

ABSTRACT

Goals:

The main objective of this bachelor thesis was to analyse the incidence of flat feet in children aged 4 to 5 years in kindergartens and to compare whether there is a difference between the frequency of flat feet in forest kindergartens compared to ordinary kindergartens. The result may indicate whether the kindergarten environment has an effect on the formation of the children's sole.

Methods:

The following were evaluated for 20 children from ordinary kindergartens and 20 children from forest kindergartens aged 4 to 5 years: plantogram, physical examination, weight, height, foot size, type of footwear - conventional/ barefoot.

The plantogram was made using a podoscope from SANOMED s.r.o. and evaluated by the Chippaux-Smirak index (CSI).

Statistical processing was done in MS Excel and in the statistical program Rstudio.

Results:

The results of the study show that children from forest kindergartens have lower CSI, ie. less flat feet ($p = 0,0351$). The degree of arching of the foot is usually similar on the left and right foot ($p = 0,00001$). There is no significant difference in the frequency of flat feet in girls and boys ($p = 0,9761$). No correlation was found between CSI and BMI ($p = 0,421$) nor between CSI and foot size ($p = 0,792$). Children with barefoot shoes have lower CSI values than children wearing conventional shoes ($p = 0,00044$). Valgosity does not mean a flat foot necessarily, and a flat foot can be present without increased valgus position of the heel bone. No significant difference was found between CSI in 4-year-old and 5-year-old children ($p = 0,8887$). The last finding is that the flat feet is not laterally dominant - there is no significant difference between the incidence of flat feet on the left and right leg ($p = 0,6455$).

Conclusion:

Flat feet occurred in 17.5% of children in this group. Kindergarten and footwear environments can have significant effect on the formation of children's feet.

Key words: flat feet, flexible flat foot, Chippaux-Smirak index (CSI), forest kindergarten, ordinary kindergarten, foot, proprioception, barefoot footwear