



A Temporal Analysis of the u52kg

Women's Judo in the 2010 World Championships

Abstract

Developing an understanding of the temporal components within a contest can assist coaches in developing training methodology that is time effective. This study aimed to develop an understanding of the temporal components in the under 52kg division.

Pre-recorded footage was coded into temporal sequences. The results showed that on average there were 10.3 temporal blocks (hajime-matte) per contest, this was divided into work to rest ratios and the contribution of tachi waza and ne waza to the work segments. Furthermore the average duration of the contest, including matte blocks was 5.03minutes. Some of the results of this study concur with previous research.

Introduction

A major development in judo was the inclusion of women in the 1992 Barcelona Olympic games. Women had the same number of weight categories as men and therefore could produce the same number of medals.

Contests for both men and women can be up to five minutes in duration and can include extra time (golden score) of an additional 3 minutes (this changed in 2013 but was the case during this research). Developing an understanding of the work to rest ratios and the contribution of different technical components within a contest can assist coaches in developing training methodology that is time effective. Whilst the components of a contest have been studied previously there is little research that focuses solely on women's judo and therefore this study aimed to develop an understanding of the under 52kg division at the 2010 world championships.

Method

Pre-recorded footage of the 47 fights contested in the 2010 world judo championships under 52kg division was coded using sportscodelite performance analysis software (Sportstec, Australia) into temporal sequences of hajime-matte blocks. These blocks were then subdivided into tachi waza (standing) and Ne Waza (groundwork).

A 'coding window' was developed by the researcher using sportscodelite software (Sportstec, Australia) on an imac desktop computer (Apple, US). Figure 1 shows an example of the coding window.

Figure 1: Screen shot of sportscodelite being used to analyse the u52kg weight group. On the right hand side is the coding window that was developed for this temporal analysis.



The kumi kata phase included lead grip and main grip and therefore started at hajime and ended on the first attack or matte. Newaza included the transitional phase from nage waza.

Post data collection the results of "average time" for each contest was analysed in a one way ANOVA.

Selected References

Marcon, G., Franchini, E., Jardim, J.R. and Barros Neto, T.L. (2010) Structural Analysis of Action and Time in Sports: Judo. *Journal of Quantitative Analysis in Sports*. 6: (4)

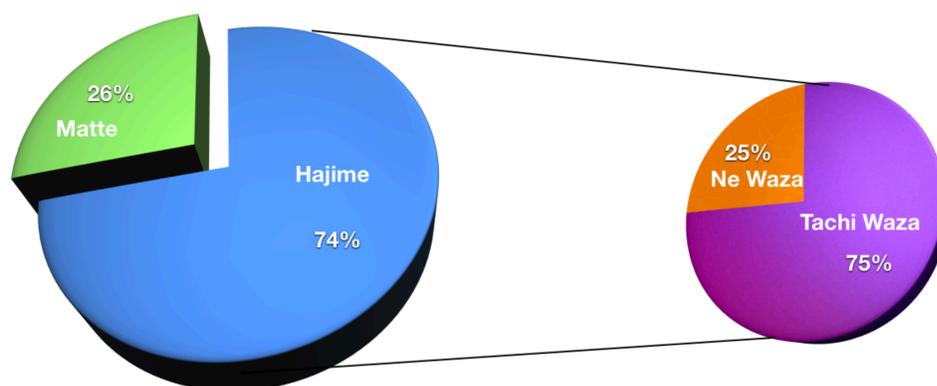
Sikorski, W. (2010). Identification of judo contest from physiological viewpoint. *Journal of Combat Sports and Martial Arts*. 2(2):1 115-118

Sterkowicz, S. (1999). Differences in the Specific Movement Activity of Men and Women Practising Judo. *Journal of Human Kinetics*. 1, 99-113.

Results

The results showed that on average there were 10.3 temporal blocks (hajime-matte) per contest. The average duration of this block was 23.1 seconds. The average duration of the contest, including matte blocks was 5.03minutes which was split 74% work (hajime) and 26% rest (matte). The work blocks were further divided into divided into Tachi waza (standing) and ne waza (ground work) which were 75% and 25% of the work time respectively.

Figure 2: Chart showing total contest time divided in work (hajime) and rest (matte) with the percentage of hajime time spent in ne waza (ground work) and Tachi waza (standing work).



Discussion and Conclusion

The initial conclusion that there were 10.3 temporal segments per contest is slightly less than other authors who reported 11 segments (Casterenas and Planas, 1997; Sikorski et al. 1987) or 12 segments (Sterkowicz's, 1999).

At an average duration of 23.1s (± 6.5) the work segments are similar to the findings of Sterkowicz (1999) who suggested they were between 15-30s and Sikorski (1987 & 2010) who suggests mean segment time was no more than 25s.

This study suggests an average rest segment of of 8.2s. (± 3.3 s). This fits within the boundaries of 5-10s suggested by Franchini et al, (2011) but is slightly shorter than the average 10s reported by Casterenas and Planas, (1997), Sikorski et al. (1987) and Sikorski (2010).

Figure 2 shows the work:rest ratio for the average contest as 3:1, this concurs with other researchers (Miarka et al., 2012; Franchini et al., 2011).

Studies of what occurs within each segment is limited. Of particular interest is the study by Marcon *et al* (2010), the authors considered four sections of the work segment as preparation, grip, technique & groundwork they also considered the recovery period (matte). This is similar to how this author views the structure of the contest as lead grip, main grip, attack/defend, transition, ne waza; although this was studied, for the purpose of this poster only tachi waza versus ne waza is presented. The 25% ne waza versus 75% tachi waza appears to agree with previous sources and could be useful for conditioning and metabolic training but first of all the true metabolic cost of tachi waza and ne waza must be understood.

In conclusion the duration of the work segments appears to agree with the published literature and is increasingly becoming established. A slightly lower frequency and duration of the rest segment could be indicative of a difference between lightweight women and other weight groups/genders but further research is needed to clarify. Further research should also consider the exact construct of the work segment.