SUMMARY

**IMPACT OF COORDINATION TRAINING
ON THE DEVELOPMENT OF TECHNICAL AND TACTICAL SKILLS
AND EFFECTIVENESS OF THE GAME OF YOUNG HANDBALL PLAYERS**

Handball continues to evolve, and today it has become more dynamic and fast than ever before. Parameters such as time and number of actions and effective playing time have changed (Bompa et al 2013) . The amount of specialized actions such as passing, throwing, close-range play and agility has increased (Chelly 2011). The high level of motor preparation and technical training of the players determine the nature of the post-competition in current handball. The multitude of stimuli in team games may suggest that the speed of the decision-making process is one of the main factors determining the final sporting success. Undoubtedly, coordination abilities, such as spatial orientation and reaction time, have a direct impact on making accurate decisions quickly. Therefore, coordination training is an integral part of the training process of all team games.

The study was characterized by issue of planning and conducting coordination training in handball at the stage of comprehensive and targeted training. The described experiment concerns players of developmental age with a relatively long training period for this age category. The purpose of the study is to determine the dynamics of changes in the analyzed motor and coordination abilities, and to establish the relationship between KZM and the effectiveness of technical-tactical activities of young handball players. Handball players born in 2001 were studied, and the players were divided into two groups. In the initial phase of the experiment, the experimental group consisted of 23 handball players, while the control group consisted of 22 boys. The above groups represented a comparable - high sports level, belonged to the leading Polish Handball Teams in their age category. The conduct of all tests and trials was divided into three stages. All stages were implemented over a period of time related to the annual training marcocycle in the 2015-2016 season. The scope of the study included the measurement of somatic characteristics, measurement of coordination abilities using "PTNR" tests (Klocek et al. 2002), motor coordination tests (Ljach and Pawelak 1998 as modified by Bodasinski 2004), measurement of fitness abilities and the author's observation sheet of field activities.

The results of the PTNR tests did not indicate clear intergroup differences. The experimental group performed better in some of the tests and the comparison group in others. In the case of these tests, it is hard to make arguments indicating the effectiveness of additional coordination training. The situation is different with the results of motor coordination tests. Here the experimental group achieved better results in six out of the seven competitions. It should be noted that in the first measurement the results of both groups were very similar both in terms of coordination and motor tests. Based on the results, it seems reasonable to conclude that the training shaping coordination motor abilities that the experimental group adopted had a positive effect over the course of the one-year training cycle and contributed to the development of the abilities assessed in sports-motor tests (Ljach and Pawelak 1998

as modified by Bodasinski 2004). It should be noted that the handball players of the comparison group also mostly recorded progress. Which indicates that the structure of handball training and the sheer complexity of conducting sports combat in this discipline determines the development of KZM. On the other hand, the dynamics of value gains in the groups and the absolute values clearly indicate the experimental group as the one that made more progress in this matter in all coordination abilities. As for the attempt to indicate the influence between the abilities monitored in the experiment and technical-tactical skills, in the case of the correlation of the results of the computerized coordination tests (PNTR) with the test results of the two groups, a total of nineteen results were recorded, which achieved a correlation coefficient equal to or greater than 0.4 or equal to or less than -0.4 (in the case of negative correlation). Analyzing the correlation results of Ljach and Pawelak's tests as modified by Bodasinski (2004), there were "positive" correlations in eighteen cases, indicating that a high level of a given ability is associated with effective actions. Interestingly, the number of correlations is the same as in the case of correlations of computer tests with technical-tactical activities. However, it does not apply to relationships between the same abilities and capabilities, which may be an argument for using these tools together in research so that the view and interpretation of the results are as comprehensive as possible. The highest number of correlations was recorded between test scores and technical-tactical skills concerns motor tests. A total of one hundred and one correlations were recorded, of which as many as 97 "positive" with four negative. This fact seems to be natural given the characteristics of conducting sports combat in handball. It seems natural that the majority of locomotor actions clearly correlate with a high level of lower limb power. Such actions as effective short-circuiting or pressing are obviously determined not only by coordination but mainly by motor abilities. Many of the technical-tactical actions that correlated with the KZM indicators were actions not recorded in the classic observation sheets. This situation applies to both offensive and defensive actions. The aforementioned actions with a high correlation index are related to the basic sentences a player has during a match (pass, throw, assist, interception, decision) Tools for reliable recording of field actions can influence the improvement of the training process. On the basis of the results of this work, further consideration of this issue seems to be warranted.