DIFFERENTIATION SKILLS IN KARATE: A STUDY IN ITALIAN KATA’S WORLD CHAMPION TEAM

Invernizzi Pietro Luigi, Longo Stefano, Scurati Raffaele, Michielon Giovanni
(Faculty of Exercise Sciences – University of Milan, Italy)

INTRODUCTION
In fighting sports the individual and the team Karate’s Kata are very interesting competitions. For some high-level competitions it is usual to gather athletes from different cities or regions in order to build a strong team. Although the athletes are going to perform a synchronized competition they have to be trained more in individual way because of logistic reasons. Thereby it is not taken into account the real difficulty that an athlete could experience in the spatial and temporal adaptation to the two other partners.

AIMS
This study analyzed the differentiation skills in kata’s athletes through some physiologic indicator, such as [La-] and heart rate, with the aim to point out any fatigue or performance index due to a request of either spatial and temporal variations.

METHODS
Three athletes of the Italian national team, team kata world champions, performed the individual Gankaku kata at their maximum performance (Reference Trial = RT) and at some spatial and temporal variations: at 90% and 110% of the distance covered during the RT (maintaining the same RT duration) and at 110% and 120% of the RT time (maintaining the same RT covered distance). A limit of ± 5% was fixed to accept the trial results. Finally a synchronized team trial at the maximum performance was executed. Trials were video recorded; [La-] and the heart rate were collected. Data of each subject were analyzed by ANOVA repeated measures. A paired Student t test was applied between the individual trials and the team trial.

RESULTS
All the athletes easily performed the trials as requested (within 5% of tolerance). In the individual Kata analysis no differences were found both in [La-] and in heart rate except between the Reference Trial and the trial at 120% of the Reference Trial time (lower in this one). Furthermore athletes showed a higher heart rate in the maximal individual trial compared to the team trial.

CONCLUSIONS
Kata’s top level athletes have a very good differentiation skills: they adapt themselves immediately to the variations required, properly and without significant changes in the most of the physiologic indicators. These Italian top level athletes have a complete control of their motor conduct in the team kata, where they reduce the rhythm to adjust themselves to the space-time partners’ actions (as showed by the lower heart rate). We conclude that the few training team sessions these high level differentiation skill athletes have during the national gatherings are sufficient to reach the optimum performance level (as confirmed by their world performances).

REFERENCES

Keywords: Karate, Movement Control, Motor Skills