

Competitive performance of elite athletes in modern ice hockey

OKSANA SHYNKARUK¹, SVITLANA SHUTOVA², OLEH SEREBRIAKOV³,VIKTORIIA NAGORNA⁴,
OLEKSANDR SKOROHOD⁵

¹ Innovation and Information Technologies in Physical Culture and Sports Department,National University of Ukraine of Physical Education and Sport, Kyiv, UKRAINE

²⁻⁵Sports games Department,National University of Ukraine of Physical Education and Sport, Kyiv, UKRAINE

Published online: February 29, 2020

(Accepted for publication: January 20, 2020)

DOI:10.7752/jpes.2020.s1076

Abstract:

Introduction. If we will talk about winter kind of sport that is one of the most popular in Ukraine, then, obviously, it is ice hockey. For us this spectacle sports has long-standing traditions in preparation for players. Unfortunately, the low level of modern sports achievements of the men's national team of Ukraine on the international arena, determines the urgency of the definition of existing problems and the formation of directions for correction of their training. The *purpose* of this study was to identify a set of indicators for the effective competitive activities' characteristics of elite athletes in modern ice hockey as a means of improving the sports training process for players of the national team of Ukraine. The article examines the results of the Ukrainian hockey players at the world championships during the period of Ukraine's independence, level of sports hockey competitions, changes in the drawing structure of the World Ice Hockey Championship and the rating of Ukrainian athletes. *Conclusions:* the indicators of effective organization of competitive activity of elite athletes in modern ice hockey are determined and analyzed, which allow to use this information to improve national team sports training program.

Keywords: competition, ice hockey, world championship, ranking.

Introduction

The effectiveness of elite athletes' training in modern ice hockey, in many ways, depends on the ability to take timely changes in modern approaches to the training of athletes, and accordingly, it is right and appropriate to apply them. Several authors argue that with the achievement of high sporting results, considering the organizational and methodical aspects of the management system of hockey players, is the main component of sports successes (Bondarchuk, 2015; Kostiukevych et al., 2018; Ishmatov, 2006; Platonov, 2015; Savin, 2003). Basically, in the literature a lot of scientific works on improvement of various types of players' preparedness, simulation of hockey players' sporting activities, loading peculiarities in the preparation of hockey players, and the peculiarities of the training of young hockey players are presented (Meulmanet al., 2012; Mikhnoet al., 2011; Nikonov., 2008).

However, for the ice hockey, as one of the most popular sports game representatives in the Winter Olympic Games program, the sport result may be conditioned by a wide range of indicators, including the individual characteristics of an athlete's personality, the effectiveness of the training system, material and technical conditions of preparation and other (Ishmatov, 2006; Kugaevsky, 2012; Mikhnoet al., 2011; Pavlovet al., 2011). This fact for today is complemented by constant increase in the indexes of the competitive load in hockey, the increase in the density and high intensity of the calendar of official competitions, which allows to assert about the noticeable complication of the systematic conduct of the training process in the playing season, which, in turn, often leads to a decrease in the efficiency and performance of the players (Bondarchuk, 2015). Therefore, the modern features of planning and organizing the training of Ukrainian hockey players should be considered today, including through the study of the features of the training process and the organization of competitive hockey teams from the world's leading countries at this kind of sport.

Understanding all aspects of competitive activity, the ratio of its indicators, and the choice of the right direction in its organization and implementation, can lead to high achievements of sport, male national team of Ukraine, which determines the relevance of this scientific issue.

Materials and methods

To solve the problems and obtain objective data, the following research methods were used: theoretical analysis and generalization of scientific-methodical and special literature, data of the Internet; content analysis of archive materials of the international and Ukrainian hockey federations; synthesis, comparison and

generalization of indicators of the level of sports hockey games and hockey players' rating; methods of mathematical statistics.

Study of literary sources and generalization of the data of special literature allowed to formulate a general idea of the problems under investigation, to determine the level of their development and perspective. A detailed analysis of the existing training systems of leading countries in hockey was conducted to determine the most effective and effective approach to building the training process for hockey players.

Content analysis of archive materials from the international and Ukrainian hockey and amateur federations allowed to obtain and analyze the results of the Ukrainian hockey players' performance at the world championships during the independence period of Ukraine; the peculiarities of the organization and holding of the World Hockey Championships and found concrete changes in the structure of the drawing of these competitions, which made it possible to determine their significance for the sports performance of Ukrainian hockey players.

Using the method of synthesis, comparison and generalization of indicators of the level of sports hockey games and hockey players' rating, it was possible to understand the accumulated facts, to organize the levels of sports hockey and ice hockey competitions in the world. Separated the most important competitions for all hockey players in the world and the level of the most important (main) competitions for Ukrainian hockey players. Among the great variety of facts found are especially important, namely the significance of the number of Ukrainian hockey players who are participants of the NHL, for the sporting success of Ukraine's national ice hockey team at World Championships.

The resulting digital material was subjected to statistical processing using traditional methods.

The study was conducted in accordance with the developed program from September 2014 to May 2018.

Results

After analyzing the results of Ukrainian hockey players' appearances at the world championships during the period of Ukraine's independence, it should be noted that the Top Division won Ukraine's men's team in 1998 (Fig. 1). The year 2002 for Ukrainian ice hockey can be noticed as the peak of their achievements, because the men's national team of Ukraine at the World Cup in Sweden finished 9th place, and at the 2002 Olympic Games in Salt Lake City took 10th place.

From 2007 to 2018, unfortunately, there is a negative dynamic of the sporting results of Ukrainian hockey players in the World Championship, and in particular, it is a periodic and fairly regular entry into the IB division (Shynkaruk, 2018).



Fig. 1. Results of Ukrainian hockey players' performance at World Championships during independence of Ukraine

Theoretical analysis of the current state and existing approaches to the construction of the training process of elite athletes in ice hockey allowed to determine the basic principles in the construction of the training process of hockey players from different countries (Mikhnoet al., 2011; Nikonov, 2008; Savin, 2003). The main difference between hockey schools is the individual or team-wide approach to planning and organizing work with athletes.

So, at the national school of hockey, team meetings are used with group implementation of training programs for all types of training.

And in Canada and the US, an individual approach is used as a choice of training camps for certain types of player training, while the player himself controls the level of his functional capabilities and technical and

tactical indicators, personally taking responsibility for his own level of preparedness(Shynkaruk, 2018).

Analyzing the peculiarities of the World Ice Hockey Championship between 1992 and 2018, it should be noted that over the past 26 years, the International Hockey Federation has changed the structure of the World Cup several times(Shynkaruk, 2018). Changes made to the team distribution structure have contributed to an increase in the number of team members and games. So, in 1992, the total number of teams was 42 teams, and in 2017 they were already 48 (Fig. 2, 3).

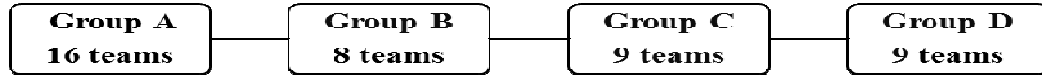


Fig. 2. The structure of the World Ice Hockey Championship 2000

According to specialists, the modern structure of the World Hockey Championship draw is the most objective because the level of teams in each Division is the same. In this case, the groups A and B of the Divisions are divided by the level of qualification teams. At the expense of Division III, the number of participating teams increased again and by 2018 it is 48. In addition, the number of games in the Top Division increased from 56 (up to 2012) to 64 for the tournament (Shynkaruk, 2018).



Fig. 3. The structure of the World Ice Hockey Championships since 2012

Therefore, when planning the preparation of Ukrainian hockey players for the world championships as the main competitions, it is necessary to consider the peculiarities of the impact of certain changes in the organization of their conduct, such as the number of games, the particularities of the order table, respectively, the schedule of games, the volume and intensity of the competitive load, etc.

The most prestigious and main official hockey competitions are Winter Olympics, World Championships and World Cup. Among the club competitions, the most prestigious world league is the National Hockey League, which is the main professional club league of world hockey.

Studying the results of the Winter Olympics, World Championships and World Cup since 1992, it should be noted that the Canadian team is a permanent leader, since by 2018 it has become 3 times the winner of the Olympic Games, 7 times in the World Championships, twice in the World Cup (Fig.4)(Shynkaruk, 2018).

The achievements of Canadian athletes in the main official competitions of the International Hockey Federation not only underline the prestige of the NHL World League, which is the dream of every hockey player from all over the world, but also forced to consider the representation of her players from different countries.

So, as can be seen from Figure 5, players in Canada and the USA were the main representatives of the NHL in the 2017-2018 season, respectively, 348 and 193 hockey players(Meulmanet al., 2012).

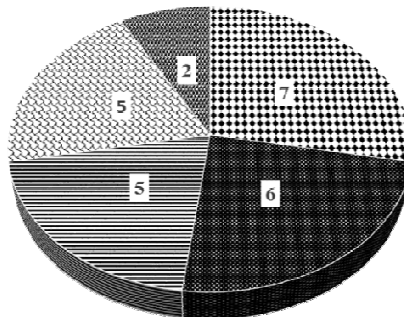


Fig.4. The number of wins of national hockey teams in the world championships since 1992:

- - Canada
- - Czech Republic

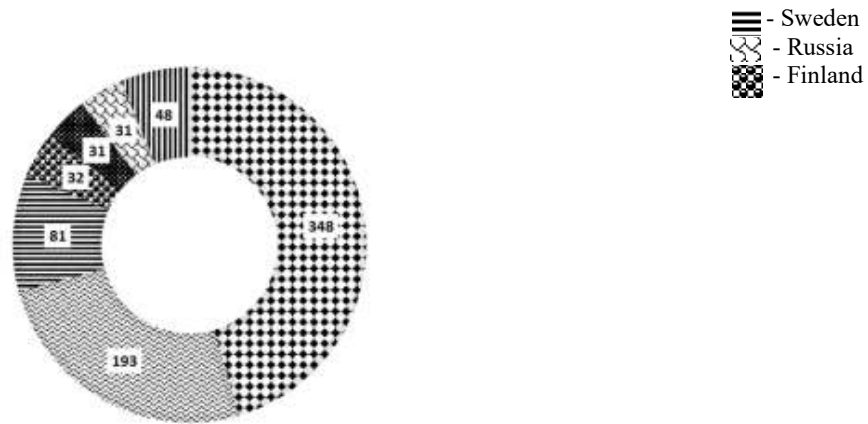


Fig. 5. Number of hockey players and clubs in the NHL:



Players from countries such as Sweden, Finland, the Czech Republic, Russia also has a large number of hockey players playing NHL clubs, respectively, 81, 32, 31, 31.

Since the national team of countries with the highest representation of NHL players is permanent winners of major official hockey competitions, their warehouses should be considered (Fig. 6).

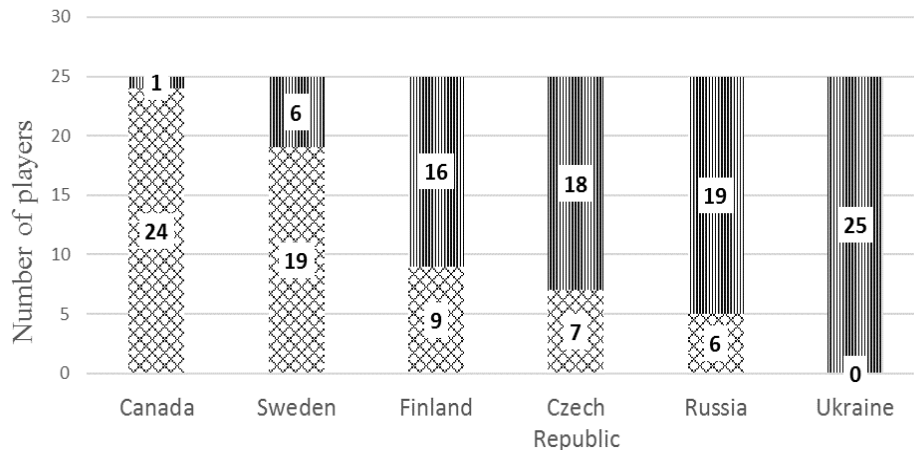
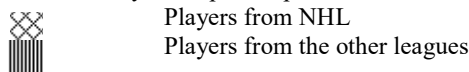


Fig.6. The ratio of the number of players from the NHL and other leagues in the teams of teams at the World Ice Hockey Championship in 2018:



Thus, Figure 6 shows that the presence of players playing in NHL clubs, apparently has a decisive influence in determining sports achievements. Thus, for example, the Ukrainian national team since 2003 does not have players playing in the NHL, which coincides with the fact that from 2003 to 2018, unfortunately, the negative dynamics of sporting results of Ukrainian hockey players in the world championship, ending their performances on world scene in Division I.

It should be noted that Ukraine's men's team in 2003 ranked 11th in the world ranking, and in 2018 the Ukrainian team ranks 23rd (Fig. 7) (Shynkaruk, 2018).

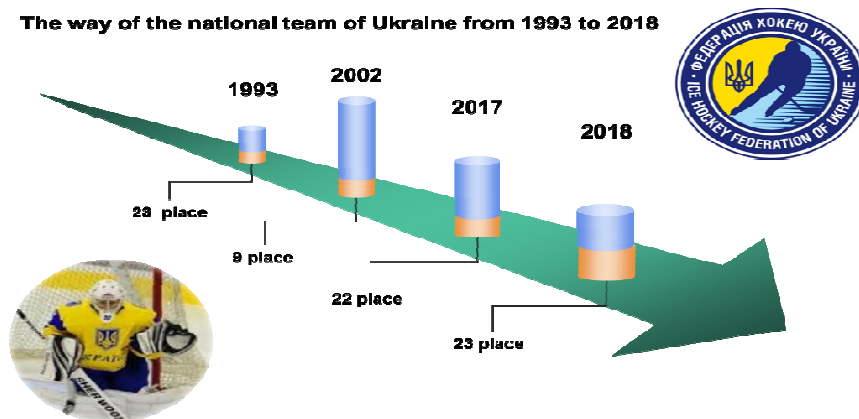


Fig. 7. Indicators of the ranking of the men's national team of Ukraine on ice hockey

That is, for the past 15 years as a men's national team of Ukraine on ice hockey is not included in the top ten world leaders in this sport, gradually and steadily lowering their rating. These data may need to be considered as an indicator, unfortunately, already a stable current level of athletic skill of Ukrainian elite athletes in ice hockey.

Discussion

According to some experts, the current state and existing approaches to the construction of the training process of elite athletes in ice hockey, various basic principles in the construction of the training process of hockey players from different countries were determined. The main difference between various hockey schools is the individual or team-wide approach to planning and organizing work with athletes.

The results of the Ukrainian hockey players' performance at the world championships during the period of independence of Ukraine are analyzed, it is possible to determine that the highest indicator of the achievements of the national team of Ukraine on ice hockey is the 10th place at the 2002 Winter Olympics in Salt Lake City. Also, Ukraine's national ice hockey team is a regular participant in the World Championships, where its best result is 9th place in Sweden in 2002. From 2007 to 2018, unfortunately, the negative dynamics of sporting results of Ukrainian hockey players in the world championship is noted.

One of the most striking features of the World Cup structure problem is its inconstancy. Changes made to the team distribution structure have contributed to an increase in the number of team members and games. It is undeniable that, it is necessary to take into preparation program of elite ice hockey players the peculiarities of the impact of certain changes in the organization of their conduct, such as the number of games, the features of the order of the tournament table, respectively, the schedule of games, the volume and intensity of the competitive load. The Winter Olympics and World Championships are the main official hockey competitions organized by the International Hockey Federation. The most prestigious World League is the National Hockey League, which is the main professional club league of world hockey. The presence of national team teams from countries that are members of the NHL clubs may be one of the important indicators of high-level sports achievements.

Conclusions

From these facts, one may conclude that a complex of indicators of effective organization of competitive activity of elite athletes in ice hockey of Ukraine was identified, taking into account which will allow to improve the sports training of the national team.

Which seems to confirm the idea that for the effective organization of training for the male national team of Ukraine ice hockey, which is aimed at achieving a high sporting result in prestigious competitions, it is necessary to consider the following indicators:

- results of the Ukrainian hockey players' performance at the world championships during the period of independence of Ukraine;
- the current state of the organization of the training process for elite athletes in ice hockey, existing approaches to the training process of elite athletes in ice hockey in Ukraine, European countries (on the example of Sweden's national team) and on the North American continent;
- changes in the structure of the World Hockey Championship draw, and determination of their impact on the sports performance of Ukrainian hockey players;
- the significance of the indicators of the level of hockey sports competitions, the definition of their hierarchy and the rating of Ukrainian athletes, in order to increase the sports performance of elite athletes in ice hockey in Ukraine.

Conflict of interest: Authors state no conflict of interest.

Reference:

- Bondarchuk, A. (2015). Ways of constructing periods of development of a sports form. *Science and modernity*, 1 (3), 35-63.
- Ishmatov,R.(2006). Construction of a training and training process for high-skilled hockey players: a training manual. St. Petersburg: Academy of Hockey, 45
- Kostiukevych, V., Borisova, O., Shynkaruk, O., Shlonska, O., Stasiuk, I. (2018). Modeling of training process of athletes in sports games in annual macrocycle. *Journal of Physical Education and Sport, University of Pitesti, Journal of Physical Education and Sport (JPES)*, 18 Supplement issue 1, Art 44, pp. 327 - 334, online ISSN: 2247 - 806X; p-ISSN: 2247 – 8051; ISSN - L = 2247 - 8051 DOI:10.7752/jpes.2018.s144
- Kugaevsky, S. (2012). Individualization as one of the directions of optimization of the training process of hockey players 14-16 years. *Pedagogics Psychology and medical-biological problems of physical education and sports. Kharkiv: HOUSEHOLD HARDWARE*, 1, 67-69.
- Meulman, H., Berger, M., Van der Zande, M., Ottevanger E., Crucq M. (2012). Development of a tool for training the drag flick in the penalty corner in the field hockey. *Procedia Engineering*. Vol.34, 508-513.
- Mikhno, L.,MikhailovK.,Shilov V.(2011). Content and structure of sports training for hockey players. Tutorial. NMU. PF Lesgafta St. Petersburg, 193.
- Nikonov, Yu., (2008). Training of qualified hockey players: training. Allowance.Olympic literature, NUPESU, 266.
- Pavlov, S., Pavlova, T. (2011) Technology of preparation of athletes.Schelkovo: Publisher Marhotin P., 344.
- Platonov, V.(2015). Preparation system of athletes in the Olympic sport. General theory and its practical applications: a textbook [for coaches]: in 2 books. Kyiv, Olympus. Lit., B. 2, 752
- Savin, V. (2003). Theory and method of hockey: a textbook for the studio. higher study Institution. Moscow: Publishing Center "Akademiya", 400.
- Shynkaruk, O., Shutova, S., Serebriakov, O.,Yarmolenko, M. (2018).Trends in the system of modern hockey Physical education, sports and health of the nation: a collection of scientific papers. No. 6 (25). Zhytomyr: publisher Yevenok O. - P. 200-206.