



ANALYSIS OF THROWING TECHNIQUE IN 35th NATIONAL GAMES JUDO COMPETITION FOR WOMEN DURING 2015

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Abstract:

The Technical efficacy of throwing techniques in 35th National Games 2015 were subject to analysis. 56 female competitors in seven weight categories of different states, competing in 77 bouts under the 2012-2016 IJF Rules were analysed using Open judo software and recorded video footage of National games 2015 judo competitions. The ultimate aim was to develop a technical profile for Throwing techniques in India judo, looking into technique type and throwing efficiency. After the data analysis the female participants most effectively use standing technique (Te waza) to obtain scoring, with Ippon seoi nage (one arm shoulder throw) proving to be the most effective technique among Indian judokas. Osoto makikomi (major outer winding throw) and MOROTE-Seoi Nage (Both hand and shoulder throw) are being the other most scoring and efficient techniques.

Key Words: Technical Efficacy, Data Analysis, Judokas, Throwing Techniques & Side Sacrificing Technique

Introduction:

Olympic Judo is a sport with high relevance in understanding the reflexes, attacks and counterattacking capabilities of the players. A detailed analysis of techniques related to high performance Judo was conducted during 35th National Games held in Kerala in 2015. Judo competitions during the games lasted for 4 days and 56 female judokas from all over India participated. The major area of analysis was throwing of Judo. The entire competition was recorded using 4 video cameras. A single bout was recorded using four cameras; placing one each in every corner of the mat area. This was done in order to capture every movement by the judokas from every angle possible to make the analysis more reliable. A total of 77 bouts were conducted for female categories as well as all the 7 weight categories combined.

The seven weight categories for women are Extra Light Weight (-48kg), Half Light Weight (-52kg), Light Weight (-57kg), Half Middle Weight (-63 kg), Middle Weight (-70kg), Half Heavy Weight (-78kg), Heavy Weight (above 78kg). Various tactics related to each weight category was analyzed according to classification of judo techniques. Different types of throwing were analyzed. Throwing techniques were 67 in number and difference in techniques used by female judokas were closely watched and were noted down.

Out of 67 techniques approved by International Judo federations (IJF), 17 throwing techniques for female category were used by the referees for awarding points during the competitions. And the same parameters used by them were taken for our critical analysis. The procedure of analysis included close viewing of videos of each bout. The video was played in slow motion for better understanding of the techniques used by the judokas. The analyzing process was carried out by one international referee (IJF) and two national referees (JFI). The videos of a bout from cameras kept at four different angles were played simultaneously and these referees awarded points for the judokas according to their analysis. The scores awarded in real time for the bout during the competition were then compared with the scores awarded by the referees during the video analysis. And thereby it was analyzed whether the judgment during the competition was fair.

In the women's Extra Light Weight (-48kg) category successful throwing techniques were used 13 times. In the women's Half Light Weight (-52kg) category successful throwing techniques were used 11 times. In the women's Light Weight (-57kg) category successful throwing techniques were used 7 times. In the women's Half Middle Weight (-63kg) category successful throwing techniques were used 11 times. In the women's Middle Weight (-70kg) category successful throwing techniques were used 5 times. In the women's Half Heavy Weight (-78kg) category successful throwing techniques were used 2 times. In the women's Heavy Weight (above 78kg) category successful throwing techniques were used 10 times.

Population of the Study:

The participants for the study were the competitors qualified for the Judo competition of 35th National Games 2015 held at Thrissur. The top 8 states qualified in women section were taken part in event was considered. The teams participated are Punjab, Haryana, Uttarakhand, Delhi, Manipur, Karnataka, Meghalaya, and host state Kerala in Women's section The total numbers of participants were 56 in 7 weight categories in Female section.

Table 1: Throwing Technique Efficiency

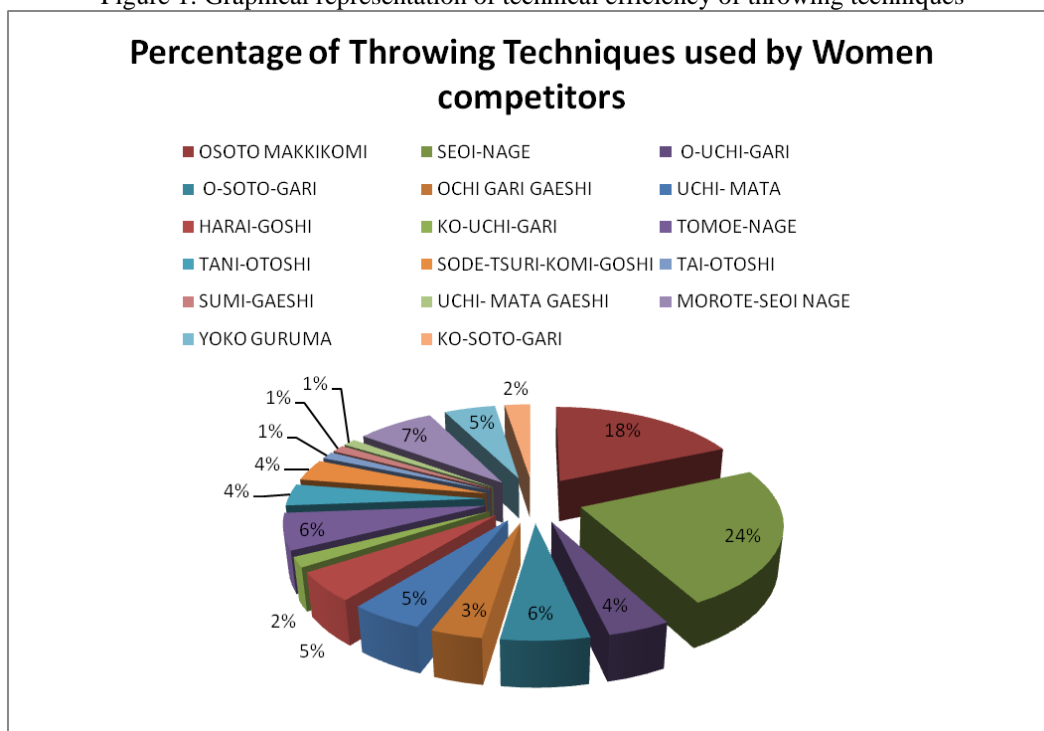
| S.No | Nage Waza (Throwing Techniques - Women) | Successful Attacks (SA) |
|------|---|---------------------------|
| 1 | Osoto Makkikomi | 0.96 |
| 2 | Seoi-Nage | 1.23 |
| 3 | O-Uchi-Gari | 0.22 |
| 4 | O-Soto-Gari | 0.31 |
| 5 | Ochi Gari Gaeshi | 0.18 |
| 6 | Uchi- Mata | 0.26 |
| 7 | Harai-Goshi | 0.26 |
| 8 | Ko-Uchi-Gari | 0.09 |
| 9 | Tomoe-Nage | 0.32 |
| 10 | Tani-Otoshi | 0.19 |
| 11 | Sode-Tsuri-Komi-Goshi | 0.19 |
| 12 | Tai-Otoshi | 0.06 |
| 13 | Sumi-Gaeshi | 0.06 |
| 14 | Uchi- Mata Gaeshi | 0.06 |
| 15 | Morote-Seoi Nage | 0.39 |
| 16 | Yoko Guruma | 0.26 |
| 17 | Ko-Soto-Gari | 0.13 |

Table 2: Technical Data of 35th National Games 2015 - Judo Women

| S.No | Nage Waza (Throwing Techniques - Women) | Weight Categories | | | | | | | Total Scores |
|------|---|-------------------|--------|--------|--------|--------|--------|----------|-----------------|
| | | -48 Kg | -52 Kg | -57 Kg | -63 Kg | -70 Kg | -78 Kg | Ab 78 Kg | |
| 1 | Osoto Makkikomi | 1 | 2 | 2 | 0 | 2 | 1 | 6 | 14 |
| 2 | Seoi-Nage | 6 | 1 | 3 | 2 | 2 | 0 | 0 | 14 |
| 3 | O-Uchi-Gari | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 3 |
| 4 | O-Soto-Gari | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| 5 | Ochi Gari Gaeshi | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| 6 | Uchi- Mata | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 |
| 7 | Harai-Goshi | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 3 |
| 8 | Ko-Uchi-Gari | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 9 | Tomoe-Nage | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 3 |
| 10 | Tani-Otoshi | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 11 | Sode-Tsuri-Komi-Goshi | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 12 | Tai-Otoshi | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 13 | Sumi-Gaeshi | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 14 | Uchi- Mata Gaeshi | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 15 | Morote-Seoi Nage | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 16 | Yoko Guruma | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| 17 | Ko-Soto-Gari | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |

The above presented table.1 and table.2 shows that, 112 Judo players participated in National Games 2015. Based on the gender, the population consists of 56 (50%) men and 56 (50%) women .Considering the participants' gender, in women section 7 weight category is included, 17 throwing techniques were used by women competitors for the competition. Among this Osoto makikomi and Seoi Nage were used 14 times each. The success of throwing technique depends on the number of points scored in the competition. After considering the analysis of Successful Attacks (SA) 1.23 scored with Ippon Seoi Nage and 0.96 scored with Osoto Makikomi. Morote seoinage was scored 3 times with SA score of 0.39.Tomoe Nage was scored 3 times with SA score of 0.32.Osoto Gari was scored 3 times with SA score of 0.31. Uchi Mata was scored 3 times with SA score of 0.26. Harai goshi was scored 3 times with SA score of 0.26.Yoko Guruma was scored 2 times with SA score of 0.26.

Figure 1: Graphical representation of technical efficiency of throwing techniques



In figure 1, the results of the study shows that the percentages of Successful Attacks (SA) of throwing technique performed by women competitors were Ippon Seoi Nage with 24%. The percentage of other techniques used are Osoto Makkikomi 18%, Morote-Seoi Nage with 7%, O-Soto-Gari with 6%, Tomoe-Nage with 6%, Yoko Guruma scored 5%, Uchi- Mata scored 5%, Harai-Goshi scored 5%, O-Uchi-Gari scored 4%, Sode-Tsuri-Komi-Goshi scored 4%, Tani-Otoshi scored 4%, Ochi Gari Gaeshi scored 3%, Ko-Soto-Gari scored 2%, Ko-Uchi-Gari scored 2%, Tai-Otoshi scored 1%, Sumi-Gaeshi scored 1%, Uchi- Mata Gaeshi scored 1%.

Research Instrument:

The data for the purpose of study was collected from the analysis of video recordings of the 77 bouts and technical data of the Judo competitions (Indian participants) held in 35th National Games 2015. The video recordings were appropriately tabulated and further statistically analyzed in detail to determine the possibility of optimizing the relationship between technical and tactical training (Stekowicz and Koziol, 1996) requirements of the Judoka. The present research initiative has been carried out in line with the international Algorithmic system (Hantau 2000) concept. As the international algorithmic system has been based on the complexity and specific motor actions the methodology for this study has been based on the international algorithmic systems.

Statistical Tools Applied:

The present research initiative has been carried out in line with the international Algorithmic system (Hantau 2000) concept. Judo as a sport has high relevance in understanding the reflexes, attacks and counterattacking capabilities of the players. As the international algorithmic system has been based on the complexity and specific motor actions the methodology for this study has been based on the international algorithmic systems.

Analysis:

A method used by Adam (2007) and Glenn et.al, (2015) to order the efficiency has been used to identify the highest scoring techniques performed in British Judo.

$$\% \text{ of successful attacks} = (\text{No. of successful attacks} / \text{total number of attacks}) \times 100 \quad (1)$$

The value of indices of efficient attacks (Sa) is equal to points scored by efficiently executed techniques during one contest,

$$Sa = (5 \times Y) + (7 \times W) + (10 \times I) / n \quad (2)$$

Where:

Y, W, I - number of attacks scoring for Yuko (Y), Wazari (W) and Ippon (I)

N - Number of contests

The analysis of the techniques used by women Judo players of National Games 2015 were noted.

Conclusion:

This study underlines the trend set in National level judo players of India regards to technique that are most effectively used in competition, with *yoko sutemi waza* contributing the highest percentage of scores overall and in the majority of the analysed categories. Tani otoshi is the most effective throw in used in the

tournament. Tani otoshi is the dominating technique; uchi mata is the second most frequently scoring attack within National games 2015.

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