

A COMPARATIVE STUDY OF BOUT ANALYSIS AMONG FEMALE JUDO PLAYERS IN DIFFERENT WEIGHT CATEGORIES OF OLYMPIC GAMES 2008 BEIJING CHINA

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Abstract

The purpose of the study was to analyze the bouts of female judo players participated in different weight categories in Olympic Games 2008 held at Beijing China. The parameters on which the bout analysis done were the duration of bout, manners of winning, and technique. The duration of bout was consist of the time duration of a single bout taken, manner of winning is consist of the scores ippon, 2x waza-ari, waza-ari, yuko, koka, and the penalties awarded to the contestants, and techniques was consist of the techniques which were used in all bout under the study as: Koshi-waza (Hip technique), Ashi-waza (Leg technique), Te-waza (Hand technique), Atme-waza (Grappling technique). To facilitate this study pre-quarter final and above 15 bouts were selected from each weight categories. The documents made available by the organizers of the Beijing Olympic Games constituted the material for this study. 45 bouts between the female contestants were analyzed in the respective 3 above mentioned weight categories. The data pertaining to all selected parameters for bout analysis were collected by analyzing the video recording of bouts of each weight categories from the Olympic Judo Tournament (Beijing 2008). The significance of the mean difference between the different weight categories in the relation of the duration of bout researcher has statistically analyze by one way analysis of variance (ANOVA). For another two parameters; manner of winning, and techniques were analyzed by the descriptive analysis because for these two parameters researcher could not took data in a numeric manner.

Introduction

Judo meaning "gentle way" is a modern Japanese martial art and combat sport, which originated in in the late nineteenth century. Its most prominent feature is its competitive element, where the object is to either, throw one's opponent to the ground, immobilize or otherwise subdue one's opponent with a grappling maneuver, or force an opponent to submit by locking the elbow joint or by executing a choke. Strikes and thrusts (by hands and feet)—as well as weapons defenses—are also a part of judo, but only in pre-arranged forms (kata) and are not allowed in judo competition or free practice (randori). In 1964 at the first Olympic Judo event in Tokyo there were 74 participants from 27 countries. By 1992 in Barcelona the Judo competition had grown to 437 participants from 93 countries. The Olympic weight classes have increased in number over the years. Starting with the Tokyo Olympics, 3 weight categories were introduced in addition to the open category. The categories were expanded to 6 (including an open category) for the 1972 Olympics and 8 for the 1980 Olympics. In 1992 the open category was dropped from the Olympics, so there are currently 7 weight categories for both men and women in the Olympics, i.e. below 48, -52, -57, -63, -70, -78, above 78. In these seven weight categories the medalists are Dumitru Alina (ROU) in (-48 K.G.), Xian Dongmei (CHN) in (-52 K.G.), Quintavalle Giulia (ITA) in (-57 K.G.), Tanimoto Ayumi (JPN) in (-63 K.G.), Ueno Masae (JPN) in (-70 K.G.), Yang Xiuli (CHN) in (-78 K.G.), Tong Wen (CHN) in (+78 K.G.).

Means And Methods

For the purpose of this study was to conduct the bout analysis of female judo players in Olympic 2008 held at Beijing, China. To facilitate this study pre-quarter final and above 15 bouts were selected from each weight categories. Here the researcher divided these weight categories in different three category namely lower weight category (-48 & - 52), middle weight category (-57, -63& -70), and upper weight category (-78 & open category). The documents made available by the organizers of the Beijing Olympic Games constituted the material for this study. 151 female judoka entered for the Olympic Judo Tournament (Beijing 2008). 45 bouts between the female contestants were analyzed in the respective 3 above mentioned weight categories. The parameters are the measures which describe the characteristics of the population. The parameters characterizing the sporting struggles at the Twenty-ninth Olympic Games 2008 (Beijing China) were: The duration of bout, Manner of winning, and Techniques.

Manner of winning:

Scores: (Koka, Yuko, Waza-ari, Ippon, 2xWaza-ari)

Penalties: (Shido I, II, III, Hansokumake)

Techniques:

Koshi-waza (Hip technique)

Ashi-waza(Leg technique)

The duration of bout: Te-waza(Hand technique)

Total time consumed during a fight. Atme-waza(Grappling technique)

The data made available by the organizers of Olympic Judo Tournament (Beijing 2008) constituted the material for this study. 151 female judoka entered for the Olympic Judo Tournament (Beijing 1996). 213 bouts between the female contestants were analyzed in the respective 7 weight categories. The frequency of duration of bout was compared: that how much time has one bout taken, manner of winning was compared: Ippon, 2xWaza-ari, Yuko, Koka, penalties and technique was compared: which technique is used mostly in the competition. The structural analysis of each bout also included the type and frequency of successful attacks employed in the standing position and during ground work, taking account of the Kodokan classification. These fighting techniques were illustrated with pictures found in publications. The data pertaining to all selected parameters for bout analysis were collected by analyzing the video recording of bouts of each weight categories from the Olympic Judo Tournament (Beijing 2008) and selected 15 bouts from each weight categories and total 45 bouts were collected.

Statistical Technique

As we know that we had three parameters of judo bout analysis namely: The duration of bout, Manner of winning, and Techniques. In the duration of bout we had three groups and for comparison of those groups researcher has statistically analyze by one way analysis of variance (ANOVA). For another two parameters; manner of winning, and technique were analyzed by the descriptive analysis because for these two parameters researcher could not took data in a numeric manner

Analysis of Data and Results of The Study

This could be the critical portion of the thesis in arriving at the conclusion by examining the hypothesis. This procedure of testing the hypothesis was done by accepting the research hypothesis or rejecting the null hypothesis in accordance with the result in relation to level of significance at 0.05 level of significance. The [probability level below which the hypothesis is rejected is termed as the level of significance. The "F" ratio which has obtained by analysis of variance was compared at 0.05 level of significance.

The following table illustrates the statistical result of the comparison of bout analysis of different weight categories namely lower, middle, and upper weight categories were compared. The difference between the mean of the group under study were given in the following table.

Table -1
One Way Analysis of Variance of The Mean Difference of The Duration of Bout

Source of variance	d.f.	S.S.	M.S.S.	"F" Ratio
Treatment	r-1	1.041	0.507	0.566
	3-1=2			
Error	N-r	37.621	0.895	
	45-3=42			

F ratio at 0.05 level of significance for 2 and 42 (df) = 3.22

Results of duration of the bout

The data of the duration of bout analysis of female judo players in Olympic Games 2008 held at Beijing China is presented in table – 1.

Table – 1 shows that the tabulated F ratio at 0.05 level of significance for 2 and 42 (df) is 3.22 is higher than the obtained “F” value 0.566. Hence there is no significant difference between the different weight categories of female judo players in Olympic Games 2008 held at Beijing China.

Discussion of findings of the duration of the bouts

Findings of the study showed that there was no significant difference in duration of bout of the judo female players at Olympic Games 2008 held at Beijing China. All weight categories were same in terms of this time total finish the court.

Table - 2

Analysis of the manner of winning of three weight categories

Source of variance	Lower Weight (47, 52, 57 Kg.)	Middle Weight (63, 70 Kg.)	Upper Weight (78, +78 Kg.)
IPPON	5	4	4
2XWAZA-ARI	1	2	2
WAZA-ARI	3	2	2
YUKO	4	4	3
KOKA	2	2	1
PANALTIES	-	1	3
Numbers of Bouts	15	15	15

Results of manner of winning of different weight category

Table - 2 shows that there are six ways to analyze the manner of winning namely ippon, 2xwaza-ari, waza-ari, yuko, koka, and penalties. Here Ippon is the highest score in judo and koka is the lowest score. There are four penalties namely shido I, II, III, highest penalty is the hansakumake.

Table-2 shows that Ippon is mostly awarded to the lower weight category than the middle category and upper weight category.

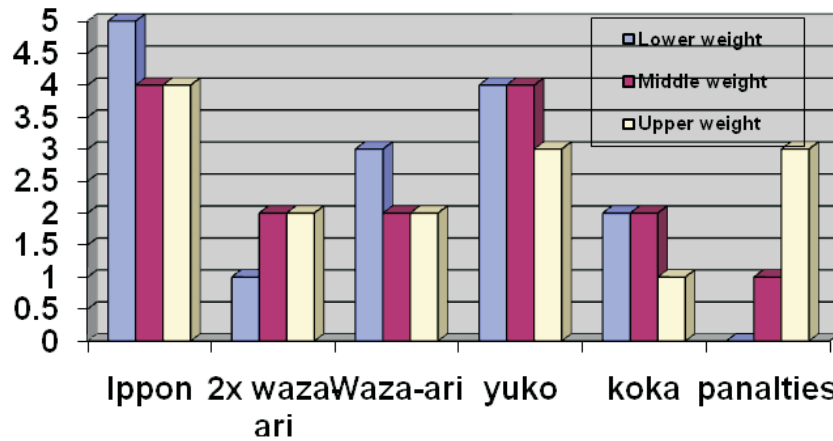
Table-2 shows that 2x waza-ari is mostly awarded to the middle weight category and upper weight category than the lower weight category.

Table-2 shows that Waza-ari is mostly awarded to the lower weight category than the middle category and upper weight category.

Table-2 shows that Yuko is mostly awarded to the lower weight category than the middle category and upper weight category.

Table-2 shows that Koka is equally awarded to all the three weight categories because koka is the lowest score in judo and it can get easily during the bout.

Table-2 shows that the neeoronce of penalties upper weight category is than the lower weight category and middle weight category.



Graph - 2 Bar Graph on Manner of Winning

Discussion of findings of the duration of the bouts

Findings of the study showed that, Ippon is mostly awarded to the lower weight category, 2x waza-ari is mostly awarded to the middle and upper weight category, waza-ari is mostly awarded to the lower weight category, yuko is awarded mostly to the lower category, koka is mostly awarded to the lower and middle weight category and from the penalties, benefits upper weight category was obtaining more number of penalties.

**Table- 3
Analysis of the technique of three weight categories**

Technique	Lower Weight (48, 52, 57 Kg.)	Middle Weight (63, 70 Kg.)	Upper Weight (78, +78)
Koshi- Waza (Hip Technique)	2	4	6
Ashi-Waza (Leg Technique)	5	7	3
Te- Waza (Hand Technique)	8	5	2
Atme-waza (Grappling Technique)	2	3	7

Results of techniques of different weight categories

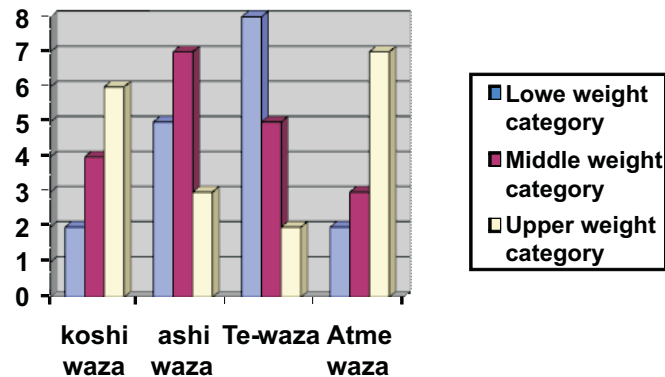
Table -3 show that there are four way to analyze the technique namely Koshi-waza (Hip technique), Ashi-waza(Leg technique), Te-waza(Hand technique), Atme-waza(Grappling technique).

Table-3 shows that Koshi-waza (Hip technique), is mostly applied by the upper weight category than the lower weight category, and middle category.

Table-3 shows that Ashi-waza(Leg technique) is mostly applied by the middle weight category than the lower category and upper weight category.

Table-3 shows that Te-waza(Hand technique), is mostly applied by the lower weight category than the middle category and upper weight category.

Table-3 shows that Atme-waza(Grappling technique), is mostly applied by the upper weight category than the lower category and middle weight category.



Graph – 2 Bar Graph on Technique

Discussion of findings of the duration of the bouts

Findings of the study show that, Koshi-waza (Hip technique) is mostly applied by the upper weight category, Ashi-waza (Leg technique) is mostly applied by the middle weight category, Te-waza (Hand technique) is mostly applied by the lower weight category, Atme-waza (Grappling technique) is mostly applied by the upper weight category.

Discussion of findings

Analysis of result revealed that there is no significant difference as far as time taken by the Judokas to finish the bout is concerned among the difference weight categories of female judo players in Olympics Games 2008 held at Beijing China.

The data further reveals that the Ist Group that is lower weight categories (48,52,57 kg) and Wazari (3) as compare to other two group IInd and IIIrd that is middle category (63,70 kg) and upper weight category (78, +75 kg) it may be due to lower body weight of the competitors which already and than one more explosive is this needed of Ippon and Wazari that is largely on the back and with considerable and force is more in comparison to the other two weight groups because of their heavy weight they may not able to throw the opponent with above mentioned technique.

While IInd Group (63, 70 kg) and IIIrd group (78, +78) that had shared maximum no. of 2×Wazari-ari (2) and yuko (2) as compare to Ist group, because of bout frequency is slightly low and they have got maximum no. of penalties and that's why their opponents getting maximum penalties, point.

However the Ist group and IInd group that had shared maximum no. of Koka (2) as compared to IIIrd group because of they take all most full time to their bout and also play defence.

In relation to penalties it was obtained that IIIrd group (upper group 78, +78) have got maximum no. penalties (3) as compare to other two groups that is Ist group (48, 52,57 kg) IInd (63, 70) because of the fact that bout frequency may be low due to the body weight and structure and they all so play very defensive in relation to other parameters that is technique (Hip technique Leg technique, Hand technique and grappling technique) of different it; obtained that IIIrd group that is upper weight category (78, +78) is apply maximum no. of Koshi Waza (Hip technique) (6) in comparison to other two group, lower and middle weight group, because of body structure, proportion e.t.c. might have provided advantages to apply hip technique than any other weight groups.

In other technique that is Ashi-waza (Leg technique) is used maximum no. of times (7) in middle weight category (63,70 kg) in compare to lower and upper weight group because application of leg techniques has on advantage of body for effective Tei subki (foot movement is not essential. This makes fast pace body turning not that essential and more are being in middle weight category player (63, 70 kg) of this category are structurally heavy, tall and long limbed. These entire factors made them recited to depend on leg techniques.

In next technique that is Tei waza (Hand technique) is used maximum no. of time (8) in lower weight group (48, 52, 57 kg) in comparison to middle weight and upper weight because all bouts findings can be attributed to the fact that in hand technique Kuzushi (pulling) tsukuri and Koka. (fitting and execution) etc. elements are required to be fast whatever the hand technique the entry and body alignment required to be deep close to opponent and complete, since, weight categories 48kg, 52 kg, 57kg are comparatively lighter weight category- Body structure, proportion etc. might have provided advantages apply hand technique than any other weight categories.

In other and last technique group that is Atme-waza (grappling technique) is used maximum no. of time (7) in upper weight group that is (78, +78 kg) in compare to other two groups the lower and middle weight category because, in move weight category players use lots off Ground work that is locking, choking and holds.

These findings are attributing due to equal level of standard among the entire Olympic Judo player.

Conclusions

1. There is no significant difference between the different weight categories of female judo players in Olympic Games 2008 inform of the duration of the bout.
2. Ippon is mostly awarded to the lower weight category than the middle category and upper weight category.
3. 2 x waza-ari is mostly awarded to the middle weight category and upper weight category than the lower weight category.
4. Waza-ari is mostly awarded to the lower weight category than the middle weight category and upper weight category.
5. Yuko is mostly awarded to the lower weight categories than the middle category and upper weight category.
6. Koka is equally awarded to all the three weight categories because koka is the lowest score in judo and it can get easily during the bout.
7. Penalty benefits were mostly received by lower weight category and middle weight category than upper weight category.
8. Koshi-waza (Hip technique), is mostly applied by the upper weight category than the lower weight category, and middle category.
9. Ashi-waza (Leg technique) is mostly applied by the middle weight category than the lower category and upper weight category.
10. Te-waza (Hand technique), is mostly applied by the lower weight category than the middle category and upper weight category.
11. Atme-waza (Grappling technique), is mostly applied by the upper weight category than the lower category and middle weight category.

References

- Komata, A biomechanical Investigation of kuzushi of O soto gari in Kano Cup international competition Bulletin of the association for the scientific studies on judo, Kodokan Tokyo Report V-1978
- Koshida, The common mechanism of anterior cruciate ligament injuries in judo : A retrospective. Br J Sports Med 42 .2008;
- Kruszewski, The evaluation of tactical and technical preparation of the senior medalists from 66 kg category participating in European Championships from 2004 to 2006. 2008
- Janez Per, Analysis of Player Motion in Sport Matches Computer science in sport –mission and method 2008
- Matsumoto, Takeuchi and Nakamura, “Analytical studies on the contest performed at the all Japan Judo Championship Tournament” Bulletin of the association for the scientific studies on judo, Kodokan Tokyo Report V-1978
- T Yamamoto, A Kigawa, and T Xu, Effectiveness of functional ankle taping for judo athletes: a comparison between judo bandaging and taping., Department of Sports Medicine, International Budo University, Japan. Br J Sports Med. 1993 June; 27(2): 110–112.
- Peter D Dijkstra, and Paul T.Y Preenen, No effect of blue on winning contests in judo 1 Division of Environmental and Evolutionary Biology, Graham Kerr Building, University of Glasgow Glasgow G12 8QQ, UK
- U. M. Kujala, S. Taimela, I. Antti-Poika, S. Orava, R. Tuominen, and P. Myllynen, Acute injuries in soccer, ice hockey, volleyball, basketball, judo, and karate: analysis of national registry data. Unit for Sports and Exercise Medicine, University of Helsinki, Finland, in volume 312 on page 844. Imamura R, Johnson B, A kinematic analysis of a judo leg sweep: major outer leg reap--osoto-gari. Department of Kinesiology and Health Science, CSU, Sacramento, USA.