ABSTRACT

This thesis focuses on the foot arch condition in female sports and fitness aerobics competitors at different competition levels. Our aim is to analyze the condition of the longitudinal plantar arch based on plantographic measurements in a group of female athletes differing in performance and competition category. The work consists of two parts. The theoretical part deals with the description of sports and fitness aerobics by its definition and rules, then it describes the anatomy of the leg, the deformities of the plantar arch and last but not least the methods of plantogram evaluation. The practical part of the thesis deals with the analysis of the foot arch structure in selected female athletes at different performance levels. Specifically, in female athletes of the first performance class, where the number of probands measured totalled 44, and in female athletes of the second performance class, where 46 probands were measured. Subsequently, the total population (N=90) was compared to the general sporting population. The practical part of the study included additional questions for the athletes in the form of a questionnaire regarding the duration of participation in sports aerobics and fitness, performance class, frequency of training blocks, special exercises for the foot arch and the use of orthopaedic insoles. All results are tabulated and interpreted. The characteristics of the whole set of measured probands show that the mean age of the female athletes in the first VT in the adult category is 19.21 ± 0.18 years, height 162.96 ± 1.41 cm and weight 58.17 ± 1.47 kg. For the second VT in the adult category is 19.05 ± 0.43 years, height 166.46 ± 0.90 cm and weight 60.33 ± 1.52 kg. The results show that in the total population of both the first and second performance classes, the effect of specific sports load on the foot arch condition was observable in 55.6% of the measured probands, as 50 of the measured female athletes can be classified in the flat-footed category. Specifically, 25 female athletes from the first VT and 25 female athletes from the second VT. Based on the values obtained, it was recommended that the flat-footed female racers should pay more attention to compensatory exercises and activation of the leg arch muscles. An intervention program with selected exercises was designed for sports and fitness aerobics competitors to prevent the development of flat feet and possibly to treat flat feet.

KEYWORDS

plantography, flatfoot, aerobics, exercise, sport