

Accepted Manuscript

Title: Study on the Foot Shape Characteristics of the Elderly in China

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PII: S0958-2592(17)30067-6

DOI: <http://dx.doi.org/doi:10.1016/j.foot.2017.04.004>

Reference: YFOOT 1474

To appear in: *The Foot*

Received date: 28-4-2016

Revised date: 18-4-2017

Accepted date: 20-4-2017



Please cite this article as: Luo Xiang Dong, Xue Chao-Hua, Li Yan. Study on the Foot Shape Characteristics of the Elderly in China. *The Foot* <http://dx.doi.org/10.1016/j.foot.2017.04.004>

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Study on the Foot Shape Characteristics of the Elderly in China

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Xiang Dong Luo: study design, data acquisition, interpretation of data, final approval.

Chao-Hua Xue: study design, critical revision of the article, final approval.

Yan Li: study design, data acquisition, manuscript revision, final approval.

Highlights

- Study on the Foot Shape Characteristics of the Elderly in China
- HIGH LIGHTS
- The feet of the elderly over 60 years of age in China often present degenerative changes, deformities, and diseases.
- A convenient sample of 800 (398male and 402 female) valid questionnaires were surveyed and recovered which provided information on the foot shapes, foot deformities, and foot diseases of the elderly above 60 years old to study the morphological characteristics.
- A total of 800 (half male and half female) elderly subjects whose feet were in a good state were recruited mainly from the regions of Shanghai, Henan, Hebei, Sichuan, and Shaanxi in China for foot size measurements to obtain the foot type of the elderly in China.
- The results of the survey were used for subjective analysis and that of the measurements was used for objective analysis. The aim of this study is to obtain information on the foot type and the characteristics of the elderly feet in China.

ABSTRACT

Background: With aging, the feet of the elderly above 60 years old in China present degenerative changes, deformities, and diseases, which significantly affect their daily activities.

Objectives: We aimed to study the morphological characteristics of the feet and identify the foot type according to size (length and width) and defect characteristics of elderly feet in China.

Methods: A convenient sample of 1000 subjects above 60 years old was recruited mainly in the regions of Shanghai, Shaanxi, Henan, Hebei, and Sichuan in China. Foot images were collected, and 800 (male 398, female 402) valid questionnaires were recovered. A total of 800 elderly subjects as the test group were invited to measure their foot sizes by means of a Footprint Collector (Tong Yuan Tang Health Management Limited, Qingdao in Shandong province). We compared the foot type of the elderly with that of the general adult Chinese population as the control group using the t-test for independent samples.

Results: Hallux valgus (46.9%) and flat foot (50.0%) were the most common foot shape deformities. The most frequent foot diseases were foot scaling (91.2%) and calluses (96.3%). The medial width of the first metatarsal-toe joint of the elderly was significantly higher (elderly female, 44.95 ±4.86 mm; elderly male, 48.55 ±4.94 mm) than that of the general adult population (adult female, 40.18 ±3.43 mm; adult male, 43.22 ±3.20 mm) ($p < 0.01$).

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