



MINISTRY OF SPORT OF RUSSIAN FEDERATION
RUSSIAN STATE UNIVERSITY OF PHYSICAL EDUCATION, SPORT, YOUTH AND TOURISM (SUPEST)

**Proceedings
Of XIII International Scientific and Practical
Conference of Students and Young Scientists
“Modern University Sport Science”**



**XIII International Scientific and Practical Conference of Students
and Young Scientists “Modern University Sport Science”**

May 16–17 2019

Moscow 2019

Editorial Board:

Komova E.V. ,PhD.

Udalova M.Yu. ,PhD.

Reviewer:

Kanarsky S.P. ,PhD.

Moscow State Academy of P.E.

Publication of scientific abstracts. The XIII Annual International Conference for Students and Young Researchers "Modern University Sport Science", RSUPESY&T – M., 2019 -348 Page.

ISBN 978-5-604526-9-0

This publication contains abstracts of The XIII Annual International Conference for Students and Young Researchers "Modern University Sport Science" May 16-17, 2019. This book of abstracts considers issues of Theory and Methods of Physical Education; Physical Education and sports for All; Physical Education & Rehabilitation and Adapted Sports; Biomechanics, Sport physiology, Sport medicine; Sport Psychology; Sport and Society; Sport Management, Marketing & Sport Media; Sport Methodology & Comparative Study in Sport and Physical Education; Issues of the Modern Olympic Movement, Tourism and is intended for the scientists conducting research in physical education and sport, lecturers of Higher Educational Establishments, students, post-graduates, coaches and athletes.

The abstracts are published as they have been submitted by the authors

EVALUATION OF THE CONDITION OF THE FOOT OF HIGHLY QUALIFIED GYMNASTS BY USING PODOMETRY METHOD

Murtishcheva S.M.

Abstract

The article presents the results of evaluation of the condition of the foot of highly qualified gymnasts by using podometry methods of Friedland M.O., Shtriter V.A., Jaralov-Jaralend V.A. and Ocheret A.A. Been revealed a high percentage of some deviations in the condition of the foot of gymnasts.

Keywords: *rhythmic gymnastics, jumping ability, foot, flat feet.*

Introduction

Rhythmic gymnastics is an Olympic complex-coordinated and acyclic sport in which gymnasts compete in technical mastery and in the expressiveness of performing complex body movements both with and without an apparatus. With each Olympic cycle higher demands are placed on the technical complexity of the composition – elements of all structural groups of an exercise without an apparatus must be present in every competition program. One of such elements is jumps, which is distinguished by a complex structure and high demands on the speed-strength training of gymnasts.

According to most experts, jumping ability as a component of speed-strength training is one of the leading physical abilities and directly affects the sports result [1].

However, gymnasts do not achieve high results in the realization of jumps even with a high level of physical and technical readiness. The requirements for the condition of the gymnasts' feet increases every year, but the existing methods of developing jumping ability, as a rule, do not contain a health component [2]. That is why we investigate the problem of the conjugate development of jumping ability and the prevention of the negative impact on the feet in rhythmic gymnastics.

The purpose of the research – to analyze the negative impact of sports training on the foot health of adult gymnasts.

In order to analyze the condition of the foot we conducted several tests using the methods of Friedland M.O., Striter V.A., Yaralov-Yaraland V.A. and Ochet A.A.

Results of the research and their discussion

The study was conducted on the base of «Volga Region State Academy of Physical Culture, Sports and Tourism». The experiment involved 18 female students engaged in rhythmic gymnastics.

The first test was a podometric survey according to Friedland. According to the results of the podometry 50% of the gymnasts have no deviations in the

condition of the foot: 33% of the female students have a normal arch of right and left feet; 11% – moderately high arch of both feet, 11% – very high arch of both feet. This means a uniform distribution of the weight on both legs in the training process. However, the remaining 50% of female students were diagnosed abnormalities: 17% of gymnasts have a flattened arch of the right and left foot, and 33% have a full flatfoot.

The second test consisted of receiving a plantogram of the foot of gymnasts according to the Shritter technique. According to the results of the podometry, it was revealed that 56% of the gymnasts have no deviations in the feet condition: 39% of the female students have a normal arch of right and left feet; 11% – moderately high arch of both feet, 6% – very high arch of both feet. However, the remaining 44% of female students were diagnosed abnormalities: 28% of gymnasts have a flattened arch of the right and left feet, and 17% have a full flatfoot.

The third test was also a study of the plantogram of gymnasts using the method of Yaralov-Yaraland. It was revealed that 50% of gymnasts have no deviations in the condition of the foot according to the results of the podometry. However, the remaining 50% of gymnasts have various kinds of deviations: 44% of female students have a flattened arch of both feet, and 6% – full flatfoot.

After that we conducted a functional test using the Ocheret method to determine the stability of the gymnasts' feet. According to the results of the podometric test for stability of the feet it was found that 72% of the female students have a stable arch of the right and left feet. This means a uniform distribution of the weight on both legs. However, 28% of gymnasts have abnormalities in the condition of the foot: 17% of female students have a relatively stable arch of both feet, 6% of gymnasts have a shortening of the left foot, and 5% – of the right foot.

These facts characterize the weakness of the arches due to the insufficiency of the muscular-ligamentous apparatus, instability, and flatfoot varying degrees.

Conclusions

Thus, we identified a high percentage of deviations in the condition of the foot for each technique among highly qualified gymnasts, among which is a flattening of the arch of the foot, characterizing flat feet of 1, 2 and 3 degrees. The presence of these deviations should be considered in the training process. The results of the study will be used to creation methods for the conjugate development of jumping ability and prevention of flatfoot in rhythmic gymnastics.

Bibliography

1. Medvedeva E.N. Innovative approach to prevention of injury during the training of jumps in rhythmic gymnastics / E.N. Medvedeva, R. B. Tsallagova, A.A. Suprun, E. B. Kotelnikova // *Uchenye zapiski iniversiteta imeni P.F. Lesgafta* . – 2016. – No. 4 (134), pp. 160-162.

2. Cupisti A. Injury survey in competitive sub-elite rhythmic gymnasts: results from a prospective controlled study / A. Cupisti, C. D'Alessandro, I. Evangelisti, C. Umbri, M. Rossi, F. Galetta, E. Panicucci, S. Lopes Pegna, M. Piazza // J Sports Med Phys Fitness, 2007. URL: <https://www.ncbi.nlm.nih.gov/pubmed/17557059> (22.02.2019).

Murtishcheva Sofia Mikhailovna, graduate student, kafedra_gymnastics@mail.ru, Russia, Republic of Tatarstan, Kazan, «Volga Region State Academy of Physical Culture, Sports and Tourism».

*«Оценка состояния стопы высококвалифицированных гимнасток путем подометрии»
Муртищева Софья Михайловна, магистрант, kafedra_gymnastics@mail.ru, Россия, Республика Татарстан, г. Казань, ФГБОУ ВО «Поволжская государственная академия физической культуры, спорта и туризма»*

Аннотация.

*Оценка состояния стопы высококвалифицированных гимнасток путем подометрии.
В статье рассматривается оценка состояния стопы высококвалифицированных гимнасток с использованием методик Фридланда М.О., Штритера В.А., Яралова – Яраланда В.А. и Очерета А.А. По каждой проводимой методике у гимнасток выявлен высокий процент определенных нарушений в состоянии стопы.*

Ключевые слова: художественная гимнастика, прыгучесть, стопа, плоскостопие.