Traumatism prevention of ankle joint among children, who go in for “disco” dancing, at the stage of initial training

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Abstract: Nowadays “disco” can be considered the type of dancing. Disco is a dance where dancing movements are combined with the elements of gymnastics and a great number of jumps during a quick musical tempo, without acrobatics elements use. In order to master successfully all technique of jumps, it is necessary to training feet for a long-term load. Taking into account age-related characteristics of locomotor apparatus insufficient development and the fact that all children dance without footwear, feet muscles and joints and ankle joint strengthening in order to prevent traumatism is an urgent topic for research. **Materials.** Experimental and theoretical substantiation of the exercises complex, directed toward ankle joint traumatism prevention in 7-8 year-old children during training “Disco” dancing lessons at the initial stage of training. **Research methods.** Scientific-methodical information and Internet-resources theoretical analysis and summarizing, pedagogical observation, sociological methods (questionnaire survey, plantography, results interpretation according to V.A. Yarolov-Yaralantsa method), pedagogical experiment, methods of mathematical data handling. **Results.** The questionnaire survey was held in order to reveal the amount of traumas during the lessons and competitions, their kinds and reasons in the groups of initial training. We created the complex of exercises, directed toward ankle joint traumatism prevention in 7-8 year-old children during the training lessons of “Disco” dancing at the initial stage of training and a complex of exercises for independent everyday work at home. **Conclusion.** The way of ankle joints traumatism prevention includes specially selected physical exercises. For a successful professional activity feet of a dancer should be flexible, should have sufficient power and power endurance. On the basis of the research results we come to the conclusion that dancing-choreographic exercises can be used as the way of correct bearing formation among children of junior school age.

Keywords: junior school age, initial training stage, Disco dancing, ankle joint traumatism prevention.

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INTRODUCTION

Junior school age is the time when bones and muscles become longer and the mechanisms of pose holding are not adapted to the changes that happened. Deviations are observed in most 7-8 year-old children. Muscles of the extremities (especially small muscles) are relatively weaker, than body muscles. During this period there is intensive foot development. It mainly consists of cartilaginous tissues. Under the influence of mechanical influences a child's foot can easily deform [1].

Easy flexibility of muscle-joint apparatus provides a child's flexibility, but can't create firm “muscle corset” for normal bones position preservation. As a result it is possible to have

skeleton, extremities deformation, platypodia. Special attention to children's normal pose and physical loads use is demanded [6].

In studied scientific-methodical literature there are no sufficient works concerning ankle joint traumatism prevention in the system of physical training of children, who go in for “Disco”.

New means and methods searching with the main parameters of loads determination are directed toward foot and ankle muscles and joints strengthening, in order to support spring and pushing function of the foot among children, who go in for “Disco” dancing, is the urgency of the research.

The aim of the research: experimental and theoretical substantiation of the complex of

exercises, directed toward ankle joint traumatism prevention among 7-8 year-old children during the training "Disco" dancing lessons at the initial stage of training.

In order to solve the set objectives we used the following research means: scientific-methodical literature and Internet-resources theoretical analysis and summarizing, pedagogical observation, sociological methods (questionnaire survey, plantography, results interpretation according to V.A. Yarolov-Yaralants method), pedagogical experiment, methods of mathematical data handling.

RESULTS AND DISCUSSION

A questionnaire survey was held in order to reveal amount of injuries during the training lessons and competitions, their kinds and their reasons in the groups of the initial training. The questionnaire survey included 8 questions. 17 experts, coaches-teachers, who work with children in different directions of dancing (Disco, Hip-hop, sports ballroom dancing, acrobatic rock-n-roll) in the Centers of additional education in Moscow and Moscow region took part in the questionnaire survey. The average working experience of the experts was no less than 10 years, the average age -31 years-old; all experts had higher education and 50% had higher special education. From five mentioned above kinds of dancing only in sports ballroom dancing children train and compete wearing special footwear.

Pedagogical observation and pedagogical experiment was held in a Youth Center "Voskhod" in Khimki since September 2017 till March 2019.

The main component of the exercises optimization complex, directed toward foot muscles and joints and ankle joints strengthening among children of junior school age, who go in for "Disco", is maximum complete and valid information concerning the training and competitive activity, important physical qualities.

Main attention we paid to hygienic conditions of lessons and the places of competition, the quality and purity of the covering, air temperature.

One of the problems, which most teachers face during their work with children, who go in for different kinds of dancing is often ankle and

ankle joint injuries (ankle twisting, joint apparatus sprain). It is conditioned by weakness of the lower extremities muscle-joint apparatus. One of the reasons for this phenomenon is great load on ankle joint. It is connected with the specificity of training lessons and competitive activity. Another reason is the absence of preventive measures, connected with ankle joint strengthening [3,5].

As it is seen from the table, small percentage of small injuries (tensions, bruises and subluxations) happens during the preparatory and competitive periods. The experts made ranking of injuries reasons:

- warming-up wasn't fulfilled properly (without the control of a coach);
- not stable psychological state, connected with the peculiarities of age group;
- worry because of responsibility before the collective and parents;
- no competitive experience;
- low level of technical readiness;
- low level of physical readiness;

At the initial stage of training since the moment of taking beginners till the first official performance there are 5 months, then goes one performance every month. In general 4 competitions a year (February, March, April, May).

On the basis of sociological research results and defined by the experts reasons, which lead to different injuries, the results of plantography and the accumulated practical and scientific experience (Shorin G.A., Mutovkina T.G., Tarasova T.A., 1994, Strakovskaya V.L., 1994, Sharmanova S.B., Fedorov A.I., 1999, Polyayev B.A., Yunusov F.A., Ivanova G.E., Skvoznova T.M., 2007, Khaas Zh.G., 2011) we created the complexes of exercises for independent everyday work at home and a complex of exercises. It was held directly during "disco" dancing lessons 2 times a week (duration from 10 to 15 minutes depending on the stage of training). At the first stage of the research, which lasted 2 months we created the complex of exercises (8) using the objects and without them. The exercises were fulfilled from the initial position sitting (62,5%) and standing (37,5%). During the first lessons all exercises are started with minimal load. At the second stage, which lasted 2 months the number

of exercises in a complex decreased till 6 and time of their fulfillment increased. The percentage of exercises from the sitting and standing position was equal, it means 50% (3 exercises) were the exercises from sitting position and 50% (3 exercises) from standing position. 15 minutes were given to fulfill the complex, the same as at the 1 stage. At the third stage (2 months) the created complex included 5 exercises of the increased difficulty and time, dedicated to the complex fulfillment, decreased till 10 minutes. It mainly included the exercises from standing position (on the floor, on the height) and the exercises with rubber ribbon.

Feet provide steadiness, balance, movement, they hold body weight after the jump. Typical foot injury can cause incorrect preparation or the technique of fulfillment. In order to avoid feet injuries and other injuries a dancer and a teacher should follow the rules of correct technique of performance, weight distribution and correct floor covering [4].

A foot changes its form and movements as a result of trainings more often, than any other part of the body. That is why the foot of a young dancer should be adapted to changes, which are necessary during the trainings [7].

In a usual practice of dancing teachers don't pay great attention to disorders concerning locomotor apparatus in the students. It is supposed that the medical permission from the doctor guarantees locomotor health of a child. However, even not thorough study can prove that only some percent of children doesn't have disorders in feet position. In terms of the increased physical and emotional load, general fatigue of an organism, the functions of a foot decrease because of foot arch disorders and it can lead to serious injuries [2].

The means of ankle joints injuries prevention can be specially selected physical exercises [6]. Physical exercises are fulfilled both without weight and with different objects (balls, dumbbells, expander, absorbers, special mats, gymnastic sticks and etc.) from different initial positions (standing, sitting, lying).

During junior school age insufficient muscles development, joints weakness, long-term loads on the foot lead to platypodia. In this case

there appears pain in a foot and an ankle, and a person feels tiredness during walking and running [8].

CONCLUSION

The way of ankle joints traumatism prevention includes specially selected physical exercises.

Nowadays the experience of outstanding Russian scientists in the sphere of dancing (A.A. Sapogov, 2003; Yu.I. Gromov, 2006), specialists in the sphere of physical culture (S.B. Sharmanova, 2001; O.S. Vasilev, 2007), doctors-orthopedists (J.S. Hafil, 2007) proves that dancing-choreographic exercises have considerable influence on bearing and foot arches formation.

For a successful professional activity feet of a dancer should be flexible, should have sufficient power and power endurance. Foot flexibility means maximum amplitude of movements in ankle joint and foot joints.

On the basis of the research results we come to the conclusion that dancing-choreographic exercises can be used as the way of correct bearing formation among children of junior school age.

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Table – Results of a questionnaire survey among experts (n=17)

Questions	Dancing direction				
	Disco	Hip-hop	Spots ballroom dancing	Acrobatic rock-n-roll	Capoeira
1.How often do your students get injuries?	Once in 6-12 months	Once in 1-3 months	Once in 6-12 months	Once in 1-3 months	Once in 2 years and less
2.Kinds of injuries	tension, meniscus injuries; ankle joints injuries; foot joints apparatus injuries.	Bruises; tensions; shoulder joint injuries; cruciate ligaments of knee injuries; ankle joints calves injuries.	cruciate ligaments of knee injuries; meniscus injuries; spine injuries.	Tensions and muscles ruptures; ankle joints, calves injuries.	Abrasion marks, concussions, tensions; ankle joints, calves injuries; foot joints apparatus injuries; dislocations and concussions of foot fingers, arm injuries.
3.During which period of activity do students have most injuries?	Preparatory, competitions	Preparatory	Pre-competitive	Competitions	Preparatory
4.The reasons for injuries	1.Insufficient warming-up before the main activity. 2.Low level of technical and physical readiness. 3.Bad psychological state	1.Insufficient warming-up before the main activity. 2.Low level of technical and physical readiness. 3.Not proper footwear/clothes use. 4. Bad psychological state	1.Insufficient warming-up before the main activity. 2.Mistakes in trainings planning and training methods.	1.Insufficient warming-up before the main activity. 2.Low level of technical and physical readiness. 3.Bad psychological state	1. Low level of competitions organization. 2. Insufficient warming-up before the main activity. 3. Bad psychological state.
5.How often do your students go through planned medical check-up?	Once a year	Once in two years and less	Once in two years and less	Once in 6 months	Once in 6 months

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