Investigation and comparison of aggression in athletes in non-contact (swimming), limited contact (karate) and contact (kickboxing) sports

Key words: aggression, swimming, karate, kickboxing

Abstract
It is inevitable that everyone dealing with sport will encounter the phenomenon known as "aggression". Rarely can we find a subject that is as considered as aggression and violence. To study the above cases, the aim of this research is to carry out a survey about aggression rates in some fields of sport, compare these fields with each other and compare athletes with non-athletes. 105 elite athletes in different sports, 38 persons in swimming (non-contact sport), 32 persons in controlling karate (limited contact) and 35 persons in kickboxing (contactable sport) who participated in the second Iranian Olympiad in 2008, were compared with 105 non-athletes. All of subjects completed an aggression questionnaire, compiled by Buss and Perry [1992]. After analysis of the questionnaires and using the analysis of variance (ANOVA) with the comparison between different types, data were obtained from the aggression questionnaire.

The findings of the research indicate a significant difference in the different levels of aggression between research types (p<0.001). Tukey’s test also shows that the greatest difference was in the kickboxing group and the least difference was in karate and swimming. The results show that except in kickboxing which is contact and rough, athletes in other fields do not have significantly different aggression factors from non-athletes and the theory that athletes in non-contact and limited-contact fields have more aggression than non-athletes is not borne out by the result of this research.

Introduction
There is a general view that aggressive behaviour is firstly perceived negatively and secondly that the purpose of aggressive behaviour should be harm.

In assertive behaviour, however, athletes are permitted to act aggressively within the framework of the sport and use physical injury as a means of winning the competition. In hostile aggression a player is angry and his primary aim is to injure to his opponent [Caron, Halteman, Stacy 1997], because hostile aggression is along with physical injuries, the probability of its existence in contact sports is more common than the non-contact sport.

The contact sport is attractive to the player who was aggressive before or taking part in these kinds of sport can increase aggression [Cox 2002]. In addition maybe hostile aggression not only in the sport field but also outside the sport field can happen. In fact according to Bandura’s social learning theory, aggressive behaviour can arise from accepting other behaviours and or even player’s own behavior [Bandura 1973]. On the other hand although contact field athletes may be compared to non-contact field athletes, non sport aggression show more aggression, but some believe that severer active sport causes to be evaluated energy and excitement this process can decrease aggression in a daily life [Bushman 2002].

Research done within this area is of two types. First is the research that confirms the existence of aggression among athletes. Conversely, the second type rejects the existence of this property among athletes. In general, research done within this area supports the theory that athletes in comparison with non-athletes are more affected by aggressive behaviour [Frinter, Rubinson 1993; Chandler,
Johnson, Carroll 1999]. Fletcher and Dowell [1971] and Valliant et al. [1981] studies on college athletes showed that totally athletes are more aggressive than non-athletes. Comparing female athletes and non-athletes, other specialists showed that female athletes are more aggressive than non-athlete [Hernandez-Ardieta et al. 2002].

Filho et al. [2005] study also demonstrated a significant difference among athletes and non-athletes regarding aggression level, particularly in the martial arts. The body of these findings illustrates that involvement in any sport activity is related to aggressive properties [Lemieux, McKelvie, Scout 2004].

On the other hand, some researchers observed no relationship between involvement in sport and aggression. For example, Morgan and Costil [1996] found that athletes in comparison with non-athletes have even lower levels of aggression.

To pay attention to above cases, the aim of this research is to perform a survey about aggression rate in some sport fields, compare these fields with each other and compare athletes with non-athletes.

**Methods**

105 elite athletes in different sports, 38 persons in swimming (non-contact sport), 32 persons in controlling karate (limited contact), 35 persons in kickboxing (contactable sport), were compared with 105 non-athletes with mean age 23.4 ± 1.8.

All of subjects complete aggression questionnaire, of Buss and Perry [1992]. This questionnaire contains twenty nine questions which evaluate four behaviour factors, physical aggression (nine questions), verbal aggression (5 questions), anger (7 questions) and hostility (8 questions). These factors are classified under three motor or instrumental components (physical and verbal aggression), affective component (anger) and cognitive component (hostility).

The validity of original questionnaires form out by makers of these questionnaires which in this order was reported physical aggression, verbal aggression, anger and hostility 80%, 76%, 72% and 72%.

Athletes individually and in groups with the help of researchers complete questionnaires and non-athletes also individually with a similar method, complete the questionnaires. Also some sociological information like age, height, weight, education degree, sport position is taken from all of experiences.

After classification of questionnaires with the use of analysis of variance (ANOVA) with the comparison between different types, data were obtained from aggression questionnaire.

**Table 1. Statistical criteria of research variables in different groups**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Index</th>
<th>Statistical groups</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Number of subjects</th>
<th>Degree of freedom</th>
<th>P-value</th>
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</table>
Results

After gathering information, obtained results with the use of analysis of variance test (ANOVA) were analyzed that results are brought in the table 1.

As it is clearly shown in the table groups were different from each other in all of behavioural factors. Tukey's test shows that kickboxing athletes in anger, physical aggression, hostility factors and in total had higher grades.

This group in a verbal aggression factor is distinguished from the swimming group and karate and in these factors the grades are significant high.

Also the results show that except the kickboxing group, other sport groups are not distinctive in different factors of aggression from a non-athletes group.

Discussion and Conclusion

In this research the rate of aggression was studied and considered in athletes in the fields of non-contact, limited contact and contact sports.

The results show that except in kickboxing which is contact and rough, athletes in other fields do not have significantly different aggression factors from non-athletes and the theory that athletes in non-contact and limited-contact fields have more aggression than non-athletes is not borne out by the result of this research.

It seems that sports activities, especially those with limited contact (like controlling karate) cause an offload of energy and excitement which leads to a decrease in aggressive behaviour especially in the outdoor sports environment. The results of the research also shows that the aggression levels of practitioners of controlling karate is also lower than those of non-athletes which may indicate that the sporting activity has a modifying role in a person's behaviour.


Filho et al. [2005] and Fuller [1988] in their studies show a high level of aggression in martial arts [10-17]. Conversely Szabo and Parkin [2001] show lower aggression levels in martial art athletes in comparison with non-athletes [Szabo, Parkin 2001].

One of the interesting findings of the present study is the existence of a different behavioural model for Iranian athletes in comparison with athletes from other societies. Unlike catharsis theory's [Cox 2002; Bushman, Baumeister, Stack 1999] claim, it seems that sport in Iranian society is not used as an acceptable style and means of energy discharge, and aggression reduction in the daily lives of people. People in every society have particular behaviour in sport and physical activities. Physical activity in the form of sport follows culture. As it is stated in the Seville statement on violence, aggression is not programmed genetically, but it follows cultural factors to a large extent [Seville Statement on Violence 1986]. It is most likely that in Iranian society, participation in sport has moral and human dimensions that are used to direct a person's elevation, both mentally and physically.

In any case, the results of this similar research show that sports activities have a mainly positive effect on behavioural factors like aggression, and have the capacity to adapt a person's behaviour. Furthermore, in some fields of sport where athletes have achieved higher grades, we should search for causes in the cultural and specific instructions of that field and the existence of psychological and cultural connections between athletes and coaches in that sport.

More research in this field may clear up the ambiguities in this subject.

References


**Badanie i porównanie agresji u sportowców w dyscyplinach bezkontaktowych (pływanie), ograniczonego kontaktu (karate) i kontaktowych (kickboxing)**

*Słowa kluczowe: agresja, pływanie, karate, kickboxing*

**Streszczenie**

Przeprowadzono ankietę według Bussa i Perrego [1992] dotyczącą agresji, po czym zanalizowano wyniki przy pomocy analizy wariancji ANOVA. Wyniki badania wskazują, iż istnieje statystycznie ważna różnica (p<0.001) pomiędzy podmiotami badań. Test Tukeya pokazuje także, że największa różnica dotyczy grupy kick-bokserów, a najmniejsza pływaków. Z rezultatów wynika, iż wyjątek stanowi kickboxing jako sport kontaktowy i brutalny, gdzie poziom agresji jest dość wysoki.

W pozostałych sportach poziom agresji u sportowców i niesportowców nie wykazywał zbytnich odchyleń. Wydaje się, iż poziom agresji zostaje rozładowany w czasie uprawiania pozornie brutalnego sportu i wpływa pozytywnie na zachowanie poza sałą sportową.