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The comparative analysis of the aggression level between women practicing Hip-Hop dancing and women practicing Brazilian Jiu-Jitsu

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Summary

Aim: The comparison of aggression level between women practicing Hip-Hop and Brazilian Jiu-Jitsu against the average aggression level of Polish women.

Material and methods: 27 women practicing Hip-Hop and 33 women practicing Brazilian Jiu-Jitsu were questioned using the Polish adaptation of the survey “Aggression questionnaire” by Buss, Perry from “Amity Institute” to check the aggression level. Gathered data was compared against the results of Polish women control group.

Results: The lower level of total aggression level was observed among the women practicing Brazilian Jiu-Jitsu as well as among women practicing Hip-Hop against the control group. The reducing in total aggression level along with the growth of the length of sport career was observed among women practicing Brazilian Jiu-Jitsu and lack of that relation among women practicing Hip-Hop.

Conclusion: A long-term training of Hip-Hop dance results in actual reducing of aggression level among the women, which was forced by lowering the level of physical and verbal aggression. It can be an evidence of some kind of limitation in using this training as a mean of therapy in aggression disorder therapy.

A long-term practice of BJJ lowers all components of aggression and as well as total aggression level which seems to be more universal in using it (BJJ) in aggression disorder therapy.

Introduction

In specialist literature there are many examples of martial art connections with psychological areas and they show visible relation between them [1,2]. It seems logical to connect researches on aggression phenomenon (psychological aspect) with both martial art and connection of sport and youth culture- which is a Hip-Hop dance. Aggression is immanent to human nature, needed to survive. There are many types of aggression which interfere with one another. Aggression can be divided into instrumental and antagonistic. Instrumental aggression is when the action can do harm, however, the intention is directed to achieve another specific behaviour, i.e. a victory in sport; antagonistic aggression, on the other hand, is when the action is directed to harm other person [3]. Because of that, there is division into accepted and unaccepted aggression. Accepted aggression happens when it is the expression of instrumental aggression- a player gets angry and that motivates him/her to take actions within the game rules; however, unacceptable aggression is the expression of antagonistic aggression and happens when a player in emotions stops obeying the rules [4]. Aggression happens in all areas of life- public, family, school and sport. Sport can also fulfil educational and informative functions, which can lead to reducing or eliminating the frequency of aggressive behaviours [5].

The researches of aggression phenomenon should lead to discover its backgrounds and factors influencing its intensity level (increase or decrease). The results can help in observing and finding a positive solution to it. Researches of aggression level among women show that women who practice sports have lower level of aggression. Most of aggressive behaviours among female athletes are of instrumental nature, which means that they are directed on achieving non-aggressive advantage as a result of aggressive action. Women are characterized as having high values of hostility towards society, indirect aggression, and hidden aggression, verbal and physical aggression. At the same time they have a high value of controlling aggressive behaviours [6,7,8]. Reports say that women practicing judo provide themselves with a bigger sense of security, self-confidence and satisfaction. Women practicing Brazilian Jiu-Jitsu must perform at all times connections between mental and physical activity to plan the strategy that will lead to defeating the opponent, which will also benefit in many real life situations [9,10,11].

The authors assume that the presented comparative analysis of two so different sports will broaden in significant way knowledge about the aggression phenomenon.

Materials and methods

Researches were conducted between April and December 2018 in Bydgoszcz and Gdansk. The data was gathered by completing “The aggression questionnaire” by Buss, Perry of “Amity” Institute (according to Polish on-line version with authors consent). There was a question about the length of a sport career added to the survey. There were 27 women practicing Hip- Hop, 33 women practicing Brazilian Jiu-Jitsu (BJJ) and 31 women not practicing any sports taking part in the survey. All persons taking part in the research were questioned about any possible factors influencing aggression in their life like: personal, family or professional setbacks, court trials, addictions, diseases. Afterward the decision was made whether the person is appropriate for the research or not. 91 persons were questioned altogether.

The gathered data was compared against each other and against data from “Amity” Institute. For statistical purposes Excell 2007 and Statistica 6 programs were used. The average values of aggression components were marked (physical aggression, verbal aggression, anger and hostility) for each group, the statistically important differences were marked for different/ the same variations and determination factor R^2 was marked on regression charts. Also related change of value of aggression components was calculated and expressed in percentage.

Results from “Amity” Institute were only shown for better visualization of the topic, because of the lack of raw data.

The related change of each aggression component was calculated according to the formula:

$$D = - \left(\frac{S_1 - S_0}{S_1} \right) * 100\% \quad \text{Equ.1}$$

S₁- value for the control group

S₀- value for the researched group

The – symbol was introduced to accept the change of level for lower, aggression components.

Results are presented in tables Tab.1-3 and in charts Graph.1-3.

Results

Tab.1 Basic sociometric data of women from all groups.

Group	Age (years)	Range (years)	Length of training (years)	Range (years)	Olympic discipline	State, european, world competition
Hip-Hop dancers group	22,1±6,9 _{a,b}	16-42	6,4±4,4	1,5-20	no	yes
BJJ group	26,2±6,1 ^a	16-39	6,2±4,1	1,0-13,5	no	yes
Control group	26,8±12,0 _b	14-51	-	-	-	-

^{a,b} – statistically important differences

The data in Table 1 indicate that group of women practicing Hip-Hop is younger than the group of women practicing Brazilian Jiu-Jitsu and women from the control group; however, due to the same length of sport career and the same level of rivalisation, it can be used for the direct comparison and research of the relation between the level of aggression and a specific work out.

Tab. 2 Results of aggression components and total aggression in each of the researched groups.

Group	Anger	Range	Physical aggression	Range	Hostility	Range	Verbal aggression	Range	Total aggression	Range
Hip-Hop dancers group	19,1 ± 3,5b	12-24	17,3 ± 2,7 ^{ab}	12-22	21,7 ± 3,7 ^a	14-28	14,0±3,6 ^b	7-20	72,8 ± 7,9 ^a	57-85
BJJ group	17,7 ± 4,4 ^{ab}	9-27	18,8 ± 5,3 ^a	10-35	17,7 ± 6,3 ^{ab}	9-30	14,0±3,1 ^a	7-20	68,2 ± 11,7 ^b	35-106
Control group	18,8 ± 2,9 ^a	14-26	19,1 ± 3,4 ^b	10-26	22,7 ± 4,1 ^b	16-35	15,4 ± 2,7 ^{ab}	10-22	76,3 ± 7,4 ^{ab}	65-97
"Amity" Inst. group	19,2		18,9		21,8		14,5		74,3	

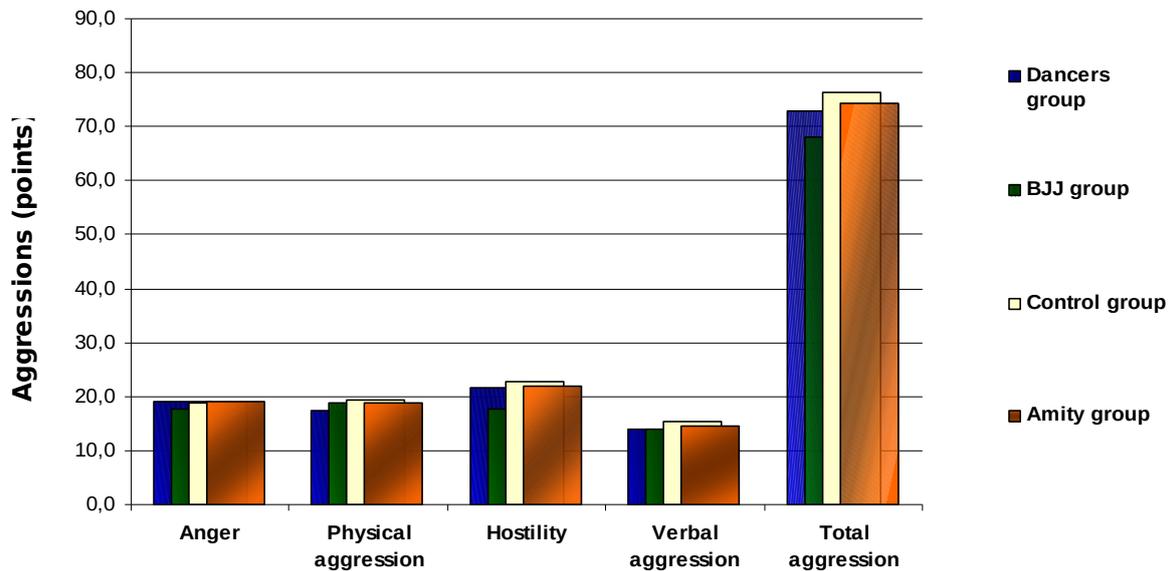
^{a,b} – statistically important differences in the same table columns

Data in Tab. 2 shows lower level of total aggression in both groups of women who practice sports.

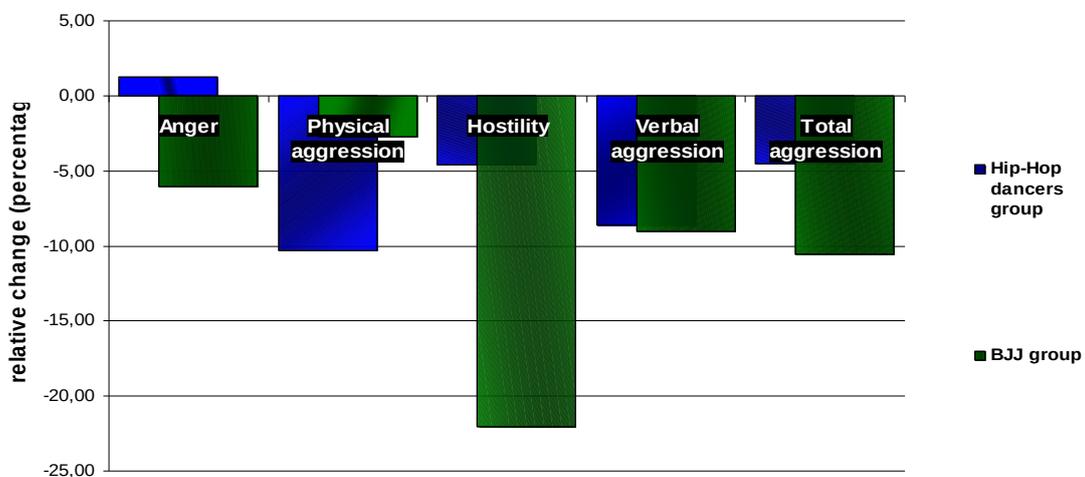
Tab. 3 The related change of aggression components and total aggression calculated against control group for both researched groups.

Related change of value (%)	Anger	Physical aggression	Hostility	Verbal aggression	Total aggression
Dancers group	1,25	-10,29	-4,57	-8,58	-4,52
BJJ group	-6,06	-2,77	-22,05	-9,02	-10,59

The greatest related change (decrease) of aggression components is observed in the group of women practicing BJJ for hostility value -22,05% and the group of women practicing Hip-Hop for physical aggression – 10,29% and verbal aggression – 8,58%.



Graph. 1. Absolute values of aggression components and total aggression among researched groups and on-line results of „Amity” Institute group.

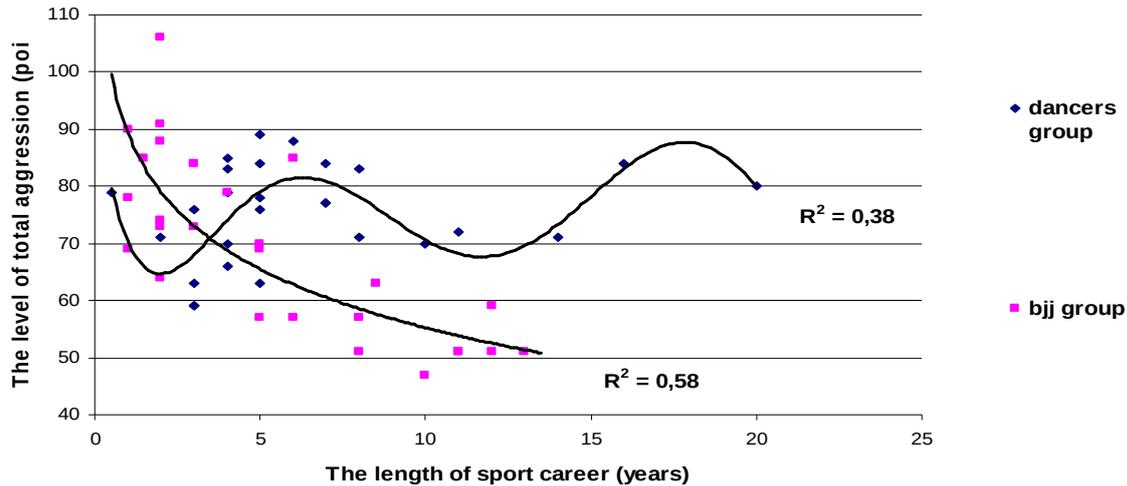


Graph. 2. Calculated related values of aggression components and total aggression of researched groups.

The chart Graph. 2 shows that within the group of women practicing BJJ the dominating aggression component which decide about lowering aggression level is hostility.

On the other hand, in the group of women practicing Hip-Hop the major role in lowering aggression level plays 2 components: physical aggression and verbal aggression, but at a lower level than hostility in BJJ group.

It is confirmed by the percentile data shown in Tab 3.



Graph. 3. The change in total aggression level against the length of sport career.

The chart Graph. 3 shows that in the group of women practicing BJJ it can be observed a lowering of total aggression level along with the growth in the length of sport career. The determination factor $R^2 = 0,58$ is at the high level.

In the group of women practicing Hip- Hop this relation is of individual character (the 4th degree curve line), so it does not show relation with the length of sport career.

Discussion

Data shown in Tab. 1 suggests that women practicing sport (Hip-Hop dance and Brazilian Jiu-Jitsu) have the same length of sport career. It should be mentioned that at the same time both disciplines are not Olympic disciplines and that both discipline have the State Championship, European Championship and World Championship organized. Dancers from Hip-Hop group are younger than BJJ athletes, but Polish data suggests that it does not influence aggression level at that age range [12]. So it can be concluded that both researched groups are similar and can be directly compared in the light of aggression level.

Data gathered in Tab. 2 says that the level of physical aggression is significantly higher in the group of women practicing Brazilian Jiu-Jitsu than in the group of women practicing Hip-Hop, which can be link to the more aggressive character of BJJ trainings, which can be a gateway from negative emotions like aggression. Women who do not practice martial art sometimes have no opportunity to reduce the tension in their life [13].

Further data (Tab. 1) suggests that some aggression components (anger, hostility) are lower in the group of women practicing BJJ than in the group of women practicing Hip-Hop. The

results are similar to the researches done by other authors researching Hip-Hop culture. On the other hand verbal aggression is at the same level in the groups of women practicing sport and significantly lower from the values in the control group, what is in contrary with the above mentioned researches, which suggested a high level of verbal aggression among Hip-Hop followers [14,15]. Maybe it can be explained through a compensation role of a dance as a form of expressing oneself as it was mentioned by other authors [16].

A chart Graph. 2 presents that in the group of women practicing BJJ the aggression level is lowering together with the length of sport career, whereas there is no relation like that in the group of women practicing Hip-Hop- (a 4th degree curve line suggests individual variability).

In case of women practicing BJJ it can be assumed that sport brings new values to their mental life [17], which increases with the length of sport career. It can make one feel more confident and reduce the drive and will to win at all costs, which lowers, on the other hand, aggression level. A similar relation was observed among female and male judo players [18].

In case of women practicing Hip- Hop lack in relation between the variables can be an evidence of limitation of dance therapy in treating aggression disorder, however, that aspect requires more attention.

Data presented in Tab. 3 and charts Graph. 1-2 points out which aggression components are lowered through a long-term training. In case of women practicing Hip-Hop the dominating value is hostility, which calculated against control group is reduced for about 22,05%. It can be said that this sport reduces hostility and can be a platform for reducing individual stress [19,20]. In the group of women practicing Hip- Hop the dominant variables in lowering aggression level are physical aggression (decrease of 10,29%) and verbal aggression (decrease of 8,28%). Also in that area there are other reports showing a positive influence of Hip-Hop in reducing physical aggression level among socially maladjusted youth [21].

As many researchers suggest aggression is common in both everyday life and sport, sometimes necessary in the training process and during competition. Researching relations between aggression and specific sport disciplines can be the ground to build on treatment programs which will help to control aggression.

A program based on training of Hip-Hop or Brazilian Jiu-Jitsu seems to fulfil the requirements, although each at different area.

Conclusion

1. A long-term Hip-Hop training by women results in slight but meaningful reduction in aggression level among them which is forced by lower level of verbal and physical aggression. It can be an evidence of some kind of limitation of this type of training when used as a tool in aggression disorder therapy.
2. A long- term BJJ training lowers all aggression components as well as total aggression so it seems to be more universal in treating people with aggression disorder.
3. Both Hip-Hop and Brazilian Jiu-Jitsu trainings lower a total aggression level through lowering different aggression components, so they can be used in treatment of different individual cases of aggression disorder therapy.

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