

## THE DIFFERENCES IN THE MOVEMENT STRUCTURES OF KATA, FIGHTS AND MENTAL POTENTIALS BETWEEN BOYS AND GIRLS WHO TRAIN KARATE

### **Abstract**

*The goal of research was to evaluate the movement structures of kata, fights and mental potentials from CRD series (attention distribution, operational thinking and psychomotor reactions) of 32 young karate students (17 boys and 15 girls). Next task was to determine differences in the arithmetic mean between boys and girls, aging between 10 to 14 years, by applying multivariate statistical methods and significant univariate analysis of variance. The results of applied multivariate analysis of variance (MANOVA) showed no statistically significant relationship in the entire system of variables ( $p=.09$ ). However, univariate procedures (ANOVA) obtained statistical significance only in DPUKPTM or total time ( $p=.01$ ), DPMINTM or minimum time of correct reaction ( $p=.01$ ), DPMAXTM or maximum time of correct reaction ( $p=.04$ ) and OMMINN or minimum time of correct reaction ( $p=.00$ ) variables all in favor of the boys. In variables with no statistically significant differences, boys had a longer path of training and were better in sports fight, while the girls were better in performing kata. In the space of attention distribution, operational thinking and psychomotor reactions, boys had better results in all applied variables except for total time variables – OMTAVRM. The research showed that the differences in favor of boys are a result of innate capabilities, functioning of CNS mechanisms and synaptic barriers within the neuromuscular system. The significant differences were recorded because the boys are much better in some perceptive abilities than girls are at that age. Individual experiences, gained through development and effect of training process in karate, have a certain positive effect on shaping the form of situational behaviour.*

**Key words:** *kata and fights, SRD series, boys and girls, age from 10 to 14 years, differences*

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