2.2 Who Are the Oldest-Old?
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Why the Interest in Oldest-Old?
Owing to a substantial decline in the age-specific mortality of the oldest-old (80+ year) within the last 50 years this age group has become the fastest growing age segment in most European populations. Even though the reductions in mortality at these ages have usually been smaller than that below age 80, the cumulative effect of the change has been an increase in the number of the very oldest (Kannisto 1994). Most of this increase is due to improvements in economic and social conditions and to ongoing medical advances (Riley 2001). This is well illustrated by the “natural experiment” of the German unification. Following the unification of East and West Germany (1989-1990), mortality in the East declined toward prevailing levels in the West, especially among the elderly (Gjonca 2000; Vaupel 2003). Thus, factors associated with mortality in older people seem to be highly influenced by changeable environmental factors.

Who Are Our Oldest-Old?
The group of oldest-old in SHARE is defined as participants aged 80 or older (80+). In all, 1,732 oldest-old participated (8.8% of all 50+ participants). Among these 2/3 (n=1,113) are in the age range 80-84 years (80-84y), and the remaining 1/3 is 85 years or older (85+y). The mean age for all oldest-old participants is 84.3 years (range 83.7 to 84.8 years in the different countries). For details see Table 2A.2 in the Appendix to this chapter. The participation rate varies from 32% to 57%. All are living in their own home or together with their family. The sample design did not allow for the inclusion of institutionalised persons. The present results are derived from weighted data.

How Did the Oldest-Old Comply with the Study?
With advancing age, older people suffer more from various conditions which could hinder participation, e.g. cognitive impairments, visual and hearing impairments, low educational level, frailty due to disease. Thus, in order to enhance the participation of the oldest-old, the SHARE study questionnaire was designed in a way that would allow for the individual to use a proxy, either partially or completely. In general, the oldest-old had a high participation rate in the various parts of the questionnaire, i.e. either alone or together with a proxy. Pure proxy interviews were less than 10% (data not shown). According to the interviewers’ opinion, the overall willingness to answer the questions was very good or good among approximately 75% of the oldest-old SHARE participants.

Where Do the Oldest-Old Live and How Is Their Social Network?
A little more than half (56%) of the SHARE oldest-old population live alone, while around one fourth (27%) live as a couple (Table 2A.2). The remaining proportion (16%) lives with their family, most often with a child, but unevenly distributed within the SHARE countries. In general, a North-South gradient is observed with a lower proportion of oldest-old living together with their family in the most northern SHARE countries, intermediate proportions in the more continental SHARE countries, and the highest proportions in the southernmost SHARE countries. Thus Sweden, Denmark, and the Netherlands have only 3-6% living together with their family, while Italy and Spain have 22% and 37%, respectively (Table 2A.2). One marked difference in this general North-South pattern is
Greece, which has the same proportion as the northern countries (8%). Nevertheless, the general pattern is to be expected, given the cross-national differences in nursing home accessibility (more nursing homes in the more northern countries) and cross-cultural differences in caring for family members. But in all SHARE countries the children of the oldest-old are the far most important group to help their parents, accounting for about one third of the help given (Table 2A.2), but with some cross-national differences. Adding the proportion of oldest-old living with their family, which in most cases is a child, oldest-old in the most southern SHARE countries (Spain and Greece) get the greatest support from their children.

Only between 1/5 to 1/4 of home-dwelling oldest-old are socially active in the sense of doing either voluntary work, caring for a sick or disabled adult, providing help to family, friends and neighbours, attending educational courses, being active in social clubs (including sports clubs), religion or politics (Table 2A.3). For all SHARE oldest-old, the main social activity during the past month was caring for a sick or disabled adult (12.2%), followed by providing help to others (9.5%). The same proportion has religiously related activities (9.3%), while sport and social club activities engage a smaller number (7.2%). Educational or socio-political activities were all negligible (~1%) among oldest-old in SHARE. However, rather large differences exist between the various countries. Oldest-old Greeks are more likely to care for a sick or disabled adult (32.2%) and to provide help to others (19.4%) than Spaniards and Italians. The largest variance is seen regarding religious organisation, where almost half (42%) of oldest-old Greeks are active compared to 0 to 11% in almost all other SHARE countries with the exception of Austria (18.9%). Also, being member of a social club, including a sports club shows some country differences, as Danes and Dutchmen are much more engaged (21.5% and 19.0%, respectively) than Italians, Greeks, Spaniards, and Austrians (~1-3%).

How Healthy Are the Oldest-Old?

In general, morbidity is increasing with advancing age, and more so in females than in males (Nybo 2001). Thus, oldest-old are expected to have a higher number of diseases and chronic conditions compared to younger persons. In SHARE about 1/3 of the oldest-old report having no long-term health problem/illness (Table 2A.4). The well-known female preponderance of higher morbidity is apparent in SHARE too, with larger proportions of men reporting having no long-term health problems and no limitation in activities compared to women (Men: 34.3% and 30.3%, respectively; women: 30.3% and 24.3%, respectively). But in contrast to what could be expected, within the oldest-old age group, persons aged 85 and over report themselves to be healthier than their younger counterparts in the age range from 80 to 84 years regarding most self-reported health measures. E.g. having no limitations with everyday activities is reported by 40% of men aged 85 and over, while the corresponding figure among the ‘younger’ men aged 80 to 84 is 29% (Table 2A.4). The same pattern is observed in reporting ‘no long-term health problems’, having ‘only 0-1 symptom’ or ‘only 0-1 chronic diseases’ (Table 2A.4) and in both sexes, but with generally lower proportions among women. In line with this is the declining mean number of self-reported chronic diseases with advancing age groups (80-84 to 85+) in both men and women (Table 2A.4). Consequently, one could be tempted to interpret the results as a stabilisation of the otherwise increasing prevalence of diseases from age 50 and onwards, and following this a similar stabilisation in the prevalence of disability. However, this is not the case. When using Activities of Daily Living (ADL) and Instrumental Activities of Daily
Living (I-ADL) as measures of disability, lower proportions of subjects report having no disabilities with advancing age groups. The pattern is similar in both sexes, but at a lower level and with a greater decline in women compared to men, e.g. 71.4% of 80 to 84 year old and 66.9% of 85+ year old men have no limitations in ADL, while the corresponding figures in women are 76.6% and 46.7% (Table 2A.4). The accelerated decline in ADL functions in women compared to men has been shown in other studies on old and oldest-old (Andersen-Ranberg et al. 1999). The same figures for I-ADL are 58.8% and 50.8% in men, respectively and 55.2% and 43.2% in women, respectively. Likewise, the mean number of ADL limitations is increasing with advancing age groups (Table 2A.1).

It is well recognised that cognitive functions decline with advancing age, and the SHARE population is no exception. Mathematical skills, orientation, verbal fluency, and word recall decline over the age range of 80 to 85+ (Table 2A.4; data not shown for verbal fluency or word recall), but interestingly there is a marked difference between the high proportion of subjects being almost fully orientated (i.e. allowing for one fault) and the rather low proportion demonstrating good arithmetic skills. At age 85+ about 75% are still well functioning in orientation, while the corresponding proportion of subjects being well functioning in arithmetic skills is 13%. While the proportions are sex-specific equal regarding orientation, the opposite is true when it comes to arithmetic skills where 85+ year old men are doing better than 85+ year old women, 18.7% and 10.7%, respectively (Table 2A.4).

The proportions of oldest-old having no depressive symptoms are also declining with advancing age groups, especially in men.

Being healthy can be defined in many ways, but using the definition of being independent in ADL, I-ADL, and mobility (HEALTHY), around 16% of the SHARE oldest-old are healthy, but with significant differences between men and women (Table 2A.4). In line with the sex-specific differences regarding self-reported chronic diseases and symptoms, oldest-old men according to the above definition of being healthy are in a healthier state than their female counterparts, 21.9% and 12.5% respectively. But rather large variations exist cross-nationally. 40% of Swiss men can be defined as HEALTHY, while much lower proportions are found among German and Greek men (14% and 15%, respectively) (Table 2A.3). Among women the highest prevalence of being HEALTHY is again among the Swiss, while the lowest proportions are found among Greek women (22.8% and 4.1%, respectively).

Although only a small proportion of SHARE oldest-old can be defined as HEALTHY a rather large proportion of oldest old can manage activities of daily living (ADL) without limitation, in other words, a large proportion of oldest-old is not severely disabled. However, with advancing age groups the variance in number of limitations in ADL is increasing too. The largest proportions of those having 1 to 6 limitations are constituted by the persons aged 85 and over, and a high number of limitations become more frequent with advancing age (Figures 1 and 2), which is comparable to other studies (Andersen-Ranberg et al. 1999). However, as institutionalised people are not included in this survey, these results must be interpreted cautiously regarding the level of the proportions. Also the cross-sectional nature of these data makes it difficult to distinguish between age and cohort effects.
**Figure 1** Age group specific proportions of men with 0 to 6 limitations in activity of daily living (ADL)

**Figure 2** Age group specific proportions of women with 0 to 6 limitations in activity of daily living (ADL)
How Much Health Care Do the Oldest-Old Have or Need?

Help from other persons is mainly determined by an individual's physical or cognitive ability to respond to the demands of everyday life, while culture-determined sex dependent differences, e.g. cooking and laundering, are less important. Impairments in mobility, ADL, and I-ADL will reflect declining ability to live independently, and thus a need for help, either personal or practical. The rather low proportion of oldest-old being healthy does not necessarily mean that the remaining about 80% are all unable to live independently, but there is, though, a gap from 80% being “NON-HEALTHY” to the proportion of subjects getting help with personal care (23.8% for men and 22.1% for women) or both personal care and practical help (31.7% for men and 32.5% for women) (Table 2A.4). Interestingly, while the proportion of healthy subjects remains stable with advancing age groups the proportion of oldest-old receiving personal care and practical help increases.

What Is the Socio-Economic Status of the Oldest-Old?

Socio-economic status evaluated by the household income and the annual individual income has no clear North-South gradient (Table 2A.3). While the lowest values of annual PPP-adjusted total individual gross income exist in Spain and Greece (€9,106 to €9,032 respectively), the top 3 highest ranging countries are The Netherlands, Austria, and France, with €40,021, €31,542, and €29,050, respectively. However, looking at the country-specific means of total household income (taking into account the number of household persons), Greece is lying remarkably low (€10,059), and much lower than the second lowest ranking country, Spain (€16,469), while the top three ranking countries are The Netherlands (€52,521), Switzerland (€46,284), and France (€41,049).

Do the Oldest-Old Have Any Expectations for the Future?

Asking the oldest-old about their chance of living 10 more years is interesting. On a scale from zero to a hundred per cent chance, 15.6% of 80-84 year old and 26.5% of 85+ year old answered zero chance, while 20.0% and 24.6%, respectively gave it a fifty-fifty chance. But yet another 25.6% and 13.1%, respectively, actually rated themselves to have more than a fifty percent chance. Not surprisingly, the highest chances were given by the ‘youngest’, i.e. 80-84 year old, but noteworthy are the almost similar proportions (20-24%) of a fifty-fifty chance rating in the two age groups, i.e. 80-84 year and 85+ year old persons (data not shown).

What Can the SHARE Oldest-Old Tell Us?

The SHARE data on oldest-old are consistent with present national studies on ageing people with increasing proportions of people with disabilities, and increasing proportions demanding more personal care and practical help with advancing age and female gender. But interestingly, self-perceived health measurements show increasing proportions of oldest-old reporting no difficulties or limitations with advancing age groups. The exclusion of institutionalised persons may explain some of this, but other reasons are likely too. For instance, validity is low for self-report of medical diagnoses, even in disabled non-institutionalised persons, being especially true for less apparent diseases, while hip fractures, Parkinson’s disease, diabetes, cancer, and disc diseases are more readily remembered (Simpson et al. 2004). Also ageism, i.e. the underdiagnosing of diseases in very old people, may contribute to the lower prevalence of self-reported diseases and long-term health problems (de Graen et al. 2003). Declining cognitive functions may also explain
fewer complaints with advancing age among oldest-old. Finally, the fact that the very oldest (85+) have survived most of their fellow birth cohort members may lead to the feeling of being especially strong and healthy. This could certainly affect the questions of self-perceived health.

Although the SHARE data on oldest-old are the first to show cross-national differences in a wide range of health measurements, interpretations must be done cautiously. Weights may be less accurate for the oldest-old. Important is also the fact that institutionalised persons were excluded by sample design ‘favouring’ the more northern SHARE countries, which have more nursing homes than in the south.

The SHARE data set is very valuable for further longitudinal studies in order to shed light on the determinants of health and survival in the rapidly growing population of the oldest-old. SHARE shows an intriguing North-South gradient in various health, social, and economic outcomes which, however, is not reflected in oldest-old mortality and life expectancy. Cross-national analyses cannot give the reason for these disparities, but a longitudinal study will provide an excellent opportunity for understanding the determinants of ageing and survival among the oldest-old.

References