

ANALYSIS OF SPECIALISTS' OPINIONS ON THE ISSUE OF SPECIAL PHYSICAL TRAINING OF JUNIOR WATERPOLO SWIMMERS DEPENDING ON THE PLAYING POSITION

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Abstract: *Currently, optimizing the training process, in particular the special physical training of junior waterpolo swimmers is a complex and important challenge in performance sports. The subject of the research is solving the problem of the special physical training of junior waterpolo swimmers, which requires integrated and personalized approaches, taking into account the individual needs of the athletes depending on the playing position and the specific requirements of the event. In order to achieve a complete and detailed picture of the investigated subject, the following research methods were used: the study of bibliographic materials, pedagogical observation, the questionnaire, conversations with specialists in the field. The obtained results show that the specialists in the field are of the opinion that special physical training must have an important role in the training of junior waterpolo swimmers in the water polo competition, a fact that requires the creation of specific characteristics for the playing position.*

Key words: *specialists in the field; water polo; training.*

1. Introduction

Long-term sports training is an integral pedagogical system, which is based on physical development models that follow the age of athletes and the formation of their sports and technical skills. The mentioned aspects are required to be considered especially at the junior level in many team sports and especially in water polo [10, p. 2].

Water polo is an exciting water sport both for those who practice it and for those who are in the stands as it combines two sports at the same time, namely: swimming and handball. This fact requires general and special physical, technical-tactical and special psychological training, helping players reach their full potential and achieve their goals [2], [4, 5], [8].

Water polo is a high-intensity sport that places significant demands on athletes'

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swimming abilities and overall physical conditioning. Here's how adequate physical training contributes to achieving expected results in water polo competitions [1, p. 225].

Nurkovic N., and coauthors, [6, p. 15] are of the opinion that training water polo players requires systematic and continuous work throughout the year, which emphasizes all types of training: general and specific physical conditioning, technical-tactical skills, psychological, etc. At the same time, the significance of the specific physical condition profile for various playing positions is already known in team sports, having been studied by several authors, but such studies are less common in water polo, especially among junior players [3], fact also confirmed by Ostrovs'kij M.V., Poproshaiev O.V., Chaplins'kij M.M., Sidorko O.J. [7], who mentioned that there are few studies conducted on the characteristics of the development of physical qualities of water polo players in the training process.

Addressing the various challenges in performance sports, particularly in water polo, requires a specific approach that recognizes the unique demands of each playing position. By adopting a position-specific approach to training and development, coaches can empower junior water polo players to reach their full potential within their roles on the team. This targeted approach, combined with collaborative efforts between coaches and water polo players, can contribute to maximizing the sports potential of junior polo players.

2. Materials and Methods

2.1. The purpose of the research is to identify the model of special physical training of junior polo players and the role of this type of training in the training process, according to the experts in the field.

2.2. Research methods

Within the elaboration of this article, for obtaining a comprehensive understanding of the subject, particularly in the context of a holistic approach, as research methods were used: the study of bibliographic materials, pedagogical observation, the survey method, conversations with athletes, coaches and specialists in the field.

2.3. Research subjects

The coaches of the water polo teams from the Republic of Moldova.

3. Research Results

Several specialists including Poproshaiev O.V. [9, p. 111] believes that at the current stage of training of water polo players, great attention is paid to the indicators that contribute more effectively to a positive result in game activities and competition. Among them the most important indicators are special swimming resistance and game performance. All this is also related to the changes in the rules, which increase the playing time and influence various aspects of the training of water polo players, the physical training and condition of the athletes. This

problem has been studied previously; however, many questions remain unanswered, particularly concerning the specific needs of junior players. Therefore, the research can provide valuable insights and information to coaches and sports professionals. These insights can help them tailor training programs to meet the specific needs of junior players, ultimately enhancing their performance and development. This fact is dictated by the need for training strategies for junior polo players, in order to reach their full potential and achieve desired results in water polo competitions.

In this research context, the methodology involved developing a questionnaire specifically tailored to gather insights from water polo coaches from specialized sports institutions in the Republic of Moldova (40 respondents).

Figure 1 illustrates the educational goals in the training of junior water polo players, emphasizing the development of both physical and psychological skills essential for success in the sport.

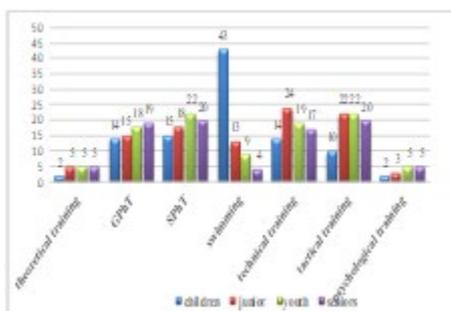


Fig. 1. Structure diagram regarding the importance of educational goals in the training of water polo players in an annual training cycle (in %)

Educational purposes in the training of junior polo players include general and special physical development, psychological and theoretical training, technical and tactical development of players, as well as the formation of values as a discipline, perseverance and respect for the opponent.

In order to identify the importance of educational purposes in the training of water polo players within an annual training cycle and across different age categories, coaches surveyed highlighted several key factors. In this sense, the weight of some factors differs essentially compared to other factors, such as swimming - having the maximum weight for children 43%, with the obvious tendency of reduction for juniors 13%, for youth and seniors it remains at 9%. If we analyze general and special physical training, we find a slight upward trend, starting with 14% and 15%, respectively, up to 19% and 20%, respectively, followed by technical and tactical training, the weight of which changes depending on the level of training of the players.

The insights gleaned from Figure 1 and the responses from specialists underscore the critical interdependence and conditioning between various educational purposes and special physical training in the preparation of junior water polo teams. Here's an analysis based on the provided information: Theoretical and psychological training importance, despite their smaller weight in Figure 1 (5%), but this fact in no way diminishes the importance of these purposes in the training of performance athletes. The survey results indicating a 93% confirmation of correlation and mutual

influence between educational goals and special physical training highlight the interconnected nature of these components. This underscores the recognition among specialists that various aspects of athlete preparation, including general physical, technical, tactical, and psychological training, are interrelated and mutually influence each other.

Figure 2 highlights the perceived importance of general and special physical training in the training of junior water polo players, as indicated by the responses from respondents. Approximately 29% of respondents attribute a decisive role to general physical training, while 31% attribute the same to special physical training. This suggests that a significant portion of respondents view both types of physical training as fundamental pillars in the overall preparation of junior water polo players. These respondents likely believe that without a solid foundation in general and special physical conditioning, athletes may struggle to perform optimally in the sport. A majority of respondents (57% for general physical training and 60% for special physical training) attribute an important role to both types of physical training. This indicates that the majority recognizes the significance of physical conditioning in athlete development but may not consider it as the sole determining factor for success. A smaller percentage of respondents (12% for general physical training and 9% for special physical training) stated that it is “at the same level as other factors.” This suggests that some respondents believe that while physical training is crucial, it should be considered equally alongside

other aspects of players preparation, such as technical skills, tactical understanding, and psychological readiness.

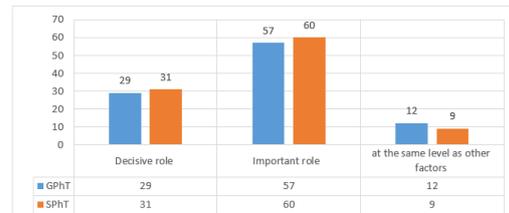


Fig. 2. *Structure diagram regarding the role of general and special physical training in the training of a team of junior polo players*

In conclusion, the integration of both general and special physical training plays a crucial role in enhancing the performance of junior water polo players. By combining these two types of physical conditioning effectively, players can improve their endurance, precision, and overall resilience in the game, leading to better performance outcomes in competitions.

The analysis of survey results indicates strong support (87% of respondents) for the implementation of a standardized special physical training model applicable to all water polo teams in the Republic of Moldova, starting from junior levels. Such a model could provide consistency and efficiency in athlete development across different age groups and teams.

The respondents' arguments regarding the implementation of a unique special physical training model for all water polo teams in the Republic of Moldova highlight several key benefits and objectives for the sustainable development of the sport in the country. Here's an analysis of their views and the

associated targets:

- Approximately 18% of respondents support the idea of standardizing training across all teams, irrespective of their performance level or age. This approach aims to ensure consistency and uniformity in training practices, which can facilitate easier coordination, evaluation, and progression of athletes and teams.
- Another 18% of respondents advocate for the development and improvement of water polo coaches in Moldova through training based on a unique methodology. By providing coaches with standardized training methods and resources, this approach can enhance their coaching skills, knowledge, and effectiveness in nurturing young talent.
- About 17% of respondents emphasize the importance of a systematic and coherent approach to special physical training. This approach aims to optimize player development by structuring training programs that address specific physical conditioning needs, leading to improved performance and competitiveness in competitions.
- Fifteen percent of respondents highlight the potential for effective use of available resources, including equipment, facilities, and space. By implementing a standardized training model, resources can be allocated more efficiently, ensuring that teams have access to the necessary tools and facilities to support their training needs.
- Another 17% of respondents underscore the importance of increasing the performance of athletes to enhance competitive opportunities for domestic teams at the national and international levels. By improving player

development through standardized training practices, Moldovan water polo teams can become more competitive on the global stage, thus raising the profile of the sport in the country.

Overall, these arguments and objectives emphasize the potential benefits of implementing a unique special physical training model for water polo teams in Moldova.

Constructive collaboration between the Water Polo Federation of the Republic of Moldova and water polo coaches is essential for the successful implementation of a unique model of special physical training. Here's an analysis based on the provided information:

- 32% of respondents suggest that the model of special physical training could be adopted from successful water polo schools in countries such as Montenegro, Serbia, Romania, or others with a rich tradition in the sport. Drawing from the experience and knowledge of these countries could provide valuable insights into effective training programs, methodologies, and techniques used to enhance player performance.
- However, the majority of respondents (68%) advocate for adapting the training model to suit the specific needs of Moldovan players. While learning from successful polo schools abroad is beneficial, it's crucial to consider the unique traits and characteristics of Moldovan players and adapt the training program accordingly. This ensures that Moldovan athletes benefit from the same principles and methodologies while addressing their specific requirements and challenges.

Overall, the responses highlight the importance of striking a balance between leveraging international best practices and tailoring the training model to fit the Moldovan context.

The unanimous agreement among respondents regarding the influence of specific factors such as climatic conditions, existing infrastructure, availability of facilities, cultural differences, differences in players' training levels, and playing conditions in Moldova underscores the

importance of tailoring the physical training model to suit the unique context of Moldovan water polo.

Implementing the same model of special physical training for all teams in a water polo sports institution can be beneficial for the development of the sport as a whole and for the progress of players in all sports teams, 88% of respondents claim. In the opinion of the respondents, the implementation of the unique model of special physical training for all teams would ensure:

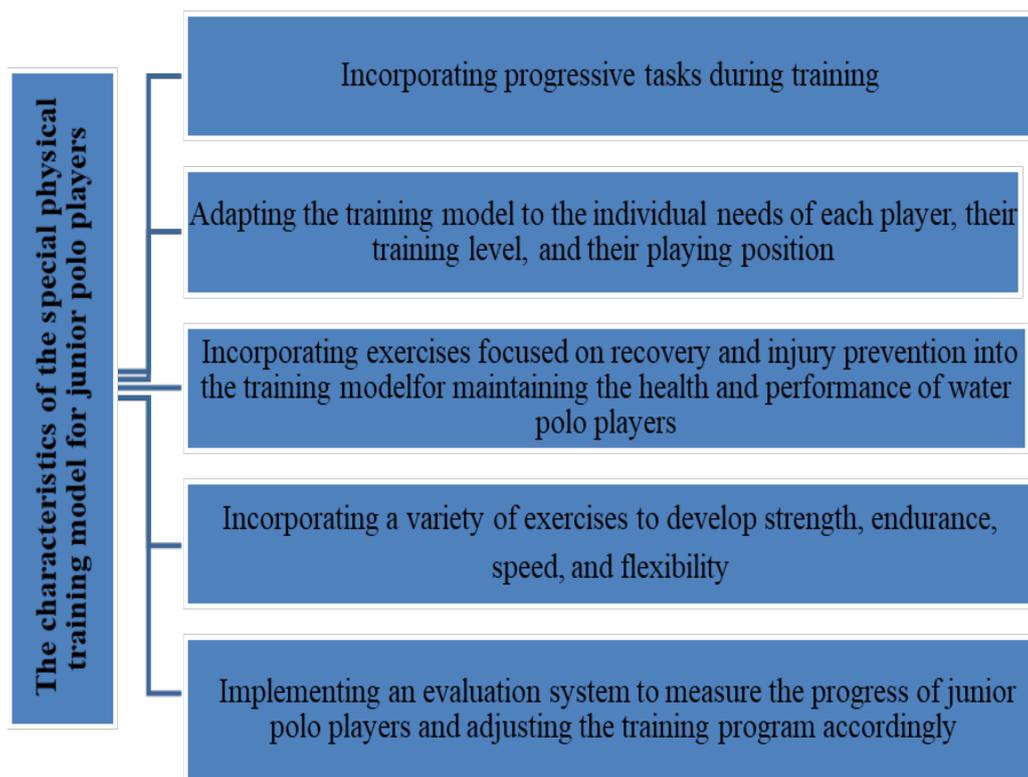


Fig. 3. *Characteristics of the special physical training model for junior polo players, depending on their importance*

Figure 3 depicts the ranking of characteristics of the special physical training model for junior water polo

players, according to their perceived importance as identified by respondents. Here's an analysis of the characteristics

and their significance for achieving notable performances:

- **Systematic and Coherent Approach:** This characteristic likely ranks high in importance, as it ensures that all players, regardless of their training level or age, receive consistent and structured training.
- **Providing opportunities for players to progress through different stages of their development, from junior to senior levels.** Collaboration opportunities and the exchange of experience in competitions for junior representative teams are essential for enhancing athletes' performance. By exposing junior players to competitive environments and facilitating interaction with peers and coaches from other teams, this characteristic promotes skill development, learning, and growth.

Emphasizing the individual needs of players and the specific strategies adopted by the team is crucial in designing effective special physical training programs for junior water polo players.

Water polo is a physical contact sport, players need strength and endurance to move quickly in the water, fight for possession, defend and score goals.

Specialists in the physical training of junior polo players 92% argue that it must be adapted physical training according to each player's playing position in water polo is essential for optimizing performance, reducing injury risk, promoting player development, and enhancing overall team effectiveness. In such a way:

- Developing speed, agility, explosive power, and scoring ability are

paramount for attacking players. These qualities enable them to create scoring opportunities, evade defenders, and execute shots with precision and power. Training programs for attacking players should include drills and exercises that enhance speed, agility, and explosive power, such as sprinting drills, agility ladder exercises, and plyometric jumps.

- **Defensive players require muscular strength, endurance, and flexibility to effectively defend against opponents and move quickly in the water.** Developing defensive skills and positioning is also essential for thwarting opposing attacks. Training for defensive players should prioritize exercises that build muscular strength and endurance, such as resistance training, bodyweight exercises, and circuit training. Flexibility exercises and agility drills can help improve mobility in the water, while defensive drills and simulations can hone defensive techniques and decision-making abilities.
- **Goalkeepers need muscle strength, flexibility, agility, and reflexes to execute quick movements, handle shots, and make saves effectively.** Developing swimming speed and water handling skills are also crucial for goalkeeper performance. Goalkeeper training should include exercises that target muscle strength, flexibility, and agility, such as core stability exercises, dynamic stretching, and agility ladder drills. Reflex training drills, ball handling exercises, and diving simulations can help improve reaction time and shot-stopping abilities.
- **Conducting 90% of training in the water is essential for simulating game**

conditions and enhancing players' endurance, strength, and speed in their natural environment.

The respondents made a classification of the aspects on which the differentiated physical training of the junior polo players must be focused, a fact that will ensure them to maintain their physical condition

and achieve results (Table 1).

The classification of physical training for junior polo players based on their playing positions underscores the importance of tailoring training programs to address the specific demands of the sport, including endurance, flexibility, suppleness, and coordination.

Table 1

The differentiated physical training of junior polo players must be focused on the following aspects

Improving aerobic and anaerobic endurance	
Motivation: Water polo is a demanding sport that requires players to exert intense physical effort throughout the entire match. A well-developed aerobic and anaerobic endurance is essential for athletes to sustain high-level performance and excel in the sport.	Gameplay Benefits: Endurance plays a crucial role in water polo by allowing players to maintain high levels of performance throughout the match.
Flexibility and suppleness	
Flexibility and agility play crucial roles in injury prevention for water polo players.	Adaptability is a key attribute that provides water polo players with a significant competitive advantage by enabling them to move easily in the water, respond quickly to changing game situations, adjust their tactics and strategies as needed, and maintain mental resilience under pressure.
Coordination	
Efficient movement allows players to navigate the water with ease, including swimming strokes, treading water, and changing direction, to maintain a smooth and controlled motion.	Good coordination is essential for accuracy in throwing and catching, two fundamental skills in water polo. By developing their coordination, players can enhance their effectiveness in passing, shooting, and maintaining possession, ultimately contributing to their team's success in the game.

The survey results indicating that 80% of respondents consider treating players differently based on their position as important in water polo underscore the recognition of the unique responsibilities and roles associated with each position on

the field. At the same time, all respondents (100%) mention that players may need to be flexible and play several positions, or even change positions during a game, highlights the dynamic nature of water polo and the importance of

adaptability in player roles.

In such a way integrating both position-specific skill development and conditioning to meet the energy demands of water polo is crucial for comprehensive athlete training programs.

4. Conclusions

As water polo competitions become increasingly competitive, it is imperative for coaches to train players to be flexible and adaptable in their gameplay. This flexibility enables players to seamlessly transition between positions as needed during matches, enhancing the team's overall versatility and strategic options. By applying differentiated treatment in the special physical training of junior polo players, coaches can maximize individual performance and team cohesion. For instance, goalkeepers can focus on improving reflexes and blocking techniques, while attackers can work on creating scoring opportunities and defenders can hone their defensive positioning. This tailored approach to training ensures that players develop the specific skills and attributes required for their positions, ultimately contributing to the team's success in competitions.

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