Difficulties in mobility among elderly people and their association with socioeconomic factors, dwelling environment and use of services

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ABSTRACT. The purpose of this study was to clarify the extent to which elderly people have difficulties in mobility, and determine their association with socioeconomic factors, dwelling environment and use of services. The study groups were composed of two random samples of 800 persons aged 65-74 and 75-84, respectively. In all, 1224 non-institutionalized persons (80%) were interviewed at home. The respondents were asked to assess their ability to get about the house, negotiate stairs and walk outdoors, as well as manage certain physical exercise tasks. Difficulties in getting about outdoors were found most frequently among the women in the older age group (52% reported difficulties), and least frequently among the women in the younger age group (23%). Logistic regression analyses showed that difficulties in getting about outdoors were significantly explained by length of education and defects in the dwelling environment. Also, difficulties in getting about outdoors explained significantly the use of home help. It is concluded that difficulties in mobility among elderly people, especially among elderly women, should be reduced more actively either by improving their physical abilities or by developing compensation strategies for their own use or in regard to the environment.


INTRODUCTION

To maintain mobility, e.g., the ability to walk, negotiate stairs and use public transportation, in old age is essential for independent functioning in daily life (1-3), as well as for social participation and leisure activities (4). Preventing or postponing functional disabilities and promoting independence is important for the quality of life of older people (5). The information yielded by epidemiological research on mobility problems and related factors will facilitate the planning and development of preventive interventions.

The pathways that lead to mobility problems in late life are not precisely known, but there usually are one or more chronic conditions in the background, the number of which was found to be connected with difficulties in or loss of mobility (3, 6-8). Further, the ability to move contributes to how older people perceive their health (9, 10). Age as such (3, 7, 11-14), and being female (11-14) are associated with an increased prevalence and incidence of reported mobility difficulties.

Previous research has shown that socioeconomic factors, such as low income (3, 8), low education (7, 15), and social class as a combination of these (16), are related to mobility problems or loss of mobility. In the study by Guralnik et al. (3) the relationship of income to loss of mobility was independent of age or chronic conditions in both sexes. The same applied to the relationship between mobility loss and education in men. Social class has been considered to affect functional ability more than gender (17), which further indicates the importance of socioeconomic factors in relation to mobility.

Environmental factors are not the cause of mobility problems, but elderly people with such problems will be more vulnerable to environmental demands. For example, older people with mobility limitations more often report the need for modifications in dwellings, such as extra handrails, ramps or stair lifts, than others (18). In addition, environmental factors,
e.g., the lack (4) or inaccessibility (19) of transportation, often limit the outdoor mobility of elderly people. When difficulties in mobility appear, older people have several ways of dealing with them. They can try to adapt by altering how they act (e.g., acting more slowly, doing things in a different way or giving up difficult tasks), which often happens gradually and unconsciously (20, 21). Alternatively, people can try to improve their capabilities through medical or rehabilitative interventions (21). When inabilities appear, people can further compensate for such losses by increasing their informal or formal use of services, or by making the dwelling environment more suitable either by improving their existing home environment or moving into a more appropriately equipped dwelling (18, 20-22). When considering the ability of older disabled people to continue living at home, the condition and standard of the equipment in the dwelling environment not only are crucial, but also affect the family’s willingness to take care of an older relative at home, as well as the possibilities for professional carers to render their services (23).

Previous research has shown that older people with mobility difficulties avail themselves of more health care services (24, 25) or home care (26-28) than those without. In addition, elderly people who move into another dwelling tend to have more disability or mobility problems than those who remain in their existing homes (29, 30). Special modifications are also made more often in the homes of older people who have mobility difficulties than in the homes of other older people (18, 31).

Mobility problems are common among elderly people, but to date few epidemiologic studies addressing representative populations have been carried out to clarify the factors associated with these problems. In particular, non medical factors (e.g., demands of the physical environment, use of external support) and their multivariate relations to mobility problems have not been addressed. The aim of the present study is, first, to clarify the extent of difficulties that people in the 65- to 84-year age group have in their mobility in the city of Jyväskylä, central Finland, and, second, to determine the relationship between mobility difficulties and socioeconomic factors, dwelling environment and use of services.

SUBJECTS AND METHODS

The study is part of the EVERGREEN-project, an extensive research and development project focusing on the elderly population of the city of Jyväskylä, central Finland. The aims of the project are to describe the health and functional capacity of the elderly people, and improve them with interventions at the population level. Jyväskylä has about 68 000 inhabitants of whom 12.6% in 1992 were 65 years or older, a figure slightly below the national average (13.8%). The material for this study was collected through home interviews with non-institutionalized people in 1988. The sample consisted of 1000 people from each of two decennial age groups (people born in 1904-1913 and 1914-1923), and it was further randomly decreased to 800 persons for financial reasons; 589 persons in the older age group were interviewed (179 men and 410 women), and 635 in the younger age group (240 men and 395 women). The participation rate was 80.2%. Proxy interviews were carried out in 60 cases (4.9% of the interviews). The interviews were carried out by 28 female students of the University of Jyväskylä, who received 40 hours of special training.

The dependent variables in this report were the mobility variables chosen from the Physical Activities of Daily Living (PADL) scale (transferring from/to bed, getting about indoors, getting about outdoors, where the alternatives were 1 = able without difficulty, 2 = able, but slowly, 3 = able with great difficulty or gets tired, 4 = able with technical aids, 5 = not able without personal assistance), and the Instrumental Activities of Daily Living (IADL) scale (using public transport; alternatives 1 = able without difficulty, 2 = able with difficulty, 3 = not able). The scales were constructed on the basis of previous experiences and the literature (32-34). The test-retest reliability of getting about outdoors was measured by a second interview (N=36) after two weeks, and the correlation between the answers was 0.82. The validity of mobility function assessment was not examined, but previous studies have shown that self-assessments of mobility (walking, for example) give valid information when compared to performance tests (agreement about 90%) (35, 36).

In addition, difficulties in managing various tasks demanding physical exertion were studied (climbing up one flight of stairs without rest, running 100 m, walking in the woods, biking at least 2 km, skiing at least 2 km, swimming at least 25 m; alternatives 1 = able without difficulty, 2 = able with difficulty, 3 = not able). The response alternatives were dichotomized to 1 = able without difficulties, and 2 = able with difficulties/slowly gets tired or not able.

Four variables were selected as independent variables. Length of full-time education in years, and personal monthly net income were chosen to represent socioeconomic status. The interviewer’s answer to an open-ended question was chosen to describe the defects in the home environment that make func-