

Features injuries handball players 18-20 years old in competition

Abstract

Handball is a game sport that combines a high level of physical psychological preparedness and technical and tactical skill. The first great successes come to players after 1-12 years of systematic preparation. The most talented young handball players from youth begin to move to the teams of men's clubs, and then join the ranks of the national team, while others, having received injuries, say goodbye to handball. The purpose of the study is to determine the nature of injuries to handball players aged 18-20 years, to identify the main types of injuries to handball players of different ages and playing positions. The data obtained suggest insufficient physical and technical-tactical readiness of handball players under 20 years old for the intense conditions of major international competitions. In turn, this makes it possible to develop effective means of preventing injuries in the early stages of long-term training.

Keywords: handball players, localization of injuries, the nature of injuries, the time of injury, injuries of players of different positions

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Introduction

Professional sports are inevitably associated with the risk of injury. Handball, in turn, refers to sports with a high level of injury. The issues of injuries in sports and methods of its prevention at different times were studied by many specialists. Handball is a contact sports game. Injuries of the musculoskeletal system in handball account for 80% of the entire pathology. EA Kuzmina and OS Bulychev determined the structure of injuries in handball.¹⁻³

As can be seen in Figure 1, the most characteristic for handball players are:

- I. injuries of the knee joint (ligamentous apparatus, menisci) that occur when jumping and abrupt change of direction (turns) - 24%;
- II. injuries of the shoulder joint arising from contact with an opponent while shooting the ball on goal - 16%;
- III. injuries to the wrist and fingers that occur when in contact with the ball - 23%.

These injuries occur, as a rule, when falling onto a palm with an outstretched arm, the scaphoid bone is most often affected, less often the lunar bone. Fractures of the phalanges of the fingers of the hand are mainly the result of a direct impact of force, and, as a rule, a blow falls on the back surface of the fingers or along a long axis. Issues of reducing injuries, eliminating risk factors for their receipt in handball are the most important task in organizing training and competitive activities of both young and highly qualified athletes. This is the relevance of this study.

Material and methods

To analyze the nature of injuries to handball players, reports from team representatives during the European Handball Championships among boys under 18 and under 20 were used. A protocol for reviewing information about the type of injury, location, conditions of its receipt by athletes (for example, in contact with an opponent or not), time of the game when the injury was received or in training conditions, time missed by the player due to the need to recover from an injury. Even before the European Championship 2018 for handball

players no more 18 and no more 20 years old, the participating nations were informed of the planned implementation of the injury study, in writing. Those forms that were of use during European Championships were employed for the recording of injuries and their respective problems. The team doctors, as well as the medical supervisors, were asked to register all injuries irrespective of whether they occurred during a game (or during a training session). For purposes of unity, a standardized code was utilized describing the type and location of the injury, the expected absence period from games (or training sessions).

The reports were collected from every team and every game, regardless of whether an injury occurred or not. The collected data were strictly confidential and accessible only to those persons, who were involved in the study. The both tournament of the European Championship among handball players 18 and 20 years old included 3 stages - preliminary, intermediate and main. Over 11 days, teams (a total of 256 participants) played 56 matches. At the tournament players under 18 years old received 56 injuries, at the tournament players under 20 years old received 51 injuries.

Results and discussion

An analysis of the official reports of the team representatives at the European Championships 2018 for players no older than 18 and no older than 20 years revealed some trends Figure 1. An analysis of the most injured parts of the body of handball players aged 18-20 shows that the overall picture is similar in both age groups. At the same time, handball players under 18 years of age more often injure the lower limbs (62.5% from 56 injuries). Players under 20 also suffered the highest number of lower extremity injuries (41.2% of 51 injuries), with 21.3% fewer than younger athletes. The main types of injuries to handball players under 18 years old (16-18 years old) are contusions of various parts of the body sprains Figure 2.

Handball players for 20 years old receive similar injuries Table 1. The main injuries to handball players are in force contact with an opponent, during touchdowns after throwing and passing the ball in a jump and in sudden stops and changes of direction. It should be noted that in a quantitative sense a greater number of these injuries belong to the handball players under the age of 18 years. The differences are

11 cases. An analysis of the injuries of 18-20 years old players of different positions in a competition also shows significant differences Figure 3. The most injuries are players in the backcourt – center backcourt and line players (for 20 years old).

Table 1 Diagnosis of injuries of handball players 20 (and less) years old

Concussion with loss of	2
fracture	2
dislocation	2
muscle fibre rupture	2
tendon rupture	1
ligamentous rupture with instability	1
ligamentous rupture without instability	2
sprain	8
strain	5
contusion	18
others	1

As can be seen from Figure 4, handball players under 18 receive the greatest number of injuries in the last 10 minutes of the 1st half of match and in the middle of the second half. In this case, injuries in the second half have higher rates in relation to the first half, which may indirectly indicate player fatigue. The analysis of the time of injury during the game of handball players under 20 has a completely different picture Figure 5- the number of injuries is steadily increasing by the middle of the 2nd half.

A comparative analysis of these data for players 18 and 20 years old may indicate a higher level of functionality and better technical and physical readiness of handball players 20 years. Comparison of these indicators for handball players of 18 and 20 years old shows that for more younger athletes 1st period of the match is especially traumatic - 21 injuries occurred in the first half of the matches. More experienced and trained handball players for 20 years in the first half of the match for the entire tournament received only 12 injuries. Injury of handball players in the second half of the match for handball players of 18 and 20 years of age does not practically differ in quantitative terms (35 and 33 injuries, respectively). An analysis of the conditions for injuring handball players shows that most injuries to athletes occur in contact with an opponent Figure 6. At the same time, attention should be paid to the fact that handball players of 18 years of age are injured more often than 20 year old players by contact with an opponent. This can be explained by the insufficient level of technical and physical fitness of athletes of this age category.

The tournaments of the European Championship among handball players 18-20 years old included 3 stages - preliminary, intermediate and main rounds. Over 11 days, teams (a total of 256 participants) played 56 matches.

The total number of recorded injuries was 56 (18 years old players) and 45 (20 years old) for during official matches, 1 injury was received during training and 1 injury during warm-up of the team before the game. A long tournament with increasing tension of matches in the struggle to achieve the highest possible result by teams is characterized by different dynamics of getting handball players. Handball players 18 years old are almost 2 times more likely to receive injuries in the final part of the tournament Figure 7. This indicator may indirectly indicate an increase in uncompensated fatigue in younger

handball players associated with insufficient functional readiness and physical fitness of athletes of this age group.⁴

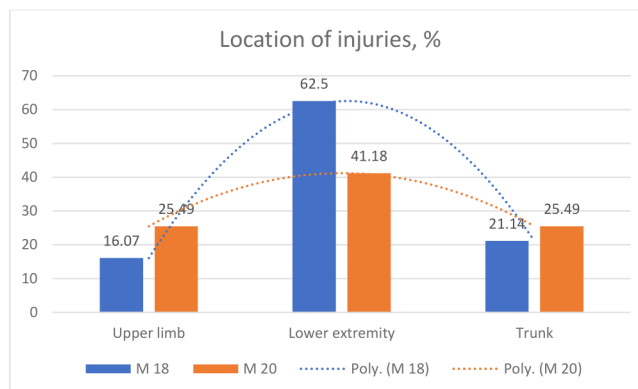


Figure 1 Location of injuries of handball players 18-20 years old.

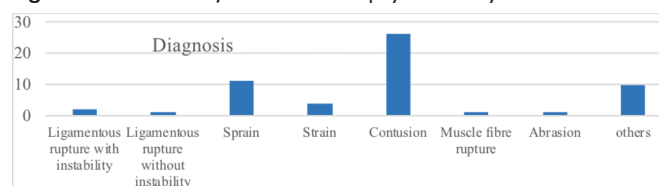


Figure 2 Diagnosis of injuries of handball players 18 (and less) years old.

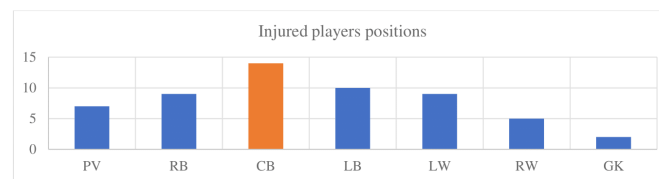


Figure 3 Player positions of injured handballers.

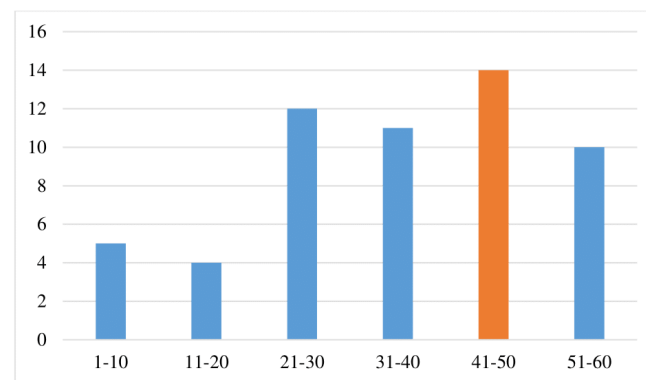


Figure 4 The time of injury in the game by handball players 18 years.

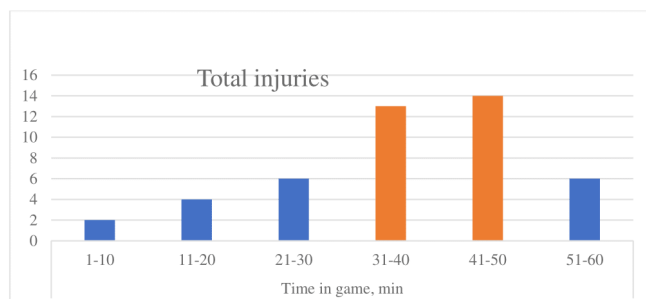


Figure 5 The time of injury in the game by handball players 20 years old.

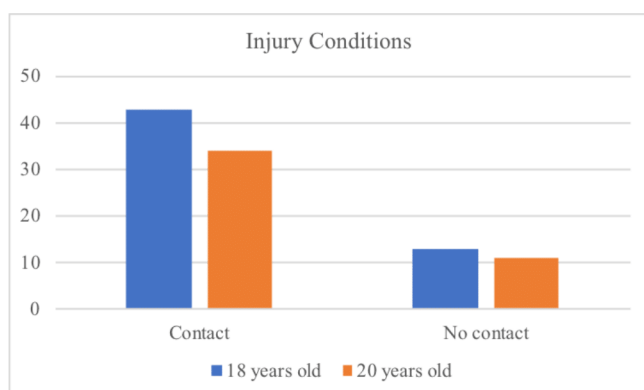


Figure 6 Conditions for injuring handball players.

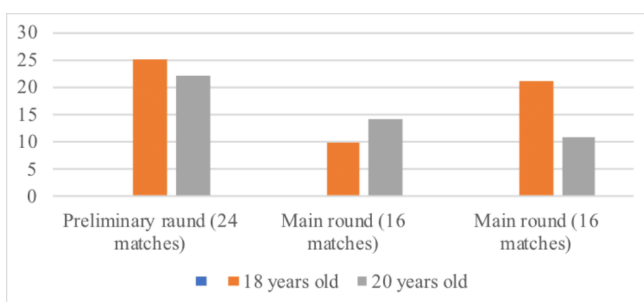


Figure 7 Differences in injuries of handball players of different ages on European Championships among handball players 18-20 years old.

Conclusion

Thus, the data obtained allow us to draw certain conclusions.

I. The main injuries to handball players are in force contact with an opponent, during touchdowns after throwing and passing the ball in a jump and in sudden stops and changes of direction.

II. A large number of injuries prove the need for more thorough physical and technical training of handball players before the age of 17-18, the development of special exercise programs aimed at strengthening the musculoskeletal and ligamentous apparatus of athletes.

III. It is necessary in the training process to pay closer attention to the technique of performing techniques and motor actions by athletes, to improve the coordination abilities of athletes.

Acknowledgments

None.

Conflicts of interest

The author declares that there is no conflicts of interest.

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