

عنوان مقاله:

Comparison of Foot Pressure Distribution Using Two Types of Medical Insoles Based on Location in Children with Flexible Flat Foot: A Quasi-Experimental Study

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خلاصه مقاله:

Introduction: Medical insoles play an important role in correcting the biomechanical characteristics of the foot in people with flat foot. The design and construction of the insole determines how it affects the foot. The aim of this study was to compare the effect of two types of semi-custom insole and custom molded insole made based on three-dimensional scanning technology on the distribution of surface and pressure in different areas of the sole of the foot. **Materials and Methods:** This quasi-experimental study was performed on ۱۶ children with plantar fasciitis at the Musculoskeletal Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. Participants were selected by simple non-probability method and randomly divided into two equal groups for intervention with semi-custom insoles and insoles made based on foot scans. The area of the parts involved in foot sole pressure and the size of the foot sole pressure and its location were measured before the intervention, immediately, and ۶ weeks after continuous use of the insoles. Shapiro-Wilk test was used to examine the data distribution and two-way analysis of variance (ANOVA) was used for data analysis. **Results:** Both types of insoles showed the maximum pressure in the whole sole of the foot after ۶ weeks ($P = ۰.۰۴$) and the maximum pressure in the middle of the sole of the foot increased significantly for both types of insoles, while a significant decrease was observed in the front sole of the foot ($P = ۰.۰۷$). The results also showed that the use of custom insoles in comparison with semi-custom insoles did not lead to a significant difference in the average of the maximum pressure applied to the front of the foot sole ($P = ۰.۶۳$). **Conclusion:** Although both custom insoles using Computer-aided design-Computer-aided manufacturing (CAD-CAM) and semi-custom insoles were effective in biomechanical effects such as pressure on the soles of the feet in children with flat feet, the custom insole was more effective. Since it is necessary to choose an advanced, uniform, and fixed method for designing and manufacturing medical insoles for children with flat feet, it is recommended that this study be performed with the help of scanners or other different and related design software.

کلمات کلیدی:

Insole, Flexible flatfoot, Plantar foot pressure, Scan

