick	25	20	14	59
Catch	1	0	1	2

Topple	0	0	0	0
Total	44	69	23	136

Note: All data show mean action from 7 matches.

Table 3 Frequency of actions between winners and losers.

Exponent	Actions					Total
	Block	Punch	Kick	Catch	Topple	
Winners	13	30	36	0	0	79
Losers	6	26	23	2	0	57
Total	19	56	59	2	0	136

Note: All data show mean action from 7 matches.

Table 4 Frequency of outcome between winners and losers.

Exponent	Outcome			Total
	Hit Elsewhere	Hit Target	Miss Opponent	
Winners	22	48	9	79
Losers	22	21	14	57
Total	44	69	23	136

Note: All data show mean action from 7 matches.

Table 2 shows the total hit target was the highest percentage with 50.6% (69 actions). Meanwhile, the total hit elsewhere recorded that only 32.5% (44 actions) and 16.9% (23 actions) for total miss opponent. The hit target was main influence of the result as winners hit the target (Table 3) more than the losers.

Table 3 shows that the frequency of winners was 59% (79 actions) and the losers recorded 41% (57 actions). The data indicated that young silat exponents used kicks (43.3%, 59 actions) and punches (41.8 %, 56 actions) as major techniques in national silat competition. Aziz, Tan and Teh [2] reported that silat athletes possess high levels of anaerobic power capability of the lower body and it supported this study with high percentage of kicks during competition. Current study also suggested that national silat tempur athletes were good at punching technique with 33 out of 69 actions that hit the target (48%). This is similar with the findings by Shapie and co [1] that reported female athletes kick and punch more than any other actions in national silat olahraga competition. They also found that the percentage of punches that hitting the target was more than any other actions to get point in competition.

Table 4 shows the winners recorded 48 actions (69%) more than the losers with 22 actions (31%)

on the overall outcome of hit target. Hit target outcome was the main indicator to the result (contributes points) in silat match. The winners have higher frequency from the total outcome and total actions (79 actions from 136 actions).

Winners scored 61% (36 actions) on kicks compared to losers 39% (22 actions) on kick during competition. The taller athlete has high potential to win silat competition when used kick as their major action [8]. According to Shapie and co. [9], the taller athletes with long leg have the advantage to fight the smaller opponent. The position of the exponents during actions can influence their performance to score points. Moreover, the good fighters will win sparring because they know how to balance their defence and attack actions [10]. The result showed that the loser produced only 6 actions (46%) of blocking compared to 13 actions (54%) to the winners with less attacking mode (punch and kick). The action profiling in silat competition showed that blocking was the common for defence while the punch and kick were the most common techniques used to attack.

Young male silat athletes did not use the catch and topple as frequent as any other techniques. The percentage of catch in national silat competition among young male athletes was 1.5% (2 actions) and topple down 0% (0 action) from the 132 actions performed by them. This was true because the young athletes are still new in silat competition. Topple down technique was related with the reaction time and coordination in order to topple down the opponent. The young athlete might be scared to catch and topple their opponent particularly because of physical factor and ability. Even though successful topple down rewarded 3 points in competition, it is important to understand that kicking and punching were the only practical techniques for the young athletes to apply during the competition to score point.

4. Conclusion

Silat tempur was a mini silat olahraga sport that specific to the children aged 7 to 13 years old [7]. The purpose of this competition was to improve the self-defence skills to young athlete who are still not perfect and need to master silat technique especially to those who are still new in silat competition. The current study has provided a great understanding of information for the silat by looking at the activity involved between winners and losers during action time in national silat competition. The researchers conclude that the winner in national silat competition used more kicks and punches to fight their opponent.

However, the young silat exponents are still lack of knowledge to use catch and topple down techniques to gain points during competition.

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