



# DISABILITY

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## 17.1 MEASURES OF DISABILITY

Measures of disability which are commonly used for elderly individuals include the Activities of Daily Living (ADL) and the Instrumental Activities of Daily Living (IADL). Within the United States and within Western European countries, there has been a fairly general consensus about the components of the instrument used to determine ADL, which are interpreted as the basic self care activities. Usually, a combination of dressing, bathing, toileting, transfer and feeding ability are included in scales used for ADL measurement. However, health care providers and social gerontologists within these western countries vary in whether they include measures of mobility within their ADL instruments. The Katz ADL [1], which provides a dichotomous scale for the basic activities of daily living has been found to correlate with both with mobility and with house confinement after hospital discharge [2]. In rehabilitation units and not infrequently in other settings, intermediate scores are assigned in ADL instruments to basic self care parameters and mobility measures which are performed with assistance of another individual or with the help of a device.

Information on ADLs are appropriately collected after direct observation of a person's functional status. A particular concern about use of the Katz or similar ADL scales in different settings is that the individual being assessed may only have limitations in one measure. Such an individual may have a far greater capacity for independence than someone who has limitations in several basic care activities. Another concern is that the person being assessed may not have an opportunity to carry out the activity in question. This would be true of bathing if no facility for bathing existed.

The concept of instrumental activities of daily living has been developed to comprise daily activities which are required for independent function in daily life other than those related to self care. These include shopping, cooking, household cleaning, managing personal finances and retention of survival skills, such as keeping the home warm enough for health and comfort. The assumption is that these skills have been learned previously and then with disability are lost to a greater or lesser extent. This assumption is not always valid. When IADL are measured in community settings, they are influenced by social factors and the physical environment as well

as by previous ability and experience.

In addition, most instruments used to measure IADL measure the functional ability of women better than that of men because cooking abilities and other abilities, related to household chores are stressed rather than activities more commonly performed by men, such as gardening and fixing things around the house. It has also been pointed out that the presence of a caregiver or other paid or unpaid household worker may limit the need of an elderly person to perform these activities and may therefore alter the persons ability to self-assess their functional skill relative to these activities.

## **17.2 FACTORS AFFECTING THE REPORTING OF DISABILITY**

Variables which affect the reporting of functional impairments include perceived normality for elderly men and women, depression, opportunity to perform the activity of interest and the source of information used; that is whether it was by self-report, report of a surrogate, or an assessment made at least in part by the enumerator.

In addition to these variables, previous studies have shown there are political and cultural issues, relative to the reporting of disability, which make it difficult to gauge the extent to which the disability is present. For example in the study by Ikels [3] of aging and disability in urban areas of China, it is implied by the investigator that previous down playing of the extent of geriatric disability among the Chinese can be explained by unwillingness of authorities to make known their inability to provide extensive services to cover the needs of the elderly.

## **17.3 FACTORS AFFECTING THE PRESENCE OF DISABILITY**

Past access to health care is a major factor which influences the presence or absence of certain disabilities in older men and women. This is reflected in these cross-cultural studies particularly in relation to reported oro-dental problems such that these are less frequently reported in the Swedish elderly sample who had had long term access to preventive dental care than in the other groups who had not had access to preventive dental care. In this regard, it is probable that fluoridation of water supplies in Sweden may have contributed to the better preservation of teeth from dental caries. However, it has been our experience among elderly in the New York State that complaints of difficulties in chewing are associated with both dental and denture problems and that both are closely linked to poverty in a country where adequate dental care is not available to the indigent.

Variables which affect the reporting of hearing loss among these elderly groups may include work exposure to noise during the years of employment, as well as whether or not the elderly had middle ear infections and whether or not these were appropriately treated. Another variable which can affect the reported hearing difficulties are whether or not the elderly wear a hearing aid. Factors which may influence the reporting of sleeping difficulty include the presence of

health problems, such as asthma, chronic obstructive pulmonary disease or hiatal hernia, which may disturb sleep. In addition, heavy alcohol consumption may be associated with early sleep and sleep disturbance later in the night.

#### **17.4 INVESTIGATOR DIFFERENCES IN THE INTERPRETATION OF TERMS AND USES OF MEASURES OF DISABILITY**

In the cross cultural studies, which are reported here, there was variability between investigators as to whether or not the ADL assessment was by direct observation, self-report or surrogate report. Furthermore, in some of these studies including the Tianjin study, the investigators interpreted ADL to mean participation in daily leisure time activities, which are unrelated to basic care or ability to perform the instrumental activities of daily living.

Explanation of respondent differences in functional loss, due to arthritis may not only be due to differences in the extent of degenerative osteoarthritis, which may be influenced by occupation, but may also be due to the elderly having varying household tasks to perform which may influence need for dexterity. Enumerator differences in documenting functional loss in the elderly samples is probably related to differences in the reporting of musculoskeletal problems. Such reporting may depend on what is considered to be normal.

#### **17.5 SUMMARY OF LIMITATIONS IN THE USE OF DISABILITY DATA ACROSS STUDY GROUPS.**

1. The extent to which a particular form of medical support may be considered as necessary is linked to community development and knowledge of the advantage of using a particular form of support. Thus, perceived need for glasses may be influenced by the literacy and reading need of the group who are being studied.
2. Need for medical support was influenced by extent of past or recent medical care, e.g. cataract surgery. Activities of daily living (ADL) interpretation and constraints in the use of the data as a means of assessment of elderly population groups.
3. The reported need for medical support may be influenced by depression with associated loss of coping skills.
4. The original idea of using ADL was as a means of assessment of the need for personal assistance of elderly in nursing homes. In the studies that have been performed, the investigators have used these terms in other ways, including as a means to describe time spent in different activities during the day. This was done by the Chinese investigators.
5. Some investigators included instrumental activities of daily living (IADL) with ADL. Responses to IADL questions are different by men and women with men likely to answer

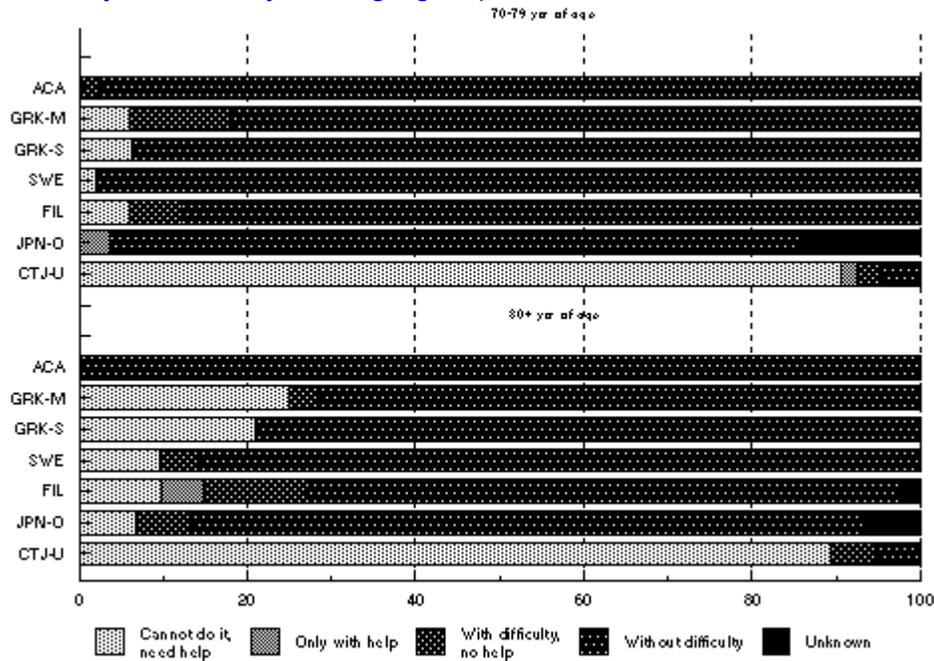
that they cannot do housework than women. This gender difference in perceived ability to carry out housework may be linked to male-female differences in roles within a community.

6. Ability to bathe independently may have been influenced by the facilities for bathing including whether or not there is a bath or shower which has rails or bars for the elderly person to use in supporting themselves.

### 17.6 INTRA GROUP AND INTER GROUP COMPARISONS OF DISABILITY AND NEED FOR ASSISTANCE

(See Figures 17.1-17.20.)

**Figure 17.1.** Difficulty in doing light housework (eg washing dishes) by study community and age group, for men.



**Figure 17.2.** Difficulty in doing light housework (eg washing dishes), by study community and age group, for women.

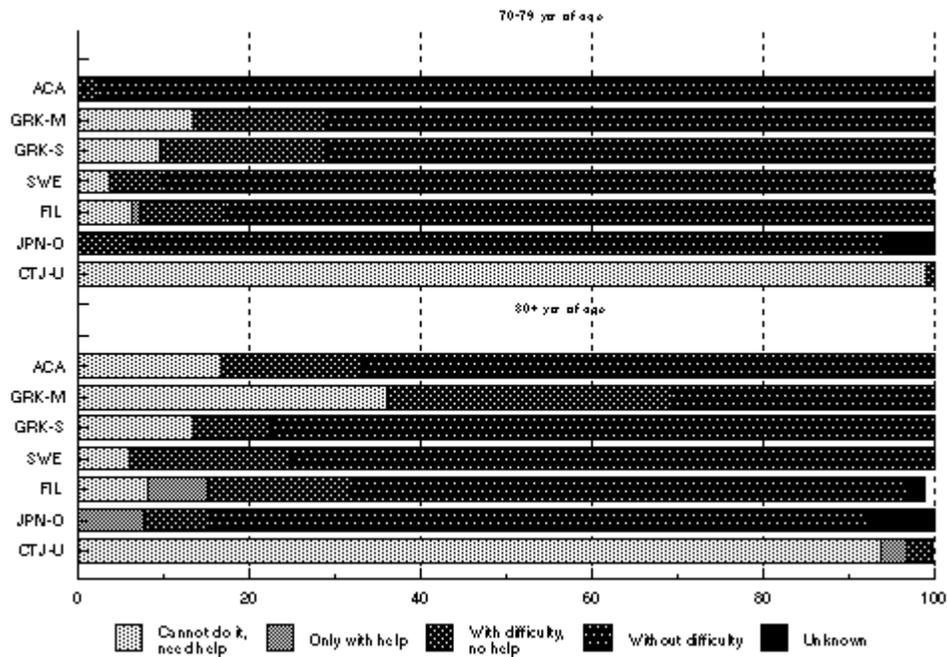


Figure 17.3. Difficulty in doing own cooking if required to by study community and age group, for men.

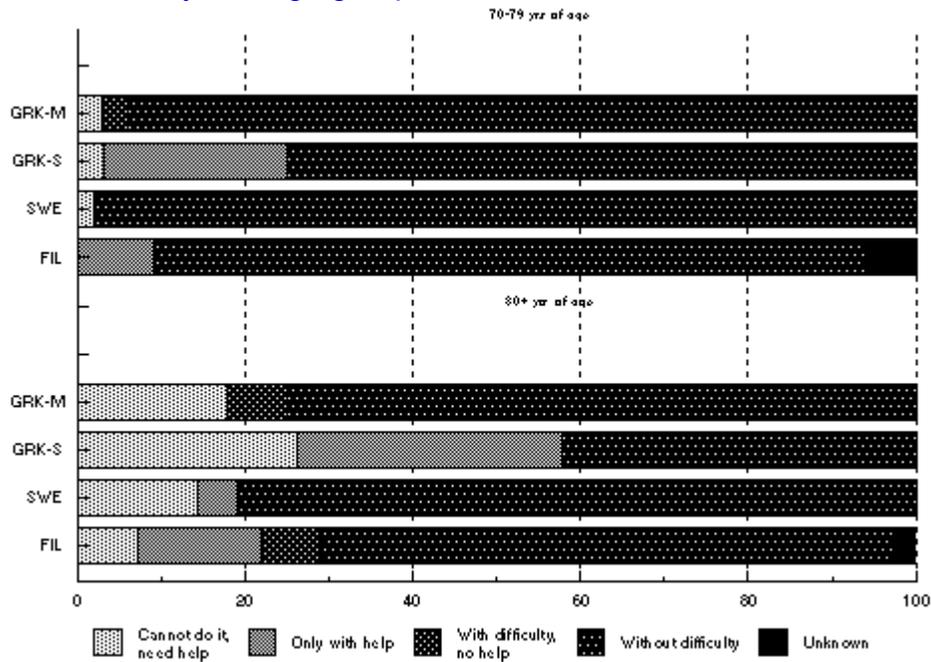


Figure 17.4. Difficulty in doing own cooking if required to by study

community and age group, for women.

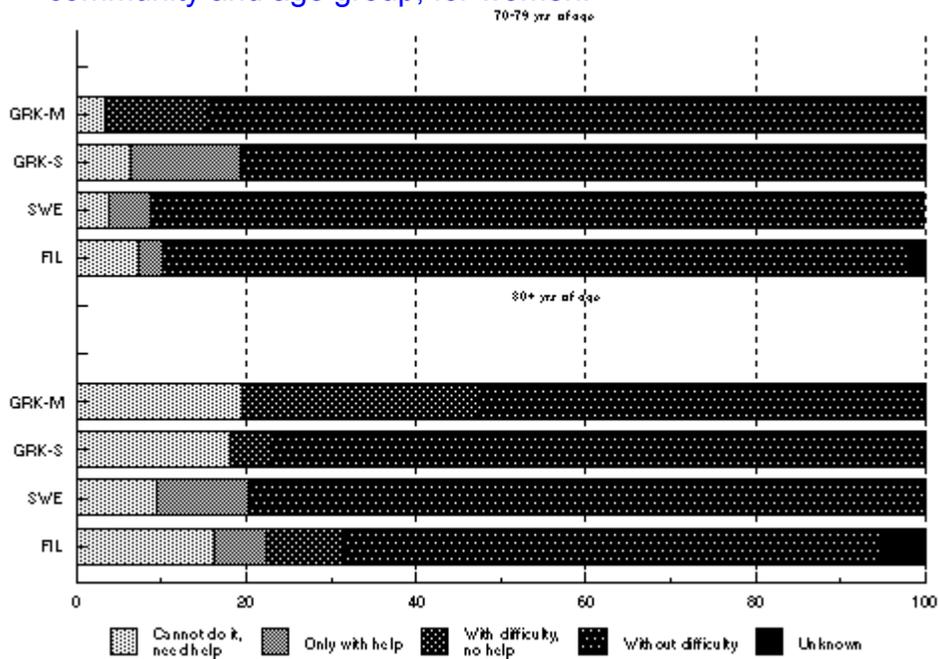


Figure 17.5. Difficulty in getting in and out of bed by study community and age group, for men.

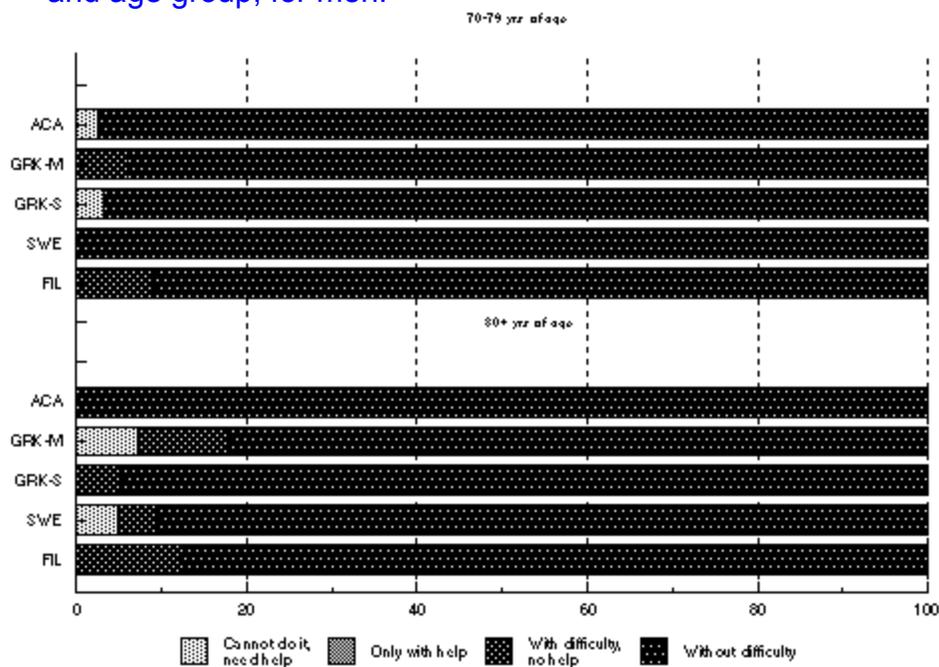


Figure 17.6. Difficulty in getting in and out of bed by study community

and age group, for women.

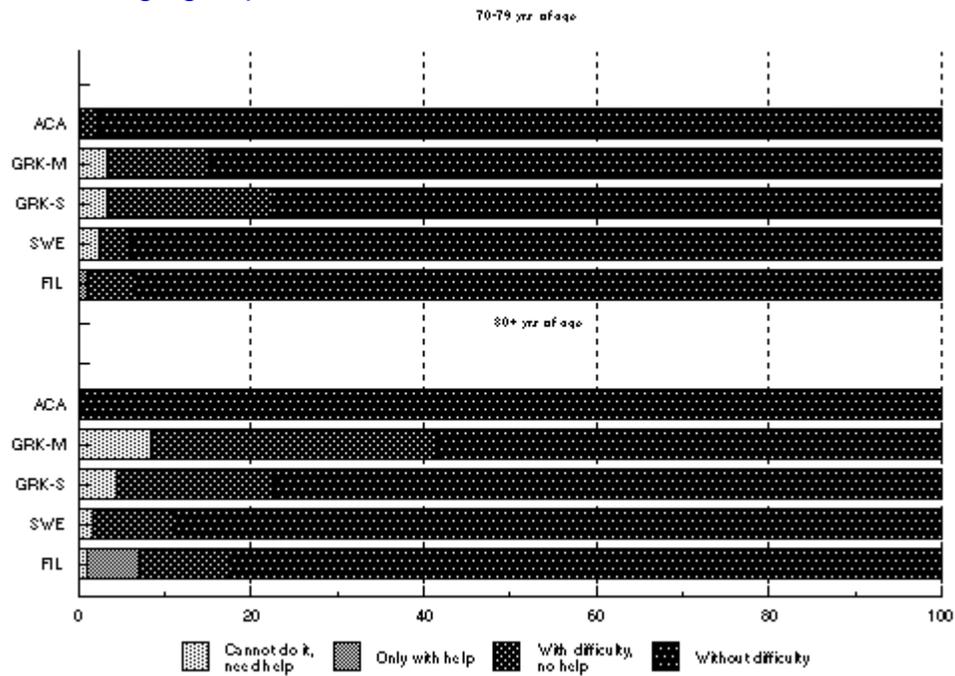
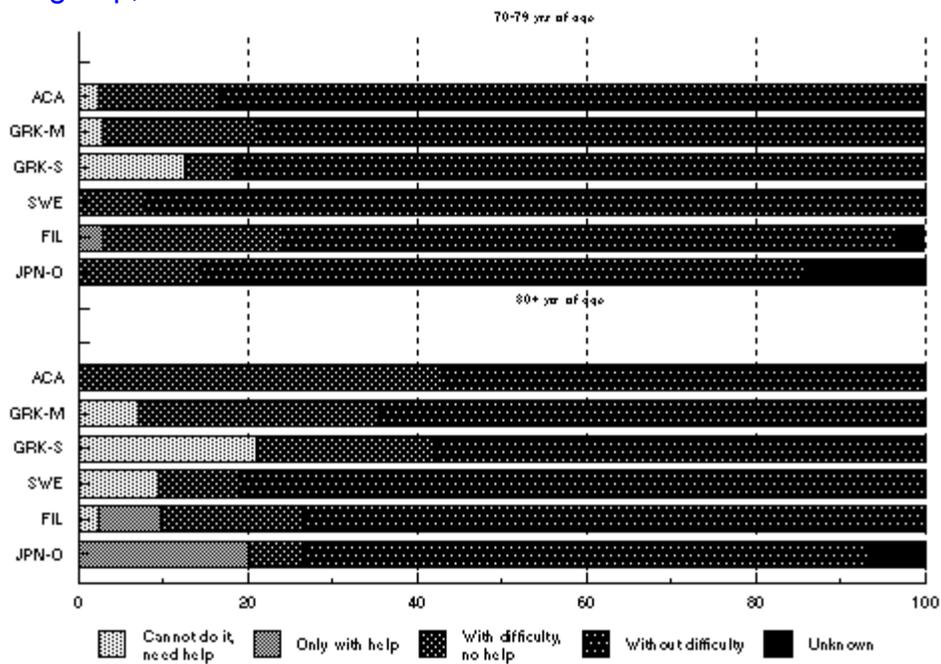
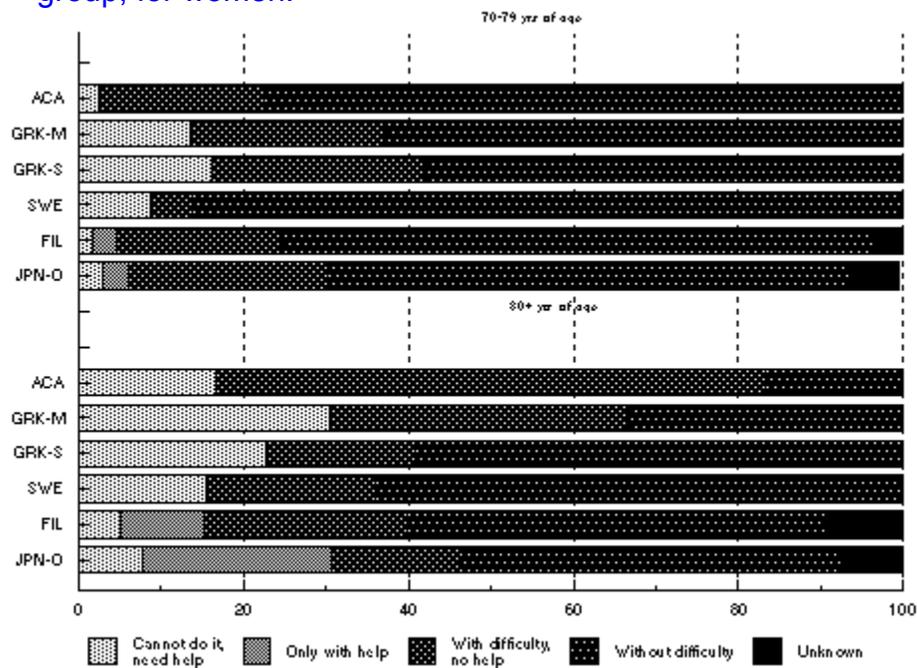


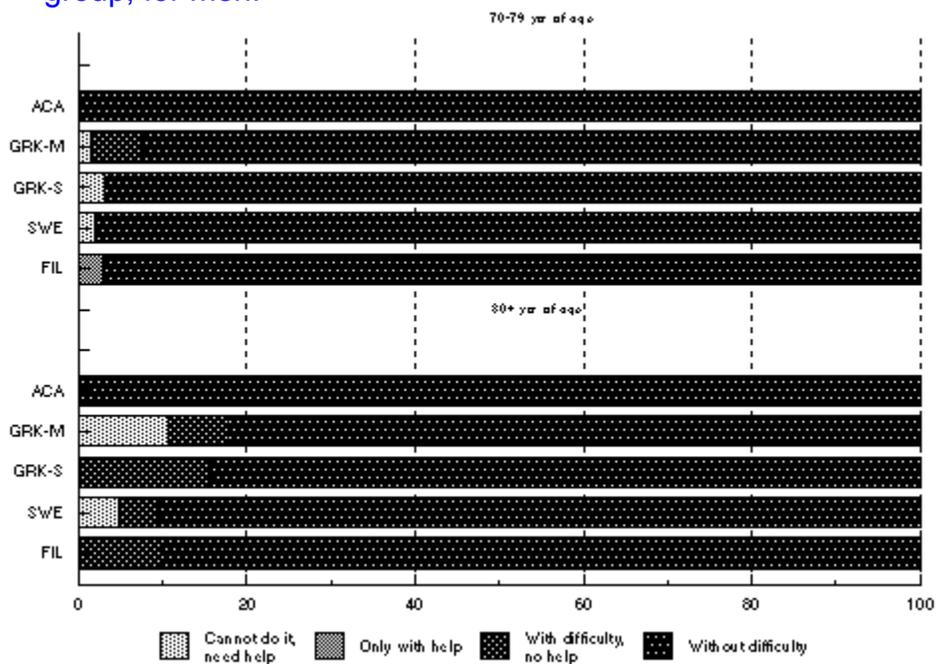
Figure 17.7. Difficulty in using the stairs by study community and age group, for men.



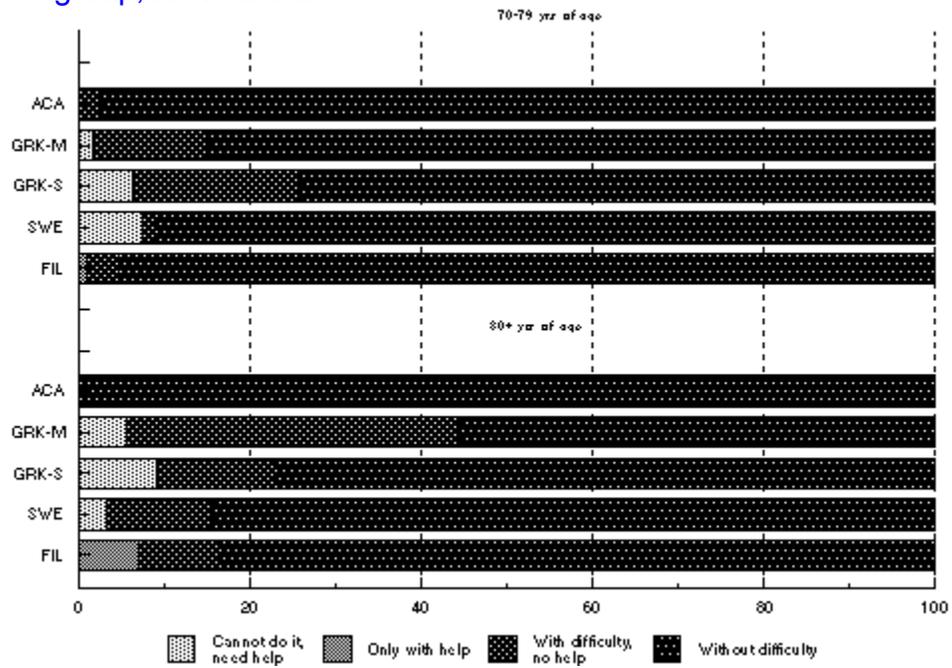
**Figure 17.8.** Difficulty in using the stairs by study community and age group, for women.



**Figure 17.9.** Ability to dress and undress by study community and age group, for men.



**Figure 17.10.** Ability to dress and undress by study community and age group, for women.



**Figure 17.11.** Difficulty in bathing by study community and age group, for men.

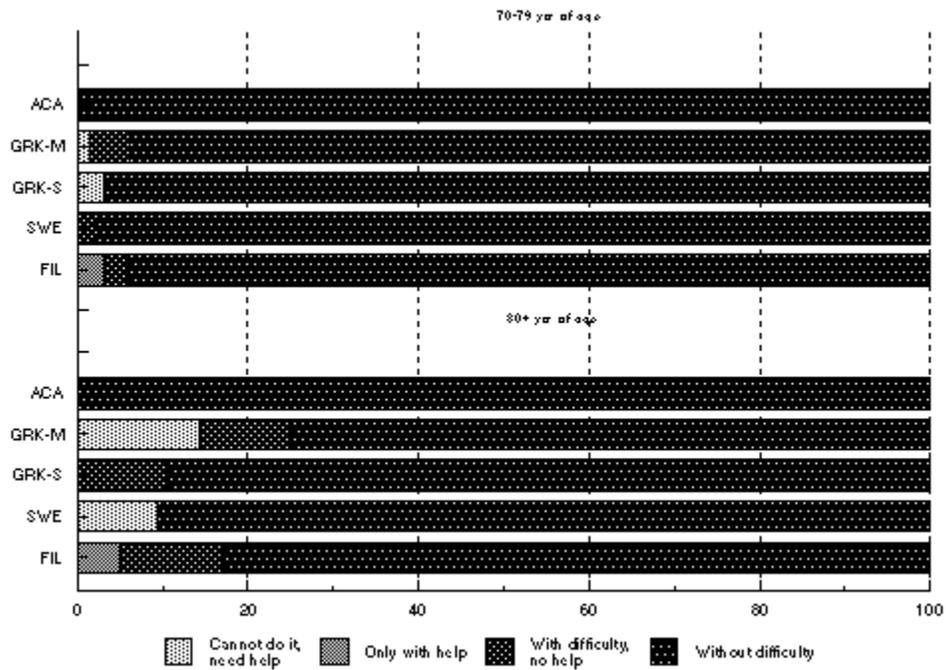
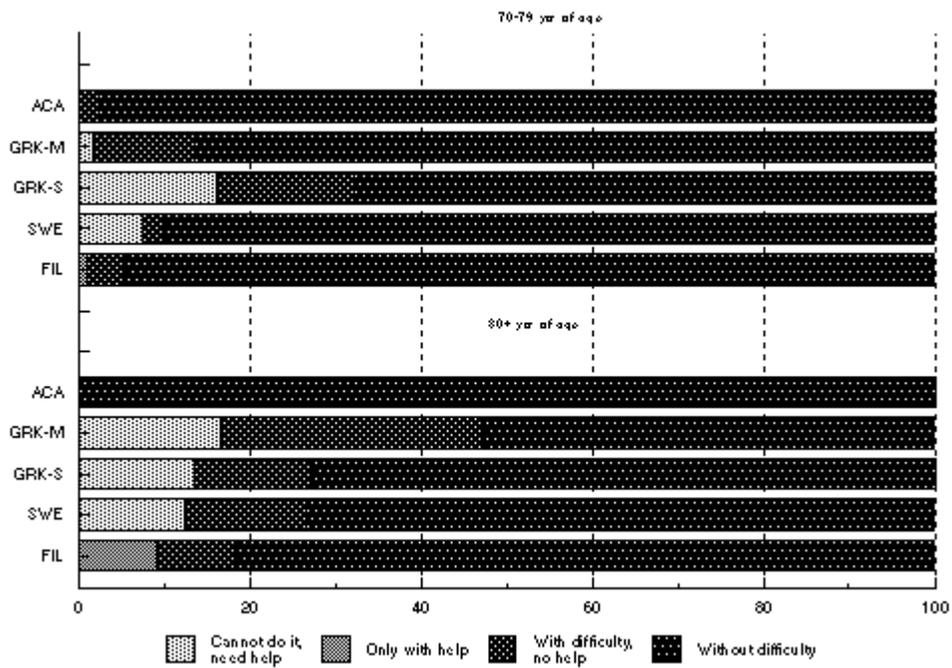
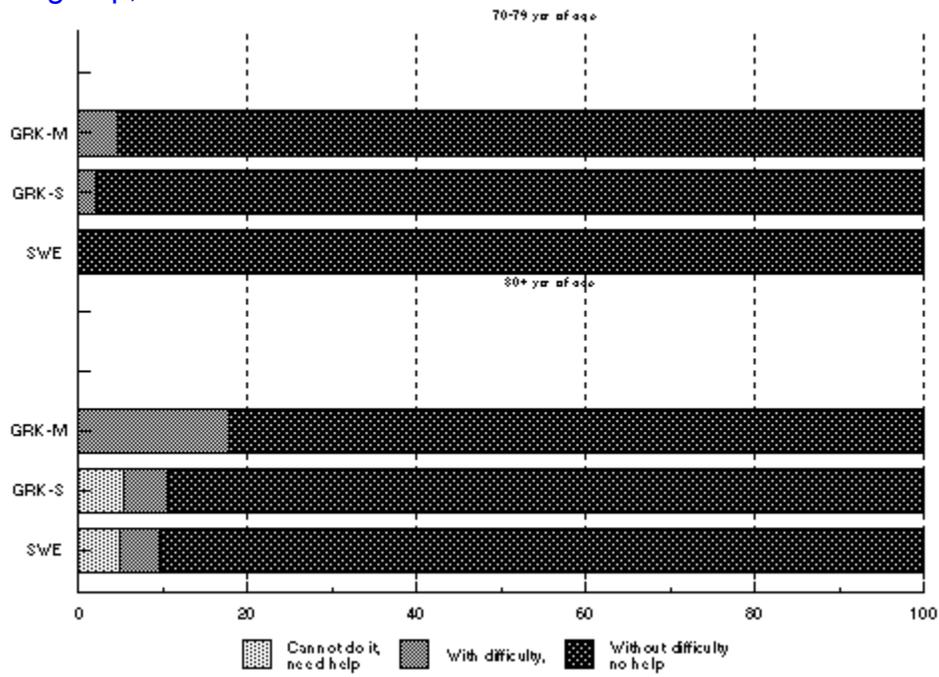


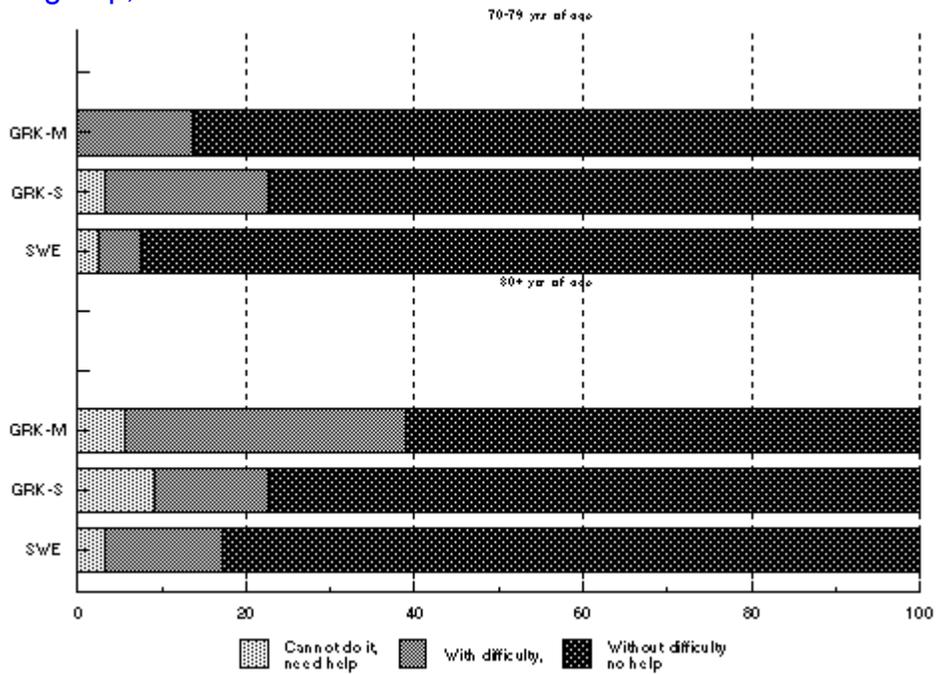
Figure 17.12. Difficulty in bathing by study community and age group, for women.



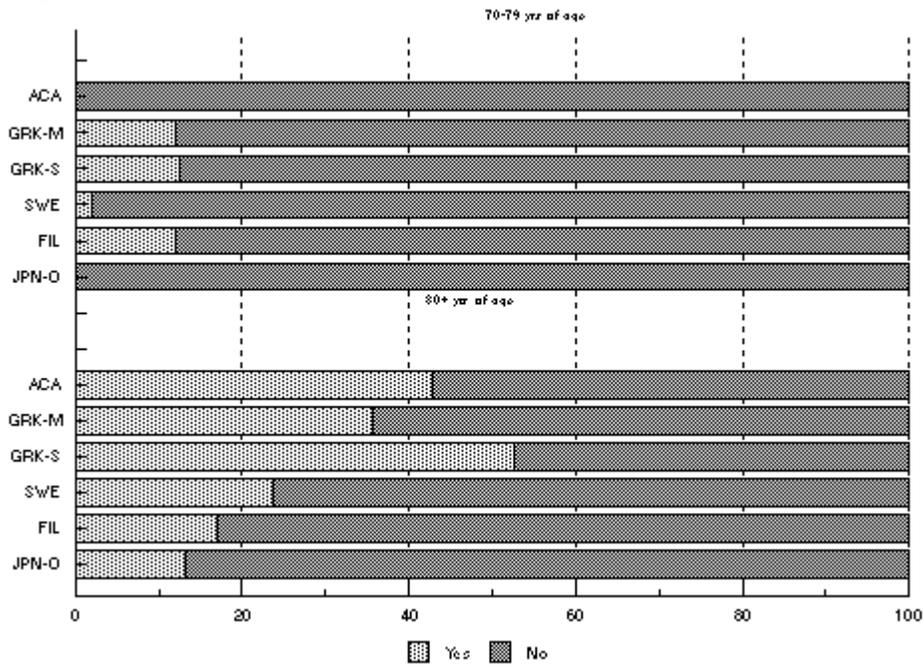
**Figure 17.13.** Ability to use the toilet by study community and age group, for men.



**Figure 17.14.** Ability to use the toilet by study community and age group, for women.



**Figure 17.15.** Need for using a cane by study community and age group, for men.



**Figure 17.16.** Need for using a cane by study community and age group, for women.

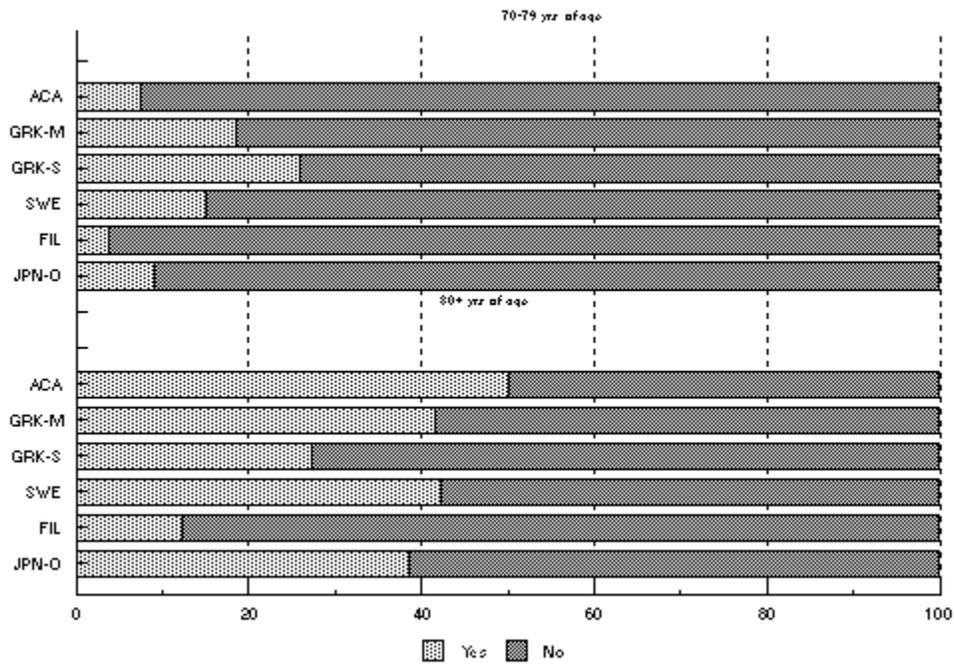


Figure 17.17. General helper of elderly by study community and age group, for men.

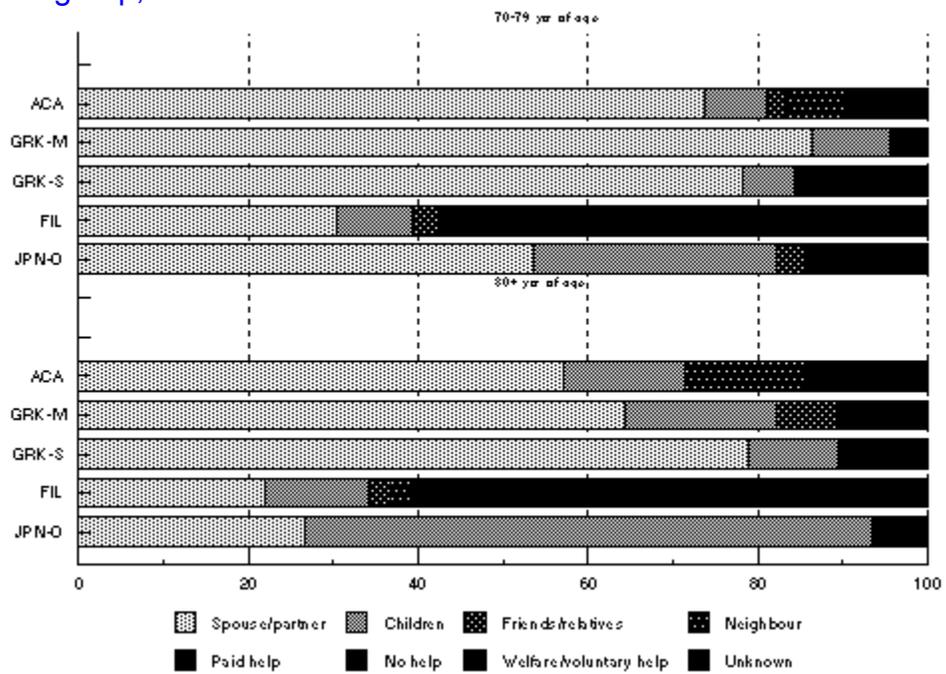


Figure 17.18. General helper of elderly by study community and age

group, for women.

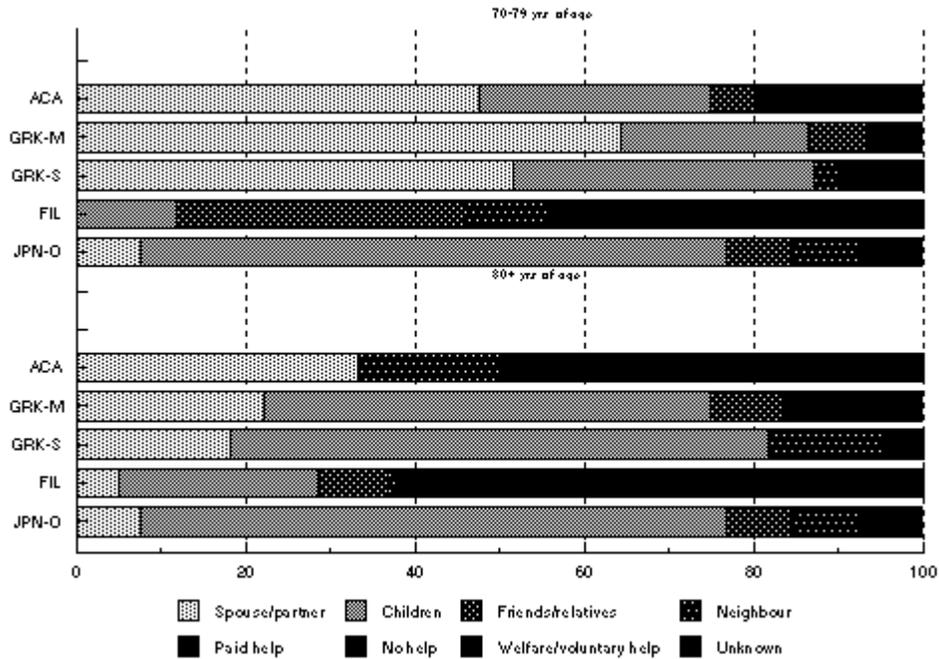
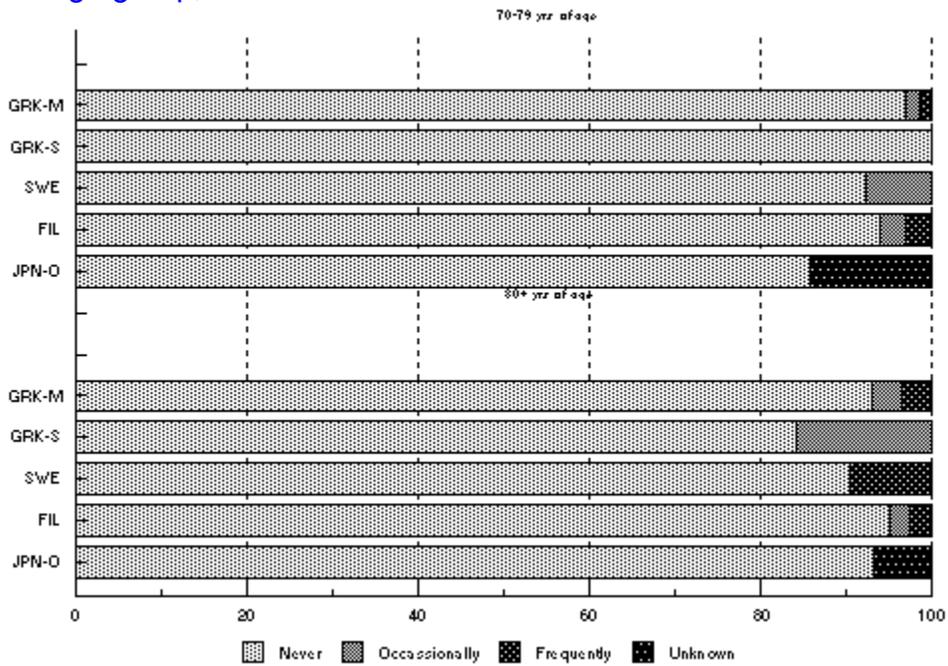
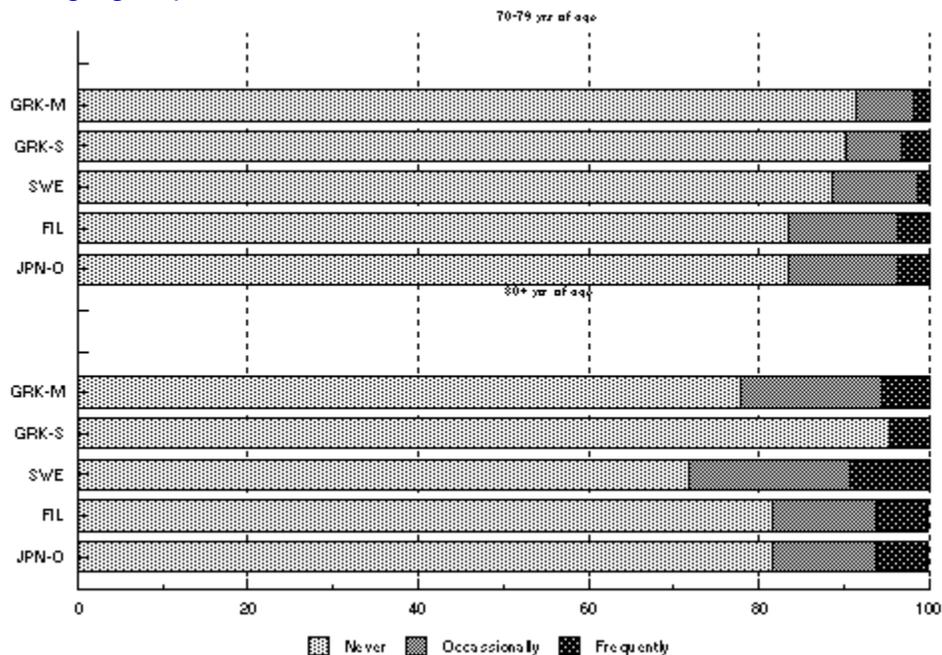


Figure 17.19. How often do you wet yourself by study community and age group, for men.



**Figure 17.20.** How often do you wet yourself by study community and age group, for women.



### 17.6.1 Swedish sample

Impairments relative to activities of daily living (ADL) differed by gender and age. Whereas frequent urinary incontinence was more commonly reported by those of both sexes who were over 80, occasional urinary incontinence was more commonly reported by women of the younger and older age groups. Fecal incontinence was uncommonly reported, but was mentioned as an occasional occurrence by men and women of the older age group.

Limitations on mobility, including difficulty in getting from one room to another and difficulty in using stairs was reported more frequently by the women and by those in the over 80 age group. Difficulty in walking 400 m was reported by a similar per cent of men and women, but inability to walk such a distance was more frequently reported by women than by men of both age groups.

Difficulty in performing instrumental activities of daily living, such as cooking was more frequently reported by the women than by the men, which may reflect differing gender roles. Measures of within group differences in the degree of disability which are most striking are frequency of going outside and need for help in using stairs. Relative to these, it can be seen that more of the older than the younger groups reported going out less than 3 days a month and women of the older group were more likely to report going out infrequently than men. With respect to stairs, help was required more by the women than the men and more by the older than

the younger respondents. Help with food shopping was required more by the older than the younger respondents and this was also true of need for help with cooking. The three types of medical support most commonly required by both the younger and the older groups were need for the use of a cane, need for the use of a hearing aid and need for the use of glasses. Of these types of support, glasses were by far the commonly required support needed. Canes were more commonly required by the older group as were glasses and hearing aids. Other types of support which showed this same pattern of distribution were use of walkers and wheelchairs: here none of the younger men required this form of assistance. Badly fitting dentures and difficulty in chewing were not commonly reported. Indeed only 2.1% of the younger men and 10.5% of the older men reported chewing difficulties and chewing difficulties were reported by 5.7% of the younger and by 9.6% of the older women. Appetite impairment was reported by a higher per cent of the older women than by the younger women and the men of both age groups.

### 17.6.2 Anglo Celtic (Melbourne)

**Photo 17.1.** Melbourne, Australia (Anglo-Celtic) (1992): man in his eighties, has difficulty waling without a walker.



Limitations of mobility were most common in the older women and this was particularly reflected in difficulty in shopping. However, more than 25% of the men and more than 20% of the older women in the Adelaide group reported that they did not do grocery shopping. Denture problems and difficulty in chewing were less commonly reported by this group than by either the

Melbourne or the Spata Greeks.

### 17.6.3 Greek sample (Melbourne)

Difficulty in doing housework and difficulty in doing cooking was reported more by the older men and women. Difficulty in getting in and out of bed and difficulty in cooking were also most commonly reported by the older women. Other limitations on mobility were reflected in the reported difficulty in using the stairs and in walking from one room to another as well as difficulty with or inability to walk 400 m. The inability to walk 400 m was most commonly reported by the older women.

**Photo 17.2.** Melbourne, Australia (Greek) (1990-91): a man in his mid 80's being interviewed with wife at the research centre.



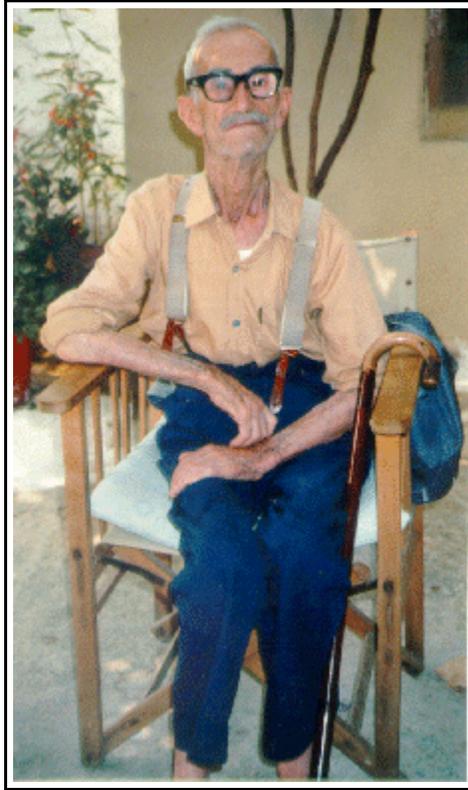
Impairments in ADL reported included difficulty in dressing and undressing, difficulty in bathing and difficulty in using the toilet, which were all reported most frequently by the older women. The need for use of a cane, glasses and hearing aids showed the same pattern as for the Swedes. Need for a walker was reported for this study group, especially by the older respondents and more by the women than the men. The reported difficulty in cooking and in getting in and out of bed may be linked to a need for a walker.

Dentures were worn by 69.7% of the younger and by 85.7% of the older men and by 61.0% of the younger and 80.6% of the older women. Edentulousness was reported most by the older group of women (8.3%). Difficulty in chewing was reported by a much higher per cent of the Greeks in Melbourne than by the Swedes. Among these Greeks, 21.2% of the younger and 28.6% of the older men reported chewing difficulties compared with 20.3% of the younger and by 52.8% of the older women. It is likely that the chewing difficulties were linked to dental neglect. Appetite, as reported, declined with age and was most frequently reported by the older women. Digestive problems were reported more by a higher per cent of the women than of the men.

#### **17.6.4 Greek sample (Spata)**

The Spata Greeks showed similar mobility limitations to those of the Swedes. In this group of Greeks, a higher per cent of the men than the women reported they could not cook. This does not necessarily indicate disability but rather that the men were not accustomed to cooking. Difficulty with chewing was reported by a higher per cent of the older as contrasted to the younger men and women. Poor appetite was also more commonly reported by the older individuals. There were only two forms of medical support which were reported as being necessary to this group, use of a cane and use of glasses. For these, the cane was reported as being needed most by the older men and glasses were needed more by women than by men of both age groups.

**Photo 17.3.** Spata, Greece (1988): one of the oldest men in the Spata sample (late 90's); he was quite ill and ate very little.



### **17.6.5 Chinese sample (Tianjin urban)**

The report of having a great deal of difficulty in doing things, due to health problems they had, was made by 87% of the younger group of men and women. However, among those over 80, 95% of the men and only 75% of the women reported having a great deal of difficulty in doing things because of such problems. Loss of interest in doing things was reported by a similar percentage of men and women of both age groups. However, this complaint was more frequently made by those over 80 years of age. Frequent forgetfulness was reported more often by men than by women.

It is of interest that self-perceived changes in sleeping pattern varied by gender such that 24% of the men between 70 and 79 and 52% of the men over 80 years of age reported that they slept more than they had when they were younger, but only 19 per cent of the women between 70 and 79 and 15% of the women over 80 years of age reported they slept more than they had earlier in life. Frequent difficulty in sleeping however, appeared more common in women than in the men of both age groups.

## **17.7 ADDITIONAL INFORMATION**

## 17.7.1 Aboriginal Australians (A Kouris-Blazos)

### 17.7.1.1 *Shopping*

The elderly do not go shopping for food as assistance is not usually available. Most of the pensioners do not own cars/trucks and the younger adults rarely take them out with their trucks to get food from the stores or to find bush food or just for an outing. The reason given by the younger members of the community was that the elderly are 'too much trouble'. Most elderly would stay in Junjuwa all day and hope that someone would bring back food for them from the bush.

### 17.7.1.2 *Use of therapeutic aids*

Blindness was found in 4% of the elderly, 40% wore glasses and 27% had poor vision but chose not to wear glasses. Thirty-three percent (n=16) had problems walking, half of whom (n=6) used a frame or cane. The elderly that were mobile would walk 1-2 times/week to the river, roadhouse, supermarket and store.

The National Trachoma and Eye Health Program 1976-79 for Aborigines reported:

- a) cataracts were responsible for 39% of cases of blindness;
- b) prevalence of trachoma of rural Aborigines was 38% (1.7% for non-Aborigines);
- c) cicatricial trachoma is found in 69% of >60 year olds;
- d) 19% Aborigines >60 years are blind (1% for non-Aborigines).

## 17.8 SUMMARY

- The activities of daily living (ADL) score was used to indicate how spared elderly people were of disability. The maximum score possible was 62 which indicated little or no disability.
- The ADL score could only be computed in the Caucasian elderly. Men generally had average scores above 55. Women tended to have lower scores in all centres, but even here the lowest score was 49 amongst the older Greek women in Melbourne.
- In support of the ADL score, enquiry about difficulty walking between rooms revealed that it was unusual for more than 15% of the elderly to have difficulty. Women tended to have more difficulty than the men. Of the women, SWE and ACA were less likely to experience difficulties compared with 20-30% of Greek women.
- Questions on ADL were modified in China, therefore comparisons with Caucasian elderly was limited. More than 80% of CTJ-U elderly reported having a great deal of difficulty in doing 'things' due to their health problems.



## 17.9 REFERENCES

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3. Ikels C. Aging and disability in China: cultural issues in measurement and interpretation. *Soc Sci Med*, 1991; 32: 649-665.

## 17.10 LEGEND FOR FIGURES

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- Figure 17.2 Difficulty in doing light housework (eg washing dishes), by study community and age group, for women
- Figure 17.3 Difficulty in doing own cooking if required to by study community and age group, for men.
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- Photo 17.2. Melbourne, Australia (Greek) (1990-91): a man in his mid 80's being interviewed with wife at the research centre.
- Photo 17.3. Spata, Greece (1988): one of the oldest men in the Spata sample (late 90's); he was quite ill and ate very little.

## **CHAPTER 17**

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