Short Communication

Functional disability in activities of daily living and instrumental activities of daily living among Nepalese Newar elderly

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Introduction

Physical function is recognized as an important indicator of health in older people and many studies have been undertaken.1 With increasing age, objectively measured health and functional status decline, physical and cognitive capacities decrease, and the number of chronic diseases and the extent of disability in performing daily activities increases. Maintaining good functional capacity is a crucial component of successful ageing.

Functional disability is often assessed in older adults by their difficulty in performing basic activities of daily living (ADL), such as those measured on the Katz index (eating, bathing, dressing, transferring, toileting and continence).2 In addition, assessment of functional status, using instrumental activities of daily living (IADL),3 suggests that IADL deficits usually precede ADL deficits.1

The most common problem that impacts upon the health and quality of life of older people, leading to dependency and institutionalization, is functional disability,4 which has a disproportionate effect on healthcare needs. Studies of the prevalence, causes and effects of functional disability in aged populations are therefore crucial for proper public health policy and planning. While many population studies on functional disability in older adults have been conducted in Western countries,1–5 very few have been reported in Asian countries.6–8 This study examined the prevalence of functional ADL and IADL disabilities among Nepalese elderly.

This study examined the prevalence of functional disability among elderly people in Nepal, one of the poorest countries of the world. The average life expectancy is 61.0 years, and Nepal is one of the few countries in the world where men live longer than women.9 The proportion of people aged 60 years and above is 6.5%, and the elderly population has been increasing rapidly in recent decades.9 This study is among the first to examine functional ADL and IADL disabilities among Nepalese elderly.

The data for this study were taken from a cross-sectional field survey of Nepalese elderly conducted in 2005 in Kathmandu city.10 This paper presents the results and analysis of Newar (n = 195) caste/ethnicity elderly, aged 60 years and above,
who are primarily original inhabitants of Kathmandu who still speak the Newari language. The Newars are one of the most cultured ethnic groups in Nepal, and many of them are skilled craftsmen, merchants and traders. Since Kathmandu is the political and administrative centre of the country, many Newars have become government workers, teachers or administrators.

The study protocol was approved by the Institutional Review Board of the Graduate School of Medicine of the University of Tokyo. Oral informed consent was obtained from all participants before interviews. Face-to-face interviews were conducted in the subjects’ homes and took approximately 1 h.

Functional disability in ADL of older adults was measured using a five-item scale (bathing, dressing, toileting, transferring and eating) developed from the six-item ADL scale. Functional disability in IADL of older adults was measured using a five-item scale (travelling by public transport, shopping for groceries, preparing meals, doing light housework and taking medicine) developed from the seven-item IADL scale. For the present study, responses were dichotomized as ‘unable to do at all/need some help’ and ‘without help’. Internal consistency of the ADL scale and the IADL scale was 0.87 and 0.88, respectively.

Descriptive statistics and t-tests were used to compare the difference between elderly men and women on the individual items in the scales, as well as on functional disability. For the present study, ADL/IADL disability was defined as the respondent ‘needs some help/unable to do at all’ for one or more of the activities in the respective scale.

Subjects ranged in age from 60 to 97 years with a mean age of 68.8 (±7.7) years; 101 (51.8%) were male and 105 (53.8%) were married. Eighty-nine (45.6%) subjects were literate (could read or write, including those who were literate due to informal education). Mean functional ability scores were 4.8 (±0.9) for ADL and 4.2 (±1.5) for IADL.

Table 1 shows the study participants’ functional disability in ADL and IADL. Among Nepalese Newar elderly, aged 60 years and older, 8.7% (8.9% for men, 8.5% for women) reported functional disability in at least one ADL item, and 29.2% (21.8% for men, 37.2% for women) reported functional disability in at least one IADL item. The most common dysfunction among the five ADL items for men and women was bathing. The most difficult activity of the five IADL items was travelling (20.5%) as a whole; this was also true for elderly women, but the most difficult IADL item for men was preparing meals. Women showed higher functional disability for all ADL and IADL items compared with men.

When adults aged 65 years and above were considered, functional disability in ADL was 12.8% (12.3% for men, 13.3% for women) and IADL was 36.8% (26.0% for men, 50.0% for women). This is quite high, but is difficult to compare with other studies due to differences in population samples.

Table 1  Functional disability in activities of daily living (ADL) and instrumental activities of daily living (IADL) (%).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
<th>t-test</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing</td>
<td>7.7</td>
<td>6.9</td>
<td>7.7</td>
<td>0.681</td>
<td></td>
</tr>
<tr>
<td>Dressing and undressing</td>
<td>5.6</td>
<td>4.0</td>
<td>7.4</td>
<td>0.294</td>
<td></td>
</tr>
<tr>
<td>Toileting</td>
<td>5.6</td>
<td>3.0</td>
<td>8.5</td>
<td>0.095</td>
<td></td>
</tr>
<tr>
<td>Transfer to/from bed, mat</td>
<td>3.6</td>
<td>2.0</td>
<td>5.3</td>
<td>0.212</td>
<td></td>
</tr>
<tr>
<td>Eating</td>
<td>1.5</td>
<td>1.0</td>
<td>2.1</td>
<td>0.521</td>
<td></td>
</tr>
<tr>
<td>Travelling</td>
<td>20.5</td>
<td>14.9</td>
<td>26.6</td>
<td>0.043</td>
<td></td>
</tr>
<tr>
<td>Shopping for groceries</td>
<td>15.9</td>
<td>11.9</td>
<td>20.2</td>
<td>0.113</td>
<td></td>
</tr>
<tr>
<td>Preparing meal</td>
<td>19.0</td>
<td>15.8</td>
<td>22.3</td>
<td>0.250</td>
<td></td>
</tr>
<tr>
<td>Doing light housework</td>
<td>13.8</td>
<td>11.9</td>
<td>16.0</td>
<td>0.413</td>
<td></td>
</tr>
<tr>
<td>Taking medicine</td>
<td>12.3</td>
<td>7.9</td>
<td>17.0</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>Difficulty with at least one ADL</td>
<td>8.7</td>
<td>8.9</td>
<td>8.5</td>
<td>0.922</td>
<td></td>
</tr>
<tr>
<td>Difficulty with at least one IADL</td>
<td>29.2</td>
<td>21.8</td>
<td>37.2</td>
<td>0.018</td>
<td></td>
</tr>
</tbody>
</table>

65 years and above

| Difficulty with at least one ADL | 12.8  | 12.3 | 13.3   | 0.864  |   |
| Difficulty with at least one IADL | 36.8  | 26.0 | 50.0   | 0.004  |   |

P < 0.05 are shown in bold.
number of IADL items, item content and scoring methods.

Previous studies have reported gender differences in functional disability, with elderly women reported to have higher functional disability than elderly men. This was true for IADL \((P<0.05)\) but not for ADL in the present study. In particular, a significant difference was found for travelling \((P = 0.043)\) and taking medicine \((P = 0.049)\). It is unclear why functional disability was higher for travelling and taking medicine among elderly women compared with elderly men. One explanation may involve cultural restrictions regarding women's movement beyond their houses. Nepalese women often report that men confine them inside their homes. Men and younger family members may also tend to perform the activity of grocery shopping. In addition, illiteracy is higher among Nepalese elderly women than men.

This study revealed a heavy societal burden in terms of addressing the needs of elderly people who show ADL and/or IADL dependency. IADL dependency is very high among Nepalese elderly, and IADL dependency among older people who are able to perform ADL independently could predict ADL decline. To prevent ADL dependence, as well as IADL dependence, identification of risk factors for IADL dependence is important because of the hierarchical relationship between ADL and IADL. Further studies are required to identify risk factors for functional IADL deterioration among elderly people, and this issue must be considered when addressing healthcare needs of the elderly and formulating appropriate healthcare policy.

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Ethical approval

Institutional Review Board of the Graduate School of Medicine of the University of Tokyo.

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Competing interests

None declared.

References