Foot problems among elderly people in Hong Kong

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ABSTRACT

Objective. To evaluate the prevalence and pattern of foot problems, and mobility among 85 elderly people in Hong Kong.


Main outcome measures. Characteristics of the subjects, foot problems and patterns, and mobility.

Results. 65 women and 20 men (mean age, 79 years) from 3 community centres in Kowloon District were invited for foot screening. 81% of subjects had at least one foot problem; the most common was callus (45%), followed by hallux deformity (37%), dystrophic nail (27%), and nail onychomycosis (24%). 45% of subjects had foot pain, and 61% of subjects were aware of their foot problems. Only 28% of subjects sought medical consultation, and 41% of subjects did not have well-fitting footwear. 99% of subjects were ambulatory; the median Elderly Mobility Scale score was 17 (range, 15-17) out of 20.

Conclusion. Foot problems were common in our elderly population, but the rate of medical consultation was low. Most elders did not have well-fitting shoes. Education on preventive podiatry medicine and routine foot examination is necessary to promote better foot health.

Key words: Aged; Foot diseases; Mobility limitation

INTRODUCTION

Signs and symptoms of certain medical conditions (such as diabetes mellitus, peripheral vascular disease, and arthritis) can be first noticed in the feet. Various foot problems are common in the general population, especially in the elderly.1-3 In 2010, there were 5000 podiatry consultations at the Podiatry Department of Kwong Wah Hospital, mostly by the elderly population. Elderly subjects usually neglect these problems and seek medical advice in late stages. Delayed treatment may lead to ulcer formation, gangrene, poor gait and balance, and increased risks of falling, morbidity, and mortality. In Hong Kong, podiatrist services are limited, and foot care education is not adequately promoted. We aimed to assess the prevalence and patterns of foot problems and mobility among 85 community-dwelling elders.

METHODS

This study was approved by the Kowloon West Cluster Clinical Research Ethics Committee of the Hospital Authority. 65 women and 20 men (mean age, 79 years; standard deviation [SD], 7 years) from 3 community centres in Kowloon District were invited for foot screening between December 2012 and March 2013. Their mean±SD body mass index was 24±3.4 kg/m². 35% of subjects lived alone, and 60% of subjects had <5 years of education. 72% of subjects had at least one comorbidity; the 3 most common comorbidities were hypertension (47%), diabetes mellitus (22%), and ischaemic heart disease.
Two experienced podiatrists examined the subjects’ feet and footwear. The Elderly Mobility Scale was used to assess the correlation between mobility and foot problems.\(^4,5\)

**RESULTS**

61 (81\%) of subjects had at least one foot problem (Table); the most common was callus (45\%), followed by the hallux deformity (37\%), dystrophic nail (27\%), and nail onychomycosis (24\%). Less common problems included skin fissures (4\%), ulcers (2\%), and ingrown toenail (1\%). No subject had cellulitis or wart. 45\% of subjects had foot pain, and 61\% of subjects were aware of their foot problems. Only 28\% of subjects sought medical consultation.

The most commonly worn footwear was slip-on shoes (38\%), followed by shoes with a lacing buckle (25\%), sandals (13\%), jogger trainer shoes (9\%), mule backless (9\%), and slippers and flip-flops (6\%). 41\% of subjects did not have well-fitting footwear. 99\% of subjects were ambulatory; the median (range) Elderly Mobility Scale score was 17 (15-17) out of 20.

**DISCUSSION**

In a Thai study of 213 healthy elders aged 60 to 80 years, up to 87\% of the subjects had foot deformities; 14\% of them had foot pain and slow walking speed.\(^6\) In the Framingham Foot Study of 1544 older adults, up to 19\% of men and 25\% of women had foot pain causing mobility limitation.\(^7\) In our study, 81\% of

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>No. of subjects</td>
<td>85</td>
</tr>
<tr>
<td>No. of female: male</td>
<td>65:20</td>
</tr>
<tr>
<td>Mean±SD age (years)</td>
<td>79±7</td>
</tr>
<tr>
<td>Mean±SD body weight (kg)</td>
<td>56±10</td>
</tr>
<tr>
<td>Mean±SD height (cm)</td>
<td>156±9</td>
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<tr>
<td>Mean±SD body mass index (kg/m(^2))</td>
<td>24±3</td>
</tr>
<tr>
<td>% of subjects living alone</td>
<td>35</td>
</tr>
<tr>
<td>Comorbidity (% of subjects)</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>47</td>
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<tr>
<td>Diabetes mellitus</td>
<td>22</td>
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<tr>
<td>Ischaemic heart disease</td>
<td>17</td>
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<tr>
<td>Cerebrovascular accident</td>
<td>9</td>
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<tr>
<td>≥1 comorbidity</td>
<td>72</td>
</tr>
<tr>
<td>% of subjects with foot pain</td>
<td>45</td>
</tr>
<tr>
<td>% of subjects aware of foot problems</td>
<td>61</td>
</tr>
<tr>
<td>% of subjects with ill-fitting footwear</td>
<td>41</td>
</tr>
<tr>
<td>Median (range) Elderly Mobility Scale score</td>
<td>17 (15-17)</td>
</tr>
</tbody>
</table>

\(\text{Callus} \quad 45\)

\(\text{Hallux deformity} \quad 37\)

\(\text{Dystrophic nail} \quad 27\)

\(\text{Nail onychomycosis} \quad 24\)

\(\text{Skin fissures} \quad 4\)

\(\text{Ulcers} \quad 2\)

\(\text{Ingrowing toenail} \quad 1\)

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**Table:** Subject demographics and results
subjects had at least one foot problem, and 45% of subjects had foot pain. The higher rate of foot pain in our subjects may be due to the difference in pain tolerance and the small sample size.8

61% of our subjects were aware of their foot problems, but only 28% sought medical consultation. This may be due to the lack of medical knowledge, accessibility of podiatry service, and care. 35% of our subjects lived alone; they often lack home carers and social support. Financial issues may also affect the decision to seek medical consultation.

50% of diabetes patients were not aware of their foot health.9 Education level, socioeconomic status, lack of information, and financial constraints affect the awareness of foot health and care. In Hong Kong, there is no recognised training school for podiatrists, and the supply of podiatry services is insufficient.

41% of our subjects did not have well-fitting footwear. Ill-fitting footwear can cause excessive pressure and friction on the sole, causing callus and secondary toe deformity. Shoes with high collars help to improve balance.10 People wearing shoes without fixation are more prone to tripping.11 Improper footwear can be an external tripping hazard.

The Elderly Mobility Scale is a validated tool to assess frailty of elderly people recommended by the Royal College of Physicians and British Geriatrics Society. It can predict the risk of falling in the elderly. Eiders with a score of >14 are considered to be independent in basic daily living and have safe mobility; poor scores are associated with those having had at least 2 falls.12 Severe foot problems are associated with falls (although the severity is not well-defined).13

This study has some limitations. The study sample was small and not representative of the Hong Kong population. History of falling, which is important in assessing the association between fall and foot problems, was not addressed. This study can be improved by measuring additional functional outcomes such as the timed up and go test, 6-minute walk, and Short Physical Performance Battery.

CONCLUSION

Foot problems are common in our elderly population, but the rate of medical consultation is low. Most elders do not have well-fitting shoes. Education on preventive podiatry medicine and routine foot examination is necessary to promote better foot health.

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REFERENCES