

# The course of the MMA fights as a part of KSW federation – as the examples of the heavy weight "fight of the night"

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## Summary

**Introduction.** The aim of the study was to describe the technical level of fighters participating in MMA "Fights of the night" KSW Federation in Poland.

**Material and methods.** All data was collected directly during the analysis of the video recording of 10 fights in the heaviest weight category. Analysis of the material included all technical elements used in all fights and their time distribution.

**Results.** The analysis results indicate that the "ground and pound" style of these fight was dominant and only in the ground position. The others techniques were used occasionally.

**Conclusions.** Conclusions suggest the poor differences in the technical level of this fighters and the lack of possibilities to relate global success.

## Introduction

Fights in mixed martial art (MMA) require from their participants using a wide range of techniques from different kinds of fight sports. Depending on the usage of acquired and mastered techniques and the determination to achieve the success by using them, we can divide the players into: **punchers** (who prefer using punches) and **grapplers** (who prefer using holds – throws levers and choke holds). There are also the players whose fight relies on putting the opponent on the ground and punching – **ground and pound**. The top MMA athletes are characterized by possessing both techniques from punchers category and grapplers derived from judo, jujitsu and wrestling. Their victory fights are based on the usage of their own mastered techniques and the ability to prevent opponent's dangerous actions. It is also based on the thorough analysis of opponents fighting style and selection of own appropriate fighting style [1,2,3,4]. The detailed analysis of their own possibilities and ways of playing fighting course, has its historical and phenomenological prototypes [5]

The **ground and pound style**, even though very attractive for the audience, is often associated with an ordinary fight, where no elements of any previously gained technique are needed or visible. However, it needs to be remembered that the fights in mixed martial art organized by KSW and advertised by TV channels, are the typical on profit marketing product and the so called 'fights of the night' are used to support that kind of image [6].

There are also additional actions taken by the training staff and advertising companies who are trying to prove their players masculinity, determination and no fear for the opponent and on the other hand trying to belittle the opponent [7]. Opinions of the scientists who are concerned about moral, spiritual, pedagogical and anti-violence values of the fights are, however, censorious [8,9,10]. The aim of the article's authors was to examine whether so called MMA 'fights of the night' organized by KSW are showing the best Polish martial art champions who possess a wide range of different techniques derived from different combat sports.

## Material and methods

The research material came from ten MMA fights organized by KSW between 2010 and 2015, which were advertised as so called „fights of the night”, and which should be the most interested and awaited by the audience. All fights were contracted for two rounds, each lasting five minutes. The participants were: Olympic champion in judo, Olympic champion in wrestling, World champion in kickboxing, World strongman champion, Polish national silver medalist in boxing and the opponents representing different combat sports were chosen by the event organizer.

The fights were analyzed by the usage of the TV coverage by two independent martial art trainers. The standard computers were used to analyze the footage (freeze-frame, zoom,

slow-motion picture, rewind, 32"screen, 1280/960 screen resolution).

Statistic reliability of the information forwarded by two coaches was measured with the use of the PQStat. v.1.4.4 programme. The Cohen-Kappa indicator was 76.5%.

The following data was gathered:

- Number of punches in standing position
- Number of kicks in standing position (with division into high and low kicks)
- Number of overthrows (with division into overthrows by power, overthrows by technique or counter-attack)
- Number of punches in on the ground position
- Number of actions in on the ground position
- Actions on the ground were timed (in minute manner)

Definitions were determined:

- Practical punches which reach the opponents' body or they force them to dodge
- Overthrows- actions that lead opponent to fall over to the ground- forced overthrows which happen only by using physical force without any technical element
- Actions on the ground like levers, choke holds

## Results

Beginning analysis showed that, seven fights were ended before the fourth minute, one fight in the sixth minute, one fight in the seventh minute and only one fight was finished in

full time (10th minute). Theoretically each contest consisted of two five-minute rounds.

The anthropometrical data of the players has been shown in Tab. 1, the number of all techniques used is in Tab. 2 and the minute distribution of performed actions is at the chart Fig. 1. Considering the fact that some of the players fought many times being at different age and different weight in different fights- in Tab.1.The arithmetic mean was introduced for their age and weight.

The diagram showed in Fig. 1 shows a high number of punches in on the ground position, high number of punches in standing position, kicks and a relevant number of overthrows in the first minute of the fight. Next minutes show a decrease in number of all the techniques used. Renewed but lower increase in number of techniques used is visible in the sixth and seventh minute of the fight and afterward there is another fall in the number of the techniques used.

To present a wide range of techniques performed by the players, actions with technical elements and without them were separately noted and presented in Tab. 2.

Data in Tab. 2 shows that the players mainly used punches and kicks in different position and overthrows. Elements derived from judo, ju-jitsu, wrestling and more advanced kick-boxing techniques were used rarely.

The distribution of the performed techniques is presented on the diagram at Fig. 2

Tab. 1. The anthropometrical data of all the players taking part in analysed fights.

	Age (years)	Range	Body mass (kg)	Range	Hight (m)	Range	BMI (kg/m <sup>2</sup> )	Range
number (n-12)	38,1 ± 5,0	30,25 - 46	120 ± 28,1	99,7 - 200,0	1,84 ± 0,04	1,75 - 1,92	35,8 ± 9,5	27,1 - 61,7
initials of the fighters	P.S   M.M	M.N	R.B   J.A	A.W	Y.K   P.N	P.G	K.A   E.E	M.P

Tab. 2. The number of all techniques used by the players in all 10 fights of the night during KSW gala

Techniques	Number of punches by hands in standing position	Number of kicks in standing position	Number of overthrows	Number of punches in on the ground position	Number of actions in on the ground position
Number (n)	97	59	11	168	2

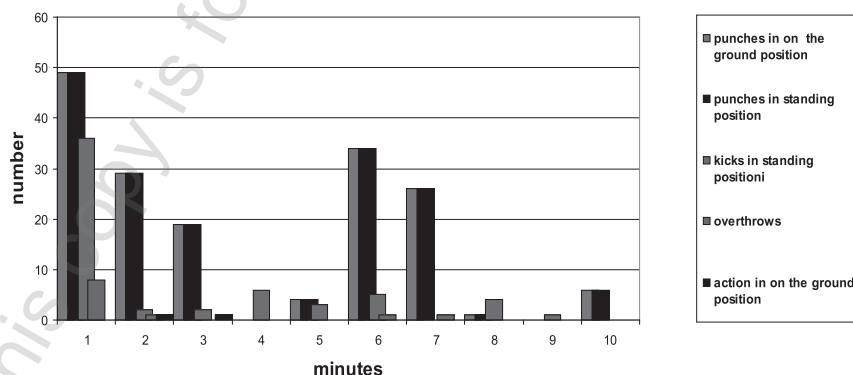


Fig. 1. A minute distribution of all the actions performed in all the fights.

Tab. 3. Quantitative and qualitative representation of different techniques used by all the players in all the fights

techniques/actions	punches in on the ground position	punches by hands in standing position	low kicks in standing position	kicks by knee	high kicks in standing position	overthrow by power	overthrow by technique	armlock on hand or leg	suffocation
number	168	97	56	3	0	10	1	1	1

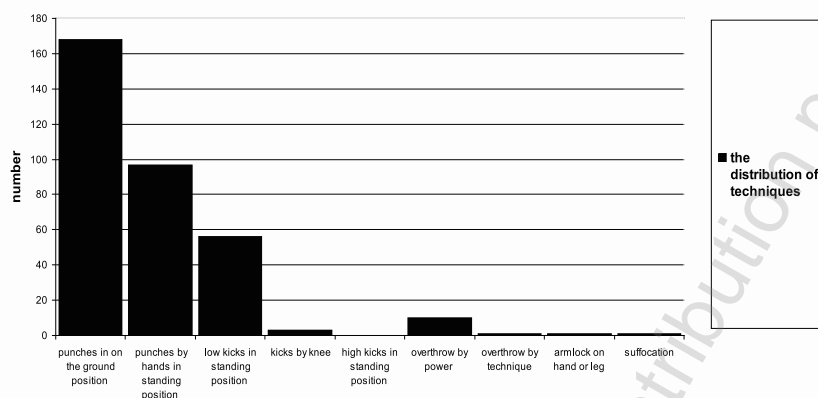


Fig. 2. Frequency of the technical elements distribution in all analysed fights

## Discussion

First observation that can be drawn from the anthropometrical data analysis (Tab.1) is the average age of the players – which is 31.1. That is, according to human physiology, the age in which the oxygen transportation by the cardiovascular system is less effective, which results in lower aerobic and anaerobic capacity. The body weight also changes (higher BMI index) and the body composition changes – reduction of muscle tissues and increase of fat tissues [11,12]. Researchers conducted on American MMA champions suggest age 31 [13]. Evidently physical training slows down natural aging processes, however, middle-age does not help in fighting at the highest level of performance, it contrast it can lead to idea of using illegal substances, that has already been recorded during MMA researches [14].

In martial art and MMA especially, there is an additional risk of head, spine and skeleton system injuries at the increased level [15]. Tab. 2 data analysis shows the dominant role of punches, which is a characteristic of karate, boxing and kick-boxing fights, not MMA fights. This situation is strongly connected with previously gained fighting techniques by the players. The minute-distribution showed in Fig.1. presents the decrease in the number of successful techniques used after the third minute of the fight and nearly complete lack of them in the last minute of the first round. This picture is totally different from the course of the fight observed in other sport disciplines and lack of so called 'second breath' in the third minute of the fight suggests serious endurance problems [16, 17,18,19]. It should be noted that it is similar to the course of heavy-weight judo fight from 2014 [20]. The time structure of the second round shows similar course of the fight like the first one, only with the lower number of techniques used- sim-

ple punches in standing and on the ground position are dominant, kicks are even less frequent. From second minute there is a fall in technical elements used by the player with a little increase in the last minute.

Data presented in Tab. 3 and on graph Fig. 2 suggest that the players used mainly punches in standing and on the ground position and low kicks. With connection to the number of overthrows (10 times) it can be said that the **ground and pound** style of the fight was dominant. Rest of the technical actions in standing and on the ground positions were scarcely observable. Very low activity on the ground, low number of overthrows and lack of technical actions on the ground (levers and choke holds) are in contradiction to research results conducted by Kirk [21], who observed that the players at the international level prefers fight leading to on the ground positions and then continuing the actions there, which is of their advantage. Diagram Fig. 2 suggests that technical actions undertook in analysed fights were little diversified and technically poor.

## Conclusions

1. The course of the analysed fights showed that through the decrease in technical action there is a systematically fall in activity and as a result decrease in quality of the fight with time elapsing
2. The fight were performed with the usage of the simplest techniques without any technical diversification derived from different combat sports
3. Low number of the actions in on the ground position suggests low abilities to lead the fight that way, what, according to the world researches, suggests predictable lack of success in this weight category.

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