

3. Physical functioning in a community context

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The analysis in this chapter shows that:

- Lower levels of personal wealth and higher levels of neighbourhood deprivation were both associated with increased risks of developing age-related impairments over a four-year period (gait speed, activities of daily living [ADLs], instrumental activities of daily living [IADLs], motor skills or mobility difficulties); negative feelings about the neighbourhood (social capital) had a smaller association that was not independent of wealth and neighbourhood deprivation. These findings were independent of educational level, aspects of health and smoking.
- Poorer personal relationships with family members were associated with onset of difficulties with mobility; those with no children were as likely to experience the onset of motor skill difficulties as those who described their relationship with their children as poor.
- Quality of personal relationships was more strongly associated with onset of motor skill or mobility problems (e.g. climbing stairs, bending or stretching) than with onset of ADLs and IADLs.
- A history of difficulties with ADLs or IADLs over the four-year period was strongly associated with poorer perceptions of general health and mental health.
- There was a clear gradient in participation in six leisure activities at wave 3 according to history of difficulties; those who never reported difficulties with ADLs or IADLs were most likely to take part, those with these difficulties at the beginning and end of the period were least likely to take part and those free of difficulties at wave 1 or wave 3 formed intermediate groups.
- In multivariate models other aspects of health were shown to contribute to the relative lack of participation, notably poor vision, general health and, for women, depressive symptoms. Independent associations of difficulties with participation in activities were relatively few but were clear in relation to taking a holiday abroad (women), having a hobby, and taking a holiday in the UK (men only).
- At wave 3 people scored worst on the control and autonomy dimension of the CASP-19 quality of life scale if they had a continued history of having difficulties with both ADLs and IADLs. Even those who only experienced difficulties with motor skills scored worse than those with minimal difficulties of any kind.

- In 2006–07, help with difficulties came overwhelmingly from informal sources, particularly the respondent's spouse. However, substantial proportions of women aged 85 years and older with difficulties mentioned help from formal sources, and this may reflect both more severe difficulties and the lack of a spouse to provide support. Among those with functioning impairment, women were more likely than men to receive help from children, except for helping people aged 85 and over with respect to shopping and work around the house (children being a source of help for about half in this age group who had difficulties with these tasks).
- People who drove vehicles to which they had free access were unlikely to use other means of transport regularly. This group tended to be richer and better educated. Other means of transport considered were public transport, lifts and taxis; use of one of these was positively associated with use of the others. Those who had reported difficulties with ADLs and IADLs both in 2002–03 and four years later were least likely to be drivers and most likely never to use public transport. Having difficulty with an IADL at wave 3 was associated with greater likelihood of taking a lift at least once a week whereas having any kind of difficulty was associated with greater use of taxis compared to those who did not have difficulty, but generally use of taxis was infrequent. This suggests that transport options for those with difficulties need to be kept under review to facilitate getting out of the home.

3.1 Introduction

The ability to remain independent, in the sense of maintaining choice and control over their activities, is an important goal for individuals and the centre of various policy initiatives by the UK government (Office for Disability Issues, 2008). Difficulties with physical actions that are part of everyday life for most people may pose a threat to that independence but the social model of disability suggests it is not impairment (e.g. having a defective limb or organ) that leads to loss of independence but society that fails to facilitate that choice and control. Saad Nagi was one of the first to identify the importance of the environment for the roles people could perform (e.g. staying in work) despite their physical condition (Nagi, 1976). The US Institute of Medicine (Pope and Tarlov, 1991) defines disability in terms of 'the attributes and interactions of the individual and the environment' (p. 82), highlighting the interaction of individual factors with physical and social environments.

More recently, The Disability Rights Commission (2002) defined independent living as given below and this is now used as the working definition by the Office for Disability Issues:¹

All disabled people having the same choice, control and freedom as any other citizen – at home, at work, and as members of the community. This does not necessarily mean disabled people 'doing everything for themselves', but it does mean that any practical assistance people need should be based on their own choices and aspirations.

¹ <http://www.officefordisability.gov.uk/working/independentliving.asp> (Accessed 1 June 2008).

In this chapter four sets of objectives are addressed. The first objective examines whether personal or environmental material and social factors are predictors of onset of difficulties between the first wave in 2002–03 and the third wave four years later (Section 3.3). An objective measure of mobility known as gait speed is used and set alongside self-reported difficulties. The latter are categorised into those pertaining to activities of daily living (ADLs), instrumental activities of daily living (IADLs) and motor skills or strength, here sometimes termed mobility for ease of reference (see Section 3.2 for details). The potential predictors include the person’s social and socio-economic circumstances: family wealth, neighbourhood deprivation, neighbourhood social capital and quality of relationship with family and friends.

The second objective, covered in Section 3.4, is to look at evidence for possible effects of difficulties with functioning on activities related to active engagement in society and social life. People are categorised according to their pattern of self-reported difficulties with physical function over the three waves of ELSA. Members of these groups are compared with respect to selected activities. If one group is less likely to undertake these activities than another, it is assumed that this is at least in part due to reduced ability to fulfil their choices and hence reduced independence.

The third objective (Section 3.5) is to see whether sources of help for difficulties vary according to the type of difficulty and to assess how often formal sources of help are used. This section refers to data collected in 2006–07.

Finally, the fourth objective (Section 3.6) focuses on correlates of various forms of transport use, included here because independence often relies on having transport. This section again used data collected in 2006–07.

Analyses refer to subsets of wave 1 core members; those who were interviewed by proxy at any time or were in a care institution are excluded from all analyses.

3.2 Measures of physical functioning

Each wave of ELSA has included questions about respondents’ ability to carry out everyday tasks. These self-reports of physical functioning are divided into three types: activities of daily living (ADLs), instrumental activities of daily living (IADLs) and motor skills or strength.

The original scale of ADLs was developed by Katz and colleagues (Katz et al., 1963) who described them as ‘activities which people perform habitually and universally’ (p. 94). The activities covered in ELSA are: dressing, including putting on shoes and socks; walking across a room; bathing or showering; eating, such as cutting up food; getting in or out of bed; and using the toilet, including getting up or down.

IADLs are everyday tasks involving a mix of cognitive and physical competences. The list used in ELSA comes from one developed and validated by Lawton and Brody (1969) to reflect what they termed ‘instrumental self-care’. They are: preparing a hot meal; shopping for groceries; making

telephone calls; taking medications; doing work around the house or garden; and managing money, such as paying bills or keeping track of expenses. An additional activity introduced into the US Health and Retirement Survey referred to using a map to figure out how to get around in a strange place (Fonda and Herzog, 2004); this activity has not been used in this chapter because it did not group consistently with the other IADLs.

Problems with motor skills and strength may be potential precursors to restrictions on participation. Respondents in ELSA are asked about ten items referring to movements involving the upper and/or lower limbs, most of which require a degree of muscle strength but a few of which are more to do with dexterity and flexibility. The ten items are: walking 100 yards; getting up from a chair after sitting for long periods; climbing several flights of stairs without resting; climbing one flight of stairs without resting; stooping, kneeling or crouching; pulling or pushing large objects like a living-room chair; lifting or carrying weights over 10 pounds, like a heavy bag of groceries; reaching or extending arms above shoulder level; sitting for about two hours; and picking up a small coin from a table.

Box 3.1. Physical functioning questions

Because of a physical or health problem, do you have difficulty doing any of the activities on this card? Exclude any difficulties that you expect to last less than three months.

INTERVIEWER: PROBE – ‘What others?’ ... Code all that apply.

- 01 Walking 100 yards
- 02 Sitting for about two hours
- 03 Getting up from a chair after sitting for long periods
- 04 Climbing several flights of stairs without resting
- 05 Climbing one flight of stairs without resting
- 06 Stooping, kneeling or crouching
- 07 Reaching or extending arms above shoulder level (either arm)
- 08 Pulling or pushing large objects like a living-room chair
- 09 Lifting or carrying weights over 10 pounds, like a heavy bag of groceries
- 10 Picking up a 5p coin from a table
- 96 None of these

Here are a few more everyday activities. Please tell me if you have any difficulty with these because of a physical, mental, emotional or memory problem. Again exclude any difficulties you expect to last less than three months.

INTERVIEWER: PROBE – ‘What others?’ ... Code all that apply.

- 01 Dressing, including putting on shoes and socks
- 02 Walking across a room
- 03 Bathing or showering
- 04 Eating, such as cutting up food
- 05 Getting in or out of bed
- 06 Using the toilet, including getting up or down
- 07 Using a map to figure out how to get around in a strange place
- 08 Preparing a hot meal
- 09 Shopping for groceries
- 10 Making telephone calls
- 11 Taking medications
- 12 Doing work around the house or garden
- 13 Managing money, such as paying bills and keeping track of expenses
- 96 None of these

The Katz and Lawton-Brody lists are widely used for professional assessments of the needs of older people. The questions in ELSA represent simplified versions and do not differentiate particular facets of these activities or the degree of challenge they cause; although the respondents are not asked whether they wish to do these activities, the mobility ones and ADLs, at least, are likely to be part of most people's lives. The ELSA questions are aimed at the milder end of limitations, asking about difficulties rather than dependence on others or complete inability to do something, but they are worded in a way intended to capture difficulties that, although they may not be permanent, last long enough to be considered chronic. The wordings of the questions are given in Box 3.1.

In this chapter the analyses focus on these three main groups of physical limitations. People with difficulty in only one motor skill have been included with those who have none, since there tends to be fluctuation over time in reporting a single item and it was considered that the limitations incurred by a single motor skill problem would be relatively minor.

As well as learning about the problems respondents report it is valuable to assess their physical function objectively. There can be differences between self-reports and the results of performance tests (Hoeymans et al., 1996; Sayers et al., 2004) and assessing both self-reported and measured difficulties allows us to combine an objective measure of poor performance with an indication of how everyday mobility is affected. (Reuben et al., 2004).

In addition to providing self-reports of physical functioning difficulties ELSA respondents aged 60 years and over are timed walking an eight-foot distance so that their gait speed can be calculated. Respondents do not undertake the test if they refuse, if they or the interviewer feel that attempting the test would be unsafe or if questions are being answered on their behalf by someone else (a proxy interview). Respondents are asked to walk (not race) to the other end of the course at their usual speed, just as if they were walking down the street to the shops, and to walk all the way past the other end of the tape before stopping. The interviewer times how long they take to get to the other end and then times them again walking in the other direction. The average of the two times is used for analysis.

Walking becomes difficult in the presence of breathlessness, sarcopenia, dizziness and other problems and individual gait speed gives an assessment of physical mobility that is particularly sensitive to variation at the slower end of the scale. Studies from the US have shown that impaired mobility is predictive of future disability, nursing-home entry and mortality (Guralnik et al., 1994). Tests of physical function may be used in clinical assessments of older people (Guralnik and Ferrucci, 2003; Studenski et al., 2003) and can help identify individuals with pre-clinical limitations who are at increased risk of developing disabilities (Cesari et al., 2005; Melzer et al., 2006; Steel et al., 2004).

In the rest of this chapter methods for specific analyses are given in the relevant sections. The analyses were carried out on core ELSA members who took part in all three waves, had not yet moved into long-term care and responded to the questions on physical functioning. Gait speed tests were only completed by people aged 60 years and over at wave 1 so analyses involving

gait speed are restricted to that subgroup. Analyses of sources of help for physical functioning limitations refer to people aged 55 and over at the beginning of March 2006 and those on transport use to people aged 65 and over; both these analyses use wave 3 data.

There are three main statistical methods of analysis: logistic regression (used to look at predictors of a binary outcome such as whether someone developed an impairment or not); linear regression (for analyses of characteristics associated with a continuous outcome such as score on social support or quality of life scale); and age standardisation. Age standardisation reduces the inflation or deflation of apparent differences in outcome across groups that may simply result from one group being older than another. This means that the percentages given are not the percentages one would observe directly in the sample but are those one would observe if the age distribution in each functioning group was the same as that for all men in the analysis sample and similarly for women. When statistical tests have been carried out, a p-value of less than 0.05 has been considered statistically significant but interpretation also takes into account the size of the parameter – i.e. how practically important the association between two factors appears to be. For all the longitudinal models, analyses were run with and without weighting and on the whole this did not make a major difference to the findings. Results in Section 3.3 are presented unweighted and those in Section 3.4 weighted. The same weight was used in Sections 3.5 and 3.6 as this was confined to people who had taken part in waves 1 and wave 3 and this differed little from the population who had taken part in all three waves.

3.3 Predictors of onset of impairment

Methods and measures

This section focuses on how a person's social and socio-economic environment predicts their physical functioning over time. Many aspects of health vary according to an individual's socio-economic circumstances, as well as the socio-economic circumstances of the household or neighbourhood in which he or she lives (Adler and Ostrove, 1999; Diez Roux, 2001; Marmot and Wilkinson, 1999). Within the social environment, the effects of personal relationships on the physical and emotional health of older people have been explored previously but have concentrated on the extent and quantity of relationships (Bisschop et al., 2003; Lang and Carstensen, 1994; Vaillant et al., 1998) rather than perceptions of relationship quality.

The first part of this section focuses on three aspects of socio-economic status, one related to household circumstances and two related to the neighbourhoods in which people live. The second part of the section looks at a more intimate aspect of older people's social context – the way they view their relationships with friends and family.

ELSA is unusual in having a comprehensive measure of family wealth; the measure used here includes financial, physical and housing wealth but not pension wealth. Wealth is split by quintiles but because wealth tends to decline once people move into retirement and beyond and tends to be different in men

and women these quintiles were calculated specific to sex and five-year age groups and then combined.

The types of neighbourhood in which people live affect their health and well-being (Blackman, 2006) and older people may be at heightened risk from the negative health effects of living in deprived neighbourhoods (Browning and Cagney, 2002; Wight et al., 2008). Mental health (Aneshensel et al., 2007; Walters et al., 2004) and physical function (Balfour and Kaplan, 2002; Schootman et al., 2006) have been found to be poorer in older people living in deprived neighbourhoods and previous findings using ELSA data have shown that, even after individual differences in socio-economic status and health behaviours are taken into account, older people in deprived neighbourhoods have poorer cognitive function (Lang et al., 2008a) and are more likely to develop mobility problems.(Lang et al., 2008b).

The Index of Multiple Deprivation (IMD) 2004 combines seven dimensions of deprivation measured at the level of the lower layer super output area (LSOA), a statistical unit introduced in the 2001 Census which contains approximately 1,500 individuals. The dimensions are: income deprivation; employment deprivation; health deprivation and disability; education, skills and training deprivation; barriers to housing and services; living environment deprivation; and crime. Details of the theoretical and practical implementation of the IMD measure, including its reliability and validity, have been published (Office of the Deputy Prime Minister, 2004). For this analysis IMD scores were divided into quintiles.

Social capital has been defined in more than one way. For example, Robert Putnam has written about a form of social capital based on individuals' levels of engagement with formal and informal organisations (Putnam, 2000). The measure used in ELSA is a different one and is based on people's perceptions of the neighbourhoods in which they live, taking account of trust, mutual

Box 3.2. Statements used to assess neighbourhood social capital

- 'I really feel part of this area/I feel that I don't belong in this area'
- 'Vandalism and graffiti are a big problem in this area/There is no problem with vandalism and graffiti in this area'
- 'I often feel lonely living in this area/I have never felt lonely living in this area'
- 'Most people in this area can be trusted/Most people in this area can't be trusted'
- 'People would be afraid to walk alone in this area after dark/People feel safe walking alone in this area after dark'
- 'Most people in this area are friendly/Most people in this area are unfriendly'
- 'People in this area will take advantage of you/People in this area will always treat you fairly'
- 'This area is kept very clean/This area is always full of litter and rubbish'
- 'If you were in trouble there are lots of people in this area who would help you/If you were in trouble, there is nobody in this area who would help you'

assistance and petty crime. Neighbourhood social capital has been shown to be linked to health outcomes such as mortality (Subramanian, Lochner and Kawachi, 2003) and access to primary care (Prentice, 2006).

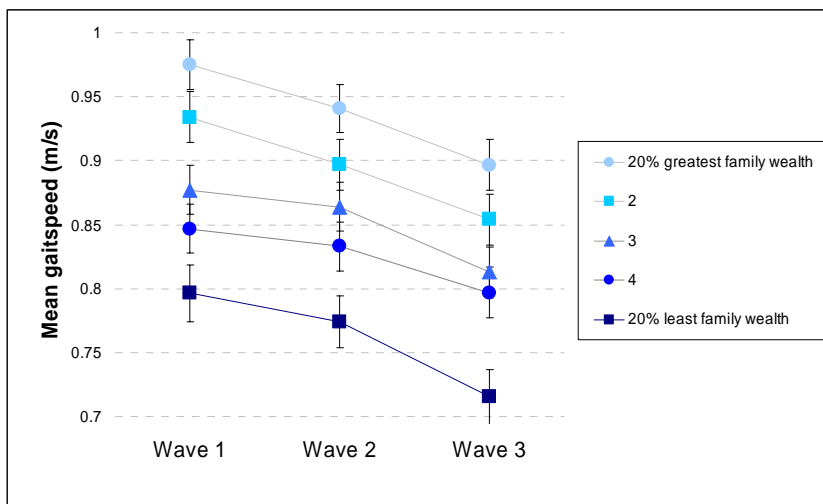
Neighbourhood social capital was measured in the self-completion section of ELSA wave 1. Respondents were presented with the following nine pairs of contrasting statements (see Box 3.2) and asked to indicate which are closer to how they feel about their local area.

Each statement was scored from 1 (most positive about the local neighbourhood) to 7 (least positive). For this analysis the summed scores were divided into five approximately equal categories.²

Physical function outcomes in relation to socio-economic factors

To take into account both existing levels of function and decline over time we looked at both baseline gait speed and change in gait speed between waves 1 and 3. Figure 3.1 shows the relationship between mean gait speed at successive waves and quintiles of wealth at wave 1. There is a clear negative relationship between wealth and gait speed that is consistent across waves. Furthermore, it appears that the decline in gait speed we would expect to see over time, as people age, is most marked in those in the lowest wealth group.

Figure 3.1. Mean gait speed at wave 1 and subsequently, by household wealth at wave 1 divided by quintiles



² The score ranges for the categories were 9–15, 16–20, 21–25, 26–31, 32–63, with lower scores indicating more positive relationships.

To assess more formally how decline in gait speed is influenced by socio-economic circumstances regression models were used. The models were adjusted for: age, sex, level of education, Body Mass Index (BMI) category, cigarette smoking, alcohol consumption and self-reported health. The rationale for making these adjustments is that these are all factors known to be associated both with socio-economic status and with mobility – adjusting for them allows us to assess the extent to which intermediate factors are responsible for any associations between socio-economic status and gait speed. The outcomes of these models are presented in Tables 3A.1 and 3A.2, which show the relationships between gait speed and wealth and between gait speed and neighbourhood deprivation.

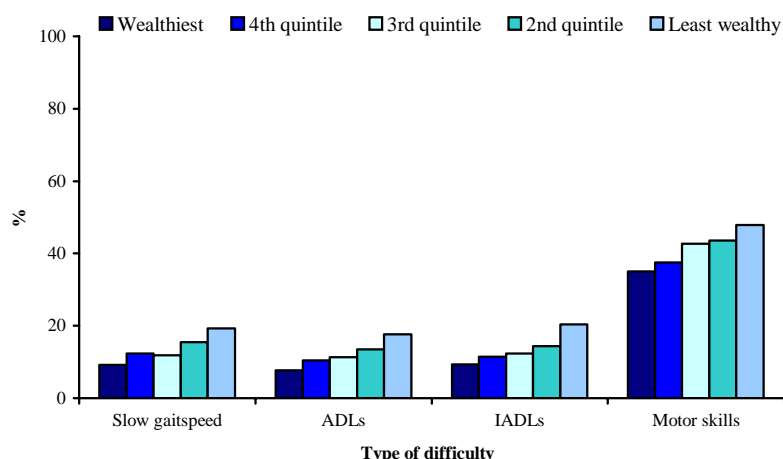
For each of the socio-economic variables these models confirm there is a relationship with both baseline gait speed and with decline in gait speed. When both these socio-economic variables were included in the same model and social capital added in there was no statistically significant relationship with social capital but marked relationships with both wealth and neighbourhood deprivation persisted (results not shown). This suggests individual and neighbourhood socio-economic effects have an independent effect on the physical functioning of older people and is in keeping with similar findings from earlier waves of ELSA (Lang et al., 2008b).

In the ELSA wave 2 report results were presented in relation to having a gait speed of 0.5 metres per second or slower, a level approximately similar to what is needed to move around safely outdoors, including getting over a road in the time allowed by the crossing signal (Melzer et al., 2006). In the next set of analyses here we assess decline in gait speed by assessing the likelihood of moving into this slow gait speed group – that is, of having a gait speed of faster than 0.5 m/s at wave 1 but slower than that, or being unable to complete the gait speed test, at wave 3.³

These outcomes are presented alongside outcomes of models looking at the likelihood of reporting one or more ADL problems at wave 3 (among those who did not have them at wave 1), of reporting one or more IADL problems at wave 3 (among those who did not have them at wave 1) and of reporting two or more motor skill problems (among those with one or no problems at wave 1 – see comments above). We assessed these outcomes in relation to household wealth, neighbourhood deprivation and neighbourhood social capital. To show the magnitude of the incidence results are first presented for unadjusted models in Figure 3.2 and in Tables 3A.3 to 3A.5. The incidences by wealth quintile and neighbourhood deprivation were very similar. Tables 3.1 to 3.3 show the odds ratios for these outcomes adjusted for the effects of age, sex, level of education, BMI category, cigarette smoking, alcohol consumption and self-reported health.

³ ‘Unable to complete’ refers to those who reported they could not walk, who were too ill to complete the test or for whom the interviewer thought it would be unsafe to attempt the test.

Figure 3.2. Incidence of impaired physical function by wave 3 in relation to wave 1 household wealth



Notes: unadjusted, unweighted. Based on those without the difficulty at wave 1. 3,532 cases included for gait speed, 6,112 for incident ADLs, 6,119 for incident IADLs and 4,570 for incident motor skill problems.

Table 3.1. Incident impaired physical function in relation to wealth – adjusted models

Respondents who answered questions on functioning in waves 1–3 and without the relevant difficulty at wave 1

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Odds ratios (95% confidence intervals)				
Wealth split by quintiles				
Wealthiest	1.00	1.00	1.00	1.00
4	1.39 (0.94, 2.04)	1.29 (0.95, 1.75)	1.20 (0.89, 1.59)	1.07 (0.88, 1.31)
3	1.35 (0.92, 1.99)	1.36 (1.00, 1.85)	1.13 (0.85, 1.51)	1.27 (1.04, 1.56)
2	1.64 (1.11, 2.41)	1.41 (1.04, 1.92)	1.22 (0.92, 1.63)	1.30 (1.05, 1.60)
Least wealthy	2.24 (1.51, 3.32)	1.83 (1.34, 2.50)	1.75 (1.32, 2.34)	1.36 (1.08, 1.71)
p for trend	>0.001	>0.001	>0.001	0.002
Unweighted N	3,203	5,428	5,441	4,137

Notes: ADLs = activities of daily living; IADLs = instrumental activities of daily living. Slow gait speed Jess than 0.5m per sec or being unable to complete the gait speed test. Splitting of wealth into quintiles was specific to sex and age in 5-year bands. Models were adjusted for age, sex, level of education, BMI category, cigarette smoking, alcohol consumption and self-reported health.

Deleted: = being in slowest 25%

Table 3.2. Incident impaired physical function in relation to neighbourhood deprivation – adjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Odds ratios (95% confidence intervals)				
IMD 2004 split by quintiles				
Least deprived	1.00	1.00	1.00	1.00
4	0.97 (0.69, 1.36)	1.43 (1.10, 1.88)	1.01 (0.78, 1.30)	1.16 (0.97, 1.40)
3	0.96 (0.67, 1.37)	1.10 (0.82, 1.47)	0.96 (0.73, 1.25)	1.30 (1.07, 1.57)
2	1.69 (1.20, 2.39)	1.66 (1.25, 2.22)	1.42 (1.09, 1.85)	1.38 (1.13, 1.70)
Most deprived	1.68 (1.16, 2.45)	1.65 (1.21, 2.25)	1.49 (1.12, 2.00)	1.31 (1.02, 1.68)
p for trend	<0.001	0.001	0.006	0.032
Unweighted N	3,222	5,482	5,495	4,182

Notes: See Table 3.1.

Table 3.3. Incident impaired physical function in relation to neighbourhood social capital – adjusted models

Respondents who responded to questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Odds ratios (95% confidence intervals)				
Neighbourhood social capital split by quintiles				
Highest	1.00	1.00	1.00	1.00
4	1.01 (0.68, 1.49)	0.80 (0.58, 1.11)	0.85 (0.63, 1.16)	0.96 (0.78, 1.21)
3	1.04 (0.72, 1.52)	0.94 (0.69, 1.27)	0.94 (0.71, 1.26)	1.11 (0.94, 1.44)
2	1.01 (0.68, 1.50)	1.21 (0.90, 1.62)	1.08 (0.81, 1.44)	1.14 (0.99, 1.53)
Lowest	1.26 (0.86, 1.85)	1.34 (1.00, 1.81)	1.37 (1.03, 1.83)	1.27 (1.14, 1.77)
p for trend	0.303	0.004	0.009	0.013
Unweighted N	2,871	4,927	4,963	3,782

Notes: See Table 3.1.

The results indicate associations between all of the exposures and outcomes examined, but the relationships with wealth and neighbourhood deprivation appear stronger than those with neighbourhood social capital and the latter was no longer significant when included in a model with wealth and neighbourhood deprivation. It is also noteworthy that onset of IADLs or slow gait speed among people in the third and fourth quintiles of deprivation (less deprived) were no greater than those among the fifth (wealthiest) quintile. For each exposure there is a more moderate relationship with incident motor skill problems than with the other outcomes. There is strong evidence here for a relationship between aspects of socio-economic circumstances and incident impaired physical function.

Physical function outcomes in relation to relationship quality

As part of the self-completion part of ELSA wave 1, respondents were asked whether or not they had a partner ('Do you have a husband, wife or partner with whom you live?'). Those who said they had a partner were then asked to respond to six questions on how they felt about their partner, to which possible answers were 'A lot', 'Some', 'A little' and 'Not at all'. Questions asked were:

- How much do they really understand the way you feel about things?
- How much can you rely on them if you have a serious problem?
- How much can you open up to them if you need to talk about your worries?
- How much do they criticise you?
- How much do they let you down when you are counting on them?
- How much do they get on your nerves?

Responses to each question were scored from 1 (for the most positive responses) to 4 (for the least positive responses) and summed to give a score from 6 to 24, which was then divided into five approximately equal groups.⁴ A sixth category was added for those who reported they did not have a partner.

Corresponding sets of questions were asked about respondents' children, families and friends and the responses summed and categorised using the same method as for partners. Percentages of respondents reporting different levels of relationship quality, by relationship type and sex, are presented in Table 3A.6.

There was no clear overall pattern of association between quality of relationships at wave 1 and incident physical function problems during the following four years although a number of relationship types were associated with poorer outcomes. As for socio-economic status, outcomes of these analyses are shown in unadjusted models (Tables 3A.7–3A.10) to give an indication of the magnitude of incidence and in adjusted models to show whether associations were independent of other factors (Table 3.4).

In adjusted models, there were weak or no associations between onset of difficulties and quality of relationships. P-values show that observed differences in likelihood of developing slow gait speed or ADL difficulties could have arisen by chance; i.e. there is no evidence that those who had a low-quality relationship with a partner, or who did not have a partner, were more likely to develop slow gait speed or ADL difficulties than those with a partner and good relationship quality. For all except the wider family the associations were stronger with motor skills than with problems with ADLs or IADLs or with impaired gait speed. For motor skills both those who did not have children and those who had poor relationships with their children at wave 1 appeared to be at increased risk of onset of problems with motor skills by wave 3. The same was true, to a lesser extent, for relationships with friends and onset of problems with motor skills. For example, compared to those who

⁴ As the scores were unevenly distributed the groups could not be constructed to be of exactly equal size.

Table 3.4. Incident impaired physical function in relation to quality of relationship with (a) partner, (b) children, (c) other family members and (d) friends – adjusted models

Respondents who answered questions on functioning in waves 1–3 and without the relevant difficulty at wave 1

Quality of relationship with:	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Odds ratios (95% confidence intervals)				
Partner				
Best	1.00	1.00	1.00	1.00
2	0.68 (0.36,1.30)	1.09 (0.68,1.78)	1.03 (0.65,1.64)	1.09 (0.79,1.49)
3	0.72 (0.41,1.26)	1.02 (0.66,1.59)	1.08 (0.71,1.65)	1.24 (0.93,1.66)
4	1.18 (0.66,2.11)	1.28 (0.8, 2.04)	0.87 (0.44,1.38)	1.47 (1.08,2.01)
Worst	1.04 (0.57,1.89)	1.24 (0.78,1.98)	1.43 (0.93,2.22)	1.39 (1.01,1.91)
No partner	1.27 (0.75,2.14)	1.33 (0.87,2.05)	1.43 (0.95,2.13)	1.32 (0.99,1.78)
p for trend	0.198	0.161	0.101	0.004
Children				
Best	1.00	1.00	1.00	1.00
2	1.18 (0.77,1.83)	1.00 (0.69,1.45)	1.14 (0.79,1.65)	1.16 (0.87,1.55)
3	0.73 (0.49,1.11)	0.94 (0.67,1.32)	1.06 (0.76,1.47)	1.26 (0.97,1.63)
4	1.06 (0.69,1.64)	0.98 (0.69,1.40)	1.05 (0.74,1.50)	1.48 (1.14,1.94)
Worst	1.26 (0.81,1.96)	0.88 (0.61,1.26)	1.44 (1.02,2.03)	1.73 (1.32,2.28)
No children	1.48 (0.95,2.29)	1.44 (1.00,2.06)	1.77 (1.24,2.52)	1.63 (1.21,2.18)
p for trend	0.379	0.442	0.057	>0.001
Other family				
Best	1.00	1.00	1.00	1.00
2	0.68 (0.45,1.04)	0.99 (0.71,1.38)	0.93 (0.69,1.26)	1.09 (0.86,1.40)
3	0.84 (0.56,1.27)	0.87 (0.62,1.22)	0.76 (0.55,1.05)	1.19 (0.93,1.52)
4	0.92 (0.60,1.41)	0.99 (0.70,1.40)	0.75 (0.54,1.05)	1.12 (0.87,1.44)
Worst	1.06 (0.72,1.56)	1.01 (0.74,1.40)	0.97 (0.72,1.30)	1.22 (0.96,1.55)
No family	0.92 (0.58,1.47)	1.20 (0.82,1.76)	0.87 (0.60,1.27)	1.15 (0.84,1.57)
p for trend	0.399	0.844	0.604	0.110
Friends				
Best	1.00	1.00	1.00	1.00
2	0.70 (0.45,1.10)	0.74 (0.52,1.04)	1.00 (0.69,1.43)	1.06 (0.80,1.40)
3	0.78 (0.51,1.21)	0.79 (0.56,1.12)	1.19 (0.84,1.70)	1.23 (0.94,1.61)
4	0.73 (0.46,1.14)	0.77 (0.54,1.10)	1.10 (0.76,1.59)	1.38 (1.04,1.81)
Worst	0.86 (0.54,1.35)	0.80 (0.56,1.15)	1.20 (0.83,1.73)	1.30 (0.98,1.72)
No friends	0.95 (0.53,1.71)	0.76 (0.47,1.23)	1.23 (0.76,2.00)	1.66 (1.09,2.52)
p for trend	0.879	0.563	0.215	0.007
Unweighted N				
Partner	3,027	5,116	5,155	3,918
Children	2,990	5,074	5,114	3,888
Other family	2,772	4,817	4,832	3,693
Friends	2,776	4,840	4,853	3,723

Notes: See Table 3.1.

reported good relationships with their children, those who reported the worst relationships with their children were significantly more likely to have experienced incident motor skills problems (OR 1.73, 95% CI 1.32 to 2.28), as were those who had no children (OR 1.63, 95% CI 1.21 to 2.18). Those who had no children were no more likely to experience incident motor skills problems than those who did have children but reported poor relationships with them (OR 0.94, 95% CI 0.74 to 1.20; result not shown in table). It is unclear why incident mobility problems seemed to be more associated with relationship quality than incident ADL and IADL problems. There may be some interplay between quality of relationship and quality of help-giving which needs to be explored further.

In models including all four types of relationship no clear overall picture emerged in relation to the different outcomes but the most consistent associations were with quality of relationships with partner and children. Previous research has suggested marital status has different effects on mortality in men and women (Johnson et al., 2000) but we found no interactions between quality of relationships (of any type) and sex in relationship to our outcomes of interest.

3.4 History of reported difficulties in physical function over four years and independence

Methods

The three forms of self-reported activity covered in this chapter can be seen as part of a hierarchy with the motor skills as least limiting and difficulties with ADLs most limiting. A classification was developed intended to show the range from remaining without problems with these activities throughout the three waves of interview to reporting both ADL and IADL difficulties at every wave. To show every combination of functioning limitations across the waves would have been complex and instead four ‘middle’ groups were created which were defined according to a combination of whether they ever reported difficulties with ADLs or IADLs and whether at the last point they felt free of such difficulties or not. The categories created are given in Box 3.3.

Box 3.3. History of self-reported difficulties with physical functioning

1	Minimal difficulty	At each wave difficulty with at most one motor skill reported
2	Motor skill difficulties only	Reported difficulty with two or more motor skills in at least one wave but never difficulties with ADLs or IADLs
3	Net decrement in difficulties	Reported difficulties with one or more ADLs and/or IADLs at wave 1 and/or wave 2 but not at wave 3 (may have reported difficulties with motor skills)
4	Net increment in difficulties	Reported difficulties with one or more ADLs and/or IADLs at wave 3 but not at wave 1
5	Mixed history of ADLs/IADLs	Reported difficulties with one or more ADLs and/or IADLs at both waves 1 and 3 but across the waves varied in whether this was ADLs only, IADLs only or both (could be neither in wave 2)
6	Maximal difficulty	At each wave difficulties with at least one ADL and at least one IADL reported

Demographic features and health by history of difficulties in physical functioning

Retention in the sample according to pattern of reported difficulties at wave 1 is shown in Table 3A.11. The categories are approximate – e.g. deaths up to the end of 2006 for those who did not take part in wave 3 are used to give an idea of whether those with various types of difficulty at wave 1 were more likely to die before wave 3. It can be seen that the main reason for differential retention in the analysis sample is death; in particular those who had difficulties with IADLs at wave 1 were most likely to die.

Table 3A.12 describes the characteristics of cohort members in these six categories. The minimal-difficulty group was considerably younger than the others with a median age of 63 at the first wave, around 11 years younger than the oldest female group and 8 years younger than the oldest male group. There was more variation in median age among women than among men, possibly reflecting the greater variation in age of women in the sample as a whole. The minimal-difficulty group comprises about half the men and a third of the women who took part in all three waves. Their relative dominance in the sample is probably exaggerated compared to the general population, in part because they are more likely to remain in the study.

Consistent with the age differences, women with a history of ADL or IADL difficulties were more likely to be widowed and less likely to be married (43% of the maximal group were widowed compared with 18% of the minimal). Among men the contrasts were smaller but were still clear for widowhood; the percentage in the maximal group who had never married was particularly small, perhaps because single men with difficulties in ADLs or IADLs would be in long-term care and also probably disproportionately lost to contact in the study. Women with difficulties in ADLs or IADLs at wave 3 (categories 4, 5 and 6) were most likely to live alone and men with minimal difficulties or motor skill difficulties only least likely to live alone.

Table 3A.13 shows perceptions of general health and reporting of depressive symptoms at waves 1 and 3 by history of difficulties. General health is dichotomised into very good or good against fair, bad or very bad. An abbreviated form of the CES-D scale (Steffick, 2000) was used to assess depressive symptoms with those with at least four of the eight symptoms taken as possibly having depression.⁵ Around four out of five of those with minimal functional difficulties throughout reported good or very good general health both in 2002–03 and four years later whereas three out of four of those with ADL and IADL problems throughout reported fair to very bad health on both occasions. Patterns of general health reporting follow those of physical functioning. Those who had an increment in reported difficulties were most likely to consider their general health good or very good at wave 1 but switch to a worse rating at wave 3.

⁵ There is no universally agreed cut-off used with the CES-D8; four or more symptoms is considered to be closest to the cut-off used in the full CES-D20 to indicate clinical depression but for some purposes a cut-off of three or more is considered to indicate sufficient symptoms to be of concern.

Although not as striking as the patterns for general health, there were gradients across the six categories in the percentages with less than four depressive symptoms in either wave (in favour of the minimal category) and in the percentages possibly depressed in both waves (being greatest for the maximal category). In both cases these gradients were steeper for women than for men and a particularly high percentage of women in the maximal history group reported four or more symptoms in both waves. By wave 3, there was a steep gradient between self-reported problems with vision and the history of difficulties with physical functioning; there was a shallower gradient among categories 2–6 with respect to problems with hearing but the minimal history group stood out as being much less likely to have hearing problems than the rest.

Indicators of independence and history of difficulties in physical functioning

Measures and methods

The focus of this section is the way in which people take an active part or interest in society. The analyses are confined to activities outside paid work as Chapter 2 on ‘Extended Working Lives’ looks in some detail at work disability and employment.

With respect to leisure time, the activities covered are considered either to keep the mind stimulated and/or to provide social contact. Having a hobby was voted as a necessity by 78% of adult respondents in the Omnibus Studies used to define poverty for the 1999 Breadline Britain Study (Gordon et al., 2000). This study identified poverty as involving not only limited financial resources but also involuntary lack of at least two of the items or services considered essential to life. Reading newspapers is taken as an indicator of taking a proactive interest in what is happening in the world around. Other activities take people out of the home, such as having day trips or outings, and eating away from home. These (and hobbies) may also be social activities and other research has indicated that social participation slows cognitive decline (Zunzunegui et al., 2003). A holiday away from home without relatives at least once a year was also considered essential by 56% in the Omnibus Studies (Gordon et al., 2000). ELSA does not distinguish between who accompanied the survey member on holiday but does distinguish between holidays in the UK and abroad.

The activities measured in ELSA are:

- Reading a daily newspaper
- Having a hobby or pastime
- Taking a holiday in the UK in the last 12 months
- Taking a holiday abroad in the last 12 months
- Going on a day trip or outing in the last 12 months
- Frequency of eating out of the house

The first five of these activities are part of a list of activities in the self-completion booklet and have been included in each wave. Frequency of eating

out of the house was asked by the interviewer in wave 1 and shifted to the self-completion at wave 2, where it has since remained. The numbers available for analysis are reduced further because of the self-completion; again it was those with IADL difficulties at wave 1 who were least likely to answer the questions. This is likely to mean that differences in participation according to history of physical functioning are underestimated.

In order to get out and about, one often needs transport. As described in a government report on transport for older people (Knight et al., p. 11):

accessible transport facilitates social and community participation, social interaction, leisure, entertainment and improves quality of life.

There are therefore concerns about ensuring that transport facilities cater for people who are not rich or have mobility difficulties or visual impairments. Giving up a car brings its own challenges, as stated in a report from the Department for Transport (2001, p. 5):

The main implications of no longer having access to a car are reductions in the choice of destinations, flexibility and spontaneity of travel and the psychological impact associated with the loss of independence.

Two measures of transport availability or use have been included: first, the use of a car whenever needed, whether driver or passenger; second, use of public transport.

Contact with friends at least three times a week is used as the main indicator of independence in terms of social relationships. This includes any form of contact (in person, mail, internet, telephone). A score was derived to denote quality of relationships (see Section 3.3 for details of the questions). For the purposes of these analyses, scores were derived giving first positive and then negative scores as a percentage of the maximum possible for that person, given that not everyone has a spouse, children, etc.

For the categorical variables (e.g. reads a paper or not), variables were created that combined the information from waves 1 and 3 to show whether a respondent was doing the activity in both waves, one only or neither. Age-standardised tabulations were produced, weighted by the wave 3 longitudinal weight. These tabulations show whether groups with different histories are varied in their participation in activities, having allowed for different age profiles of the groups. However, differences do not mean that the history of physical function is of itself responsible for variation in participation. Controlled experiments provide the best evidence of cause but are not appropriate here. Instead, multivariable analyses were undertaken to see if participation profiles vary by history of functioning because of other factors that also differ according to history; e.g. if those with more difficulties are also poorer, their lack of wealth rather than their physical difficulties may be explaining participation. First, participation at wave 1 was modelled against health at wave 1 and also against marital status at wave 1, educational qualifications and wealth quintile. Knowing that wave 3 participation was likely to be highly correlated with wave 1 participation, the second step was to model wave 3 participation with wave 1 participation as a predictor and then see what other factors, notably history of physical functioning, were associated with wave 3 participation over and above their participation four years earlier. A series of models were run, starting with wave 1 participation, age, marital

status and history of physical functioning, then adding baseline health factors in a second model and finally adding baseline socio-economic factors in a third model. If the history of physical functioning is significantly associated with wave 3 participation in the first model but not in the third, this means that the other factors (health and/or socio-economic factors) are more likely to be the determining factors in participation than the physical functioning itself. Because the wave 1 participation is included in all the models at the second step, the parameters for the other factors are showing whether or not they operated to reinforce or change prior behaviour.

The socio-economic factors used here are non-pension wealth quintiles and highest educational qualification. Educational qualifications have been divided into: degree level or above; A-level or higher but not degree; GCSE or O-level; CSE or foreign qualifications; no qualification.

The health factors are:

- general health (fair/bad/very bad against very good/good);
- whether vision impaired (rated own eyesight, if necessary using lenses, as fair or poor on a 5-point scale or reported registered blind or self-rated long sight (recognising a friend across the road) or short sight (reading a paper) as fair or poor;
- whether hearing impaired (rated own hearing, if necessary using a hearing aid, as fair or poor or had difficulty with conversation if there was background noise);
- whether experienced urinary incontinence (losing an amount of urine beyond one's control during the previous 12 months);
- whether often troubled by pain and, if so, whether this pain was mild, moderate or severe;
- whether experienced four or more depressive symptoms from the CES-D8 scale.

Participation in leisure activities

Tables 3A.14 and 3A.15 show the age-adjusted, weighted percentages of people taking part in the activity in wave 1 and/or wave 3 or neither. The most common activity was having a hobby and the least common holidaying abroad, perhaps reflecting the resources needed to undertake it (whether financial, transport or social support). For all six activities there was a gradient with people in the minimal and mobility categories (1 and 2) being most likely to do an activity at either time, the groups who had experienced a net decrement or increment the next most likely and the ones who had experience of difficulties with ADLs and/or IADLs both in 2002–03 and four years later being least likely to do so. In addition, by wave 3, the female maximal group were markedly less likely to participate in most activities than even those in category 5 whereas for men there were only substantial differences for having a hobby and having a holiday in the UK. On the other hand the female groups with minimal difficulties and those who had at most experienced motor skill problems were very similar but there were substantial differences in wave 3 participation for men with respect to having a hobby (85% against 77%),

taking a holiday overseas (54% against 50%) and in having an outing (71% against 62%). The middle categories were remarkably alike, although one might have expected differences in the percentages participating in wave 3 and not wave 1 for those in category 4 – this expected pattern is only clear for men with respect to having a holiday abroad.

Models were run to explore which circumstances tended to correlate with undertaking an activity at wave 1 (not shown). In addition the history of physical difficulties was included to see if there might already be indications of lesser participation among those who were going to show more of a history of difficulties. All the variables were in the same model, so are only reported below if they were statistically significantly associated with participation after adjusting for the other factors. These models showed that participation was generally least likely if the person had no qualifications but also significantly lower compared to people with higher education for those with the minimum level of qualification. Contrary to this, those with lower education were more likely to read a paper than those with higher education. There was a steep positive gradient relating taking a holiday abroad with wealth; the least wealthy were also least likely to take holidays in the UK or to eat out often; this was also true among men for having a hobby or having an outing.

Age was *positively* correlated with reading a paper (older people being more likely to do so), and negatively correlated with taking a holiday abroad and with going on outings. Associations with marital status depended on the activity. Widowed men and all women without partners were less likely to read a paper than those with partners. Divorced or separated people and single men were less likely than people with partners at home to have had an outing in the year before wave 1, all formerly married women were less likely to have had a holiday in the UK and all men without a partner were less likely to have taken a holiday in the UK or abroad. Marital status was not associated with having a hobby or eating out.

All the activities were correlated with at least one health factor. Having four or more depressive symptoms was associated with lower likelihood of having a hobby, holiday, outing or eating outside the home for women and of having a hobby for men. Among men, impaired vision was accompanied by reduced likelihood of reading a paper, having a hobby or eating out at least once a month, whereas among women it was just associated with the last of these. General poor health was associated only with lower percentages of people having a hobby or taking a holiday abroad or with men having an outing. Poor hearing was only associated with lesser likelihood of women taking a holiday abroad. Women who already reported difficulties with an ADL or IADL at wave 1 (categories 3, 5 and 6) were less likely to have had a holiday abroad than those in the minimal category. Also, men with a history of ADL or IADL difficulties at both waves were less likely to have an outing or to eat out. The one anomaly was that men who went on to experience at most some difficulties with motor skills were less likely to have an outing even at wave 1. No immediate explanation for this is apparent.

Figure 3.3a–1 shows the odds ratios for participation in various activities at wave 3 for the three models. For example, after adjusting for participation at wave 1, age and marital status, the odds of reading a paper for men in category

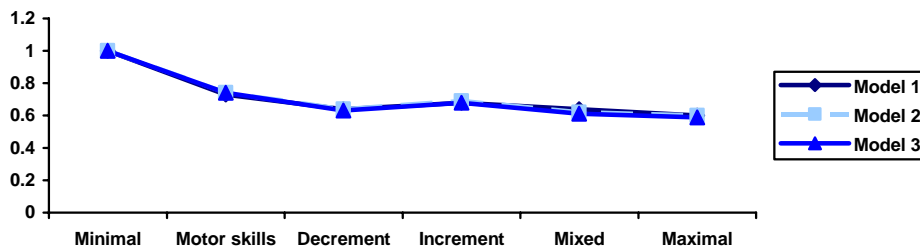
3 (reported difficulty with ADL or IADL in wave 1 not wave 3) were 0.6 of those with a minimal history of difficulties. (See Chapter 5, Box 5.3 for an explanation of odds ratios.) The points that are arrowed are those for which the difference between the group concerned and the group with a minimal history is statistically significant at the 5% level in model 3.⁶ A downward sloping line from left to right indicates that increasing history of difficulties with physical function is associated with a decreasing chance of participating at wave 3. Values above 1.0 indicate greater likelihood of participation than the minimal difficulty group and values below 1.0 a lower likelihood.

Initial patterns (model 1) were generally similar for men and women but there were stronger associations for men than for women with respect to having a hobby and having a holiday in the UK.

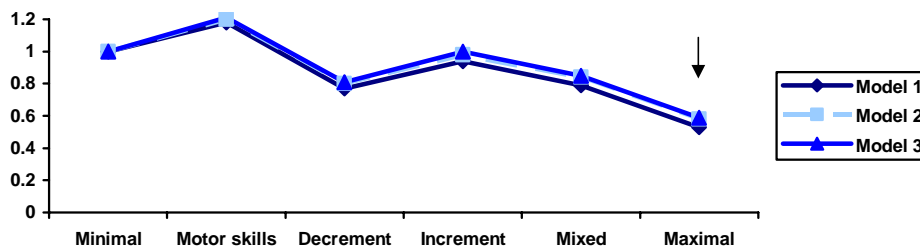
Figure 3.3. Odds ratios for undertaking leisure activities at wave 3, by history of physical functioning

Respondents who had physical function measurements in all three waves and answered questions on leisure activities

a) Reading a paper: men

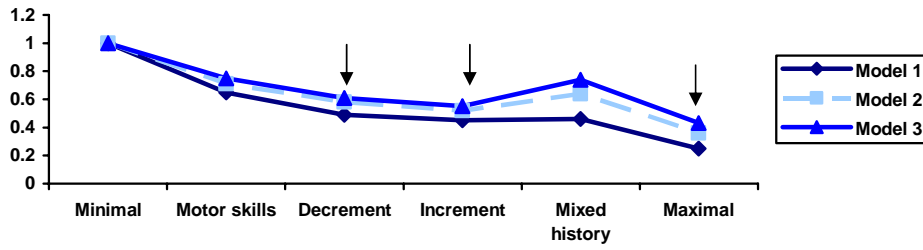


b) Reading a paper: women

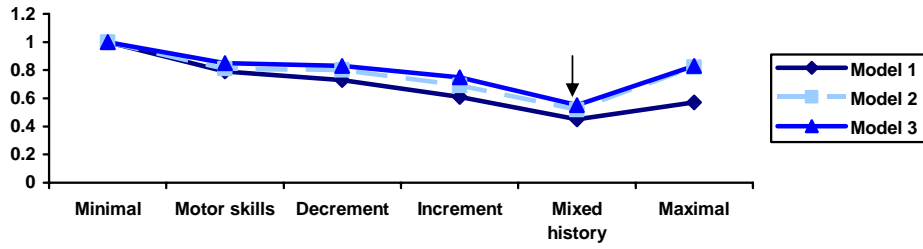


⁶ In some cases a single category has a significantly lower chance of participating but the general association between the history of functioning and the activity was too weak to be statistically significant.

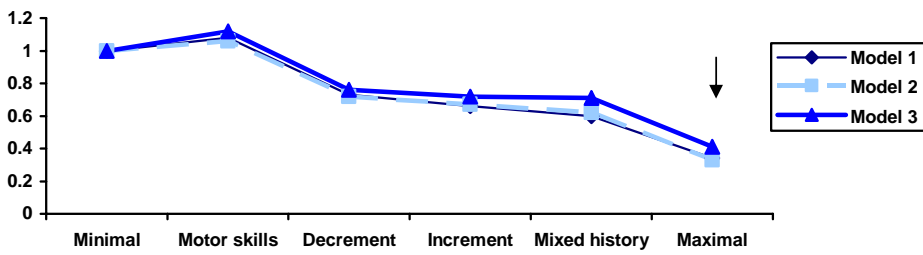
c) Having a hobby or pastime: men



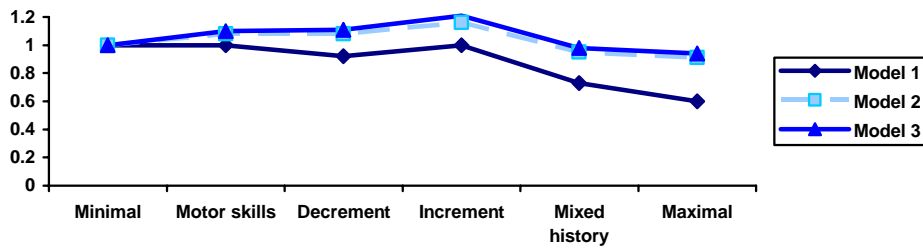
d) Having a hobby or pastime: women



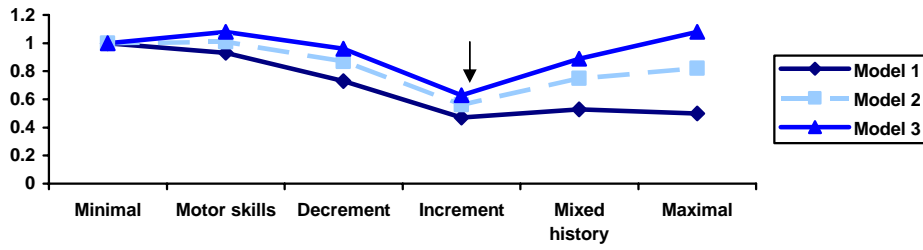
e) Taking a holiday in the UK in previous 12 months: men



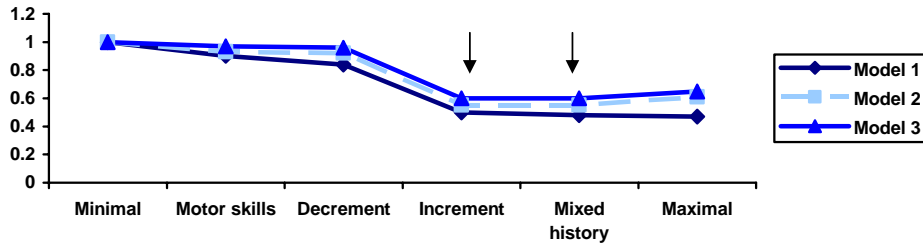
f) Taking a holiday in the UK in previous 12 months: women



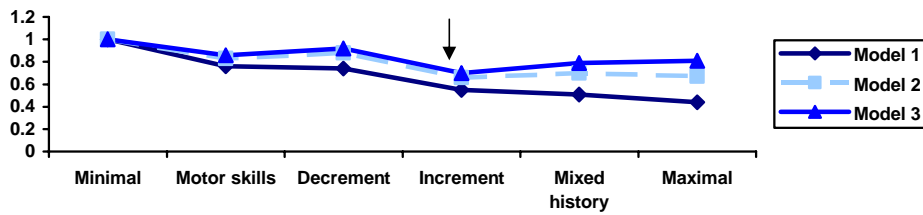
g) Taking a holiday abroad in previous 12 months: men



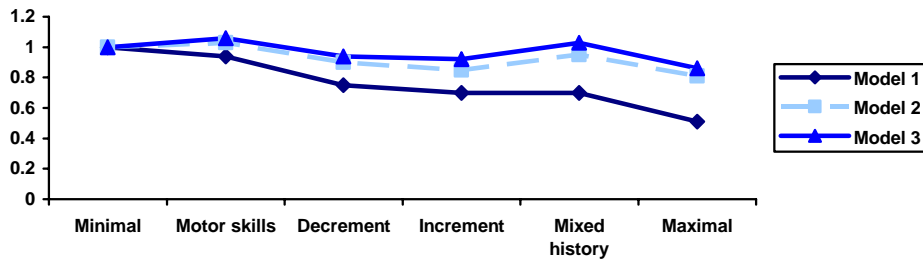
h) Taking a holiday abroad in previous 12 months: women



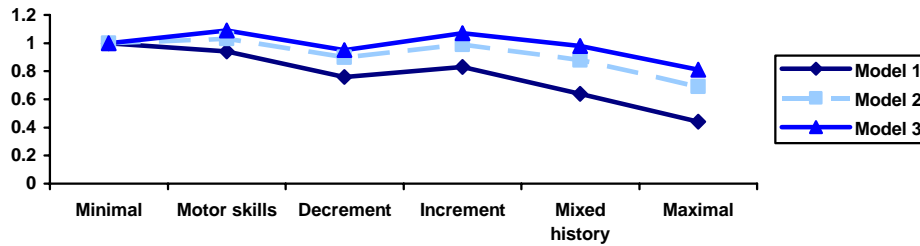
i) Taking an outing in previous 12 months: men



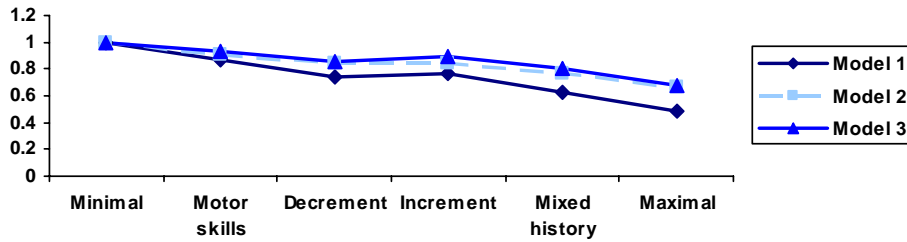
j) Taking an outing in previous 12 months: women



k) Eating out of the home at least once a month: men



l) Eating out of the home at least once a month: women



Notes: 2,587 men and 3,220 women were included in the analyses. Model 1 adjusted for age, marital status and participation at wave 1. Model 2 additionally adjusted for wave 1 health factors: general health, vision, hearing, pain, depression, incontinence. Model 3 additionally adjusted for wealth and education qualification measured at wave 1.

These models show that, given participation at wave 1, further history of physical functioning does not make as much difference of itself as one might expect. In the initial models the groups which were experiencing ADL and/or IADL difficulties at wave 3 (categories 4–6) are seen to be less likely to do most of the six activities, in accordance with the tables discussed earlier. For paper reading this was restricted to the maximal history group for women and to three middle groups for men (categories 3–5). While women with motor skill difficulties only or with a decrement in activities were not substantially less likely to do these six activities in wave 3 than women with a minimal history (conditioned on whether they undertook them in wave 1), men with motor skill difficulties or with a decrement in functioning difficulties were less likely than those with minimal history to have a hobby by wave 3 and those with a decrement in difficulty were also less likely to take a holiday in the UK before wave 3 or to have an outing.

Adjusting for health factors accounts for some of the differences that exist in the first model – the only exception being in reading a newspaper. Among men and women health factors fully accounted for categories 5 and 6 being less likely to have an outing or to eat out at least once a month. Health factors also fully accounted for differentials by history of physical functioning with respect to women and holidaying in the UK. Wealth and education further attenuated the associations for men with respect to holidaying abroad but the association between functioning and this activity was already borderline.

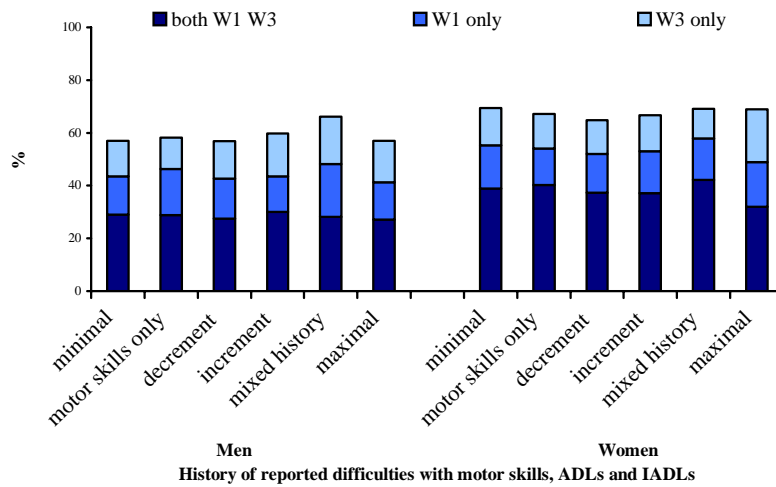
In the final models, there were still statistically significant associations between history of physical functioning and having a hobby for both men and women, with reading a paper and holidaying abroad for women, and with holidaying in the UK for men. Those who had a maximal history of difficulties were less likely than those with a minimal difficulty to read a paper (women), have a hobby (men) or take a holiday in the UK (men); those with a mixed history were less likely to take a holiday abroad (women) and those who experienced ADL and/or IADL difficulty at wave 3 but not wave 1 were less likely to have a hobby (men), take a holiday in the UK (men) or have a holiday abroad (men and women). The group with maximal difficulty is not singled out in every outcome but it should be remembered that those with ADL or IADL difficulties at wave 1 were already less likely to do some activities at that stage, and participation at wave 3 is correlated with that at wave 1.

The health factors that featured most in this attenuation were poor vision (for all except reading a paper) and, for women only, depression (with respect to having a hobby, going on holiday in the UK or taking an outing). Wealth and education were significantly associated with all the activities except reading a paper but, once health was accounted for, were not major confounders. It was seen in Table 3A.13 that there were marked differences in history of general health according to history of physical functioning. General health at wave 1 appeared to play a role in participation in being one of the health factors that attenuated associations between history of physical functioning and participation but, being correlated with wealth and education as well, it was not possible to disentangle how much of the contribution of general health was due to adequacy or otherwise of educational and material resources.

Social contact

There were no substantial differences by history of physical functioning over whether frequent contact was maintained with friends (Figure 3.4). As seen in Table 3A.16, there were some differences with respect to the quality of relationships but these were not major. History of physical functioning difficulties did not appear to play a part in positive aspects of relationships for men but played some part for women who had an increment in difficulties or a mixed history – for example those with mixed history had positive relationship scores 3 percentage points lower than those with minimal history, the median percentage for all women being 85.4%. For negative aspects of relationships, there was an uneven pattern for men but most groups had worse (higher scores) than the group with minimal history whereas for women it was again those with ADL or IADL difficulties at wave 3 who had worse scores. The groups with a maximal history of physical functioning difficulties had a score around 4 percentage points lower than the minimal group, the overall medians being just under 40%. Adjusting for health and socio-economic factors attenuated the associations but did not remove them entirely for men with respect to negative scores or for women with respect to positive ones. Nevertheless in the context of the overall median scores these differences were small.

Figure 3.4. Percentage who reported contacting friends at least three times a week at waves 1 or 3 or both, by sex and history of reported difficulties with motor skills, ADLs and IADLs



Note: Weighted age-standardised percentages.

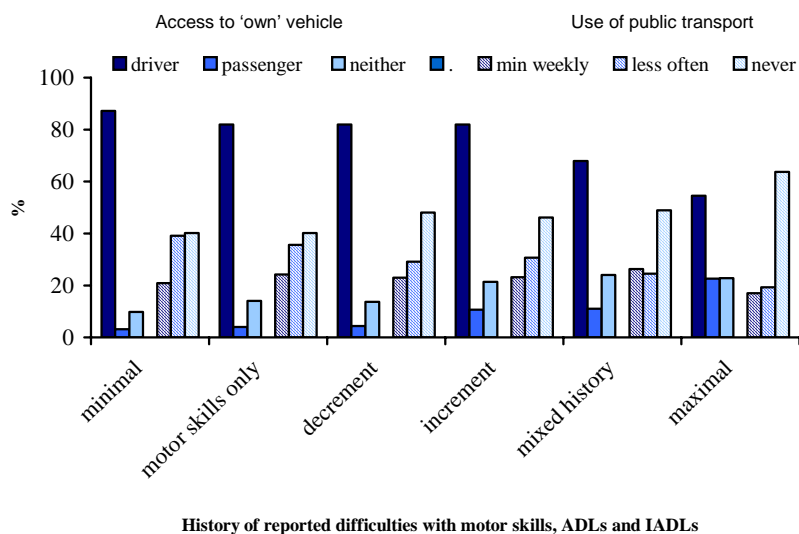
The factors that attenuated the parameters for history of physical support with respect to negative support scores were primarily depression and incontinence and, for men, poor vision. For positive support scores, no individual health item was significantly associated with the wave 3 score in the full model but, nevertheless, joint addition of all the health items did attenuate the associations between history of functioning and positive support score.

Transport

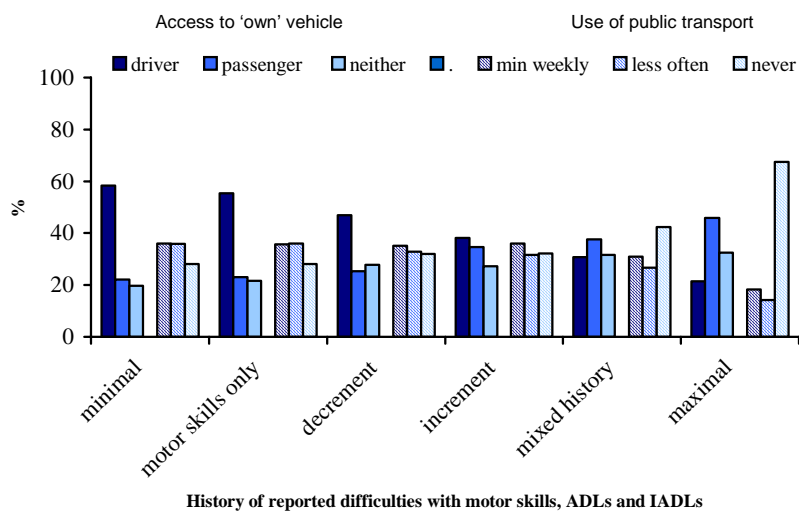
Figures 3.5a and b show the age-standardised weighted percentages of respondents who, at wave 3, had access to a vehicle whenever they wanted and whether this was as driver or passenger. The figure also shows their frequency of use of public transport, according to history of reported physical function difficulties. Men were far more likely than women to be drivers of a household vehicle and less likely to use public transport at least once a week. Not surprisingly, men who reported ADL and/or IADL difficulties in 2002–03 and four years later were less likely to be drivers than other groups but they did not compensate for this by being more likely to use public transport frequently, presumably because of difficulties of using it. There was less of a gradation for women than for men in use of public transport by status with respect to car access. However, as for men, those in the maximal difficulty category also did not compensate for being non-drivers by being notably more likely to use public transport. Indeed, for both men and women, those in category 6 were most likely to be never-users of public transport, over half never using it.

Figure 3.5. Percentage reporting access to a car as driver or passenger and frequency of use of public transport at wave 3, by sex and history of reported difficulties with motor skills, ADLs and IADLs

a) Men



b) Women



Note: Weighted age-standardised percentages.

Most men and women had access to a vehicle at both waves (84% and 71%, respectively). Whereas around 4% of men in physical functioning categories 1–4 only had access at wave 1, 8% of those with mixed history and 12% of those with maximal history had stopped having access.⁷ For women the equivalent figures were 8 to 10% and 14%. At wave 1 they were not asked if

⁷ This percentage is based on everyone in the group, not just those who had access in wave 1.

they drove the car themselves so change in this could not be assessed. Nevertheless loss of access in itself is likely to make participation in various activities more difficult.

Quality of life and history of difficulties in physical functioning

The CASP-19 instrument contains four dimensions, which give it its name: Control, Autonomy, Self-realisation and Pleasure (Hyde et al., 2003). In the context of independence it was considered appropriate to look separately at the score for a combined control and autonomy scale. This uses six items as listed below; the items are coded such that the scale has a range of 0 to 18 with higher score meaning greater sense of autonomy and control. This scale has been shown to reflect a natural grouping of answers when a method known as confirmatory factor analysis was used (Wiggins et al., 2007).

Box 3.4. Items in control and autonomy scale from CASP-19

Each item has four options: often, sometimes, not often, never

Shortage of money stops me from doing what I really want to do

My age prevents me from doing the things I would like to do

I feel that what happens to me is out of my control

I feel left out of things

I can do the things I want to do

I feel that I can please myself what I do

Scores at wave 3 were initially regressed on wave 1 scores, age, marital status and the functioning category. Table 3A.17 shows that people with minimal history of difficulties with physical functioning had the best scores and even those who experienced difficulties with motor skills but not with ADLs or IADLs had slightly worse scores than them. People with difficulties with one of these at wave 3 were worse off than those without and the group with maximal difficulty (category 6) scored worst of all. For women the difference was nearly 3 points compared to the overall median score of 12. Adjustment for health and socio-economic factors reduced the differences across groups but did not remove them and all the confidence intervals for the differences still excluded one (meaning that there was only a small chance that this difference arose from random factors to do with sample selection).

At a cross-sectional level the wave 1 CASP scores were correlated with several factors (not shown). Negative associations ($p < 0.05$) were found with: marital status (being formerly married for men or divorced or separated for women); vision and hearing problems; increasing severity of pain; fair to very bad general health; and decreasing wealth. In addition women with some urinary incontinence also had a lower mean control and autonomy score than those without. For education there was an anomalous finding of higher sense of control among women who had low-level or foreign qualifications, but this only appeared after including health factors and wealth in the model so it suggests that these women were doing well given that they were more likely to be disadvantaged in other respects. Those with a difficulty with ADL or IADL

at wave 1 had lower mean scores already but also the minimal difficulty group already had some advantage over those who went on to have a history of difficulties with motor skills only (men mean score 0.64 lower and women 0.45 lower than those with minimal history) and over those who did not report ADL or IADL difficulty at wave 1 but did at wave 3 (men 0.68 difference, women 0.66).

For wave 3 scores, depression was the health factor which attenuated the scores most when added in (i.e. depression was negatively associated with the CASP score and positively associated with more history of functioning difficulties) but poor vision also played a part. Lesser wealth was associated with worse score in the final model but was not a confounder for the association between history of physical functioning and the control and autonomy score.

3.5 Sources of help for those with physical functioning difficulties

In wave 3 new questions were introduced that separated out the sources of help for different types of difficulties. Six types of difficulties were involved:

- Moving around the house (walking across the room, getting in and out of bed, or using the toilet)⁸
- Dressing and bathing
- Eating or preparing a hot meal
- Shopping or doing work around the house or garden
- Telephoning or managing money
- Taking medication

These analyses refer to people aged 55 and over at the third wave, and exclude the new, younger, recruits at wave 3 who were least likely to have these difficulties.

Overall a quarter of men and nearly a third of women fell into at least one of these categories (see Table 3A.18). The proportions of those reporting difficulty were higher at older ages and prevalence among those aged 85 or over was markedly greater than among people aged 75–84 years old. The most common problems were with dressing or washing (18% of men and 20% of women) and shopping or doing work around the house (15% of men and 22% of women). Within age groups, differences by sex were not marked except that women were more likely than men to report difficulties with shopping or doing work around the house or garden.

Respondents who reported difficulty with any of the motor skills, ADLs or IADLs were asked: 'Thinking about the activities that you have problems

⁸ In the interview climbing several flights of stairs was included in this group but for this report it was decided to omit this and focus on the activities that were considered to be more potentially limiting, i.e. the ADLs and IADLs.

with, does anyone ever help with these activities (including your partner or others in the household)?' Those who responded affirmatively to this general question were asked further about sources of help for whichever set(s) of difficulties applied to them. Summing up the sources of help it can be seen that three out of five men and three out of four women with one of the difficulties listed in Table 3A.18 had help with at least one task. For men there was a clear age gradient: greater likelihood of help with greater age. For women the gradient was not so clear but the relatively small group of people aged 85 and over was most likely to receive help.⁹

Respondents were given a list of 18 sources of help. Eleven of these referred to relatives and one to friends or neighbours. Possible sources of help involving a statutory authority were home help or care arranged by social services or a nurse. Additional formal sources were care by a professional from a voluntary organisation and home help or care arranged privately. There was also an 'other' category.

These sources of help have been divided into formal and informal and, within informal, into spouse, children or other relatives. Friends and neighbours are included in the total for informal help. The formal group was not further subdivided because of small numbers. The 'other' group was omitted from both the formal and informal subtotals but was included in calculations of percentages receiving any help or no help. For the more common sets of difficulties receipt of help is shown subdivided by age.

Over half of those who had difficulty with dressing or bathing did not report help with those functions (Table 3A.20) and just over a third of those who reported difficulties with moving round the house (Table 3A.19). Over a quarter of men and one sixth of women did not report help with shopping or work around the house and garden (Table 3A.21). For the less common difficulties that mainly affected the oldest people, involving food or telephoning/money, a fifth to a quarter of men and women experiencing the respective difficulties did not receive help (Table 3A.22) and less than one in five of the small number of women needing help with medication did not receive help (but as taking medication inappropriately can be damaging, even this figure is worrying).

Except for women aged 75 years and over, a spouse or partner was the most common source of help (Tables 3A.20–22). These older women were predominantly widowed so many did not have that source of help available. For men the exception to spouses being the most common source of help is found among those aged 85 or more who had difficulty with shopping or work around the house and garden. Again, this age group was most likely to be without a partner.

Around a fifth of men and nearly a third of women who had difficulties with shopping or work around the house or garden or who had difficulties moving round the house received help from children but only 5% of men and 12% of women who had difficulties with dressing and bathing received such help

⁹ This is the group for whom attrition was above average and it is plausible that those who remained in the sample were those who needed less help or, if they needed it, were more likely to receive it.

(Tables 3A.19–21). This suggests that children may have been less likely to help with more intimate tasks but, as the first group of activities included both intimate and less intimate activities, we cannot be sure of this. Children were prominent as sources of help for men and women aged 85 years and over who had difficulties with various functions (although the frequency and form of help is not known). Women and men aged 85 and over who had difficulties with shopping or work around the house and garden were most likely to receive help from children, as were the small numbers of women who had difficulties with telephoning or managing money but these were mostly elderly women who were likely to be widows. Small numbers prohibited separating out whether the older people receiving help from children for tasks in the home were more likely to be living with children. In general women were more likely to receive help from children than men even in the younger groups where help from spouse was common for women. Further analyses, not done here, could link this to frequency of contact with children.

Formal sources of help were most common among the older groups and particularly among the oldest women (Tables 3A.19–22). For example, only 3% of the youngest women, aged 54–64, who had difficulties with bathing or dressing were receiving help from formal sources but 31% of women aged 85 and over who were in this position received such help (Table 3A.20). Although smaller percentages of men than of women received formal help, the oldest ones were more likely to use this source than younger ones, at least for the activities where numbers allowed age comparisons. They did not get involved in helping with telephoning or managing money even though half or more of those who had these difficulties were aged 75 or over.

3.6 Transport use at wave 3

Some aspects of transport use have already been mentioned in the context of difficulties in physical function. In this section the analyses extend to other characteristics that may be associated with transport use. In these cross-sectional analyses, it should be borne in mind that those who are excluded from transport on account of poverty or illness are probably under-represented because of attrition to the study.

Five types of transport are included: driving a vehicle to which the respondent has access whenever needed (shortened to driver of ‘own’ car),¹⁰ public transport, a lift from someone outside the household, taxi, and community transport (either door-to-door local minibus or transport provided by a hospital or day centre). In general, public transport is used more often than lifts, lifts more often than taxis, and taxis more often than community public transport. Frequency of use of the car or van to which respondents have access was not asked.

For each type of transport other than use of ‘own’ vehicle a category of ‘more frequent’ use was defined differently. For public transport, ‘more frequent’

¹⁰ The vehicle may not be owned by the respondent or their partner but it is presumed that, because the question refers to access whenever wanted, the vehicle will normally belong to the household.

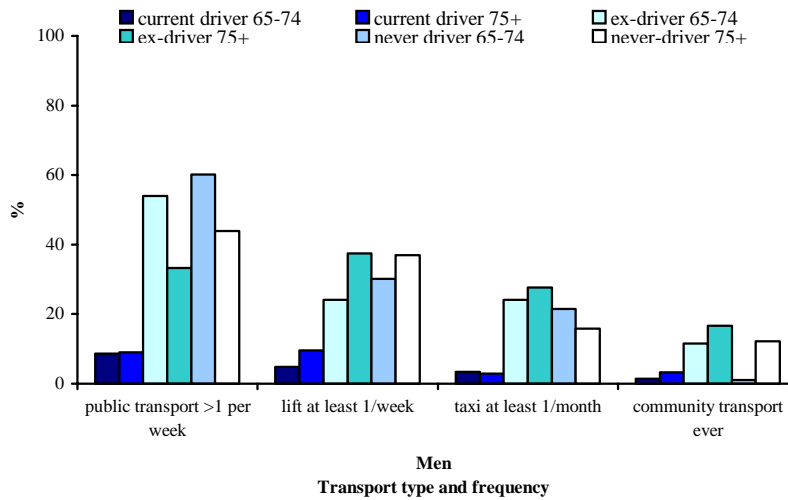
was defined as more than once a week (about 17% of respondents aged 65 and over and 35% of public transport users); for lifts ‘more frequent’ refers to those taking a lift at least once a week (about 22% of respondents and 44% of users); for taxis the division was made at once a month (about 11% of respondents and 31% of users); and so few used community transport that all users were included (8% of respondents).

The analysis was carried out for two age groups: 65–74-year-olds and those aged 75 years and above. This was done in the expectation that patterns of transport use could be noticeably different between the two groups. As can be seen in Figure 3.6a and b, current drivers were less likely to use the other means of transport ‘frequently’. Among men aged 65–74 years old use of public transport or a lift relatively ‘frequently’ was successively more likely for ex-drivers and never-drivers than for current drivers. Among older men, ex-drivers and never-drivers were equally likely to use lifts. In general never-drivers were less likely to use taxis than ex-drivers. For community transport there was no clear pattern. Age differences were greatest with respect to use of public transport by male non-drivers. The patterns for women were similar in many ways but the age differences in public transport use were smaller and younger ex-drivers were less likely to use taxis at least once a month than either never-drivers in the same age group or older ex-drivers.

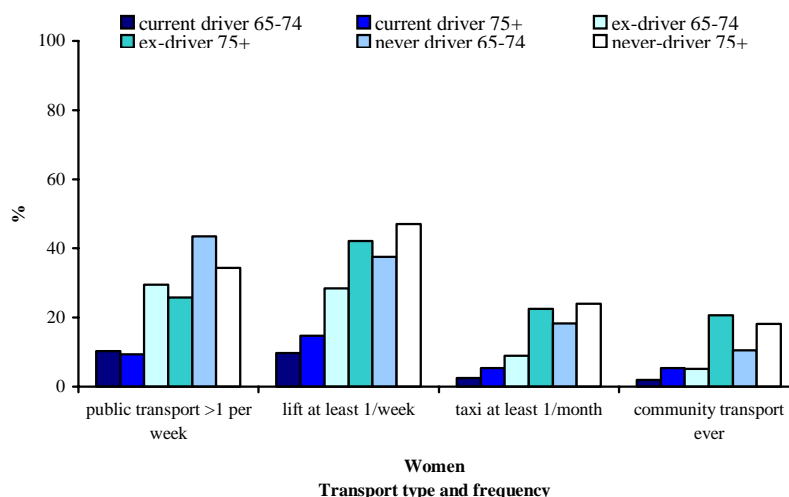
These results do not take into account health which could account for many of the contrasts and there is no information on how long ago respondents stopped driving.

Figure 3.6. Use of transport at wave 3 by sex, age and whether respondent has ever been a driver: people aged 65 years and over

a) Men



b) Women



Logistic regression models were run to learn more about the characteristics of those who drove their ‘own’ car or used the other means of transport with the frequencies listed above. The factors included in these models were of the same kind as those used in models in Section 3.5 but refer to the situation at wave 3 (Tables 3A.23 and 3A.24).

The first model looks at the relative odds of driving one’s ‘own’ vehicle compared to the odds of not doing this (i.e. either being a passenger or not having access to a vehicle). Women were much less likely to be driving their ‘own’ vehicle than men (OR 0.15, 95% CI 0.13, 0.19) and driving decreased with age, the drop-off with increasing age becoming steeper at older ages.¹¹ People who lived with someone other than their spouse were also less likely to drive (possibly because they were living with family or fitter siblings who did the driving if there was a vehicle accessible). Several health factors appeared to reduce the chance of being a driver: having poor vision, often troubled by moderate or severe pain, fair to poor general health. Also those who reported difficulties with ADLs or IADLs at the beginning and end of the four-year period covered in this chapter had only about half the odds of driving a car compared with those who had a minimal history, even after allowing for all the other factors. There were steep gradients with wealth and education, suggesting that material resources were important; education may be acting as a proxy for the kind of environment in which people grew up such that some groups did not expect to centre their activities round use of a car.

It was hypothesised that use of other means of transport would be influenced by whether the person was a driver or had access to a vehicle whenever they wanted. Also, the use of one form of transport may be interlinked with the use of another. The models for use of public transport, taking lifts and use of a taxi all included terms for being a driver and the use of the other means considered here. The following analyses focus little on use of community transport as it

¹¹ A quadratic age term fitted better than just a linear one.

was low and, we suggest, might be more affected by variability in availability (not measured in ELSA) than the other means.

An immediate striking feature of the models for use of public transport, a lift or a taxi is that using one was associated with greater use of another. Also, as seen in Figure 3.6, current drivers of their 'own' vehicle were much less likely to use these forms than people who were not. We tested for interactions between sex and being a driver, thinking that driving is a male culture in older generations. For use of public transport and lifts there were interactions ($p = 0.018$ and 0.041 , respectively), such that being a passenger in one's 'own' car boosted the chances of using public transport or a lift more for men than women and not having access to a car also boosted the chances of taking a lift more for men than for women. The immediate thought is that this reflects living circumstances but this finding has already taken account of whether the respondent lived with a partner, with someone else or lived alone. There is not space in this chapter to pursue the reason for this difference between men and women but it may connect to contact with children and provision of lifts from them (remembering that women were more likely to be helped by children except for the very elderly with respect to shopping and work around the house).

Women were less likely than men to use public transport frequently if they were passengers in their 'own' car but they were more likely than men to use lifts or taxis if they were drivers or without access to a car. Use of public transport decreased with age with the decline getting steeper at older ages but neither 'frequent' taxi nor lift usage was correlated with age in these models that took into account health and socio-economic characteristics as well.

People were less likely to use public transport frequently if they had moderate or severe pain, experienced urinary incontinence or reported difficulties with IADLs. On the other hand those in all four wealth quintiles other than the richest were more likely to use this form of transport frequently than the richest. For education there was an unexpected result of those with A-level or above but not a degree being least likely to use public transport, given their health and wealth and car availability. The only health factor associated with a lift was greater use by those reporting IADL difficulties only; all the groups reporting any type of difficulty in physical functioning were about twice as likely to use a taxi as those with at most one motor skill difficulty but there was relatively little variation across these groups (again those reporting IADL difficulties only being marginally the most likely to use a taxi). Some socio-economic patterns were unexpected with the poorest being most likely to use taxis once other factors were taken into account and only the third and fourth wealth quintiles having higher odds of using a lift than the richest. However, it should be remembered that the frequency of taxi use was at least once a month so the expense may not have been very large over the year as a whole.

3.7 Conclusions

Impaired physical functioning can have a major impact on people's lives. Efforts to minimise that impact have implications for the official and informal resources devoted to facilitating participation in society and also for attitudes

about ageing. The two main themes of this chapter are non-medical predictors of onset of impairments and participation in society when one has those impairments. The UK government set itself a number of targets in the 2008 pre-budget spending review, known as Public Service Agreements (PSA). The topic of this chapter has relevance to PSA 15 (HM Government, 2007a), which prioritises '[tackling] barriers which are due to gender, disability, or age that limit people's choice and control over their lives' (p. 3).

Section 3.3, on non-medical predictors of onset of impairments, shows that access to material resources through personal wealth or neighbourhood assets has a marked association, particularly with the onset of ADLs and IADLs. In Chapter 2 it was also shown that people in the lowest wealth quintile were most likely to have onset of work disability between 2004 and 2006. This does not prove cause, since there may be early life circumstances that facilitate both accumulation of wealth and prevention of difficulties. Information from the life history interview that took place after wave 3 may help to cast light on this. Nonetheless, one possibility is that preventing progression to the more limiting impairments requires the provision of material resources, which would be consistent with the PSA 17 priority of tackling pensioner poverty (HM Government, 2007b).

Social capital was associated with onset of difficulties but this association disappeared when adjusted for material resources and levels of neighbourhood deprivation. Further research could look into whether social capital may be changed by the onset of difficulties even if poor social capital does not precede the onset of difficulties. As shown in Chapter 4 of this report, housing assets predominate in wealth; national statistics show that a third of older people live in hazardous housing and this may be part of the explanation for onset of difficulties. This is one of the reasons cited by government for its strategy for choice in housing to enable people to live in circumstances that help them to remain independent (Communities and Local Government, 2008). A possible explanation for the onset of difficulties being more common in deprived neighbourhoods may be a shortage of facilities that presents both physical and psychological barriers to walking and keeping fit and strong. If so, there could be benefits from ensuring that older people are part of safe, supportive and sustainable communities. The idea of 'lifetime neighbourhoods' may be one way to tackle this issue (Communities and Local Government, 2008) and to ensure that older people are satisfied not only with their homes but with their neighbourhoods, as set out in PSA 17 (HM Government, 2007b).

In contrast to wealth, having good relationships with friends and family was more strongly associated with the onset of difficulties with motor skills than with ADLs or IADLs. One possible explanation for this is that psychological support may be important in helping people to cope and find ways of maximising their potential as well as in preventing or delaying the first difficulties that arise.

In the second part of the chapter the reality of participation in various aspects of society was examined, comparing groups with differing histories of difficulties with motor skills, activities of daily living or instrumental activities of daily living. It is clear that a history of physical impairment is accompanied by a greater chance of a history of self-perceived poor general health. Policies

to prevent social exclusion and unnecessary restrictions on freedom of choice need to allow for the additional barriers people may face from poor general health or cognitive impairments. In this chapter we have not analysed cognitive impairments but further analyses should explore this as the functions, particularly IADLs, involve some cognitive as well as physical function. It has been shown that cognitive performance predicts changes in physical performance (Lee et al., 2005) and that some physical performance (e.g. gait speed) predicts changes in cognitive performance (Inzitari et al., 2007). The combination may be more directly implicated in the maintenance of independence.

This chapter reminds us that many older people are engaged in leisure activities. There are other indicators of independence that were not explored here. Voluntary activity was covered briefly in wave 1 but fuller questions at later waves should enable the associations between physical functioning and active engagement in society to be explored. Another possibility is to look at membership, especially active membership, of organisations.

There was a general association between history of participating in various leisure activities and history of difficulties with physical functioning. Those with difficulties in ADLs or IADLs at both the beginning and end of the follow-up period were least likely to take part in activities. Nevertheless the categorisation of history of functioning did not discriminate as well as anticipated. For example those who reported difficulties with ADLs or IADLs at wave 1 and not four years later did not on the whole show the expected pattern of change in participation. There were a few indications that men who had a clear increment in impairment (category 4) were more likely than other groups to report hobbies, holidays abroad or outings at the earlier period and not the later one (after taking account of their participation at wave 1).

Multivariate analysis showed that other health problems experienced at wave 1, notably depressive symptoms, poor vision and poor general health, accounted for some of the differentials in participation by history of physical functioning that were seen initially. Wealth and educational attainment did not further attenuate relationships but they did play a part in that they were strongly correlated with participation in some of the activities at wave 1 and wave 3 activity was influenced by wave 1 activity. Those without qualifications were less likely to take part at either wave 1 or wave 3. It seems likely that a lifetime experience will influence what happens in older ages when physical impairment develops. Age by itself was not predictive of having a hobby, having a holiday in the UK or eating out at wave 1 but was predictive of stopping participation during the four-year period.

Although the role of physical functioning in leisure activities at wave 3 was less immediate than the initial descriptions suggested, there were still some associations after adjusting for socio-demographic information and health. There were still statistically significant associations between history of physical functioning and having a hobby for both men and women, with reading a paper and holidaying abroad for women and with holidaying in the UK for men. Those who had a maximal history of difficulties were less likely than those with a minimal difficulty to read a paper (women), have a hobby (men) or take a holiday in the UK (men); those with a mixed history were less

likely to take a holiday abroad (women) and those who experienced ADL and/or IADL difficulty at wave 3 but not wave 1 were less likely to have a hobby (men), take a holiday in the UK (men) or have a holiday abroad (men and women). There is a great variety of hobbies and we do not know what specific hobbies or pastimes were followed by our respondents but this finding suggests that offering some options that are easier to accomplish in the face of difficulties may be worthwhile as well as further research into the barriers against taking holidays.

Even if physical impairment per se had a lesser role than expected, health appeared to influence activities. We acknowledge that not everyone who is independent would choose to undertake the activities reported in this chapter but there does seem to be scope for improvement in which the community, family and friends have a role. This is another area in which moving towards lifetime neighbourhoods may help (Harding, 2007).

In terms of social relationships the likelihood of being in touch with friends at least three times a week was not affected by the history of self-reported physical functioning. There was some evidence that those with ADL and/or IADL difficulties had worse relationships with their social contacts than those without but the differences were small compared with the mean overall score. It seems likely that relationships were not strongly affected by this history – although there may have been differences in the balance between spouse, children, other family and friends that were not explored here. The findings in both parts of this chapter suggest that the influence of social relationships on both functioning and participation is complex but worthy of further exploration.

Independence is about control and autonomy. For those with ADL and/or IADL difficulties both in 2002–03 and four years later, the mean combined control and autonomy score had dropped significantly by wave 3 compared to the group which did not experience any difficulties. Even having difficulties with motor skills showed a slight disadvantage in autonomy score. On the whole it was people with difficulties with ADLs and IADLs who appeared less independent (even if this was due to comorbidity) but lower CASP scores for those who only experienced difficulties with motor skills suggests they too were vulnerable.

For the people in the ELSA cohort informal help (especially from a spouse) predominated over formal help with specific sets of ADLs or IADLs but those aged 85 and over were most likely to receive formal help for a given set, consistent with greater proportions of widows and widowers and, possibly, greater frailty. Women were more likely to be helped by their children than men, perhaps reflecting closer contact generally (not explored here) but the oldest old were more likely to be helped by children than younger people, perhaps because there was not a spouse who could provide help (either the person was widowed or the spouse also had impairments). Children were more likely to give help for shopping and work around the house than for bathing and dressing, perhaps because the latter is more intimate and requires daily attendance in the home. Relatives other than spouse or children were not frequently mentioned as sources of help. As more information accumulates on this topic in ELSA it should become possible to assess sources of help in

relation to the respondent's personal circumstances other than their sex and age. It is beyond the scope of this chapter to explore this and further research is needed into the links between sources and forms of help, feelings of control and autonomy and subsequent developments in physical functioning. Government strategy is to put people more in control and give choices; there are schemes in place for giving control over formal care, e.g. by providing individuals with budgets to purchase the care of their choice (Department of Health, 2005). Less work has been done on how to maximise control over informal care while making that care rewarding for the carers too. At the time of writing the government strategy on caring was under review.

In relation to transport use and history of physical functioning the lower likelihood of frequent public transport use and lower chances of being a driver of one's 'own' vehicle if experiencing a history of ADL or IADL difficulties suggests that these people are constrained in their outings unless they can afford taxis or other voluntary services are made more conveniently available.

The second set of analyses on transport (Section 3.6) shows that drivers are much less likely to use other forms of transport than passengers in their 'own' vehicles or those without access to their 'own' vehicle. Also, people who use one form of alternative transport are more likely to use another. Wealth was strongly positively associated with driving and fairly strongly negatively associated with use of other forms of transport, with the exception that the least wealthy were no more likely to take lifts than the most wealthy, possibly because friends or family did not have cars either. Having least wealth increased the likelihood of using a taxi at least once a month. At first sight this seems counter-intuitive but it would be consistent with lack of alternatives and it is noteworthy that frequency of taxi use tended to be low.

Various health problems and physical impairment appeared, not surprisingly, to lower the chances of using public transport frequently. Clearly, free local public transport is insufficient to enable or encourage all non-drivers to use public transport; low-level buses may help but the information in ELSA was insufficiently detailed to assess this. The frequency and availability of services are also likely to play a role,¹² as may the availability of toilets and other facilities at the destination. Although lifts in private cars could be a cheap alternative for people, it is noticeable that women were more likely to take lifts at least once a week than men; as with help received this may reflect more contact with family and the reasons for it need further exploration. There could also be motivational differences. Being a non-driver boosted the likelihood in men of taking a lift more than it did in women, perhaps indicating that only when 'needs must' did they either seek or respond to such opportunities.

One weakness of the study is that in two years, physical functioning can improve as well as decline and some transitions will be missed (Hardy and Gill, 2004) so individual histories may be more mixed than we were able to capture. Despite this, our categorisation showed a clear trend towards undertaking activities at both periods for men, and women who reported difficulties with ADLs and IADLs in all three waves were most likely to give

¹² ELSA includes some questions on reasons for not using public transport often. These have not been analysed here due to lack of space.

negative answers to participation at both these times, suggesting that their experience of difficulty was truly more chronic than for other people.

This chapter has shown that the socio-economic and social environments are relevant to the onset of limitations in physical functioning, whether perceived or measured. The exact role of the social environment is still unclear. Rather than being a direct cause of change in physical functioning this environment may make it harder to cope with impairment; the impact of a deprived neighbourhood may be greater in those who already have some health and functioning problems than those without. These additional complexities have not been explored here but it is clear that people who have developed difficulties with activities of daily living (such as washing or dressing) or with instrumental activities of daily living (such as shopping or managing money) participate less in leisure activities than those without. They are also less likely to be car drivers and to use some other major forms of transport, which may indicate a barrier to the other activities. Having less wealth is in turn a barrier to transport use, as is being alone or without a partner, to a lesser extent. Whereas it is people with ADLs and IADLs who participate least, partly because of comorbidities and life histories, difficulties with mobility or motor skills can be a precursor to these and it is noteworthy that social relationships were more strongly associated with onset of the former or latter and feelings of control autonomy were also lowered once difficulties with motor skills had developed. In light of this, intervention as early as possible should be considered to facilitate independence, and steps to ensure individuals have access to both adequate material resources and supportive relationships are needed.

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Appendix 3A

Tables on physical functioning

Table 3A.1. Baseline gait speed and change in gait speed in relation to wealth – adjusted models

Respondents who completed the gait speed test in waves 1 and 3 (aged 60 and over)

	Wave 1 gait speed	Decline in gait speed, adjusted for wave 1 gait speed
Wealth split by quintiles	<u>Proportion of individuals (95% confidence intervals)</u>	
Wealthiest	0.000	0.000
4	-0.017 (-0.041, 0.007)	0.022 (0.000, 0.044)
3	-0.053 (-0.077, -0.029)	0.027 (0.005, 0.049)
2	-0.069 (-0.093, -0.044)	0.017 (0.000, 0.040)
Least wealthy	-0.088 (-0.115, -0.062)	0.058 (0.033, 0.083)
<i>Unweighted N</i>	<i>3,633</i>	<i>3,316</i>

Notes: Values reflect differences in gait speed in m/s. Splitting of wealth by quintiles was specific to sex and age in 5-year bands. Models were adjusted for age, sex, level of education, BMI category, cigarette smoking, alcohol consumption and self-reported health.

Table 3A.2. Baseline gait speed and change in gait speed in relation to neighbourhood deprivation – adjusted models

Respondents who completed the gait speed test in waves 1 and 3 (aged 60 and over)

	Wave 1 gait speed	Decline in gait speed, adjusted for wave 1 gait speed
IMD 2004 score split by quintiles	<u>Proportion of individuals (95% confidence intervals)</u>	
Least deprived	0.000	0.000
4	-0.020 (-0.039, -0.002)	-0.008 (0.012, -0.028)
3	-0.043 (-0.062, -0.024)	0.000 (0.020, -0.020)
2	-0.059 (-0.079, -0.039)	0.031 (0.053, 0.008)
Most deprived	-0.081 (-0.103, -0.060)	0.031 (0.056, 0.005)
<i>Unweighted N</i>	<i>5,383</i>	<i>3,334</i>

Notes: Values reflect differences in gait speed in m/s. Models were adjusted for age, sex, level of education, BMI category, cigarette smoking, alcohol consumption and self-reported health.

Table 3A.3. Incidence of impaired physical function by wave 3 in relation to wave 1 household wealth – unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Wealth split by quintiles				
Percentage of individuals (95% confidence intervals)				
Wealthiest	9.2 (7.2, 11.3)	7.7 (6.3, 9.2)	9.3 (7.8, 10.9)	35.0 (32.1, 37.8)
4	12.3 (9.9, 14.7)	10.5 (8.8, 12.1)	11.4 (9.7, 13.2)	37.5 (34.5, 40.4)
3	11.9 (9.6, 14.2)	11.3 (9.5, 13.0)	12.3 (9.5, 13.0)	42.7 (39.6, 45.9)
2	15.5 (12.7, 18.1)	13.5 (11.6, 15.5)	14.4 (12.4, 16.4)	43.6 (40.2, 46.9)
Least wealthy	19.3 (16.1, 22.5)	17.6 (15.3, 19.9)	20.4 (17.9, 22.9)	47.8 (44.1, 51.6)
<i>Unweighted N</i>	3,532	6,112	6,119	4,570

Notes: ADLs = activities of daily living; IADLs = instrumental activities of daily living. Slow gait speed = gait speed of <0.5m/s or being unable to complete the gait speed test.

Table 3A.4. Incidence of impaired physical function by wave 3 in relation to wave 1 neighbourhood deprivation – unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
IMD 2004 split by quintiles				
Percentage of individuals (95% confidence intervals)				
Least deprived	10.3 (8.4, 12.4)	7.6 (6.3, 8.9)	9.9 (8.5, 11.3)	34.7 (32.0, 37.3)
4	11.4 (9.3, 13.5)	11.5 (10.0, 13.1)	10.8 (9.3, 12.4)	39.8 (37.0, 42.6)
3	12.2 (9.8, 14.5)	10.8 (9.2, 12.5)	12.0 (10.3, 13.7)	43.5 (40.3, 46.6)
2	17.6 (14.5, 20.6)	13.8 (11.8, 15.8)	15.3 (13.2, 17.4)	43.4 (40.0, 46.9)
Most deprived	19.6 (15.8, 23.4)	17.1 (14.4, 19.8)	20.4 (17.5, 23.4)	47.8 (43.4, 52.5)
<i>Unweighted N</i>	3,553	6,501	6,503	4,621

Notes: See Table 3A.3.

Table 3A.5. Incidence of impaired physical function by wave 3 in relation to neighbourhood social capital– unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Neighbourhood social capital split by quintiles				
Percentage of individuals (95% confidence intervals)				
Highest	12.1 (10.1, 14.0)	12.4 (9.8, 15.0)	13.2 (11.2, 15.2)	40.0 (36.6, 43.4)
2	8.0 (6.4, 9.6)	11.8 (9.3, 14.3)	10.0 (8.3, 11.8)	36.2 (32.9, 39.5)
3	9.4 (7.8, 11.0)	12.0 (9.6, 14.3)	10.8 (9.1, 12.5)	40.0 (36.8, 43.1)
4	12.2 (10.3, 14.0)	11.8 (9.2, 14.4)	11.8 (10.0, 13.6)	41.6 (38.3, 44.9)
Lowest	12.9 (11.0, 14.9)	14.6 (11.7, 17.5)	14.1 (12.1, 16.1)	41.4 (37.9, 44.9)
<i>Unweighted N</i>	3,164	5,844	5,881	4,171

Notes: See Table 3A.3.

Table 3A.6. Number and percentage of respondents reporting different levels of relationship quality, by relationship type and sex

Respondents who returned self-completion questionnaire in wave 1 and responded to questions on functioning in waves 1–3

Relationship quality	Partner		Children	
	Men	Women	Men	Women
	<u>Number (percentage of respondents)</u>			
Best	295 (6.6)	402 (7.4)	395 (9.0)	707 (13.2)
2	710 (15.9)	455 (8.4)	457 (10.4)	750 (14.0)
3	1,338 (29.9)	1,027 (19.0)	1,036 (23.5)	1,321 (24.7)
4	686 (15.3)	709 (13.1)	844 (19.1)	953 (17.8)
Worst	543 (12.1)	824 (15.3)	1,039 (23.6)	966 (18.0)
None	901 (20.1)	1,986 (36.8)	640 (14.5)	660 (12.3)
Unweighted N	4,473	5,403	4,411	5,357

Relationship quality	Family		Friends	
	Men	Women	Men	Women
	<u>Number (percentage of respondents)</u>			
Best	473 (11.3)	921 (18.3)	239 (5.7)	682 (13.5)
2	738 (17.7)	992 (19.7)	618 (14.6)	1,237 (24.5)
3	753 (18.0)	902 (17.9)	947 (22.4)	1,196 (23.7)
4	697 (16.7)	745 (14.8)	974 (23.0)	922 (18.3)
Worst	1,090 (26.1)	1,075 (21.4)	1,149 (27.2)	770 (15.3)
None	431 (10.3)	392 (7.8)	305 (7.2)	239 (4.7)
Unweighted N	4,182	5,027	4,232	5,046

Note: Percentages may not sum to 100 because of rounding.

Table 3A.7. Incident impaired physical function by wave 3 in relation to quality of relationship with partner – unadjusted models

Respondents who answered questions on functioning in waves 1–3

Quality of relationship with partner	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
	Percentage of individuals (95% confidence intervals)			
Best	11.0 (6.8, 15.1)	8.0 (5.4, 10.6)	9.1 (6.4, 11.8)	33.2 (28.0, 38.4)
2	6.6 (4.2, 9.0)	9.3 (7.3, 11.4)	9.5 (7.5, 11.6)	34.3 (30.5, 38.1)
3	8.0 (6.1, 9.9)	8.7 (7.3, 10.1)	9.4 (8.0, 10.8)	36.4 (33.7, 39.2)
4	12.4 (9.4, 15.5)	10.4 (8.4, 12.4)	8.6 (6.8, 10.5)	43.2 (39.4, 47.0)
Worst	12.0 (8.8, 15.3)	11.5 (9.4, 13.6)	13.2 (11.0, 15.5)	42.1 (38.0, 46.1)
No partner	20.0 (17.6, 22.3)	16.4 (14.5, 18.3)	20.0 (17.9, 21.9)	48.3 (45.3, 51.4)
Unweighted N	3,335	6,062	6,099	4,321

Notes: See Table 3A.3.

Table 3A.8. Incident impaired physical function by wave 3 in relation to quality of relationship with children – unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Percentage of individuals (95% confidence intervals)				
Quality of relationship with children				
Best	14.4 (11.0, 17.9)	11.5 (8.9, 14.1)	13.3 (10.6, 16.0)	38.5 (33.9, 43.1)
2	13.9 (10.7, 17.0)	12.1 (9.7, 14.4)	12.6 (10.2, 15.1)	39.4 (35.2, 43.6)
3	9.3 (7.4, 11.3)	10.9 (9.2, 12.5)	11.9 (10.2, 13.6)	39.3 (36.3, 42.3)
4	11.7 (9.1, 14.2)	9.9 (8.2, 11.6)	10.2 (8.5, 11.9)	40.3 (37.0, 43.5)
Worst	13.3 (10.4, 16.1)	10.0 (8.3, 11.6)	11.9 (10.1, 13.7)	42.3 (39.0, 45.6)
No children	18.8 (15.0, 22.7)	14.7 (12.2, 17.1)	15.9 (13.4, 18.5)	43.0 (38.8, 47.2)
Unweighted N	3,289	6,010	6,050	4,283

Notes: See Table 3A.3.

Table 3A.9. Incident impaired physical function by wave 3 in relation to quality of relationship with family – unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Percentage of individuals (95% confidence intervals)				
Quality of relationship with family				
Best	16.8 (13.5, 20.1)	11.8 (9.5, 14.0)	14.9 (12.5, 17.4)	40.7 (36.7, 44.7)
2	10.3 (7.8, 12.7)	10.6 (8.8, 12.4)	12.0 (10.2, 14.0)	40.0 (36.7, 43.4)
3	11.0 (8.4, 13.6)	8.7 (7.0, 10.3)	9.1 (7.5, 10.8)	38.8 (35.5, 42.1)
4	12.3 (9.4, 15.2)	10.7 (8.7, 12.7)	10.2 (8.3, 12.1)	39.1 (35.3, 42.8)
Worst	12.4 (9.8, 14.9)	10.8 (9.1, 12.5)	12.4 (10.7, 14.2)	39.7 (36.5, 42.9)
No family	14.2 (10.3, 18.2)	16.9 (13.3, 20.4)	14.9 (11.5, 18.3)	44.8 (39.2, 50.4)
Unweighted N	3,047	5,717	5,730	4,066

Notes: See Table 3A.3.

Table 3A.10. Incident impaired physical function by wave 3 in relation to quality of relationship with friends – unadjusted models

Respondents who answered questions on functioning in waves 1–3

	Incident slow gait speed	Incident ADLs	Incident IADLs	Incident motor skills problems
Percentage of individuals (95% confidence intervals)				
Quality of relationship with friends				
Best	16.1 (12.0, 20.1)	12.6 (9.9, 15.3)	11.3 (8.6, 13.9)	37.8 (33.0, 42.6)
2	11.9 (9.4, 14.3)	10.1 (8.4, 11.8)	11.6 (9.7, 13.4)	38.4 (35.1, 41.6)
3	11.7 (9.4, 14.1)	10.2 (8.6, 11.7)	11.8 (10.1, 13.5)	39.4 (36.3, 42.4)
4	11.1 (8.7, 13.6)	10.4 (8.6, 12.1)	11.0 (9.2, 12.8)	41.5 (38.3, 44.5)
Worst	12.5 (9.7, 15.2)	11.3 (9.4, 13.1)	12.2 (10.3, 14.1)	39.4 (36.0, 42.7)
No friends	19.4 (13.4, 25.4)	17.7 (12.9, 22.4)	19.8 (14.7, 24.8)	52.4 (44.8, 60.0)
Unweighted N	3,058	5,752	5,762	4,107

Notes: See Table 3A.3.

Table 3A.11. Reasons for exclusion of wave 1 respondents from analysis by history of physical functioning

Core members at wave 1 who were not interviewed by proxy

	% died by end 2006	% not known if died ^a	% in wave 3 but incomplete ^b	% other loss ^c	% retained	N at wave 1	
Difficulties reported at wave 1 (2002–03)							
Maximum difficulty with one motor skill	4.0	2.1	3.4	23.9	66.6	6,273	Deleted: 3.4
Motor skill difficulties only	7.3	2.3	3.6	22.1	64.7	1,899	Deleted: 24.5
Difficulties with IADLs, not with ADLs	19.0	2.5	5.0	20.8	52.7	716	Deleted: 6.0
Difficulties with ADLs, not with IADLs	10.7	2.5	4.4	21.6	60.8	848	Deleted: 23.4
Difficulties with both ADLs and IADLs	20.6	2.3	6.1	21.2	49.8	1,483	Deleted: 15.4
Total ^d	8.2	2.2	4.0	22.9	62.7	11,233	Deleted: 24.4

Notes: ^aThese are people who did not consent to linkage to deaths information and did not take part in wave 3. ^bPeople for whom there is wave 3 information but they only took part by proxy or gave insufficient information to be included. ^cOther loss includes people who did not take part in wave 3 because of emigration, refusal, not traced. ^dThe total includes 14 who did not answer the question at wave 1.

Deleted: 23.7

Deleted: 15.4

Deleted: 26.4

Deleted: 6.6

Deleted: 24.5

Deleted: 6

Table 3A.12. Characteristics of sample members at wave 3 according to history of reports of difficulties with physical functioning

Respondents who answered questions on functioning in waves 1–3

Category	Classification according to which categories of difficulty were reported						All
	Minimal difficulty 1	Motor skills only 2	Decrement in difficulties 3	Increment in difficulties 4	Mixed history 5	Maximal difficulty 6	
Men							
Median age (IQR)	63 (58,71)	69 (61,79)	70 (63,77)	71 (62,79)	71 (63,79)	70 (61,79)	67 (60,74)
Legal marital status	%	%	%	%	%	%	%
Married/Civil partner	77.0	75.7	71.8	70.1	66.4	73.9	74.3
Widowed	7.8	10.8	12.7	11.9	16.3	15.4	10.4
Divorced/ Separated	8.6	7.5	11.0	10.6	9.4	9.9	9.1
Single	6.7	6.0	4.4	7.3	7.9	0.8	6.3
Living alone (%)	15.7	17.9	23.0	23.5	27.8	21.8	19.2
Women							
Median age (IQR)	63 (58,69)	66 (60,74)	69 (61,78)	72 (64,80)	74 (64,82)	72.5 (62, 81)	67 (60,76)
Legal marital status	%	%	%	%	%	%	%
Married/Civil partner	68.7	61.0	53.0	45.5	41.6	36.5	56.8
Widowed	17.8	23.5	31.5	38.8	37.8	43.0	27.4
Divorced/ Separated	9.8	10.8	11.4	10.8	14.7	13.6	11.2
Single	3.8	4.7	4.1	4.9	5.9	7.0	4.6
Living alone (%)	22.5	30.6	38.9	45.1	48.9	46.0	33.9
Unweighted N							
Men	1,575	434	363	334	305	121	3,132
Women	1,334	935	490	440	484	222	3,905

Notes: The categories are mutually exclusive. Category 1 covers those who never reported difficulty with more than one motor skill; Category 2 comprises people who reported difficulties with two or more motor skills at least once but never with ADLs or IADLs; Category 3 comprises people who did not report difficulties with IADL or ADL at wave 3 but had done for at least one of these categories at wave 1 and/or wave 2; Category 4 comprises people who did not report any difficulties with ADL or IADL at wave 1 but did at wave 3; Category 5 covers those with a mixed history but reporting difficulties with at least one ADL and/or IADL at wave 1 and at wave 3; Category 6 covers those who individually reported difficulties both with ADLs and IADLs at every wave. Percentages may not add up due to rounding.

Table 3A.13. Self-reported health and depressive symptoms at waves 1 and 3 according to history of reports of difficulties with physical functioning

Respondents who answered questions on functioning in waves 1–3

Category	Classification according to which categories of difficulty were reported						All
	Minimal difficulty	Motor skills only	Decrement in difficulties	Increment in difficulties	Mixed history	Maximal difficulty	
	1	2	3	4	5	6	
Men							
Self-reported health	%	%	%	%	%	%	%
Good/very good both waves	80.6	55.9	42.9	28.0	17.2	2.6	57.5
Good/very good wave 1 only	10.2	17.0	17.0	32.8	14.3	10.9	14.8
Good/very good wave 3 only	5.2	10.8	10.2	8.0	10.7	9.6	7.6
Fair/very bad both waves	4.1	16.3	29.9	31.1	57.8	76.8	20.1
CES-D depression scale	%	%	%	%	%	%	%
0–3 symptoms both waves	91.6	85.3	78.5	68.5	62.6	53.2	82.3
0–3 symptoms wave 1 only	3.9	5.4	6.9	14.6	11.1	15.6	6.8
0–3 symptoms wave 3 only	3.5	5.4	9.0	7.7	13.6	12.4	6.2
4–8 symptoms both waves	1.0	4.0	5.6	9.2	12.7	18.9	4.7
Self-reported vision problems ^a	13.8	17.0	20.7	31.2	31.4	41.7	19.9
Self-reported hearing problems ^b	40.8	56.0	58.1	57.7	66.9	64.2	50.4
Women							
Self-reported health	%	%	%	%	%	%	%
Good/very good both waves	87.1	63.8	44.2	33.9	19.4	6.3	57.9
Good/very good wave 1 only	5.0	16.3	17.7	30.4	19.1	10.3	14.0
Good/very good wave 3 only	5.3	9.0	14.1	5.8	12.6	7.1	8.3
Fair/very bad both waves	2.6	10.8	24.0	29.8	48.9	76.4	19.8
CES-D depression scale	%	%	%	%	%	%	%
0–3 symptoms both waves	87.7	76.6	67.7	64.6	49.5	31.4	72.5
0–3 symptoms wave 1 only	3.9	8.1	11.0	14.2	15.6	13.8	8.8
0–3 symptoms wave 3 only	6.2	10.8	11.2	7.7	16.1	15.3	9.7
4–8 symptoms both waves	2.2	4.4	10.0	13.5	18.8	39.5	8.9
Self-reported vision problems ^a	12.6	19.8	23.5	30.3	34.9	45.4	22.1
Self-reported hearing problems ^b	26.8	41.0	41.2	44.2	49.6	55.9	38.2
Unweighted N^c							
<i>Men</i>	1,572	434	362	334	303	121	3,126
<i>Women</i>	1,331	933	488	440	483	222	3,897

Notes: See next page.

Notes to Table 3A.13: See explanation of categories at Table 3A.13. Numbers may not add to 100 because of rounding. Percentages weighted by wave 3 longitudinal weight and age-standardised (standard = total sample of men and women).^aAt wave 3 reported that eyesight fair or poor or was registered blind or that eyesight for seeing at a distance fair or poor or that eyesight for seeing things up close fair or poor (eyesight when using lenses, if appropriate).^bAt wave 3 reported that hearing fair or poor or that difficult to follow a conversation if there is background noise (hearing when using an aid, if appropriate).^cBases for different items differ slightly owing to missing values.

Table 3A.14. Prevalence of participation in leisure activities by history of physical functioning: men

Respondents who answered questions on functioning in waves 1–3 and the questions on activities

Category	History of physical functioning						All
	Minimal difficulty	Motor skills only	Decrement in difficulties	Increment in difficulties	Mixed history	Maximal difficulty	
	1	2	3	4	5	6	
Reading paper	%	%	%	%	%	%	%
Waves 1 and 3	66.3	59.0	62.8	61.3	59.4	53.4	63.2
Wave 1 only	6.5	10.8	9.5	8.8	8.4	8.4	7.9
Wave 3 only	7.4	9.7	5.9	5.9	4.7	8.1	7.2
Neither	19.8	20.5	21.9	24.0	27.4	30.0	21.7
Hobby	%	%	%	%	%	%	%
Waves 1 and 3	78.0	71.2	67.3	64.6	61.6	38.9	71.3
Wave 1 only	8.4	11.8	11.9	16.2	12.5	17.3	10.8
Wave 3 only	6.8	6.2	6.2	7.2	8.3	10.2	7.0
Neither	6.8	10.7	14.5	12.0	17.6	33.6	10.9
Holiday in the UK^a	%	%	%	%	%	%	%
Waves 1 and 3	50.2	48.2	41.3	40.4	30.3	23.4	44.9
Wave 1 only	17.6	13.0	18.0	17.4	16.7	14.9	16.8
Wave 3 only	12.0	12.9	10.7	9.7	11.6	5.6	11.4
Neither	20.2	25.8	30.0	32.5	41.4	56.1	26.9
Holiday abroad^a	%	%	%	%	%	%	%
Waves 1 and 3	44.8	39.0	33.3	25.3	22.6	17.0	37.4
Wave 1 only	11.1	11.8	14.1	19.5	13.0	13.5	12.7
Wave 3 only	9.3	10.7	11.7	9.8	10.4	14.3	10.1
Neither	34.8	38.5	40.9	45.4	54.0	55.2	39.8
Having outing^a	%	%	%	%	%	%	%
Waves 1 and 3	63.0	53.2	52.5	46.3	34.6	26.8	54.5
Wave 1 only	16.3	17.4	19.2	23.6	20.7	20.8	18.2
Wave 3 only	7.6	8.6	8.8	8.9	13.9	14.9	8.9
Neither	13.1	20.7	19.5	21.2	30.8	37.6	18.4
Eating outside the home^b	%	%	%	%	%	%	%
Waves 1 and 3	50.0	47.6	37.8	45.7	26.9	19.6	44.6
Wave 1 only	16.6	16.3	21.6	17.3	16.3	25.4	17.5
Wave 3 only	9.2	9.8	10.6	7.3	12.4	11.8	9.6
Neither	24.2	26.3	30.1	29.7	44.4	43.1	28.3
<i>N unweighted</i>	1,353	364	298	276	243	100	2,634
<i>N eating out</i>	1,391	371	303	272	243	90	2,670

Notes: See Notes to Table 3A.15.

Table 3A.15. Prevalence of participation in leisure activities by history of physical functioning: women

Respondents who answered questions on functioning in waves 1–3 and the questions on activities

Category	History of physical functioning						All
	Minimal difficulty	Motor skills only	Decrement in difficulties	Increment in difficulties	Mixed history	Maximal difficulty	
	1	2	3	4	5	6	
Reading paper	%	%	%	%	%	%	%
Waves 1 and 3	59.2	61.9	54.3	56.7	47.5	44.2	57.0
Wave 1 only	11.9	7.9	12.5	8.7	14.2	15.0	11.1
Wave 3 only	8.1	7.3	7.4	5.2	9.7	5.3	7.5
Neither	20.8	22.9	25.8	29.4	28.6	35.4	24.4
Hobby	%	%	%	%	%	%	%
Waves 1 and 3	75.6	71.3	66.9	66.2	54.5	59.5	69.4
Wave 1 only	9.3	11.6	12.7	13.7	19.3	11.0	11.9
Wave 3 only	6.3	7.0	8.5	7.1	9.3	8.7	7.3
Neither	8.8	10.0	11.9	13.0	16.9	20.8	11.4
Holiday in the UK^a	%	%	%	%	%	%	%
Waves 1 and 3	49.6	45.7	41.4	42.2	34.9	27.9	44.2
Wave 1 only	17.0	17.2	15.1	16.1	20.9	15.1	17.1
Wave 3 only	11.0	12.7	12.8	14.3	13.5	10.8	12.2
Neither	22.4	24.4	30.6	27.4	30.7	46.2	26.5
Holiday abroad^a	%	%	%	%	%	%	%
Waves 1 and 3	43.5	37.6	29.5	31.0	21.7	12.6	35.2
Wave 1 only	13.5	13.9	12.9	17.8	14.0	9.2	13.8
Wave 3 only	9.3	10.8	13.0	7.3	9.0	10.1	9.9
Neither	33.7	37.7	44.5	43.9	55.3	68.2	41.1
Having outing^a	%	%	%	%	%	%	%
Waves 1 and 3	64.4	59.5	50.4	51.8	49.5	31.1	56.9
Wave 1 only	15.3	16.4	18.7	19.6	14.6	16.6	16.4
Wave 3 only	7.8	10.5	12.9	11.2	9.0	15.3	9.9
Neither	12.4	13.6	18.0	17.4	26.9	37.0	16.7
Eating outside the home^b	%	%	%	%	%	%	%
Waves 1 and 3	51.2	47.8	42.8	40.2	34.3	26.5	45.2
Wave 1 only	16.4	15.9	16.5	17.0	16.4	16.1	16.3
Wave 3 only	10.4	10.2	10.4	10.8	12.0	10.0	10.5
Neither	22.0	26.1	30.3	32.0	37.2	47.4	27.9
<i>N unweighted</i>	1,177	814	397	360	371	172	3,291
<i>N eating out</i>	1,195	817	411	357	371	168	3,319

Notes: Percentages may not add to 100 due to rounding. Percentages are age-standardised and weighted by wave 3 longitudinal weight – see note to Table 3A.13. ^aAt least once in the 12 months before interview. ^bAt least once a month.

Table 3A.16. Positive and negative aspects of social relationships, by history of reports of difficulties with physical functioning: percentage of maximum possible score at wave 3, by sex

Respondents who answered questions on functioning in waves 1–3 and those on relationships in wave 3

	Adjusted for age and marital status		Also adjusted for age, health and socio-economic factors ^a	
	Coefficient	Confidence interval	Coefficient	Confidence interval
Men (n=2,195)				
Positive aspects score^b				
Minimal difficulty	Reference group		Reference group	
Motor skills only	-0.82	-2.03, +0.40	-0.67	-1.90, +0.56
Decrement in difficulties	+0.01	-1.30, +1.31	+0.29	-1.09, +1.68
Increment in difficulties	+0.69	-0.85, +2.23	+0.91	-0.71, +2.54
Mixed history	-1.02	-2.53, +0.48	-0.43	-2.15, +1.30
Maximal difficulty	-3.27	-5.97, -0.58	-2.87	-5.82, +0.79
		P=0.08 ^c		P=0.17 ^c
Wave 1 score	+0.62	+0.58, +0.66	+0.61	+0.58, +0.65
		P<0.001		P<0.001
Negative aspects score^b				
Minimal difficulty	Reference group		Reference group	
Motor skills only	+2.49	+1.27, +3.70	+2.24	+0.97, +3.50
Decrement in difficulties	+1.68	+0.37, +2.99	+1.02	-0.34, +2.37
Increment in difficulties	+2.40	+0.94, +3.85	+1.68	+0.19, +3.17
Mixed history	+2.79	+1.14, +4.43	+1.42	-0.38, +3.21
Maximal difficulty	+4.54	+1.88, +7.19	+2.97	+0.16, +5.77
		P<0.001 ^c		P=0.007 ^c
Wave 1 score	+0.56	+0.52, +0.61	+0.55	+0.50, +0.60
		P<0.001		P<0.001
Women (n=2,663)				
Positive aspects score^b				
Minimal difficulty	Reference group		Reference group	
Motor skills only	-1.44	-2.35, -0.51	-1.22	-2.14, -0.29
Decrement in difficulties	-0.85	-2.13, +0.42	-0.42	-1.75, +0.92
Increment in difficulties	-2.12	-3.49, -0.75	-1.78	-3.18, -0.38
Mixed history	-3.09	-4.58, -1.60	-2.32	-3.95, -0.69
Maximal difficulty	-2.29	-4.71, +0.14	-1.08	-3.67, +1.52
		P<0.001 ^c		P=0.019 ^c
Wave 1 score	+0.62	+0.597, +0.671	+0.60	+0.55, +0.64
		P<0.001		P<0.001
Negative aspects score^b				
Minimal difficulty	Reference group		Reference group	
Motor skills only	+0.63	-0.28, +1.54	+0.24	-0.66, +1.16
Decrement in difficulties	-0.10	-1.38, +1.19	-0.77	-2.17, +0.62
Increment in difficulties	+2.02	+0.67, +3.38	+1.44	+0.03, +2.85
Mixed history	+1.92	+0.52, +3.31	+0.78	-0.82, +2.38
Maximal difficulty	+3.99	+1.88, +6.10	+2.30	-0.03, +4.64
		P<0.001 ^c		P<0.067 ^c
Wave 1 score	0.570	0.52, 0.61	0.56	0.52, 0.60
		P<0.001		P<0.001

Notes: See next page.

Notes to Table 3A.16: ^aAdjusted for the following additional wave 1 factors: marital status (partner in household, widowed, legally divorced or separated, single), general health, presence of pain, urinary incontinence, poor vision, poor hearing, presence of depression, educational qualification, wealth quintile. ^bScore range 0–100, higher meaning more positive or more negative, respectively. At wave 3, the median and inter-quartile range of positive scores for men were 81.2 (72.9, 89.6) and the equivalent negative scores were 39.6 (33.3, 47.9). For women, the median and inter-quartile range of positive scores were 85.4 (75.0, 93.8) and the equivalent negative scores were 39.6 (33.3, 47.9). ^cP-values for heterogeneity.

Table 3A.17. Score for control and autonomy component of the CASP-19 quality of life measure at wave 3, by history of reports of difficulties with physical functioning, by sex

Respondents who answered questions on functioning in waves 1–3 and the self-completion form in wave 3

	Adjusted for age and marital status ^a		Also adjusted for age, health and socio-economic factors ^b	
	Coefficient	Confidence interval	Coefficient	Confidence interval
Men (n=2,964)				
Minimal difficulty		Reference group		Reference group
Motor skills only	-0.94	-1.43, -0.44	-0.80	-1.31, -0.30
Decrement in difficulties	-0.96	-1.54, -0.37	-0.65	-1.25, -0.04
Increment in difficulties	-2.12	-2.68, -1.55	-1.79	-2.39, -1.19
Mixed history	-2.03	-2.64, -1.42	-1.36	-2.05, -0.66
Maximal difficulty	-2.91	-3.82, -1.99	-2.07	-3.03, -1.11
		P<0.001 ^d		P<0.001 ^d
Wave 1 score ^c	+0.39	+0.34, +0.44	+0.34	+0.29, +0.39
		P<0.001		P<0.001
Women (n=3,606)				
Minimal difficulty		Reference group		Reference group
Motor skills only	-1.00	-1.39, -0.62	-0.96	-1.36, -0.57
Decrement in difficulties	-1.49	-2.02, -0.96	-1.38	-1.93, -0.84
Increment in difficulties	-2.33	-2.87, -1.78	-2.14	-2.69, -1.58
Mixed history	-2.26	-2.83, -1.69	-1.94	-2.56, -1.32
Maximal difficulty	-2.93	-3.65, -2.20	-2.53	-3.33, -1.72
		P<0.001 ^d		P<0.001 ^d
Wave 1 score ^c	+0.38	+0.34, +0.43	+0.33	+0.28, +0.38
		P<0.001		P<0.001

Notes: ^aWhether had partner in household, otherwise whether widowed, divorced or separated or never-married. ^bAdjusted for the following additional wave 1 factors: general health, presence of pain, urinary incontinence, poor vision, poor hearing, presence of depression, educational qualification, wealth quintile. ^cScore range 0–18, higher meaning more control and autonomy. At wave 3, the medians and inter-quartile ranges of scores were 12 (9.14) for men and 12 (8.14) for women. ^dP-values for heterogeneity.

- Deleted: 82
- Deleted: 32
- Deleted: , -
- Deleted: 32
- Deleted: 72
- Deleted: 32
- Deleted: , -
- Deleted: 12
- Deleted: 1.89
- Deleted: 48
- Deleted: 29
- Deleted: 1.54
- Deleted: 23
- Deleted: 0.85
- Deleted: 37
- Deleted: 34
- Deleted: 39
- Deleted: 36
- Deleted: 31
- Deleted: 41
- Deleted: 61
- Deleted: 0.84
- Deleted: 38
- Deleted: 0.79
- Deleted: 10
- Deleted: 47
- Deleted: 1.92
- Deleted: 27
- Deleted: 58
- Deleted: 1.53
- Deleted: 1.91
- Deleted: 15
- Deleted: 45
- Deleted: 2.97
- Deleted: 95
- Deleted: 39
- Deleted: 35
- Deleted: 43

Table 3A.18. Difficulty reported with groups of physical functions at wave 3, by sex and age at wave 3*Respondents who took part in wave 3 and answered relevant questions (aged 55 and over)*

	Age at wave 3				All
	55–64	65–74	75–84	85 and over	
Men					
Percentage had difficulty with:					
Moving around the house ^a	6.9	6.9	9.3	14.6	7.7
Dressing or washing ^b	13.0	18.8	24.8	40.6	18.3
Eating or preparing meals ^c	3.2	3.0	7.5	14.7	4.5
Shopping or doing work around the house ^d	11.4	11.7	21.0	42.4	14.8
Telephoning or managing money ^e	3.6	3.0	7.0	17.7	4.7
Taking medication ^f	1.5	0.8	2.6	4.2	1.6
At least one of these	19.5	23.3	35.1	58.2	25.4
Had help with at least one task	51.9	56.3	67.8	74.2	59.7
Women					
Percentage had difficulty with:					
Moving around the house ^a	7.7	9.3	11.3	20.3	10.0
Dressing or washing ^b	13.0	19.2	27.1	41.2	20.3
Eating or preparing meals ^c	3.5	5.9	7.6	20.6	6.5
Shopping or doing work around the house ^d	14.0	19.3	30.1	55.5	22.5
Telephoning or managing money ^e	2.0	3.5	5.4	18.7	4.6
Taking medication ^f	1.0	1.6	1.7	6.1	1.8
At least one of these	20.0	28.7	41.0	65.1	30.9
Had help with at least one task	71.8	67.6	73.8	87.4	74.0
Unweighted N					
<i>Men</i>	1,334	1,000	613	146	3,093
<i>Women</i>	1,597	1,172	817	270	3,856
At least one of these^g					
<i>Men</i>	244	228	206	84	762
<i>Women</i>	309	329	334	177	1,149

Notes: weighted by wave 3 longitudinal weight. ^aDifficulty with walking across a room or with getting in and out of bed or with using the toilet, including getting up and down. ^bDifficulty with eating, such as cutting up food or with preparing a hot meal. ^cDifficulty with dressing, including putting on shoes and socks, or with bathing or showering. ^dDifficulty with shopping for groceries or with doing work around the house or garden. ^eDifficulty with making telephone calls or with managing money, such as paying bills and keeping track of expenses. ^fDifficulty with taking medications. ^gBase for % who had help with at least one task.

Table 3A.19. Sources of help with moving around the house^a at wave 3, by sex and age at wave 3

Respondents reporting difficulties of the relevant type at wave 3

	Age at wave 3				All
	55–64	65–74	75–84	85 and over	
Men					
Percentage who reported help from: ^b					
Spouse or partner	55.1	51.3	50.5	–	49.8
Any child or child in law ^c	13.4	21.1	16.1	–	18.0
Other relatives	2.4	4.9	3.3	–	3.4
Informal source incl. family, neighbours and friends	58.4	63.6	62.9	–	60.5
Formal source incl. statutory/voluntary services / paid help	1.9	4.3	11.8	–	6.3
None of these	41.6	32.0	33.5	–	37.0
Women					
Percentage who reported help from: ^b					
Spouse or partner	41.8	36.9	13.5	0.0	26.3
Any child or child in law ^c	34.4	28.4	22.3	38.1	30.4
Other relatives	5.1	7.4	13.4	15.7	9.6
Informal source incl. family, neighbours and friends	62.5	59.6	42.8	53.6	55.2
Formal source incl. statutory/voluntary services / paid help	6.6	16.0	15.9	48.0	18.4
None of these	35.4	36.9	47.0	24.9	37.0
Unweighted N					
<i>Men</i>	84	67	50	21	223
<i>Women</i>	119	102	94	54	369

Notes: ^aDifficulty with walking across a room or with getting in and out of bed or with using the toilet, including getting up and down. ^bPercentages may sum to more than 100 because people can receive help from multiple sources; informal source includes the previous three categories. 'Other' is omitted from the categories because it is not known if the carer was informal or formal and numbers were small. 'None of these' means no informal, formal or other. ^cRespondents are left to interpret who to include here, but theoretically can include adopted, step and foster children.

Table 3A.20. Sources of help with dressing and bathing at wave 3, by sex and age at wave 3*Respondents reporting difficulties of the relevant type at wave 3*

	Age at wave 3				All
	55–64	65–74	75–84	85 and over	
Men					
Percentage who reported help from: ^a					
Spouse or partner	38.2	38.7	41.6	22.7	37.7
Any child or child in law ^b	2.6	5.5	4.6	10.5	4.8
Other relatives	0	0	0	0	0
Informal source incl. family, neighbours and friends	39.3	43.1	44.3	33.1	41.2
Formal source incl. statutory/voluntary services / paid help	1.0	2.7	4.7	13.3	3.8
None of these	60.0	54.7	53.0	54.8	56.0
Women					
Percentage who reported help from: ^a					
Spouse or partner	35.2	33.9	14.8	3.8	23.5
Any child or child in law ^b	11.2	9.7	9.0	23.1	12.1
Other relatives	1.6	0.8	4.0	3.3	2.4
Informal source incl. family, neighbours and friends	45.4	42.4	27.6	33.7	37.3
Formal source incl. statutory/voluntary services / paid help	3.1	6.7	9.5	30.6	10.6
None of these	52.6	51.0	62.8	37.4	52.7
Unweighted N					
<i>Men</i>	165	182	143	59	549
<i>Women</i>	203	219	218	111	751

Notes: ^aPercentages may add up to more than 100 because people can receive help from multiple sources; informal source includes the previous three categories. 'Other' is omitted from the categories (but taken account of for 'none' because it is not known if the carer was informal or formal – numbers were small. ^bRespondents are left to interpret who to include here, but theoretically can include adopted, step and foster children.

Table 3A.21. Source of help reported with shopping or work around the house and garden at wave 3, by sex and age at wave 3

Respondents reporting difficulties of the relevant type at wave 3

	Age at wave 3				All
	55–64	65–74	75–84	85 and over	
Men					
Percentage who reported help from: ^a					
Spouse or partner	47.1	45.5	39.7	14.0	40.3
Any child or child in law ^b	19.0	18.4	22.5	41.9	22.8
Other relatives	1.1	3.0	6.7	4.8	3.6
Informal source incl. family, neighbours and friends	61.7	63.5	68.4	65.0	64.4
Formal source incl. statutory/voluntary services / paid help	1.3	5.0	5.2	16.9	5.4
None of these	36.9	30.0	23.9	16.3	28.9
Women					
Percentage who reported help from: ^a					
Spouse or partner	50.0	40.7	16.3	6.1	28.7
Any child or child in law ^b	34.0	27.1	35.7	47.9	35.6
Other relatives	5.3	3.4	10.5	10.1	7.4
Informal source incl. family, neighbours and friends	78.7	70.2	66.6	69.0	71.0
Formal source incl. statutory/voluntary services / paid help	4.3	8.9	17.6	29.9	14.6
None of these	16.9	19.9	15.8	7.0	15.3
Unweighted N					
<i>Men</i>	139	113	122	61	435
<i>Women</i>	217	218	246	150	831

Notes: ^aPercentages may add up to more than 100 because people can receive help from multiple sources; informal source includes the previous three categories. 'Other' is omitted from the categories (but taken account of for 'none' because it is not known if the carer was informal or formal – numbers were small. ^bRespondents are left to interpret who to include here, but theoretically can include adopted, step and foster children.

Table 3A.22. Source of help reported with (i) eating or preparing meals, (ii) telephoning or managing money and (iii) taking medication at wave 3, by sex

Respondents reporting difficulties of the relevant type at wave 3

	Eating or preparing meals	Telephoning or managing money	Taking medication
Men			
Percentage who reported help from: ^a			
Spouse or partner	59.9	54.2	[79.1]
Any child or child in law ^b	16.0	14.2	[7.6]
Other relatives	0	4.6	[0.0]
Informal source incl. family, neighbours and friends	74.6	71.5	[92.5]
Formal source incl. statutory/voluntary services / paid help	5.4	1.2	[4.4]
None of these	16.4	26.6	[5.4]
Women			
Percentage who reported help from: ^a			
Spouse or partner	34.8	21.3	33.9
Any child or child in law ^b	28.5	42.7	34.9
Other relatives	6.6	5.0	2.5
Informal source incl. family, neighbours and friends	54.5	71.2	73.4
Formal source incl. statutory/voluntary services / paid help	16.7	3.8	11.0
None of these	18.2	23.4	16.7
Unweighted N			
<i>Men</i>	<i>129</i>	<i>134</i>	<i>44</i>
<i>Women</i>	<i>224</i>	<i>155</i>	<i>59</i>

Notes: ^aPercentages may add up to more than 100 because people can receive help from multiple sources; informal source includes the previous three categories. 'Other' is omitted from the categories (but taken account of for 'none' because it is not known if the carer was informal or formal – numbers were small. ^bRespondents are left to interpret who to include here, but theoretically can include adopted, step and foster children.

Table 3A.23. Factors associated with being a driver of a vehicle to which a respondent has access or frequent use of public transport at wave 3

Respondents aged 65 years and over at wave 3

Circumstances at wave 3	Drives vehicle to which has access			Using public transport more than once a week		
	Odds ratio	Confidence interval	p-value	Odds ratio	Confidence interval	p-value
		(n=3,923)			(n=3,917)	
Women (reference: men)	0.15	0.13, 0.19				
Women (reference: men)						
• if driver				1.10	0.83, 1.47	0.020
• if passenger				0.52	0.34, 0.80	
• if no access to car				0.91	0.67, 1.23	
Living with partner (reference)	1.00			1.00		
Living alone	1.09	0.90, 1.33		1.34	1.06, 1.69	
Living with other, not partner	0.64	0.42, 0.98	0.046	1.07	0.69, 1.67	0.049
Other transport		Omitted			Omitted	
Driver (reference)				1.00		
Passenger						
• if male				7.59	4.75, 12.11	<0.001
• if female				5.49	3.06, 9.82	
No access to vehicle						
• if male				11.70	8.15, 16.79	<0.001
• if female				9.65	6.84, 13.61	
Uses lift at least weekly (reference: not)				1.27	1.02, 1.60	0.037
Uses taxi at least monthly (reference: not)				1.56	1.17, 2.07	0.002
Health						
Having poor vision (reference: not)	0.55	0.45, 0.68	<0.001	1.10	0.89, 1.36	0.40
Having hearing problems (reference: not)	1.01	0.85, 1.21	0.88	1.06	0.88, 1.28	0.55
Pain (reference: not often troubled)	1.00			1.00		
Mild pain	1.26	0.94, 1.68		0.98	0.73, 1.33	
Moderate pain	1.32	1.04, 1.67		0.76	0.60, 0.98	
Severe pain	1.65	1.20, 2.28	0.009	0.58	0.40, 0.85	0.015
Urinary incontinence (reference: not)	1.05	0.84, 1.31	0.69	0.71	0.55, 0.92	0.010

Continues

Table 3A.23 continued

Circumstances at wave 3	Drives vehicle to which has access			Using public transport more than once a week		
	Odds ratio	Confidence interval	p-value	Odds ratio	Confidence interval	p-value
Four or more depressive symptoms (reference: fewer)	0.81	0.64, 1.03	0.081	1.05	0.80, 1.37	0.74
Fair, bad, very bad health (reference: excellent/good)	0.64	0.52, 0.79	<0.001	0.86	0.69, 1.08	0.20
Physical functioning						
Minimal difficulties (reference group)	1.00			1.00		
Difficulties with motor skills	0.91	0.72, 1.15		0.92	0.71, 1.20	
Difficulties with IADLs, not ADLs	0.43	0.31, 0.60		0.55	0.37, 0.81	
Difficulties with ADLs, not IADLs	0.87	0.63, 1.20		0.61	0.65, 1.22	
Difficulties with both	0.53	0.38, 0.73	<0.001	0.31	0.21, 0.45	<0.001
Wealth quintile						
Richest (reference group)	1.00			1.00		
2	0.59	0.44, 0.79		1.60	1.11, 2.31	
3	0.47	0.36, 0.61		1.89	1.32, 2.70	
4	0.23	0.17, 0.30		2.10	1.49, 2.96	
Poorest	0.12	0.09, 0.16	<0.001	1.82	1.24, 2.67	<0.001
Educational qualification						
Degree or higher	1.00			1.00		
A-level or higher not degree	0.95	0.62, 1.46		0.65	0.42, 0.99	
O-level or GCSE	0.68	0.44, 1.05		1.08	0.70, 1.65	
CSE or foreign qualification	0.43	0.29, 0.66		0.93	0.61, 1.41	
No qualification	0.26	0.18, 0.39	<0.001	0.81	0.55, 1.19	0.049

Note: Adjusted for age. Age is not shown as individual ages above 90 were not distinguished.

Table 3A.24. Factors associated with taking a lift at least once a week or taking a taxi at least once a month

Respondents aged 65 years and over at wave 3

Circumstances at wave 3	Takes a lift at least once a week			Takes a taxi at least once a month		
	Odds ratio	Confidence interval	p-value	Odds ratio	Confidence interval	p-value
Women (reference: men)		(n=3,917)		0.97	0.76, 1.23	0.79
Women (reference: men)						
• if driver	1.43	1.05, 1.94	0.010			
• if passenger	0.80	0.54, 1.18				
• if no access to car	1.43	1.06, 1.92				
Living with partner (reference)	1.00			1.00		
Living alone	2.38	1.86, 3.05		0.87	0.62, 1.21	
Living with other, not partner	1.92	1.29, 2.86	<0.001	1.31	0.79, 2.16	0.056
Other transport						
Driver (reference)	1.00			1.00		
Passenger				2.36	1.60, 3.50	
• if male	8.08	5.18, 12.59	<0.001			
• if female	1.78	1.02, 3.09				
No access to vehicle				6.75	4.47, 10.20	<0.001
• if male	3.19	2.13, 4.77	<0.001			
• if female	3.19	2.30, 4.42				
Uses public transport more than once a week (reference: not)	1.30	1.04, 1.63	0.022	1.60	1.20, 2.13	0.001
Uses lift/taxi (reference: not)	1.43	1.09, 1.88	0.011	1.48	1.12, 1.94	0.005
Health						
Having poor vision (reference: not)	0.90	0.93, 1.12	0.35	1.00	0.77, 1.30	0.99
Having hearing problems (reference: not)	0.92	0.77, 1.11	0.39	0.94	0.75, 1.18	0.62
Not troubled by pain (reference)	1.00			1.00		
Mild pain	1.14	0.84, 1.54		1.32	0.90, 1.92	
Moderate pain	1.03	0.81, 1.31		1.38	1.03, 1.86	
Severe pain	1.05	0.75, 1.47	0.87	1.15	0.76, 1.72	0.15
Urinary incontinence (reference: not)	1.14	0.91, 1.43	0.24	0.92	0.70, 1.22	0.58

Continues

Table 3A.24 continued

Circumstances at wave 3	Takes a lift at least once a week			Takes a taxi at least once a month		
	Odds ratio	Confidence interval	p-value	Odds ratio	Confidence interval	p-value
Four or more depressive symptoms (reference: fewer)	0.99	0.91, 1.43	0.93	1.03	0.79, 1.36	0.80
Fair, bad, very bad health (reference: excellent/good)	0.98	0.79, 1.22	0.88	1.25	0.96, 1.63	0.10
Physical functioning						
Minimal difficulties (reference group)	1.00			1.00		
Difficulties with motor skills	1.11	0.85, 3.05		2.18	1.56, 3.04	
Difficulties with IADLs, not ADLs	1.62	1.15, 2.27		2.84	1.85, 4.37	
Difficulties with ADLs, not IADLs	0.92	0.64, 1.33		2.07	1.32, 3.25	
Difficulties with both	1.00	0.72, 1.40	0.015	2.12	1.38, 3.27	<0.001
Wealth quintile						
Richest (reference group)	1.00			1.00		
2	1.06	0.75, 1.48		1.17	0.71, 1.93	
3	1.44	1.03, 2.00		0.97	0.59, 1.60	
4	1.61	1.15, 2.24		1.16	0.71, 1.88	
Poorest	1.15	0.80, 1.65	0.012	1.76	1.10, 2.81	0.011
Educational qualification						
Degree or higher	1.00			1.00		
A-level or higher not degree	1.49	0.94, 2.36		0.59	0.33, 1.05	
O-level or GCSE	1.17	0.73, 1.87		0.59	0.34, 1.02	
CSE or foreign qualification	1.58	1.01, 2.46		0.54	0.31, 0.94	
No qualification	1.44	0.96, 2.18	0.18	0.44	0.27, 0.74	0.035

Note: Adjusted for age. Age is not shown as individual ages above 90 were not distinguished.