Effects of wearing shoes on the feet: a comparative study of the feet of middle-aged partially shod and regularly shod Maasai women
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Introduction/Purpose: Maasai tribe members either walk barefoot or wearing traditional shoes made from recycled car tires. Despite walking long distances (up to 60 km) daily, they do not generally experience foot ailments. We compared parameters associated with the feet, ankles, and gait of middle-aged partially and regularly shod Maasai women and Koreans.

Methods: Foot length, calf circumference, hindfoot alignment, step length, cadence, and walking velocity were compared among 20 middle-aged bush-living partially shod (PS) Maasai women, urban-living regularly shod (RS) Maasai women and Korean. Static and dynamic Harris mat footprints were taken to determine forefoot pressure distribution during walking. We also compared standing foot and ankle radiographic parameters.

Results: The mean ratios of foot length to the width were not significantly different among three groups. Claw toe deformity was showed highly in PS (80%) and RS (95%) Maasai women. There were no significant differences in walking velocity and Harris mat findings among the three groups. On comparing PS and RS Maasai groups radiographically, talonavicular coverage angle, talo-first metatarsal angle and naviculo-cuboidal overlap were significantly greater in the PS Maasai group, whereas hallux valgus angle, the first and second intermetatarsal angle Meary angle and the medial cuneiform height were greater in the RS Maasai group.

Conclusion: Regularly wearing shoes can protect the feet from fallen medial longitudinal arches with everted hindfeet and abducted midfeet. It could also cause hallux valgus deformity. Claw toe deformity was seen frequently in the Maasai tribe regardless of shoe wearing habits.