

## **Abstract**

**Title:** Utilization of Multidimensional scaling and kinetic tests for evaluation and selection of soldiers to courses of close combat

**The aim of work:** The work deals with the structure scale for evaluation of close combat techniques and the selection of predictors, which will improve the quality of the identification of soldiers with conditions for the successful solution of model situations using the techniques of close combat.

**Method:** In the beginning of the study is constructed a scale of criterion variable for evaluating techniques of close combat. The construction of scale was used the model of multidimensional scaling. The data was obtained from eight Czech Army experts of close combat. The scale was verified by generalized and weighted Kappa coefficient. By the kinetic tests was tested the group of 157 professional soldiers from different units. The soldiers were old between 20 and 32. Besides kinetic tests were in the study included the previous experiences with fight activities. To selection of the kinetic tests was used the model of linear regression. The evaluation of predictive power of kinetic tests was made by individual cohorts in prediction cycle.

**Results:** In first part of the study was created scale of criterion variable which contain three categories for classification of techniques of close combat. During assessment of similarity of proposed elements was described 75 % variability of dates by way of using two dimension in non-metric model MDS. First coordinate was described as optimal performance of technique of close combat and second coordinate as pragmatic usage of technique of close combat.

In second part of the study was chosen by way of using the statistic methods and expertise assessment 15 kinetic tests and two variables of the previous experiences with fight activities. The model for prediction of efficiency was chosen by the help of regression analysis and by using theoretical and logical substantiation. This model contains four kinetic tests of general movement performance and one kinetic test of the specify movement performance. The model included kinetic tests as sit-up, jump with rotation, exercise with middle stick, trunk forward bend in sitting position and roundhouse kick. To chosen kinetic tests was further added attendant variables of the previous experiences with fight activities. Regarding kinetic assumptions and previous experiences improves quality of the identification of successful

individuals. Also current usage of the kinetic tests of general and specify movement performance has proved.

**Key words:** kinetics tests, multidimensional scaling, generalized and weighted kappa coefficient, prediction validity, close combat.