



# Research on the influence of subjective factors on the occurrence of sports injuries in young volleyball players

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## Abstract

**Objective of the study** is to identify the opinions of specialists on the factors determining the occurrence of sports injuries, as well as to propose a rehabilitation programme for the training of volleyball players in youth teams in Russia and China.

**Methods and structure of the study.** The research was conducted in 2021-2024, involving 84 young men participating in the Russian Volleyball Championship (youth league) and 79 players from the Chinese Volleyball Super League (youth teams). The main research method was a questionnaire survey of athletes and the results of medical examinations, which were aimed at studying the factors and causes of sports injuries among volleyball players in youth teams.

**Results and conclusions.** It has been established that the high level of sports injuries among volleyball players in youth teams in Russia and China is due to subjective factors: physical fatigue, incorrect use of technique, poor health, irrational preparatory activities and inattention.

**Keywords:** volleyball teams, young players, training activities, sports injuries, playing season.

**Introduction.** The long-term training of youth volleyball teams is a complex and multifaceted process designed to ensure the effective development of players' athletic skills for professional sports [2, 6]. Studies [1, 5] conducted with youth volleyball players show that, even with the effective use of various approaches to sports training, modern players are prone to a large number of different types of sports injuries throughout the playing season. This trend prevents them from fully demonstrating their highest athletic performance and systematically improving their skill level.

It is important to note the high prevalence of sports injuries among junior and youth teams [3, 4, 7, 8].

Firstly, there is an imbalance in the number of sports injuries examined in different volleyball groups; most recommendations focus on professional volleyball players, and there are very few preventive measures aimed at youth teams.

Secondly, the unclear definition of injuries in the analysis process and the insufficient scientific description of the causes, nature and location of injuries

make the recommendations incomparable with other specific sports training programmes for the selected sport.

Thirdly, the review of sports injuries in volleyball among adolescents can be considered sufficiently comprehensive and systematic, but the analysis is not sufficiently in-depth and convincing.

Fourthly, the factors and causes determining the occurrence of sports injuries among volleyball players in youth teams separately in training and competitive activities have not been sufficiently studied [5].

In this regard, scientific and methodological justification and the search for the most effective ways to prevent sports injuries and rehabilitate players in the context of the problem under consideration is a priority task in the training of young volleyball players in Russia and China.

**Objective of the study** is to identify the opinions of specialists on the factors determining the occurrence of sports injuries, as well as to propose a rehabilitation programme for the training of volleyball players in youth teams in Russia and China.



**Methods and structure of the study.** During 2021-2024, a sociological survey of players aged 17-19 from youth teams in Russia and China was conducted using questionnaires to study respondents' opinions on sports injuries. The study involved 84 young men from the Russian Federation and 79 young athletes from the People's Republic of China. In accordance with the basic principles related to the training of youth team volleyball players, questionnaires were developed for athletes on the problem of sports injuries among volleyball players in Henan Province, as well as in Russian cities (Moscow, St. Petersburg, Yaroslavl, Kazan, Smolensk, etc.).

Purpose of the survey:

- to identify the quantitative and qualitative characteristics of sports injuries among volleyball players in youth teams in Russia and China;
- to determine the factors and establish the causes of sports injuries among volleyball players in youth teams;
- develop practical recommendations for streamlining the process of training and preventing sports injuries among volleyball players in youth teams in Russia and China.

The questionnaire survey of athletes provided reliable information on the quantitative and qualitative characteristics of sports injuries, as well as the factors and causes of their occurrence among volleyball players in youth teams in Russia and China. The factual material formed the basis for the development of recovery methods and practical recommendations for modern coaches in Russia and China working with youth volleyball teams.

Results of the study and discussion. An analysis

of the results of research into the causes, nature and location of injuries, as well as gender and age characteristics of injury statistics, showed that young players are equally likely to suffer from both acute complications and those associated with high stress caused by constant microtrauma to tissues. The proportion of injuries among Russian youth team players is 49.65%, which is slightly higher than that of Chinese volleyball players – 45.07%.

The ligaments, tendons and muscles of the lower extremities are most susceptible to injury in Russian and Chinese volleyball players. The proportion of minor injuries to ligaments, tendons and muscles among Russian young men is higher than among Chinese athletes. Sports injuries mainly occur during regular training, accounting for 88.96% of the total number of injuries, while injuries during competitions account for only 11.04% of the total number of injuries. It has been established that injuries are more common during high-intensity pre-match training sessions.

An injury can delay the recovery of athletic form, making it an 'outdated' injury, and on the other hand, it can cause a new injury or aggravate the severity of the injury, making it less easy to recover from. As can be seen from Table 1, there is no significant difference between young volleyball players in Russia and China in the number of injuries caused by the same factor during training.

Research shows that the main causes of injuries among young volleyball players are physical fatigue, incorrect execution of technical tasks, poor health, irrational preparatory activities, and inattention. Compared to young women, incorrect execution of technical skills leads to a greater number of sports injuries

Table 1. Factors and causes of sports injuries among volleyball players in Chinese youth teams

Factors and causes	Russia (n=84)		China (n=79)		Total	
	Number of injuries	Percentage, %	Number of injuries	Percentage, %		
Incorrect use of technique	19	22,62	13	24,05	42	19,02
Poor physical condition	13	15,48	17	21,52	30	18,40
Physical fatigue	15	17,86	18	22,48	33	20,25
Inefficient preparatory activities	12	14,29	10	12,66	22	13,50
Local overload	7	8,33	5	6,33	12	7,36
Carelessness	5	5,95	9	11,39	14	8,59
Recovery time and organisation of recovery activities	2	2,38	3	3,80	5	3,07
Competitions	10	11,90	3	3,80	13	7,98
Poor sense of self-preservation	1	1,19	1	1,27	2	1,23
Total	84	100	79	100	163	100



among young male athletes. Carelessness causes more sports injuries among young women than among young men.

The role of varied exercises in regular training is very important, as they contribute to the effective prevention of sports injuries among youth volleyball players, ensuring their longevity in training and competition.

During the game, athletes mainly perform striking movements, which are not prolonged, technical movements are not standardised, and their irrational use under severe stress easily leads to sports injuries.

Thus, young volleyball players still have insufficient muscle strength, relatively 'loose' ligaments, and high joint mobility, yet they perform some high-intensity exercises. Therefore, due to poor joint stability and excessive joint activity, volleyball players often suffer unexpected joint injuries at a young age.

**Conclusions.** For youth volleyball players who are prone to sports injuries of the upper and lower limb joints, as well as the lower back during training, the following should be taken into account:

- improving overall strength, including increasing the resistance of joints to adverse factors, measures include strengthening the ligaments around the joints and improving joint proprioception. For the joints of the lower limbs, in addition to the usual strength exercises, various forms of running exercises on slopes and sand are used;
- improving the effectiveness of the interaction of strength abilities between the upper and lower limbs, improving the ability to control body stability, preventing lower back injuries;
- carefully organise player training activities, pay attention to the rationality of the content of preparatory activities, and individual training plans for athletes in various conditions (especially in cold conditions);
- develop quantitative sports injury prevention programmes so that precautions are specific, clear and easy to implement.

Coaches should take into account during daily training sessions the performance of technical and tactical exercises in order to guide players towards the formation of correct physical and mental experience

and muscle sensations, thereby improving the athlete's ability to apply the correct technique and tactics, as well as body control, imperceptibly increasing the athlete's 'morphological' awareness and ability to protect themselves.

### References

1. Velkov A.A., Fendel T.V. Kontrol i profilaktika narusheniy oporno-dvigatel'nogo apparata pri zanyatiyah sportom. Uchenye zapiski universiteta im. P. F. Lesgafta. 2021. No. 8 (198). Pp. 38-45.
2. Bulykina L.V., Guba V.P., Kostyukov V.V., Rodin A.V. Voleybol i ego raznovidnosti: uchebnik. Moscow: Sovetskiy sport, 2024. 524 p.
3. Guba V.P., Huang Yu., Rodin A.V., Bulykina L.V. Profilaktika sportivnogo travmatizma voleybolistov molodezhnykh komand Kitaya sredstvami fizicheskikh uprazhneniy na nestabilnoy opore. Fizicheskaya kultura: vospitanie, obrazovanie, trenirovka. 2024. No. 6. Pp. 10-12.
4. Guba V.P., Chernova V.N. Sportivnaya morfologiya: uchebnik. Moscow: Sovetskiy Sport, 2020. 353 p.
5. Rodin A.V. Profilaktika sportivnogo travmatizma molodykh vysokokvalificirovannykh sportsmenov v igrovyykh vidakh sporta na osnove fitnes-tekhnologiy. Adaptivnaya fizicheskaya kultura. 2018. No. 2 (74). Pp. 40-41.
6. Guba V.P., Rodin A.V., Bulykina L.V., Zainetdinov M.V. Teoriya i metodika obucheniya bazovym vidam sportivnykh igr v sisteme fizicheskogo vospitaniya: uchebnoe posobie. Moscow: Sovetskiy Sport, 2023. 289 p.
7. Huang Yu. Sredstva propriotseptivnoy trenirovki dlya profilaktiki sportivnogo travmatizma studentov voleybolistov v vozraste 17-19 let komand Kitaya: avtoref. dis. ... kand. ped. nauk: 5.8.5. Moscow, 2024. 24 p.
8. Huang Yu., Guba V.P., Bulykina L.V., Rodin A.V. Otsenka effektivnosti sredstv proprioceptivnoy trenirovki voleybolistov molodezhnykh komand Kitaya. Teoriya i praktika fizicheskoy kulturey. 2024. No. 12. Pp. 90-92.