



Science, Movement and Health, Vol. XXIV, ISSUE 2 Supplement, 2024
September 2024, 24 (2): 258-263
Original article

OPINIONS ON PHYSICAL TRAINING IN SENIOR HANDBALL: COACH AND ATHLETE PERSPECTIVES

GEORGESCU ADRIAN DORIN¹, GIDU DIANA VICTORIA¹, TUDORICĂ NICOLETA², GEORGESCU ANDREEA ALEXANDRA³, ONUR AKMAN⁴, MUTLU TÜRKMEN⁴, LICA LAURENTIU⁵, BURCEA GEORGE BOGDAN⁵, OLAR VLAD³, DRAGOMIR MARIAN², CAZAN FLORIN¹, OLTEAN ANTOANELA¹

Abstract

Aim. Women's handball has evolved spectacularly in recent decades, becoming an arena where agility, strength, and endurance are the keys to success. Physical training thus becomes a crucial component in achieving peak performance, both nationally and internationally.

Methods. To obtain the necessary data and respond to the established objectives, two different questionnaires were used: one addressed to the handball coaches of the senior women's team and another addressed to the handball players from the senior women's teams in Romania. The research was carried out in several stages, as outlined in table 1, with each stage being dedicated to the collection of relevant data from the two target groups.

Results. The answers provided by athletes and coaches also suggest some differences in their perception of the impact of general physical training in handball:

Technical advantage:

- Coaches: 71.43% of coaches believe that physical training offers a technical advantage.
- Sportswomen: 22.22% of sportswomen believe that physical training offers a technical advantage.

Psychological advantage:

- Coaches: No coaches selected this option.
- Sportswomen: 11.11% of sportswomen believe that physical training offers a psychological advantage.

Conclusions. In the analysis of the results from the questionnaire applied to handball players reveals fundamental aspects related to physical training. The female players involved in the study show considerable dedication to handball training, participating in 6-9 training sessions per week.

Keywords: handball, senior, questionnaire.

Introduction

Women's handball has evolved spectacularly in recent decades, becoming an arena where agility, strength, and endurance are the keys to success. Physical training thus becomes a crucial component in achieving peak performance, both nationally and internationally. There is a continuous concern in exploring the role of general and specific physical training in the context of women's handball at the senior level and its impact on performance capacity. (Cunniffe, Proctor, Baker, & Davies, 2009; Di Salvo. et al., 2007; Michalsik, Madsen, & Aagaard, 2014).

In women's handball, general physical training serves as the foundation for achieving a high level of performance. Developing strength, speed, and endurance gives players a competitive advantage. The French women's national handball team is an eloquent example of how general physical training can influence performance. (Angrosino, M. V. & Mays dePerez, Kimberly A. 2000).

Focusing on endurance and speed, Norway dominated the international scene, winning major titles and establishing themselves as an undisputed force in women's handball (Colibaba-Evuleț D., Bota I. (1998). *Jocuri sportive. Teorie și metodică*. București).

Specific physical training in women's handball aims to develop the specific skills of this sport.

Elements such as throwing technique, fast lateral movements and anticipation are emphasized. By integrating specific handball drills into training, players become more efficient in performing match-specific tasks. Neumann (Constantinescu), O.V., (2016), Bompă, T. O. (2014). (*Teoria și metodologia antrenamentului. Periodizarea*. Curtea de Argeș)

¹ Faculty of Physical Education and Sport, "Ovidius" University from Constanta, Bd Mamaia no 124, Romania; Corresponding adrian_georgescu_78@yahoo.com;

² University of Craiova, Doctoral School of Sport Science and Humanities;

³ Scholar Sports Club Medgidia, Constanta, Romania;

⁴ Bayburt University, Faculty of Sport Science;

⁵ Department Theory and Methodology of Motor Activities, Faculty of Physical Education and Sport, University of Craiova.

Methods

The aim of this study is to investigate and analyze the impact of general and specific physical training on the performance capacity of senior handball players and to obtain a detailed understanding of the perceptions of coaches and players regarding the essential role of physical training in achieving sports excellence. By questioning them, the goal is to evaluate the current means and methods of physical training, identify the benefits and challenges associated with existing training programs, and formulate recommendations to improve the efficiency of physical training in the specific context of women's handball at senior level.

✓ Elaboration of a structured questionnaire to analyze the opinion of coaches on the need to implement specific trainings focused on the defensive aspects of the handball game.

✓ Analyze and synthesis of the results obtained from the questionnaire to identify dominant perceptions and variations in coaches' opinions about defensive training.

✓ Design, planning and implementation of specific operational systems for the development of defensive capabilities, considering the level of physical, technical and tactical training of the athletes studied. Preliminary investigations, including the evaluation of the perceptions of senior handball coaches and players, as well as the practical implementation of a general and specific physical training program at the senior level in women's handball, are based on the following assumptions:

Applying a questionnaire to handball coaches and players will reveal that their perceptions of the impact of physical training significantly influence the team's performance in matches, identifying the key aspects that contribute to improving the team's results. We will analyze, from the perspective of the answers from both categories of respondents, the existence of a correlation between the level of general and specific physical training of senior handball players and their performance in sports competitions.

The development of the questionnaire applied in our study was preceded by the establishment and formulation of the research problem, the delimitation of the research objectives and the formulation of the main research hypotheses. Based on the experimental design, we established the sample on which the questionnaire would be applied, including the coaches of the senior handball teams and the handball players of the senior teams in the Romanian championship, representing the target of our survey.

The interview for coaches was designed to assess their perspective on the physical training of handball players, the methods used, the aspects of interest and the challenges encountered in this process. The questions were developed to obtain detailed information about existing physical training strategies, opinions on their effectiveness and suggestions for improvement. The interview consist of 13 closed questions and one open question, and at the beginning demographic data such as age, seniority in coaching, the level at which they train at the time of applying the questionnaire and the number of training courses followed throughout their career, are requested from those interviewed.

The questionnaire for female athletes was designed to evaluate the experiences of seniors in handball teams regarding physical training. The questions aimed to gather information about their current fitness regimen, previous experiences, perceptions of the effectiveness of their workouts, and suggestions for improvement.

The questionnaire for athletes contains 12 closed-ended questions and one open-ended question.

Additionally, at the beginning of the questionnaire, data on age, seniority as a handball player and the echelon/level at which they play at the time of applying the questionnaire are requested.

The questionnaire was distributed using the Google Forms application and the interview with coaches was conducted in person or via video-call applications.

Results

To obtain the necessary data and meet the set objectives, two different questionnaires were used: one addressed to handball coaches from the senior echelon and another addressed to handball players from senior teams in Romania.

The research was carried out in several stages, as outlined in Table 1, with each stage dedicated to collecting relevant data from the two target groups.

The questionnaires were first tested in the form of a pilot study to verify their consistency and were then distributed between June 2023 and August 2023 to the senior handball players and coaches of the respective teams, ensuring comprehensive participation.

For the analysis of the data collected from the questionnaires, we calculated and interpreted the distribution of the responses. Graphs were created to provide a clearer visualization of the results.

The subjects who received the questionnaires were divided into two distinct groups: coaches and senior handball players from the Romanian championship. Each group received a link to their respective questionnaire. They were informed of the deadline period for responses, which was (August 31, 2023). The interview for coaches was sent to all 14 coaches in the senior championship, but only 12 responded.

The questionnaire for female athletes was sent to all senior teams (n=14) but only 106 full answers out of 280 possible were received. The stages of the research were organized as follows, according to table no. 1:

Table 1. The stages of the research

Stage	Period	Activities
I	01.05.2023-10.05.2023	Development and application of pilot questionnaires
II	10.05.2023-15.05.2023	Elaboration of final questionnaires
III	16.05.2023-30.05.2023	Establishing the research subjects
IV	01.06.2023-31.08.2023	Application of questionnaires and application of motor tests
V	01.09.2023-30.11.2023	Data collection and information processing
VII	01.12.2023-15.03.2024	Analysis and interpretation of the collected data
VIII	16.03.2024-01.07.2024	Drafting the progress report III

Discussions

We will further analyze only the most significant answers to the questionnaire in our opinion.

The average age of the athletes surveyed is 24+5.65 years. They have been playing handball for 14.89+3.53 years old and all the athletes surveyed were playing in the National League at the time of our research.

1. How many training sessions do perform per week?

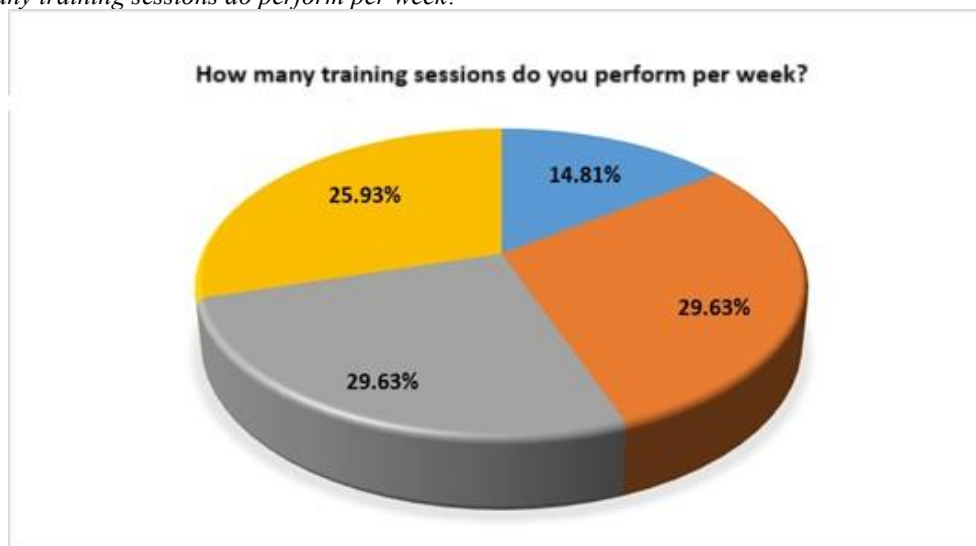


Figure 1. Proportion of answers to question no. 1 – sports questionnaire

The responses regarding the frequency of training sessions per week from senior handball players, with the majority indicating 6-9 weekly trainings, suggest some relevant aspects:

- most players (29.63%) participate in a significant number of training sessions per week, indicating a high level of involvement and dedication. This likely reflect their determination to improve their performance and achieve their handball career goals.
- handball is a sport that requires intense and regular physical training to maintain optimal performance. Therefore, participating in a greater number of weekly training sessions can be considered essential for developing and maintaining the physical aptitudes and technical skills required in high-level handball competitions.
- a higher number of training sessions provides more time for tactical and technical work. Consequently, players who train more often may have better training in the strategic aspects of the game and a deeper understanding of the specific tactics and approaches needed to be successful in handball competitions.

The responses of senior handball players regarding the frequency of training per week, shown in Figure 1, indicate a strong commitment to the sport, the need for intense training, and a high ambition to succeed in handball competitions.

2. What exercises do you think should be included in your physical training programs?

The most popular option for senior handball players regarding new exercises to include in their physical training programs is personalized exercises (37.04%). This suggest a willingness to tailor training programs to the individual needs of each player, considering their strengths and weaknesses. This is followed by exercises for the development of muscle strength (25.93%), indicating a heightened concern for improving muscle strength and endurance, wich are essential for handball performance.

According figure 2 proprioceptive exercises (22.22%) are also mentioned as an important option, reflecting the importance of coordination and balance in the context of sports performance.

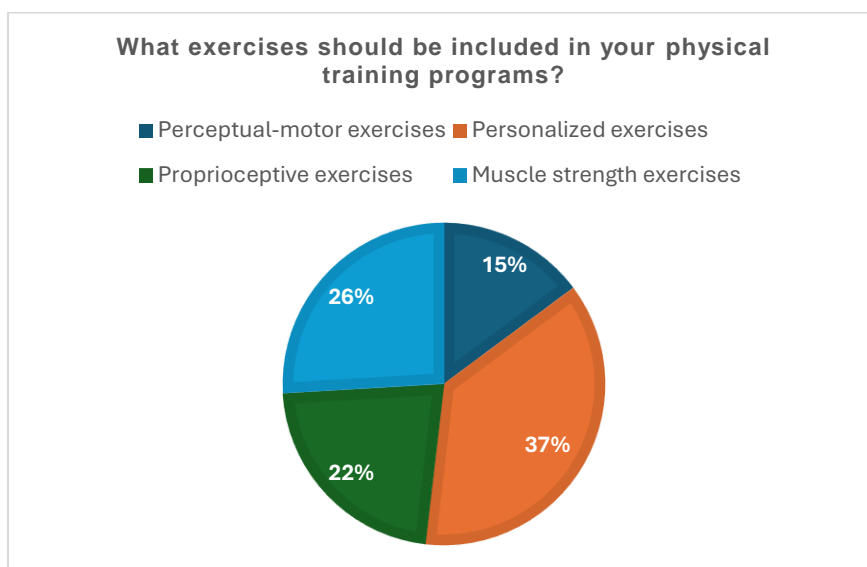


Figure 2. Proportion of answers to question no. 2 – sports questionnaire

Exercises for the development of perceptual-motor skills (14.81%) are mentioned less frequently but are still considered relevant for improving reactions and perceptual skills, which are essential aspects of performance in handball.

3. How do you think general physical training influences your overall performance capacity?

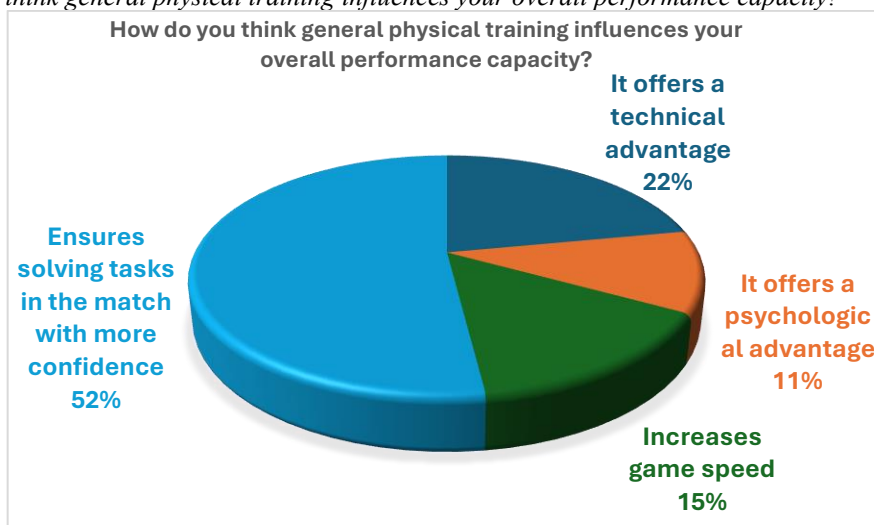


Figure 3. Proportion of answers to question no. 3 – sports questionnaire

The varied opinions, presented in Figure 3, reflect the diversity in the players' perception of how physical training impacts performance in handball. Some players believe that physical preparation is crucial for increasing game speed (15%), allowing them to respond quickly and efficiently to on-field situations. Speed is a key component in handball, and adequate physical training can enhance reaction time during matches. Additionally, players who feel physically well-prepared (52%) are more likely to approach matches with greater confidence in their abilities. Thus, physical training can contribute to developing a positive mindset and a proactive attitude on the field, significantly impacting individual and team performance.

Conclusions

Analysis of the results obtained by the coaches following the application of the interview (N=12)

The demographic data collected from the interview with the coaches revealed:

- The mean age of coaches of 47.57 years, with a standard deviation of 3.53, indicating a relatively high average age and moderate dispersion around this average.

- The average coaching experience is 20.43 years, with a standard deviation of 5.65, suggesting substantial experience among the coaches.
- All interviewed coaches work at the senior level
- Most coaches have attended refresher courses at national level (38), while fewer have attended local/regional (10) or international (8) courses.

1. *What are the main sources of information about handball training?*

As shown in figure 4 the responses indicate:

- 58.34% of coaches consider handball training courses their primary source of information. This suggests that these coaches value specialized courses to enhance their knowledge and skills in sports training.
- 25% of respondents use internet sources for information about handball training, indicating the use of online resources for up-to-date and varied information.
- 8.33% of coaches rely on specialized books and scientific articles to improve their knowledge in handball training, reflecting a concern for learning from traditional and academic sources.

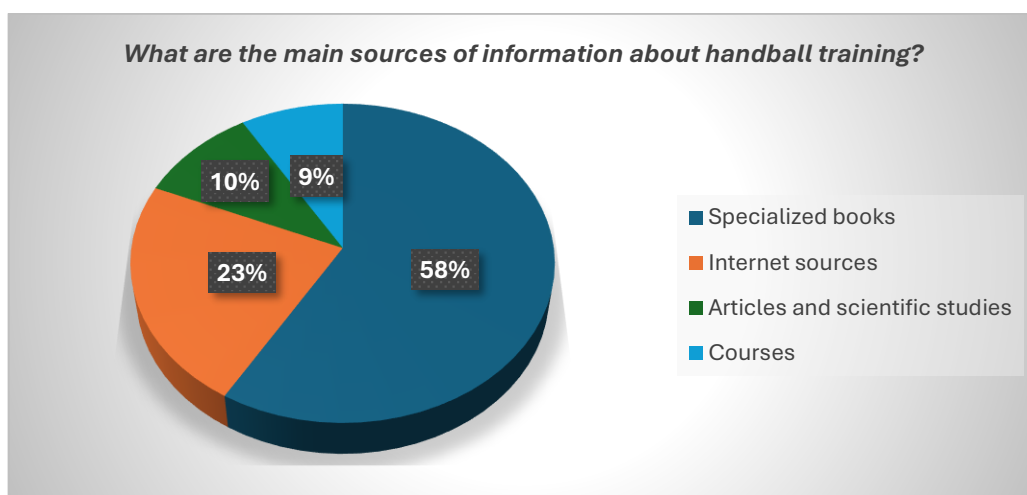


Figure 4. Proportion of answers to question no. 1 – coaches

2. *What are the main exercises of the physical training programs currently used?*

According to the interview results, 71.42% of coaches consider endurance-focused exercises as the main component of their physical training programs. At the same time, 14.29% of coaches mention exercises for developing segmental strength, and another 14.29% focus on coordination. No coaches identified speed exercises as a primary component of their physical training program, as shown in (Figure 5).

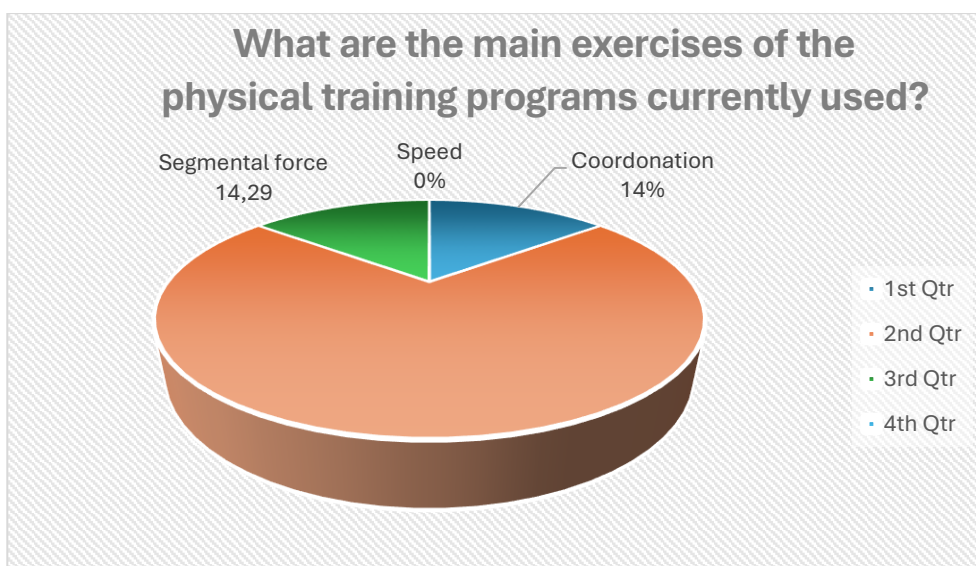


Figure 5. Proportion of answers to question no. 2 – coaches

There are notable differences between the perception of athletes and coaches regarding the main exercises used in physical training program. Athletes consider segmental strength exercise as the most important (44.44%), followed by endurance-focused exercises, with a proportion of 25.93%. In contrast, coaches prioritize endurance exercises, which are considered essential by 71.42% of them, while only 14.29% emphasize development of segmental strength exercises.

3. How many times a year do you apply tests to assess the level of physical preparation of senior players?

Coaches' responses reveal a high frequency of testing to assess players' physical fitness, as shown in Figure 6. The fact that 57.14% of coaches apply evaluation tests three times a year, demonstrating a commitment to constant monitoring and assessment of athletes' progress. This approach helps identify players' individual needs and tailor training programs to maximize performance and reduce the risk of injury. Also, 14.29% of coaches apply assessment tests twice a year, which indicating regular attention to athletes' progress during the season.

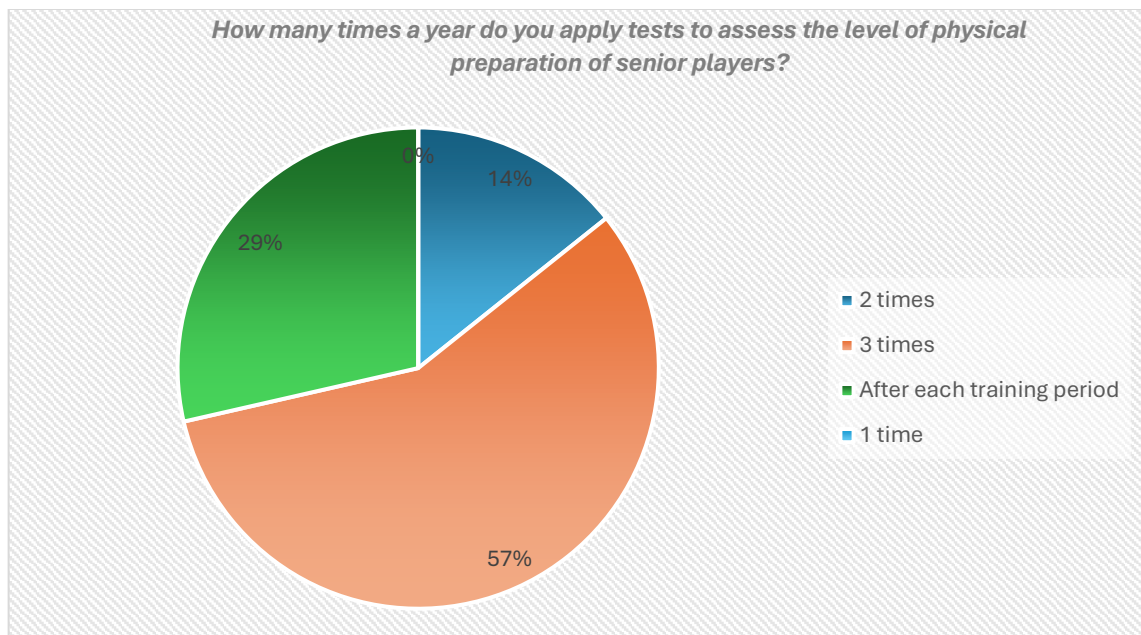


Figure 6. Proportion of answers to question no. 3 – coaches

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