

PSYCHOLOGY

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Aggression in competitive and non-competitive combat sports athletes

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Abstract

Background. The problem of aggression in sports – despite its ambiguous interpretation – is a subject of interest to sports theorists and psychologists as well as trainers. The concept of aggression can be variously-defined. Aggression in sport can be identified with self-assertion, but can also be linked to hostility. In Thirer's classification of aggression it is defined as: destructive aggression (combined with anger or hate); or non-destructive aggression (identified with assertiveness [Makarowski 2013]. It is often attributed to combat sports fighters.

Objective. Demonstrating the differences in aggressiveness between competitive and non-competitive athletes training in fighting combat sports (kickboxing and MMA) was the objective of the paper.

Material & methods. There were 65 competitive and 55 non-competitive athletes. Buss-Durkee Inventory (BDI) [Lange, Dehghani, de Beurs 1995] was used.

Results. Verbal aggression was the most visible symptom in both groups. There were no statistically significant differences between professional fighters and amateur ones, although the level of aggression in professional fighters was a little lower.

Conclusion. Regularly practicing combat sports over many years and complying with the rules can have an impact on reducing excessive levels of aggression in sportspeople.

Introduction

Sport activity, due to the necessity of fighting and competition is often connected to aggressiveness. However aggression is an ambiguous concept, which can be characterized through many different features [Woods 2001]. According to Gracz and Sankowski a sportsman is in a way forced to constant moving on a boundary defined by necessary and permissible aggressive behavior [Gracz, Sankowski 2000]. Aggression is interpersonal behavior intended to cause physical harm or mental distress [Nezabravka, 2015]. Aggressive behaviors “are sometimes out of the ethical realm of sports, and very much part of sport” [Habib, Ahmad, Shamim 2011: 29]. The concept

of aggression is not unique. There are several categories of aggression distinguished: reactive, instrumental, goal-oriented, impulsive, affective or destructive (hostile) [Kubacka-Jasiecka 2006; Habib, Ahmad, Shamim 2011].

Some terminological inaccuracies can contribute to misunderstanding the concept of aggression in sports. It concerns especially combat sports that are often identified with aggressive behavior [Kubacka-Jasiecka, Wrzesniewski 2012, Harwood, Lavidor, Rassovsky, 2017]. Their appearance results from situational and social factors, expectations of the community or frustration. Also the sport fight itself requires actions associated with aggression. The regulations of federations in which scoring rules are placed, indicate the importance of aggressive

attitude in combat sports. For example the regulations of the largest Polish federation of MMA – KSW (*Konfrontacja Sztuk Walki* – The Confrontation of Martial Arts) include a recording saying that aggressiveness is one of the criteria of scoring in each round. The regulations of the world's largest federation of MMA – UFC (Ultimate Fighting Championship) also include 2 recordings saying about so called "effective aggressiveness and defence" [<http://www.ufc.com/discover/sport/rules-and-regulations>].

Specific nature of combat sports allows deliberate physical attacks against an opponent with coincidental refraining from illegal moves or those who offend against opponent's dignity. Therefore moral and psychological development of people training combat sports is strongly emphasized. Due to controversial character of these types of sports people training combat sports need to be fully aware with regard to the threats of using the practiced techniques. The specific nature of sport task connected to combat sports regarding their characteristic or type can also have an impact on their level of aggressiveness. According to the study contact sports fighters are more aggressive than contestants in non-contact sports [Kumar 2015; Rui, Cruz 2017]. Kusnierz and Bartik compared contestants in different kinds of combat sports, they proved that Brazilian ju-jitsu fighters were most aggressive whilst *Shotokan karate* fighters had the lowest level of aggression [Kusnierz, Bartik 2014]. However, despite the type of combat sports people train, their pro-social and anti-aggressive preparation is immensely important. Martinkova and Parry demanded greater differentiating between combat sports as safe educational activities and the nature of the fight itself [Martinkova, Parry 2016].

Baker *et al.* proved that sport activities can pacify aggression in sportspeople. Combat sports fighters are not necessarily aggressive, but they should present aggressive attitude for the sake of sport competition. Specific level of exhilaration is required to take a sport competition task. It is also important to control possible aggressive behavior, because excessive aggression can lead to ignoring fair play rules [Baker, Whiting, Van der Brug 1990]. The importance of controlling the level of aggression in sports was also presented in Krishnaveni and Shahin's paper [Krishnaveni, Shahin 2014]. Baumeister and Boden [as cited in Kubacka-Jasiecka 2006] stated however that people characterized by too high level of aggression can also show problems with self-control. Excessive self-control may in turn cause aggressive behavior, because in this case the tension caused by the self-control cannot be relieved regularly and may lead to specific reactions – usually aggressive ones.

It is possible that terminological inaccuracies are caused by the fact of equating the hostile aggression (as in violence, harmful behavior, incompatible with the rules and used to deliberately inflict pain or injury through not complying with the rules of the game, foul

game or verbal attack) and bravery. Meanwhile aggression and hostility are defined as different types of behavior by many researchers [Roszkowska, Kucharewicz 2007].

Makarowski reminds Thirer's classification of aggression: destructive aggression is combined with anger or hate; non-destructive aggression (yet still aggression) is identified with assertiveness [Makarowski 2013]. In the latter case aggression has an instrumental character and its objective is to get the result (sports score) and not to harm the opponent [Klimczak, Podstawski, Dobosz 2014]. Krishnaveni and Shahin divide aggression that accompanies sport struggle into: direct, indirect, instrumental and emotional [Krishnaveni, Shahin 2014]. Karolczak-Biernacka notices that the concept of aggression is currently used both in regard to behavior resulting from negative attitude and when there exists only an element of intensity or attack symptom to reach the goal, smoothly perform the task, dominate or outsmart the rival as well as dynamic performance of own task or setting down a risky goal [Karolczak-Biernacka 2007]. Kubacka-Jasiecka considers goal-oriented aggression that is behavior resulting from assimilated rules and standards of behavior connected to performing tasks or social roles [Kubacka-Jasiecka 2006]. The concept of aggression, as it results from the above analysis of chosen items of bibliography, is complicated.

Objective

The objective of the study was to determine whether there exists a difference with regard to various forms of aggression between combat sports fighters and people taking combat sports training, who are competitive and non-competitive athletes.

The comparison was made in several categories of aggressive behavior including: physical aggression, indirect aggression, irritation, negativity, animosity, suspicion, verbal aggression and sense of guilt. The following research questions were submitted:

1. Is there a statistically significant difference in aggressive behavior between competitive and non-competitive athletes of combat sports?
2. Are there correlations between specific forms of aggressive behavior?

Due to the exploratory nature of the research, the authors decided to abandon the research hypothesis.

Study group and research methods

The study included a group of 120 people training combat sports all over Poland. The group consisted of men over 18 years old. They trained kickboxing and MMA (Mixed Martial Arts – a sport combining combat sports,

combat sports and wrestling [Martinkova, Parry 2016]). Both disciplines are contact-oriented, competitive sport. The study was conducted in spring 2016.

The study group was divided into 2 subgroups: competitive (the average age = 28 years) and non-competitive athletes (the average age = 26 years). Participation in within-club sparring or competitions were excluded as factors determining professional status. For the authors, it was interesting whether the fact of participating in the competition would have a connection with changes in the level of aggression.

Buss-Durkee Inventory (BDI) was the research method used in the study. Polish version of BDHI (questionnaire translated by Choynowski, Kosowski, Ostrichanska and Wojcik [Kosewski 1967]) was used. The experimental questions of BDI were omitted, so the questionnaire consisted of 75 questions (out of 110). BDI is a research method often used in many countries [Morrison 1975; Lange, Dehghani, de Beurs 1995]. There are 8 forms of aggression determined in the questionnaire, they include:

- Assault – it is most often violent activity towards somebody, starting a fight without a reason, lack of self-control, active defending own rights, using physical force against somebody, but not something;
- Verbal – content and way of presenting verbal communication are aimed at upsetting and psychologically hurting, this type of aggression includes: insults, criticism, threatening, raised voice or cursing;
- Indirect – include behavior not indirectly aimed at the reason of aggression, e.g. slamming doors, talking about people behind their backs, these reactions are disorganized, non-directional, they are manifested in showing discontent, bad mood and anger;
- Negativism – determine the level of covert or overt rebellion against commands or orders, also against authorities;
- Suspicion – lack of trust and cautious approach to social interactions are main types of behavior, often there is also a conviction that other people are hostile, the hostility is projected onto surroundings;
- Resentment – behavior characterized by self-pity, resentment to others, tendencies to complaining, it is usually caused by real or false conviction about ill treatment, it is reflected in attitudes of envy, critical approach, hate;
- Irritation – aggressive reactions to little things, an irritated person can easily fly into rage or anger, it shows tendency to outbursts even when slightly irritated;
- Guilt – it is manifested by remorse even because of little things, emotional reactions concerning affectional conflict arose from real or imaginary violation of moral or social standards (in deeds and thoughts) can also be measured [Kosewski 1967; Roszkowska, Kucharewicz 2007]. This method has been applied for many years, but is still used in psychology and

psychiatry's researches e.g.: Srebro [2011], Iniewicz *et al.* [2011], Falek *et al.* [2011], Roszkowska [2007].

Statistical methods

Due to the fact that the distribution of the variables tested does not approximate the normal distribution (Shapiro-Wilk test) non-parametric tests were used in statistical analysis. In order to evaluate the differences in aggression intensity between competitive and non-competitive athletes Mann-Whitney U test was used. Meanwhile the correlations between individual components of BDHI were evaluated with the use of Spearman's rank correlation test.

The statistical computations were made with the use of Statistica ver. 13. For all comparisons the level of statistical significance was set at. All descriptive data were presented in the form mean \pm SD. However in order to keep the presentation clear the data in the figures are presented in the form mean \pm SE.

Results

The results achieved are presented below. Mann-Whitney U test and Spearman's rank correlation test were used.

Descriptive statistics for all subjects are presented in table 1, for non-competitive athletes – in table 2 and for professional fighters – in table 3.

Based on the analysis of mean values verbal aggression (13.81 \pm 4.66) was the dominant type of aggression in the group of all fighters, second place went to irritation (11.21 \pm 5.07). Negativism (3.37 \pm 2.13) and resentment (5.44 \pm 4.32) were on the other hand the least often occurred types of aggression.

Based on the analysis of mean values verbal aggression (14.22 \pm 4.29) was the dominant type of aggression in the group of non-competitive athletes, second place went to irritation (12.21 \pm 4.75). Negativism (3.31 \pm 1.83) and resentment (6.02 \pm 4.54) were on the other hand the least often occurred types of aggression.

There were similar results in the group of competitive athletes. Verbal aggression (13.46 \pm 4.9) and irritation (10.52 \pm 5.2) were the dominant types of aggressive behavior. Negativism (3.43 \pm 2.33) and resentment (4.95 \pm 4.04) were on the other hand the least often occurred types of aggression.

It should be noted that the mean values of all types of aggression (except Negativity) were lower in competitive athletes. The differences in the mean values between the groups are not statistically significant (table 4).

Table 5 contains correlation coefficients between the different types of aggression in the group of all fighters. The statistically significant correlations were present between Verbal and all other types of aggression (includ-

Table 1. Descriptive statistics of aggression – total

	N	Mean	Standard deviation	Minimum value	Maximum value
Verbal	120	13.81	4.66	4.00	24.00
Assault	120	8.54	4.19	0.00	18.00
Indirect	120	6.76	4.17	0.00	16.00
Irritation	120	11.21	5.07	1.00	22.00
Negativism	120	3.37	2.13	0.00	8.00
Guilt	120	9.46	4.76	0.00	18.00
Suspicion	120	8.12	4.46	0.00	18.00
Resentment	120	5.44	4.32	0.00	16.00

Table 2. Descriptive statistics of aggression – non-competitive athletes

	N	Mean	Standard deviation	Minimum value	Maximum value
Verbal	55	14.22	4.29	4.00	24.00
Assault	55	8.89	4.47	0.00	18.00
Indirect	55	6.95	3.77	0.00	15.00
Irritation	55	12.02	4.75	2.00	22.00
Negativism	55	3.31	1.83	0.00	6.00
Guilt	55	9.96	4.63	0.00	16.00
Suspicion	55	8.49	4.71	0.00	18.00
Resentment	55	6.02	4.54	0.00	16.00

Table 3. Descriptive statistics of aggression – competitive athletes

	N	Mean	Standard deviation	Minimum value	Maximum value
Verbal	65	13.46	4.90	4.00	24.00
Assault	65	8.25	3.87	2.00	16.00
Indirect	65	6.60	4.44	0.00	16.00
Irritation	65	10.52	5.20	1.00	20.00
Negativism	65	3.43	2.33	0.00	8.00
Guilt	65	9.03	4.78	0.00	18.00
Suspicion	65	7.80	4.17	0.00	18.00
Resentment	65	4.95	4.04	0.00	14.00

Table 4. Analysis of differences between the groups based on Mann-Whitney U test

	Verbal	Assault	Indirect	Irritation	Negativism	Guilt	Suspicion	Resentment
Z	-1.107	-.840	-.562	-1.445	-.111	-.949	-.733	-1.241
Asymptotic significance (two-tailed)	.268	.401	.574	.148	.912	.342	.463	.215

ing Guilt); Assault and Verbal, Indirect or Irritation; Indirect and all other types of aggression (including Guilt); Irritation and all other types of aggression (including Guilt); Negativism and Verbal, Indirect, Irritation, Guilt, Suspicion, Resentment; Suspicion and all other types of aggression (except Assault); Resentment and all other types of aggression (except Assault).

Discussion

Studying the ambiguous concept of aggression in sports often gives contradictory or inconsistent results. Some authors observe differences in the level of aggression in the fighters due to the type of combat sport they train [Tomar, Singh 2012]. Others notice that the level of

aggression of combat sport fighters can be connected with many different factors like fear (the greater fear the greater level of aggression) or experiences related to traumas as proven by Tiric-Campara *et al.* [Tiric-Campara 2012]. Therefore the tendency to aggressive behavior does not necessarily result from the specific nature of different types of combat sport, but can also be a result of different variables that can increase the level of aggression in sportspeople in non-combat sports. On the other hand Chahal and Chaudhary compared the level of aggression between professional sport players and people who do not play sport and proved that professional sport players were more aggressive than people who do not play sport [Chahal, Chaudhary 2012].

According to this study both – competitive and non-competitive athletes – have similar level of all types

Table 5. Analysis of Spearman's rank correlation

		Verbal	Assault	Indirect	Irritation	Negativism	Guilt	Suspicion
Verbal	Correlation coefficient	1.000	.312**	.469**	.401**	.323**	.260**	.308**
	Significance (two-tailed)		.001	.000	.000	.000	.004	.001
	N	120	120	120	120	120	120	120
Assault	Correlation coefficient	.312**	1.000	.268**	.180*	.133	.070	.073
	Significance (two-tailed)	.001		.003	.049	.147	.446	.429
	N	120	120	120	120	120	120	120
Indirect	Correlation coefficient	.469**	.268**	1.000	.583**	.430**	.302**	.354**
	Significance (two-tailed)	.000	.003		.000	.000	.001	.000
	N	120	120	120	120	120	120	120
Irritation	Correlation coefficient	.401**	.180*	.583**	1.000	.424**	.379**	.412**
	Significance (two-tailed)	.000	.049	.000		.000	.000	.000
	N	120	120	120	120	120	120	120
Negativism	Correlation coefficient	.323**	.133	.430**	.424**	1.000	.248**	.319**
	Significance (two-tailed)	.000	.147	.000	.000		.006	.000
	N	120	120	120	120	120	120	120
Guilt	Correlation coefficient	.260**	.070	.302**	.379**	.248**	1.000	.390**
	Significance (two-tailed)	.004	.446	.001	.000	.006		.000
	N	120	120	120	120	120	120	120
Suspicion	Correlation coefficient	.308**	.073	.354**	.412**	.319**	.390**	1.000
	Significance (two-tailed)	.001	.429	.000	.000	.000	.000	
	N	120	120	120	120	120	120	120
Resentment	Correlation coefficient	.327**	.105	.537**	.564**	.273**	.505**	.469**
	Significance (two-tailed)	.000	.256	.000	.000	.003	.000	.000
	N	120	120	120	120	120	120	120

** correlation's level of significance 0.01 (two-tailed test)

* correlation's level of significance 0.05 (two-tailed test)

of aggression. Despite the lack of statistical significance (possible that resulting from not considering the specificity of discipline or a training time) it was noted that the level of almost all types of aggression was higher in the amateurs than in the professionals.

One of the possible explanation of this fact could be the possibility that participating in a combat sport competition teaches humbleness and how to distance themselves. It can be related to the other psychological constructs as "self-control", "perseverance development"

and "tolerance to frustration".

The presence of referees and audience during a sport event forces the fighters to comply with the regulations and to strictly obey the rules of the game. This can increase self-control, possibly not only in the sporting arena but also in life beyond sport. Rotter *et al.* [2015] made a similar remark noticing that people who train once a week have a higher level of aggression than active people who train more often than once a week. This may also be true in the present study – amateur fighters

usually train less often than professional fighters. Kubacka-Jasiecka and Wrzesniewski [2012] also proved that people who have trained karate for many years have lower level of aggression than novices. Thus combat sport can actually help in reducing aggressive behavior. Combat sport training with respect to rules and regulations mentioned among all by Ambrozy, Snopkowski *et al.* not only reduces excessive aggressiveness and tension [Ambrozy 2015; Kusnierz, Cynarski, Litwiniuk 2014], but also contributes to, for example, the development of emotional intelligence, as was proven by Szabo and Urban [2014]. It is worth bearing that in mind in case of combat sports training of the youngest fighters. The combat sports training could be then a perfect way to comprehensive and multifaceted development of a human being. Klimczak, Podstawski and Dobosz also paid attention to this fact [Klimczak, Podstawski, Dobosz 2014]. Tenenbaum *et al.* [1997] likewise emphasize that set of rules of fair play behavior should be applied in every type of sport and on every level of competition to prevent destructive aggression. Proper application of these rules is a duty of trainers.

In the analysis of specific results of different types of aggression in the fighters it is worth noticing that they (both competitive and non-competitive athletes) have relatively low level of physical aggression. It allows to overcome a stereotype that so called “fighters” can settle all conflicts or problems only with their fists. It is also worth bearing in mind that the image of a fighter who cannot hold his emotions and attack his rival already during so called “face-to-face” (i.e. the presentation of competitors before the fight begins) is just a media show that can trigger extra emotions in fans even before competition starts. It was concurrently showed predicted correlations between the specific types of aggression – the increase in one type caused the increase in the other.

Verbal aggression was the most dominant in the study group. It is similar to the results of Kusnierz, Cynarski and Litwiniuk, who evaluated capoeira, boxing and ju-jitsu fighters [Kusnierz, Cynarski, Litwiniuk 2014]. It can be noted however that the increase in intensity of verbal aggression is characteristic not only to combat sport fighters but also major part of Polish society – problem of vulgarization and brutalization of Polish language is unfortunately more and more visible in everyday life [Sikora 2016].

To answer the stated research question it can be said that despite the lack of statistical significance the level of aggression in competitive athletes was a little lower than the one of non-competitive fighters. Therefore it can be stated that regular and with full commitment training these types of sport supervised by a trainer who pays attention to educational aspects and compliance with the rules can become a method of reducing the aggressive behavior of a combat sport fighter.

The results are an implication for further research

about relationships between the sports level, professional experience and sports discipline and aggression.

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Agresja u zawodników i amatorów trenujących sporty walki

Słowa kluczowe: sporty walki, agresja, startujący i niestartujący w zawodach

Abstrakt

Wprowadzenie. Problem agresji u sportowców, pomimo swej niejednoznacznej interpretacji, jest przedmiotem zainteresowania teoretyków i psychologów sportu oraz trenerów. Samo pojęcie agresji jest różnorodnie definiowane. Agresja w sporcie bywa utożsamiana z asertywnością, ale też i łączona z wrogością. Często jest przypisywana zawodnikom sportów walki. Problem i cel. Celem badań było wykazanie różnicy w agresywności u osób startujących i niestartujących w zawodach uprawiających sporty walki (kickboxing i mieszane sztuki walki).

Materiał i metody. Przebadano 65 zawodników biorących i 55 osób niebiorących udziału w zawodach (trenujących rekreacyjnie). Wykorzystano Kwestionariusz Buss i Durke „Nastroje i humory”.

Wyniki. Badania wykazały, że u badanych najsilniej zaznacza się agresja werbalna. Nie wykazano różnic istotnych statystycznie pomiędzy osobami startującymi a trenującymi rekreacyjnie, jednak u zawodników zaobserwowano nieco niższy poziom agresji.

Wnioski. Regularne wieloletnie uprawianie sportów walki i przestrzeganie reguł może stać się środkiem wpływającym na obniżenie nadmiernego poziomu agresji u sportowca.