Original Article

Optimizing aggression in combative sports – An analytical approach

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Published online: June 25, 2013

(Accepted for publication June 09, 2013)

DOI:10.7752/jpes.2013.02025;

Abstract

The world of combative sports is full of action, excitement and hidden complexities. While each combat style has its unique facets that make it different from other combat practices, but a common characteristic is the systematization of fighting techniques along with a deep usage of mental skill. Competitive combative sports like boxing, wrestling and judo stipulate rigorous psycho-physical and emotive training that must be planned scientifically as per the requirements of the particular sports. Aggression is used extensively in sports and is an inevitable part of combative sports. Since its fluctuation is necessary for better and winning performance, the present study was undertaken to examine its primary functional applicability in such sports. The subjects, male and female international boxers, wrestlers and judokas (N=120), were administered the Aggression Scale (Pal and Naquavi, 1980) to find out their levels of aggression. Univariate analysis of variance was applied to find out inter-sport differences, descriptive statistics and t-test were also applied. The results indicated significant inter sport differences among the three male sports groups. The international male boxers had significantly lower level of aggression as compared to the wrestlers and judokas. Among female players, significant differences have been found and only the wrestlers have been found to have significantly higher level of aggression as compared to the international female boxers. However, within the three sports groups, no significant gender differences have been noticed.

Keywords: aggressive, behaviour, contact, wrestlers, judo, boxers

Introduction

Aggression is one of the most frequently used, often misunderstood terms commonly selected to describe sport situations. On the one hand, it is used to describe performance in a positive, complimentary way; while on the other hand, it is utilized to demean or criticize sport participants and / or fans, or even the nature of sports itself. Seldom does one word have so many contradictory application and definitions (Thirer, 1993). However, aggression in sport is not perceived as unequivocally negative; when it is an assertive behavior as searching for success, aggression is highly desirable (Wlazlo et al. 2007). Thus, it is often difficult to predict the degree of its involvement in sports. Many studies have found that participation in competitive games raised boys' and girls' levels of aggression, regardless of competition outcome (Gelfand and Hartmann, 1982). Slight increase in hostility has also been found for non-contact and non-aggressive sports (Arms et al. 1979). Even vigorous physical exercise using a bicycle-ergometer could enhance aggressive tendencies (Zillman, 1979). A relationship between contact level in sport and aggression has been found in previous literature (Tucker and Parks, 2001). Bredemeier, et al. (1986) conducted a study with 106 children at a summer sport camp and found that participation in high-contact sports was associated with greater aggression and with lower levels of moral reasoning. On the other hand, a recent research suggests that sports help lower aggression; enhance self-control and discipline in children (Nordqvist, 2011). While examining aggression in sports, Donahue et al. (2009) have suggested an interesting explanation for aggressive behavior. They suggest that the love for one's sport may lead to some maladaptive aggressive behavior, especially if such love is rooted in a sense of identity that leads one to react defensively in order to protect the self.

Aggressive and violent actions which might be illegal outside sport, or in supposedly non-contact sports like basketball, are legal and sanctioned in the context of combat sports like judo, karate and wrestling (Kerr, 2005). Aggression in such sports is intrinsic and sanctioned, provided the play remains permissible within the boundaries of certain rules, which act as a kind of contract in the pursuit of aggression (and violence) between consenting adults (Kerr, 2002) but the lines demarcating the permissible and the inadmissible are not always very clear-cut and precise. It seems that every form of aggression may be accepted in combat sports athletes provided they acquire the capacity to control aggression and the stronger the ethical/ philosophical principles of given sport, the more chances that capacity would be acquired (Wlazlo et al. 2007). From whatever angle we may examine, aggression is perhaps one of the most critical problems in sports (Sacks et al. 2003). The present

study was, therefore, conducted to evaluate the levels of aggression among elite performers of three combative sports (i.e. boxing, wrestling and judo) to understand the true import of this underlying force.

Methodology

For the purposes of this study, sample was drawn through purposive sampling technique. The subjects were 120 international players from three combative sports groups i.e. boxing (N=60), wrestling (N=60), and judo (N=60). The subjects were administered the Aggression Scale (Pal and Naquavi, 1980) to assess their levels of aggression. This scale has classified aggression in five categories, i.e. the saturated, the high, the average, the low, and the clean. High scores indicated high level of aggression. The obtained data was analyzed by employing univariate analysis of variance to find out the inter-sport differences, and Scheffe's post-hoc test was applied to find out the direction of differences. Descriptive statistics such as mean and standard deviations were calculated and t-test was used to find out the intra-sport gender differences. The level of significance was set at 0.05.

Results and Discussion

The results of oneway analysis of variance with regard to the inter-sports differences among male international players have been presented in Table – 1. The results of Scheffe's post hoc test with regard to inter-group differences have been presented in Table -2

TABLE – 1

The results of oneway analysis of variance with regard to the inter-sports differences among Male International Players

Source of Variance	Ss	df	Ms	F-Value	Sig.
Between Groups	2618.233	2	1309.117	11.451**	.000
Within Groups	6516.350	57	114.322		
Total	9134.583	59			

**p<0.01

TABLE – 2

Results of Scheffe's post-hoc test with regard to Male International Players

Between Group	Mean Difference	Std. Error	Sig.
Boxers & Wrestlers	-15.900 **	3.381	.000
Wrestlers & Judokas	5.350	3.381	.294
Boxers & Judokas	-10.550 **	3.381	.011

**p<0.01

From the results of oneway analysis of variance in Table – 1 above it can be observed that there were significant differences among international male players from the three sports groups (F-value=11.451, p<0.01). The post-hoc results presented in Table- 2 above have revealed that the mean difference between the male boxers and wrestlers was -15.900, between wrestlers and judokas it was 5.350, whereas between the boxers and judokas it was -10.550. The differences between boxers and wrestlers, and between boxers and judokas have been found to be significant (p<0.01 in both cases).

These results indicate that among male subjects, the boxers were having significantly lower level of aggression as compared to the wrestlers and judokas. While comparing levels of aggressions among boxers, ju-jitsu and karate participants, Wlazlo et al. (2007) had reported that boxers had significantly lower aggression control. They also found that self-aggression was significantly higher in boxers compared with other groups.

The results of oneway analysis of variance with regard to the inter-sports differences among female international players have been presented in Table – 3. The results of Scheffe's post hoc test with regard to inter-group differences have been presented in Table - 4.

TABLE-3

The results of oneway analysis of variance with regard to the inter-sports differences among Female International Players

Source of Variance	Ss	df	Ms	F-Value	Sig.
Between Groups	900.100	2	450.050	3.550*	.035
Within Groups	7225.550	57	126.764		
Total	8125.650	59			

*p<0.05

TABLE – 4

Results of Scheffe's post-hoc test with regard to Female International Players

Between Group	Mean Difference	Std. Error	Sig.
Boxers & Wrestlers	-8.650*	3.560	.060
Wrestlers & Judokas	7.700	3.560	.106
Boxers & Judokas	-.950	3.560	.965

*p<0.05

A cumulative reading of results available in Tables 3 and 4 would show that there were significant differences among female players ($F=3.550$, $p<0.05$), and the post-hoc results have revealed that the mean difference between the female boxers and wrestlers were -8.650, between wrestlers and judokas were 7.700, and between boxers and judokas it were -.950. The female boxers were found to have significantly lower levels of aggression as compared to the wrestlers. Though the boxers had lower levels of aggression as compared to judokas as well, however, these differences have not been found to be significant. Salam (2011) also noticed significant differences among different contact games (including boxing and wrestling) on physical aggression and hostility. Results with regard to the mean, SD and t-values relating to the two gender groups among boxers have been presented in Table- 5.

TABLE – 5

Gender Differences among International Boxers

Groups	Mean	SD	Mean diff	t-value
International Male Boxers	75.60	12.713	-6.050	-1.500
International Female Boxers	81.65	12.791		

The results depicted in Table – 5 above demonstrate that the international male boxers had a lower mean score of 75.60 as compared to the international female boxers (mean score 81.65). However, the mean difference for these two groups being - 6.050, and the t-value being -1.500, these differences have not been found to be significant. As per the classification in the aggression scale, both the gender groups fell in “average” category of aggression.

With regard to the wrestlers, the mean, SD and t-values relating to the two gender groups have been presented in Table- 6.

TABLE – 6

Gender Differences among International Wrestlers

Groups	Mean	SD	Mean diff	t-value
International Male Wrestlers	91.50	8.338	1.200	.438
International Female Wrestlers	90.30	8.980		

The results in Table – 6 indicate that though the male wrestlers had a bit higher mean score of 91.50 as compared to the mean score of 90.30 for the female wrestlers, but the t-value being merely .438, the same fell much below the significance level at 0.05, indicating no significant differences among these groups. However, these wrestlers were found to possess “high” level of aggression as per the classification.

Results with regard to the gender differences among judokas have been projected in Table – 7.

TABLE – 7

Gender Differences among International Judokas

Groups	Mean	SD	Mean diff	t-value
International Male Judokas	86.15	10.574	3.550	1.008
International Female Judokas	82.60	11.664		

The results regarding gender differences among judokas have revealed similar trend as in the case of wrestlers. Though the male judokas had demonstrated a higher level of aggression as compared to their female counterparts (mean scores being 86.15 and 82.60 respectively), but these differences were not found to be significant ($t=1.008$). Both the gender groups exhibited “average” level of aggression.

Conclusions

In the present study, inter-sport differences have been noticed among the three sports groups and the male boxers have been found to have significantly lower level of aggression as compared to wrestlers and judokas. Among female sports groups, boxers had significantly lower level of aggression as compared to the wrestlers, and even as compared to judokas (though not significantly). As per the classification provided with the aggression scale, the wrestlers fell in “high” category whereas boxers and judokas were placed in “average” category of aggression. Husman (2013) too had found that the boxers were significantly less aggressive than wrestlers and even cross country runners as they tend to direct their aggressive feelings inwardly (intra-punitive) rather than outwardly upon persons or things in their environment (extra-punitive). It seems that boxers need to have the ability to switch mental focus at the spur of the moment; he or she must have ‘narrow’ concentration to focus on ‘here and now’ at one moment, and at the next, must concentrate on the ‘global plan’ to consider the next moves. Bhardwaj (2013) have also reported boxers to have significantly higher concentration abilities. It is perhaps, for this reason that boxers undertake mental exercises aimed at increasing alertness, sharpening memory skills, improving concentration, and thinking faster, as every little moment matters for them (Roubein, 2011). This might be also for the reason that boxing is a unique sport. A common perception is that boxers need to psyche themselves up into a frenzied state, fuelled by anger with the intention of causing injury. However, boxers know that excessive aggression can be extremely harmful; a boxer not in control of his or her decision making can expose himself or herself to counterpunches. Any mental distraction can potentially cause a total collapse in the ring. They need to have arousal required for successful performance in the ring, but at the same time, must maintain calmness to follow the envisaged plan tactically.

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