

PUBLIC HEALTH MEASURES IN PREVENTION OF DISEASES AMONG YOUNG ATHLETES FROM THE REPUBLIC OF MOLDOVA

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The role of exercise for maintaining the health is indisputable. However, for young athletes, exercise training represents a big challenge, especially by achieving an aim through paying the price by their health disturbance. Applying of necessary measures to strengthen the health of young athletes from the Republic of Moldova is the main priority of the state surveillance of public health. It is a descriptive study, based on the analysis and synthesis of the national and international laws, relevant scientific publications and research results, aimed on the peculiarities of athletes' health and the main directions of preserving and strengthening it. The differences in sport regulation, health care management and health control of athletes have been highlighted. The risk factors in young athletes' activity, morbidity and sports injuries have been assessed. As a result it was developed a set of measures to reduce the risk factors, improve specialized medical care and health promotion among young athletes. The results will serve as an evidence for improving the sport medicine service in complex with public health surveillance measures that will contribute to strengthening the health of young athletes.

Keywords: young athletes, state of health, risk factors, health promotion.

Problem statement. The deep reformation of the society, since its independence and until now has had an impact on all fields of activity, including physical education and sports. Among the most significant effects, should be mentioned decrease of the attention to physical education, destruction of sports infrastructure, reduction of physical education classes in university curricula. All of the above-mentioned have diminished the availability of physical education and sports for a great part of the population. As a result, just every fifth teenager in the Republic of Moldova practices physical education and sports.

Health evaluation and highlighting the determinants on young athletes are particularly important for the next reasons: the health issues of the young generation must be seen in interaction with social and economic environment; optimum environmental and social conditions ensure optimal physical and mental wellbeing and a dynamic capacity to adapt to ever-changing environmental conditions, which determine the growth and development; teenage is one of the most critical periods of the individual development, considered one of the most complicated stages in human life; food behavior has a main role throughout teenage, a period when occurs fast growth, sexual and endocrine changes, requiring additional nutrients and energy; the passage from childhood to adulthood is manifested by significant changes in the psycho-emotional status; the young population is exposed to the risk of multiple health challenges.

Analysis of analogical researches and publications. Practicing physical exercise and sports raises a wide range of public health issues, which require an appropriate response.

Health disorders among persons who practice sport might primarily be the results of risk factors (endogenous and exogenous) rather than of the specific activity [4, 5]. The knowledge of the risk factors in sport environment is of highest importance in primary prevention of its negative impact on health, contributing to reducing sports morbidity and increasing life expectancy.

Several authors mentioned that, during the exercise training, a complex of unfavorable factors influence athletes body: the intensity and the increased amount of training exercises, psycho-emotional tension, frequently change of climatic zone during the competitions or training camps, environment conditions in sport halls (climatic, mechanical, chemical, biological, etc.) [1, 14].

Each sport activity is characterized by physical and psycho-emotional overloading with different intensity, specific training and different environmental and nutritional factors [12]. In addition to that, each athlete has his/her own biological risk factors: age, sex, level of readiness and adaptability, etc., which should be considered while drafting workout and dieting, as well as developing principles of medical monitoring of athletes etc. [9, 12].

An investigation of Dinu et al., (2010) found that systematic action of the unfavorable factors of sport activity on a chronic breakdown background have a cumulative effect, forming disorders in both adjustment and inadequacy processes, leading therefore to somatic pathologies [8].

Health promotion and health education among athletes and people practicing sport must start from knowing the negative effects of failure to comply with hygiene and behavior practices, diet and main nutrients intake, use of various nutritional supplements and their effects on body, the importance of medical examinations, vocational guidance in the sport selection process, professional risk factors of sports activities [3, 7, 23].

The aim of the paper. The actual article aims to make a summary evaluation of the principles of healthcare organization for athletes, and to argument the measures to strengthen the health of young athletes from the Republic of Moldova, as one of the main priorities of state surveillance of public health.

A descriptive study of the national and international laws, relevant scientific research on healthcare organization and athletes health has been conducted and linked to public health surveillance activities. The features of sport morbidity and

traumas, medical examination role in controlling the health of athletes from the Republic of Moldova have been highlighted.

Presentation the main material. The main health care policy documents adopted in our country – National Health Policy of the Republic of Moldova and National Public Health Strategy for the 2014-2020 years, stipulates food streamlining and enhancing physical activity among citizens as decisive objectives in strengthening the public health [21, 22]. National Programme for Nutrition (2014) emphasizes that practicing physical exercises and health and age-appropriate dieting results into achieving not only a harmoniously developed body, but also a mental and emotional wellbeing, which makes a strong motivation to changing lifestyle and health orientation [20].

In this context should be mentioned that the Moldovan Law on Sports and Physical Education (1999) states that sport is a category of professional work [17]. Thus the problems of physiological and hygienic assessment of sports activities, streamlining the training program, standardization of physical activity, respecting the environmental conditions in the gyms, monitoring the health of athletes, detecting the unfavorable functional changes and prolonging the longevity of professional athletes must be on the public health experts agenda.

Public health activities regarding the prevention of communicable and non-communicable diseases are specific among athletes. Athletes travel a lot, being subjected to hygienic factors of the transport units. They live in campus or hotel rooms (during training camps and competitions), involving a close interaction with teammates, with the risk of common use of personal items (towels, water bottles, soap) and equipment (masks, weights). Special literature notes that very few athletes practice safe sex, phenomenon leading to sexually transmitted diseases among homosexuals and heterosexuals. Tattoos have become very popular among athletes, being a source of infection. Steroids, hormones, vitamins and other substances are used lately among athletes. Thus, health education is essential among athletes [6, 18].

High quality management of sport buildings and training camps is essential for preserving and strengthening the health of athletes [10].

In this context, Cebanu & Friptuleac (2006) investigated functional status of the body, state of health and training conditions among athletes practicing weightlifting, boxing, free and Greco-Roman wrestling, revealed the specific risk factors that influence the health of athletes. The study determined that the functional state of the organism of the athletes correlates with environmental factors both directly and indirectly. Thus, there was a direct correlation between microclimate and neuromuscular system changes ($r = 0.87$), between CO_2 concentration and changes in the central nervous system ($r = 0.92$), between all occupational and environmental factors and functional modification index of the circulatory system ($0.3 < r < 0.69$). Specifics of the training process and environment contribute to the adjustment process imbalance (13.8% of athletes with adaptive failures) [5].

Doping practice in sport, as a public health problem, cannot be overlooked. The most obvious

threat represented by doping consists in widening use of stimulant substances among children who aspire to become athletes. Besides the ethical issue of doping, the use of anabolic substances exhibits professional athletes to an unreasonable pressure, causing a serious threat to public health. At the European level, the fight against doping must consider: law enforcement, health issues and disease prevention [11, 25].

In this context, in 2012 in the Republic of Moldova was adopted the Law no. 185 on preventing and combating doping in sport. In 2014 was created the National Anti-Doping Agency, subordinated to Government. The basic objectives of the Agency are promoting and applying policies in order to prevent and overcome nationwide phenomenon of doping, encouraging clean sport practice to protect the health of athletes, supporting research on doping phenomenon in sports [16].

Based on the statement, that in different socio-occupational groups, pathology will always have a certain profile, that requires thorough research in order to develop preventive measures, we conducted an estimating on the health of athletes, based on morbidity through addressability data and complex medical exam results.

The overall level of young athletes' morbidity in 2005-2014 based on addressability makes up $1003.6 \pm 96.87\%$. The highest level is characteristic for respiratory diseases ($624.0 \pm 55.33\%$) and injuries ($132.4 \pm 15.84\%$), skin diseases ($107.4 \pm 19.4\%$), bone-articular system diseases ($30.1 \pm 3.23\%$), eye and its annexes disorders ($23.5 \pm 3.35\%$).

The structure of general morbidity among young athletes shows a fairly high rate of respiratory system diseases (62.18%), injuries (13.2%) and skin diseases (10.71%). These three groups of diseases spread among athletes represent 86.1% out of all registered diseases through addressability and confirms the need of developing specific preventive measures for conditioning of environment and strengthening the health status of young athletes.

The structure of morbidity by injuries is predominated by superficial injuries (34.5%), dislocations, sprains, ligament strains (61.7%) and fractures (3.8%).

Estimating the health of young athletes after medical examinations has been noticed high incidence of illness, especially cardiovascular diseases, oral diseases, and genitourinary system diseases.

Thus, it is necessary to consolidate the actions of Sports Medicine Service and the State Surveillance Service of Public Health from the Republic of Moldova in the implementation of preventive measures and health promotion among young athletes.

Regardless of the activity level, a considerable problem for athletes is trauma that can lead to an increased risk of disability. Traumas are mentioned as one of the most important reasons for athletes to give up sport. This occurs because among young athletes practicing professional sports, information about injury danger is less available or unknown. It is required a strict surveillance among population, in order to identify high-risk trauma sports, as well as ensuring the necessary knowledge referring to the impact of trauma on the body of athletes and its prevention [15, 19, 24].

Our researches during the 2005-2014 years have shown that the incidence of injuries was $75.8 \pm 13.4\%$, on second place after respiratory diseases.

Modern sports medicine has the task of studying the equilibrium, basic limitations and knowledge of adaptive capacity of the body to actual environmental conditions [10, 13]. Modern sport is an opportunity for young people to develop adaptive capacities for the body, under extreme activity, particularly in terms of physical and psycho-emotional overloading [2]. Sports medicine physicians have to inform people of all ages about the benefits of physical activity on health.

Instead, in the Republic of Moldova sports medicine service has no well-defined organizational structure and there are no normative acts on creating and equipping medical office inside sport buildings. The concept of developing sports medicine service now is in process development. Under limit budget, useless material and technical basis, shortage of modern equipment, low motivation and support for staff, are the results of the lack of effective policies of promoting the service in general.

Another problem is the lack of an updated set of indicators to assess and control the performance of sports medicine service, and the lack of staff specialized in this field. Therefore in 2014 at the Nicolae Testemitanu State University of Medicine and Pharmacy from the Republic of Moldova was developed a new curriculum in sports medicine residency for a period of three years, which included training in sport physiology and pharmacology, medical rehabilitation, internal medicine, sports cardiology and traumatology, emergency in sport and healthcare management, sport nutrition and health promotion.

Thus we find that in the Republic of Moldova there are a lot of problems related to the health of athletes. They occur because the sports medicine service did not receive enough attention from the structures involved in this process, which also resulted in limited access to medical services among people practicing sports and physical education.

Taking into consideration the results of the actual health problems analysis among athletes, it becomes necessary to develop and implement in the Republic of Moldova a set of measures, in order to decrease the risk factors, to develop the capacity of specialized medical service and to promote health among young athletes. Therefore we propose to apply the following measures:

Legislative measures:

- To develop a national program for promoting physical education and sport among children and youth;
- To develop and comply with the national legislation on hygienic requirements for sport buildings, life and workout regime, according to the European Union laws;
- To develop normative documents on the features of nutrients demand (proteins, fats, carbohydrates, energy and biologically active substances (vitamins, minerals)), diet, usage of nutritional supplements, for every sport activity;
- To develop and improve the legislative and normative acts in accordance with new requirements and socio-economic conditions of the country.

Medical measures:

- To provide modern medical equipment and technologies to ensure the quality of services according to international standards;
- To accomplish the existing framework in order to improve the quality of sports medicine in the Republic of Moldova;
- To organize medical assistance for athletes through public health institutions in the territory;
- Provision with medical equipment of the sportive medicine units in municipalities/districts and medical offices organized within sports facilities in schools, high schools, public and private sports clubs.
- To purchase a mobile laboratory for diagnostic and medical monitoring of the athletic training process;
- To develop standardized clinical protocols in sports medicine.

Public health surveillance measures:

- Prevention, surveillance and control of communicable and non-communicable diseases among athletes by providing immunization, behavioral risk factors surveillance, injuries prevention;
- To protect athletes against environmental risks;
- To control the determinants of athletes' health state;
- Health promotion and health education by means of information-education-communication campaigns;
- Human resource development and planning for sports medicine service;
- Increase research in sports medicine and preventive medicine;
- Collaboration among governmental departments for the development and promotion of physical education and sport among population, Ministry of Health, Ministry of Education, Ministry of Youth and Sports, the National Olympic and Sports Committee, sports federations, etc.
- To intensify international collaboration in order to ensure experience exchange with foreign partners (FIMS, EASM, WADA, etc).

Conclusions: 1. Health surveillance of the athletes and population practicing sport should be aimed on preventing diseases and traumas, promoting a healthy lifestyle. Knowledge and compliance with a healthy lifestyle, balanced diet, are measures that contribute to preserving and strengthening of health, reduce morbidity and trauma, increase life expectancy.

2. The reduced access to sports medicine services leads to lower results performance of athletes and late pathologies detection, which in turn causes various health complications.

3. In the Republic of Moldova there is a legal, but incomplete, basis for physical activity and sport, insufficiently oriented on health promotion and health education of athletes, and developing sports medicine.

4. Unfavorable training factors determine a high level of morbidity and increased injury.

5. In order to improve training conditions and prevention measures against trauma and disease were required legislative, administrative and medical reformations.

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ЗАСОБИ ОХОРОНИ ЗДОРОВ'Я В ЗАПОБІГАННІ ХВОРОБАМ СЕРЕД ЮНИХ СПОРТСМЕНІВ РЕСПУБЛІКИ МОЛДОВА

Анотація

Є безперечною роль фізичних вправ для підтримання здорового способу життя. Але, незважаючи на це, для юних спортсменів, фізичні вправи у вигляді тренувань, часто є справжнім викликом, зокрема, коли їх метою є досягнення якісних показників ціною погіршення власного здоров'я. Обґрунтування засобів покращення стану здоров'я юних спортсменів Республіки Молдова є пріоритетним напрямом Служби з державного нагляду за громадським здоров'ям. Це дослідження носить описовий характер, ґрунтується на аналізі та синтезі національного та міжнародного законодавства, важливих наукових публікаціях та на результатах власних досліджень, які виявляють особливості стану здоров'я спортсменів та головні напрями його підтримання та зміцнення. Було виділено відмінності в нормуванні спортивних видів діяльності, менеджменту медичної допомоги та спостереженні за станом здоров'я спортсменів в Республіці Молдова. Було оцінено фактори ризику в діяльності юних спортсменів, рівень схильності до захворювань та спортивні травми. В результаті було розроблено цілий ряд засобів із зниження впливу факторів ризику, розвитку здібностей зі спеціалізованої медичної допомоги, просування здоров'я серед спортсменів. Результати, які було отримано, є доказами реформування служби спортивної медицини, які в комплексі з засобами з нагляду за громадським здоров'ям сприятимуть зміцненню стану здоров'я юних спортсменів.

Ключові слова: юні спортсмени, стан здоров'я, фактори ризику, просування здорового образу життя.

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МЕРОПРИЯТИЯ ОБЩЕСТВЕННОГО ЗДРАВООХРАНЕНИЯ ПО ПРОФИЛАКТИКЕ ЗАБОЛЕВАНИЙ СРЕДИ ЮНЫХ СПОРТСМЕНОВ В РЕСПУБЛИКЕ МОЛДОВА

Аннотация

Физические упражнения бесспорно играют важную роль в поддержании здоровья. Всё же, для юных спортсменов, физические упражнения, в форме тренировок, часто являются серьёзным вызовом, в особенности в достижении некоторых показателей, ценой подрыва собственного здоровья. Одним из приоритетных направлений Службы Государственного Надзора за Общественным Здоровьем, является аргументация мер по укреплению состояния здоровья юных спортсменов в Республике Молдова. Данное исследование основано на анализе и синтезе национального и международного законодательства, современных научных публикаций и результатов личных исследований в отношении особенностей состояния здоровья спортсменов и методов его сохранения и укрепления. Были установлены различия в регулировании спортивных занятий, организации медицинского контроля и мониторинга за состоянием здоровья спортсменов в Республике Молдова. Была дана оценка факторам риска в деятельности спортсменов, уровня заболеваемости и спортивного травматизма. В результате был разработан ряд мер по снижению воздействия факторов риска, по развитию специализированного медицинского обслуживания и продвижения здорового образа жизни среди спортсменов. Полученные результаты послужат в качестве доказательства в пользу реформ службы спортивной медицины, которые, в комплексе с мерами по надзору общественного здоровья, будут содействовать улучшению состояния здоровья юных спортсменов.

Ключевые слова: юные спортсмены, состояние здоровья, факторы риска, здоровый образ жизни.