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Home Care Arrangements in Europe
Determinants and Quality of Life

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Table of contents

I Introduction and research questions

Greying of the hair, declining physical strength, wisdom of old age and growing serenity – these characteristics cross one's mind if thinking about ageing. But what does it mean to a society – or a continent – if the population ages? Life expectancies are increasing, birth rates are decreasing and strong birth cohorts reach old ages, hence, the proportions of the old and oldest old within Europe are growing. These trends are accompanied by an increasing number of persons that are dependent and physically and mentally limited; since age is the strongest risk factor for diseases and the occurrence of need of care. Being sensible of these facts, the interest in health, morbidity and care need determinants rises and becomes crucial for nowadays decision making processes.

Care systems are on the one hand influenced by a variety of determinants but they also influence the society and the individual. That cycle is taken up by the analyses presented in the current report. Hence, two analyses have been carried out: Part A covers family and health factors that determine which type of home care is provided to dependent elderly. Part B focuses on how quality of life of elderly Europeans is affected by the type of home care used and by other characteristics.

Today we know that the majority of Europeans advance the view that elderly in need of regular support should have the opportunity to stay at home (European Commission, 2007). Thus, it is essential for decision makers to know how care at home is socially and structurally organised and how this can be thought of as a future care arrangement that could be strengthened, also to release the costs of institutional care, which is the most expensive form of care. How care is organised means, what individual and contextual factors determine if a person in need of care uses rather (1) formal care by professional care services and nurses, (2) informal care by e.g., family members from inside or outside the household, (3) a mixture of both types or if a person in need of care (4) does not have any type of support. These questions are studied in part A of this report. Since individual and contextual factors are manifold, overall demographic and socioeconomic factors are included in the analyses but the emphasis is laid on individual characteristics: Family characteristics and health factors of a person are studied to see how they affect personal care arrangements. Care is defined as receiving personal care in the activities of daily living including e.g., dressing, bathing or showering, eating, getting in or out of bed or using the toilet. Help with domestic tasks is not included. To cover exogenous but essential surrounding conditions - meaning the established welfare state system and differing cultural values and norms - the effects of family characteristics and health factors on the types of care are additionally studied separately for three different welfare state regions (*Northern Europe*: Denmark, Netherlands, Sweden, *Southern Europe*: Italy, Spain, *Central Europe*: Austria, Belgium, France, Germany). These regions are built according to Esping-Andersons (1990) welfare state regime system and the care regime system of Bettio and Plantenga (2004).

But, asking how dependent people are cared for is only one side of the coin. A question that falls into line is how elderly feel if they are old, limited and in need of care. It should be a target not only to find supportive solutions for dependent persons but also to find mechanisms that maintain a worthwhile life or in other words it is an important objective that "adding years to life is as important as adding life to years" (Knesebeck et al., 2005). This added life to years is measured by the so called indicator of quality of life. Several definitions of quality of life, also referred to as life satisfaction or well-being, arose, which is not surprising, given the complexity of the concept. One concept has been carried out by the WHO. They refer in their definition to a subjective self-evaluation and embed it into a cultural, social and environmental context: "Quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value systems in which

they live and in relation to their goals, expectations, standards and concerns." (WHOQOL Group, 1996). Thus, it is not poor health or a good socio-economic status that directly influences this measure but rather how the respondent senses his or her health and living conditions. In accordance to the self-perception concept, in Part B of the report, the influence of care arrangements and the importance of health, demographic and socio-economic factors for the quality of life of elderly Europeans is studied. The determinants of quality of life are also analysed separately for three welfare state regions.

Using data of the second Wave of the Survey of Health, Ageing and Retirement in Europe (www.share.org) which includes various social items of the 50+ population in Europe, the following research questions are answered in Part A and Part B of the report, including data of nine European countries:

- *Does family matter for the type of care chosen?*
  Is the existence of a spouse or partner important for the type of care received? Does the geographical proximity and occupation of children matter?
- *Do health factors matter for the type of care chosen?*
  Are differences in the type of care explicable by special health conditions, e.g., cognitive impairments or by particular care need causing diseases like strokes, heart attacks or cancer?
- *Does the type of care matter for the quality of life?*
  Is the quality of life higher when only informal or when additionally formal care is received?
- *Do health factors matter for the quality of life?*
  How important are physical and mental impairments for the quality of life?
- *What are the differences across Europe regarding family, health, types of care and quality of life?*
  Do cultural and political conditions affect the relationships between these factors in different welfare state regions in Europe?

II Main findings

Types of care in general

- One-seventh of the whole 50+ population is in need of care. 37.9% of them receive no care although they suffer from limitations in basic daily activities, 33.1% receive formal and mixed personal care and 29.0% receive informal personal care. If only Central European countries are considered formal and mixed care is primary used, while in Southern Europe informal care is mostly widespread. In Northern Europe formal and mixed as well as informal care at home is rather low.

Family structure

- Living without a partner or spouse is significantly linked with a higher risk of receiving formal and mixed care or no care although suffering from limitations in ADLs. The risk to receive informal care is lower. That is true if analysing all countries combined and is highly developed in Northern countries. In the North, partners or spouses seem to be the essential source for informal caregiving for those not living in institutions. In the South having a partner does almost not matter for the care arrangements.
- The geographical distance of parents in need of care to the closest living child has a significant effect on the type of care. With increasing geographical proximity, informal

care increases and formal and mixed care decreases; this is strongest pronounced if they live co-residently. Also the risk of being in need but receiving no care decreases with increasing geographical proximity of the closest living child – but not significantly. The effects are stronger if the closest living child is a daughter. A more in-depth examination of the results shows that this is especially developed in Central Europe – where children's living distance seems to be more important for the type of care compared to Northern and Southern Europe. While in Northern European countries informal care by children seems to be in general not widespread, in the South informal care by children is the primary care arrangement.

- Significant increases in informal as well as formal and mixed care occur if the closest living child is retired compared to full-time employed children. The higher informal care of persons with retired children is only significantly existent in Southern Europe, whereas a higher use of formal and mixed care of persons with retired children is only found in Central and Northern Europe. Next to that, having a not employed child has also a significant effect for higher formal and mixed care in Central Europe, whereas having a not employed close living child leads in the South to a higher risk of having limitations in ADLs without being cared. There is no effect on informal, formal or mixed care if the closest living child works part-time.

Health factors

- Physical and cognitive health limitations are strongly correlated with each other and with the presence of diseases. Thus, the combined analysis of the effect of limitations and diseases on care need arrangements in a multivariate model-setting comes to very different results than simple descriptive analyses by one condition at a time. In the following the multivariate results are given which control for the joint occurrence of limitations and diseases.
- There are strong disparities by welfare state regimes. In the Central European countries, severe physical limitations, severe cognitive impairments, and depression are connected to informal care rather than to formal and mixed care. In contrast, in the Northern and Southern European countries formal and mixed care arrangements predominate in this group.
- In Northern and Central European countries persons with mild and moderate physical or cognitive impairments have a high risk of getting no care at all.
- Persons suffering from cancer or heart attacks receive formal and mixed care in Northern and Central European countries, while informal care arrangements are dominating in Southern Europe. Persons who suffer from stroke receive informal care in Northern and Central Europe, and formal and mixed care in Southern Europe.
- The effects of depression on care settings are inconsistent. Furthermore, depressed persons have a high risk of not receiving any type of care. One reason may be the difficulty of diagnosis and individual's own recognition of depression.
- One explanation for these divergent trends lies in the different level of institutionalisation in Central, Northern, and Southern Europe. In Central and Northern Europe severe limitations will lead to institutionalisation and the less severe cases will be cared for at home. In contrast, in Southern Europe all severity levels will be cared for at home, explaining the higher proportion of formal and mixed care for certain diseases and limitations.

Quality of life

- Being in need of care increases the risk for poor quality of life. However, it is rather the fact of being in need of care – caused by poor health - than the type of care received that

influences the quality of life. Differences between the welfare systems are small. A special group with a tendency to an even higher risk for poor quality of life are those who are in need of care but do not receive any support.

- Health is among the strongest impact factors for the quality of life. Especially subjective poor health and mental problems such as a depression and cognitive impairments lead to a much worse estimation of people's quality of life.
- People in Northern Europe rate their quality of life highest, followed by people in Central Europe while Southern Europeans bring up the rear.
- Increasing age has a lower impact on the quality of life as often thought because other life domains which are influenced by age dominate the effect. Only in higher ages (70+) does the risk for poor quality of life rise.
- Although females have a higher risk for depression, the overall risk for poor quality of life is slightly higher in males.
- Living with a partner affects the quality of life positively.
- The importance of social activities on a higher quality of life is confirmed in our study.
- The strongest impact on the quality of life in our analysis is the ability of a household to meet ends needs.
- People who were able to give financial transfers of at least 250 Euro have a higher quality of life. It might not simply be the better financial situation but a feeling of reciprocity if care or other help is received.
- A positive estimation of the future living standard increases the quality of life and vice versa.
- Education, living area and distance to children have no influence on the quality of life in our analysis.

III Policy implications

Family

- Special emphasis should be laid on old people who live without a partner. They carry a very high risk of receiving no care although they suffer from limitations – also if they have children.
- Awareness and acceptance by employers and employees for part-time work as an instrument to balance work and care for dependent elderly should be expanded.
- A new group of caregivers – old and retired children – provide a great amount of care to very old parents. This "new" caregiver generation needs special and different support than caregiving persons that are still young and have to balance work and care.
- In Southern Europe formal care has to be established more widely. Southern Europeans will otherwise be strongly burdened by care tasks within the family in the coming decades. It is questionable if migrant care workers are a sustainable solution for the formal care sector in the South.

Health

In the Central, Northern and Southern European countries there exist various, often contrary, trends in care settings according to health indicators. Because this study focuses on policy relevant aspects of care arrangements and not on disease-specific differences in Europe, the policy implications are presented separately by welfare state regimes.

In Central European countries:

- There is a strong tendency towards informal care even with increasing severity of physical and cognitive limitations. People with moderate limitations receive no care to a large extent.
- Considering the caregivers distress, the demand for specialised care services will rise. This is especially true for caregivers of elderly with depression, severe cognitive impairment or dementia.
- Future policy challenges lie in reducing deficiencies in the offer of professional in-home care and, in result, reducing the burden of informal caregivers (especially of caregivers for demented persons)

In Northern European countries:

- The emphasis in home care arrangements lies on formal and mixed care.
- This can be interpreted as an indicator of a very high level of acceptance of professional care support as an alternative to institutionalisation.
- The high acceptance of formal care and of institutions needs to be maintained in order to keep caregiver's burden on an acceptable level
- Special attention should be given to persons suffering from moderate limitations who seem to lack care support.

In Southern European countries:

- Despite the overall dominance of informal care there is a strong tendency of formal and mixed care arrangements for people with severe physical and cognitive limitations.
- The reasons are very low levels of institutionalisation and probably the availability of in-home care, by migrant care workers.
- An important future policy issue is to establish an official market of professional in-home care services and institutions to ensure adequate care supply. This is especially important for persons with severe physical and cognitive problems and their relatives.

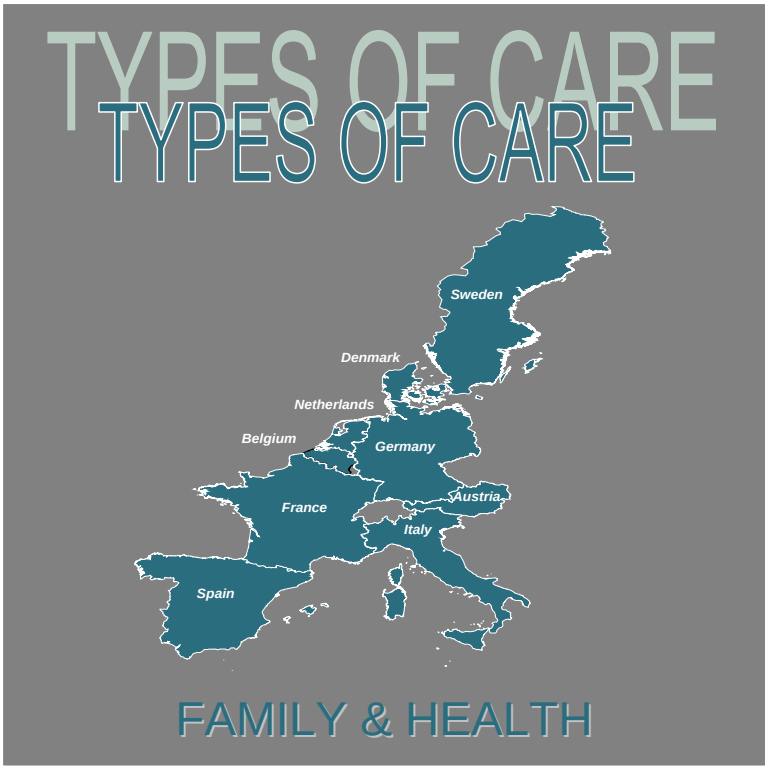
Quality of life

- Care need decreases the quality of life, but people with formal and mixed care do not feel worse than people who receive only informal care. Formal care should be supported because it does not lower the quality of life of people in need of care but lowers the burden of family care providers.
- Special emphasis should be placed on people with limitations in their daily activities who do not receive care: female elderly without a partner and low education.
- Social activities have been shown to increase the quality of life. Encouraging social integration and voluntary engagement would thus not only back the society but also enhance the quality of life of the helping person.
- Good physical and mental health is a very important aspect for a high quality of life. Quality of life is only one aspect why it is so important to promote a lifelong healthy, active and happy lifestyle and a positive view into the future.

IV

Part A

Family characteristics and health factors as determinants of types of care



1 Theoretical background

1.1 Welfare states, care regimes and the nature of the family

A variety of factors influence the decision on the type of care used by elderly Europeans and at the same time affect the chance to choose between differing care arrangements. These factors are in particular (1) the welfare state or care regimes that dominate in a country, (2) the historically grown cultural values and norms about the nature of the family and the state as well as the (3) availability of informal care resources. These three factors are closely related to each other and influence themselves mutually and through different pathways.

Depending on historically rooted norms and values in terms of e.g., equality, freedom or independence of on individual, in the past centuries, different welfare state systems evolved all over Europe. They were for the first time described and clustered in a systematic classification by Esping-Anderson (1990). He categorised European countries on a broad conformity of their welfare state organisation in (1) social democratic countries with universal social insurance programmes (e.g., Denmark, Sweden), (2) liberal societies with more privately applied insurances (e.g., Great Britain) and (3) conservative societies with a greater emphasis on occupation based social insurance systems (e.g., Germany, Austria, Belgium, France). Additionally, some recent scientists have distinguished Southern European countries, like Greece, Italy and Spain as a separate group with comparatively low provisions by the state (e.g., Iacovou, 2000; Arts and Gelissen, 2002; Ferrara 1998).

A more detailed classification has been carried out by Bettio and Plantenga (2004). They modelled so called *care regime clusters* according to differing care policies across Europe. *The first cluster* emerges for the Southern countries: Here the management of care is delegated to the family and high indexes of informal care are reached. Formal care arrangements are rather underdeveloped, while contacts and exchanges within the family network are intensive and diverse. *A second cluster* – the Northern countries - follow a universalistic approach by providing moderate to high levels of formal care resources for a large segment of the population. Informal care plays only a modest role in caregiving and the state rather substitutes family care than supporting family care givers (Bettio and Plantenga, 2004). In between these two extremes, the Netherlands and the UK are grouped together in a *third cluster* with care regimes that show a large collective interference in services for the elderly, with informal care being still important – more important than in Northern countries. A *fourth and fifth cluster*, representing Germany and Austria as well as France and Belgium, respectively, were characterised by medium positions in formal and informal care, with Germany and Austria having more informal care that is supported by formal care arrangements (principle of subsidiarity), while more formal care strategies are developed in France and Belgium (Bettio and Plantenga, 2004). These differences in care regimes are for example displayed in rates of institutionalised persons (see Table 1). These rates of course influence the demand and supply of home care arrangements. While Scandinavian countries and the Netherlands show the highest rates of persons aged 65+ living in institutions, Central European countries take a medium position and in Italy and Spain only 3.9 or 2.9% of the elderly population lives in nursing homes.

Table 1: Rates of institutionalised persons in% in different countries

Country	Rates (in%)
Netherlands	8.8
Sweden	8.7
Denmark	7.4
Germany	6.8
France	6.5
Belgium	6.4
Austria	4.9
Italy	3.9
Spain	2.9

Source: European Commission (2006).

These differing types and definitions of welfare or care regimes interplay strongly with historically grown values and norms, especially with norms that focus the distribution of responsibilities: Is the family the natural care giver? Do parents expect their children to take care of them? Or does the state carry the primary responsibility for dependent elderly? These questions are answered quite differently in Northern, Central or Southern European countries and these differences go far back to the roots of the nature of the family that dominates in a society. Southern Europe was and is still characterised by very strong family ties, not only within the nuclear family. This results from a familistic culture in which individual utility and family utility are equivalents (European Commission, 2007). Guerrero and Naldini (1996) mention that although changes of the family in Italy and Spain exist, economic conditions, social policies and the family culture are important barriers to a further individualisation of family relations. According to care tasks this means that the family is expected to care and adult children feel a strong filial responsibility to protect and care for their parents (see e.g., Bazo et al., 2003; Katz et al., 2003).

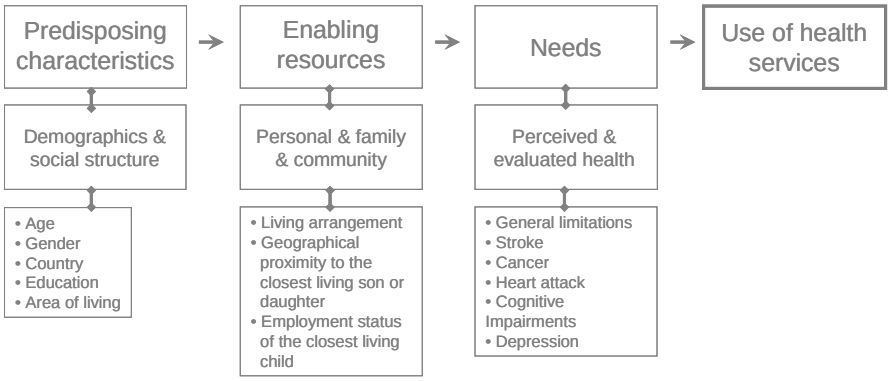
Northern European countries are rather characterised by values and norms that support the freedom of choice for every individual at every stage of life. Independency and autonomy have always been striking values that are also reflected in less geographical family ties and more voluntary relationships (Broese et al., 2006). Lowenstein and Daatland (2006) find for example in a comparative study on filial norms, that in Northern countries inter-generational exchange is more open to negotiation. Reher (1998) constituted a special geography of family ties. He saws a dividing line of kinship network between the Centre and North of Europe and the South of Europe, with strong networks in the South and weaker ties in the North and Centre of Europe, finding expression in differently organised welfare institutions for the elderly and feelings of responsibilities in the case that a family member becomes dependent on help. These findings are also backed by recent survey data of the Eurobarometer (European Commission, 2007): The Dutch, Danes and Swedes score the highest values for institutional and professional care if they are asked which care arrangement they would choose primarily if the father or mother can no longer manage to live without regular help. Southern Europeans show the highest values for informal care arrangements (except from Eastern Europe). They especially prefer to live in that situation co-residently with the dependent parent. Central European countries take a medium position between these two extremes. Glaser et al., (2004) did not find a clear-cut North-South divide in terms of support for the elderly. But the majority of analyses show differences in the sense of more family-based and more state-based care and support arrangements across Europe, more or less finding a North-South gradient (e.g., Haberkern and Szydlik, 2010; Daatland and Herlofson, 2003; Motel-Klingbiel et al.,

2005; Ogg and Renaut, 2006; Bettio and Plantenga, 2004; Reimat 2009; Rainer and Siedler, 2010; Hank and Jürges, 2010; Kalmijn and Saraceno, 2008).

> *Hypotheses I: Informal care is more widespread used in the South and in the centre of Europe, while the proportions are lower in Northern countries. The opposite is supposed to be found for formal and mixed care.*

Following the initial Behavioural Model of Health Services Use, developed in the 1960s, the analysis was conducted considering firstly, the links between family variables and types of care and secondly, the links between health factors and types of care. The initial behavioural model suggests, as depicted in Figure 1 (following Andersen, 1995), that the use of health care is a function of (1) predisposing characteristics like demographic factors and the social structure, of (2) enabling resources like e.g., family characteristics or the community and of (3) the needs that emerge from limitations caused by health problems (see Figure 1).

Figure 1: Behavioural Model of Health Services Use



Source: Following Anderson (1995).

Following this theoretical model, family characteristics as enabling resources as well as health factors defining the needs are analysed separately in accordance to types of care, including demographic and socio-economic factors as predisposing characteristics.

1.2 Family characteristics

According to these differences in the importance and nature of the family and the organisation of the welfare state, family characteristics could be more or less influential on the offer and use of special care arrangements. In general, spouses or partners and children, are the primary private caregivers all over Europe – of course with differently strong weights in different regions – and their availability is an indispensable precondition for the receipt of informal care. Tomassini et al. (2004) show how older Europeans live: Since the 90s a rising number of old women lived and still lives together with a husband (as life expectancy of men increased) or a child (because of strong birth cohorts). Comparing the European regions, it becomes obvious that living alone or with a partner only was and is far more common for men and women in e.g., Sweden and the Netherlands compared with the South of Europe. In the South the proportion of older people living with children or in other types of living arrangements was and is higher. For example, one third of the Italian and Portuguese older women lives

with children compared with only two and six% of their Swedish and Dutch counterparts. Central European countries have an intermediate position with the proportion of older women living with children varying between 10 and 20% (Tomassini et al., 2004). These results are in common with other studies (see e.g. Iacovou, 2000).

As living arrangements imply the availability of informal care, living with spouses, children or other household members, is the most important correlate of receipt of informal care (Chappell and Blandford, 1991). If there does not exist an available partner or spouse living in the same household a lower probability of receiving informal care (e.g. Daatland and Herlofson, 2003) and a higher probability of receiving formal care (e.g. Bonsang, 2009) is observed. As the marital status is strongly connected with the living arrangement it should be mentioned, that e.g. Broese et al. (2006) find that never married and widowed persons have higher odds of receiving formal help than married persons. Furthermore, Attias-Donfut et al. (2005) find that personal care is in Northern Europe to a greater majority undertaken by a spouse, whereas in the South children and other family members play a bigger role in personal caregiving.

Hypotheses II: Having a partner is all over Europe connected with higher informal care and lower formal care as well as lower absent care although it is needed. Living with a spouse or partner is strongest connected with informal care in the North.

Considering children as potential caregivers, their geographical proximity is an important characteristic for availability to dependent parents: children could be part of the household and give care inside the household, they could live close and give care from outside or they could reside further away and are potentially not available for informal care tasks. Living a short distance is a structural prerequisite for the regular provision of support and is often denoted as one important item of solidarity between generations (see e.g. Katz et al., 2003). The majority of national and international studies show: The closer the living distance between children and their needy parents, the higher is the probability of informal caregiving (Ogg and Renaut, 2006; Haberken and Szydlik, 2009; Nichols and Junk, 1997; De Jong Gierveld and Fokkema, 1998; Joseph and Hallmann, 1998; Silverstein and Litwak, 1993; Brandt et al., 2009; Katz et al., 2003; Daatland and Herlofson, 2003; Pillemer and Suitor, 2006; Dautzenberg et al., 2000). Bonsang (2009) finds that the living distance does not change the results of the use of informal care, but that including the information on the closest living child, yields to a higher accuracy of the outcome. Additionally Joseph and Hallman (1998) find that the closer a child lives, the longer is the time it provides care and support. Furthermore, it matters which type of care is considered. A recent study by Brandt et al., (2009) shows for example that geographical distance is more important for personal and nursing care compared to support with domestic tasks, while Silverstein and Litwak (1993) find in an older study that emotional support is less dependent on geographic circumstances than household support. Furthermore, the distance between daughters and parents could be more essential for a care arrangement compared to that of sons and parents. Suitor and Pillemer (2006) analysed data of a female US subpopulation and find a consistent pattern of preference for daughters over sons as a source of emotional and instrumental support. Also a more recent study by Haberkern and Szydlik (2008) finds that daughters are more likely to be caregivers than sons.

Considering the link between geographical proximity and formal and mixed care arrangements it could be logically assumed that the further away the closest child lives, the higher is the formal care receipt of dependent parents. That is supported by Daatland and

Herlofson (2003), analysing data of five European countries, that reveal that in general, having a child living close reduces the probability for professional care services. Bonsang (2009) discusses in a paper whether there exists a substitution- or a complementarity relationship between formal and informal care. Defining co-resident living parent-child-dyads as informal care arrangements, the results indicate that co-residence substitutes for formal care services if care is defined as support with domestic tasks. If care signifies personal and nursing care, co-residence has no effect on formal care arrangements.
Furthermore, Daatland and Herlofson (2003) and Katz et al (2003) report that having a child living near by is only significantly important for informal caregiving in Northern and Central European countries and not in the South of Europe. For formal care services geographical proximity has a significant reduction effect only in the North (and Israel).

But next to that, also the opposite influential direction should be mentioned: the health status and needs of the elderly are often found to be a predictor of geographic convergence of parents and children (Rogerson et al., 1997; Hank, 2007; Silverstein, 1995; Clark and Wolff, 1992). Some find only a higher geographical proximity, some find an increase of co-residing generations. Looking at differences between countries, Hank (2007) shows that the link between worse health and increasing co-residence is especially existent in Western European countries, whereas co-residence is widespread and more independent of the health of parents in the South. Comparing Italy and Britain, Glaser and Tomassini (2000) find for example that in Britain mother-child proximity is more likely to arise from needs of the older generations, whereas in Italy mother-child-proximity may reflect a cultural preference regardless of need.

Hypotheses III: With increasing geographical proximity of the closest living son or daughter, the risk of informal care increases. The risk for dependent parents of receiving formal and mixed care or no care decreases with rising proximity. We expect the effects to be stronger for daughters than for sons. And we expect the effects to be strongest in Southern Europe and lowest in Northern Europe.

The availability of children as potential caregivers is not only dependent on distance measures but also on time measures; that is, the employment status of a child can make a difference for the care arrangement. Earlier studies do not reveal a clear-cut picture on that relation. Some studies educe a negative connectivity between employment and care: Not employed children have a higher probability of caregiving than full-time employed children (Suitor and Pillermer, 2006; Dautzenberg et al., 2000; Haberkern and Szydlik, 2008; Carmichael and Charles, 2003. Others find no effect of children's' employment on the probability of informal support giving (Kalmijn and Saraceno, 2008; Brandt et al., 2009. Ogg and Renaut (2006) observed no difference in the probability of caregiving dependent on employment, but they report that employed women were less likely to give help regularly. Rands (1997) analysed British data with the result, that caring for an older person was more widespread among part-time workers. Bazo et al. (2003) mention a positive connectivity: Adult children, who provide help, are mostly employed. Next to that, they report that the proportions of housewives and retired persons are generally high for the personal care type. The latter is supported by recent results of Attias-Donfut et al. (2008) stating that there is some evidence that moving into retirement has a positive effect on the intensity of help given. Considering different countries within the employment-caregiving-setting Callegaro and Pasini (2008) came to the conclusion that in Mediterranean countries caregiving is more developed among not employed children – inducing that in the South a large fraction of time is used for care if the need arises– while in Northern Europe children are able to work full-time and provide care next to employment.

Hypotheses IV: Employment determines the care arrangement, but only in the South and centre of Europe in so far that: Having not employed children leads to a higher informal care and lower formal care value, while having full-time working children leads to the opposite. Having a part-time working or retired child increases informal care.

1.3 Health factors

Physical and mental health factors are two of the most important determinants on care need. Differing by the level of impairment, mental and physical health conditions may have a direct impact on individual's activities of daily living (ADLs) and cause specific demands of care. Besides predisposing characteristics (demographic factors, social structure and health beliefs) and enabling resources (family and community), need is the third factor in the behavioural model of health care utilisation (Andersen and Newman, 1973). The "need" factor covers various physical, mental and emotional health determinants which can be measured in an objective and subjective way. Andersen (1995) states that need is one of the major factors of influence on the choice of the care setting.

In the past, various studies are conducted to analyse the role of formal and informal care and their determinants. However, the major research focus was to answer the question, if formal care and informal care are substitutes or complements (e.g. Van Houtven and Norton, 2004; Lo Sasso and Johnson, 2002; Bonsang, 2009), when controlling for various health factors. Van Houtven and Norton (2004) state in their analysis of Americans aged 70+ who live in private households that "Informal care reduces home health care use and delays nursing home entry" (Van Houtven and Norton, 2004: 1159). They additionally conclude that survivors of a stroke or heart attack have a clearly higher risk for formal care or nursing home usage. For persons with ADL limitations and cancer diseases, there is only a slightly higher risk of receiving formal care than getting informal care.

Some studies on health determinants and their effects on choices of a special care setting conclude that ADL limitations "are the main factors driving the demand either for formal care or institutionalisation" (Gramain, 1998: 9; Jacobzone et al., 1998). Gannon and Davin (2010) analysed the receipt of formal and informal care services with SHARE data on France and Ireland and conclude that an increase in the number of ADL and IADL restrictions and a decrease in cognitive functions have a higher impact on getting informal than on receiving formal and mixed care. However, the effect of functional limitations is slightly higher on formal care than on informal care. Armi et al. (2008) analyse data of octogenarians in Switzerland over a 5-year period. The authors find that utilisation of both formal and informal care increase by a higher level of dependency in ADLs, however, that is more profound in formal care receipt. In a systematic literature review by Kadushin (2004), the author concludes that physical impairment (measured in various ways) is the most influential factor of (formal) home health care receipt. Furthermore, some studies, reviewed by Kadushin (2004), found an interaction between severity of physical limitation and the care arrangement. Grabbe et al. (1995) find that persons with mild and moderate physical impairments have a low risk of receiving formal care, especially if there is an informal network available. But the receipt of formal care was higher (independent of the social network) for severely impaired persons.

As mentioned, notable differences in the care systems can be considered among the European countries. A very profound gap can be stated for the welfare state regimes in Northern and Southern European countries, e.g., in accordance to institutionalisation, which is on a significant lower level in the Southern than in the Central and Northern European countries,

and in “terms of cultural patterns of family loyalties, allegiances, and authority” and “demographic patterns of intra-generational co-residence and patterns of support for the elderly”, summarised as family ties (Bolin et al., 2008: 719-720; Reher 1998). In this system of categorisation, countries in Southern Europe are identified as “strong family-ties countries” and Northern European states as “weak family-ties countries”.
Considering the effect of severity on health care use and the notable country differences in care settings, the following hypotheses can be constructed:

Hypothesis VIa: In all countries, persons with mild or moderate physical limitations predominately receive informal care or no care at all.

Hypothesis VIb: Persons with severe general physical impairments and acute health problems (such as stroke, heart attack or cancer) are informally cared in Southern European countries and formally or mixed cared in Central and Northern countries.

In many cases, mental and physical health problems are strongly correlated. Especially in very old ages, co-morbidity or multi-morbidity is a frequent phenomenon, especially focussed by scientists in recent years. One example is a study of Clarke et al., (2002). The authors of this study found a significant higher percentage of stroke survivors with physical and cognitive disabilities and reported worse mental health than in the reference group (persons who have not experienced a stroke).
A very recent study of the Canadian Institute of Health Information find a very systematic relation of cognitive impairment and care setting among demented persons (CIHI 2010). Most of the demented persons receiving home care are mildly or moderately cognitive impaired. Demented persons with severe or very severe cognitive impairment are predominantly in residential care. These conclusions are enhanced by additionally taking the impairment in daily activities into account. The Canadian study concludes that 53% of the demented persons in home care have low limitations in ADL and low cognitive impairment, while only 17% of the demented persons in residential care are low cognitive and physical impaired.
Taking care of a person with mental disorders, cognitive impairments or dementia is a very stressful and demanding task (Bedard et al., 2000; Zweifel and Konig, 2004; Schulz and Martire, 2004). This fact has to be considered by potential caregivers. However, prior studies on the effects of dementia on the choice of the care setting find a significant higher risk of receiving informal care for demented persons than of receiving formal care (McCamish-Svensson et al., 1999; Ory et al., 1999). However, it can be expected that caregiver’s physical and emotional distress, same as the need for specialised formal care, increases by level of cognitive impairment. Analogous to the hypothesis for physical health, the following hypotheses are developed:

Hypothesis VIIa: In all countries, persons with mild or moderate cognitive impairments predominately receive informal care or no care at all.

Hypothesis VIIb: Persons with severe cognitive impairments and depression are informally cared in Southern European countries and formally or mixed cared in Central and Northern countries.

2 Data and methods

2.1 SHARE and the types of care

The following analysis is based on data of the cross-national Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE comprises data on health, socio-economic status and social and family networks of the 50+ population. The baseline study (first Wave) has been conducted in 2004 in eleven EU member states. In a second Wave in 2007 data of the 50+ population in thirteen EU-member states were collected. Data of the second Wave take the centre stage in the analysis. Wave 1 data have been analysed but will only be shortly described by comparing them with results of Wave 2. To permit a comparison of both Waves only countries that participated in both Waves are included in the analysis: Austria, Germany, Belgium, France, Italy, Spain, Sweden, Denmark and the Netherlands. Greece and Switzerland have to be excluded as data on formal care arrangements are not sufficiently reliable. Next to that, institutionalised persons are excluded as only care arrangements in private households are of interest.
The SHARE database includes many variables according to health, health care and support. The dependent variable studied is called *types of care.* It is composed of different variables and consists of four categories: (1) people receiving no care and having no limitations in activities of daily living (ADLs), (2) people receiving no care although they are suffering from at least one kind of limitations in ADLs, (3) people receiving informal personal care by non-professionals and (4) people receiving formal care by professional care services and nurses or a mixture of personal care by professionals and non-professionals. Care has a very restrictive definition as only help with activities like e.g., dressing, bathing or showering, eating, getting in or out of bed or using the toilet are covered by the expression personal care (For more details on the composition of the variable see the Appendix A).

2.2 Method

Multinomial regression models have been carried out for the analysis of the interrelation of (1) family characteristics and types of care and (2) of health factors and types of care. Respectively, four models have been run to study the family variables and four models to analyse the health variables. In each case the first model includes all nine analysed countries. Afterwards the links between types of care and family structures and types of care and health characteristics has been studied separately for three different European welfare state regions: Northern, Southern and Central Europe. The regions were built according to welfare state and care regime characteristics, as described in Section 1. According to similarities we combined the second and third cluster of care regimes into the welfare state region called Northern European region including Sweden, Denmark and the Netherlands. Data of Italy and Spain form the first cluster of care regimes and are in the following called Southern welfare state region, whereas the fourth and fifth care regime clusters, including Austria, Belgium, Germany and France stand for the more conservative, Central European welfare state regime. The combination of care regime clusters into welfare state clusters have to be conducted to avoid that the number of respondents becomes too small for the separated analyses. (For more details on the number of respondents see Map 1 in Appendix A).Two different data sets are used for (1) the four family models and (2) the four health models.

2.3 Dataset and variables of the Family Models

The dataset for the analysis of family variables consists of persons only that have children. The final data set of the family model includes 20.037 persons in nine countries that have at least one child. Three variables for the family structure have been built and studied. First, the living arrangement indicates if a person lives with or without a spouse or partner. Of the analysed persons belonging to Southern Europe 25.0% live without a partner, while that are 26.3% in Central Europe and 29.1% in the Northern welfare state region.

Second, the geographical distance of parents to the closest living son or daughter, measures the distance in three categories: (1) living more than five kilometres away, (2) living less than five kilometres away or (3) living in the same household or building. The data reveal that in the North living co-residently is least developed with 6.7 (9.6)% of closest living daughters (sons). Central Europe takes a medium position with 11.2 (16.5)% living co-residently with a daughter (son), whereas Southern Europeans exhibit the highest rates of co-residence of children and parents: 22.9% have a closest living daughter and 29.0% have a closest living son living in the same household or building.

Third, the occupational status of the closest living child exhibits if the closest living child works full-time/is self employed, is part-time employed, retired or not employed. In general 59.2% of the children in the data set are full-time or self employed. Divided into welfare state regions, the Southern Europeans exhibit the highest numbers of full-time employed children (62.4%), the North the middle (58.9%) and Central Europe the lowest values (57.7%). Not employed children are mostly found in the South (24.3%) and less found in the North and Central Europe with 19.8 and 18.4%, respectively. The proportions of retired persons do not differ strongly between the regions and add up to 2.1% on average. The strongest variations between the regions show up for part-time employed children: with 8.7 and 9.8% of the closest living child working part-time in Central and Northern Europe, respectively whereas the proportion in the South amounts to only 3.5%.

Next to these family characteristics, the control variables age, gender, country, education and area of living are included in the models (For more details on the operationalisation see Appendix A).

2.4 Dataset and variables of the Health Models

The analysis of health determinants and health biography is based on the SHARE dataset, too. All persons (parents and childless persons from the selected countries) are included in the analysis of health determinants. The dataset includes 22,176 persons (with 37 excluded persons due to missing information in one or more variables used for building up the dependant variable).
The health model consists of two modules:

I) While the first module is focussed on the effects of physical health problems,
II) The second module analyses the effects of mental health problems on care need and on the choice of the type of care.

To measure the physical health state of the individuals, four variables of the SHARE dataset are chosen. The first one asks for (general) limitations “because of health problems in activities people usually do” (SHARE Questionnaire, 2006). In this variable, persons evaluated their grades of limitation on a scale. The categories are “not limited”, “moderately limited” and “severely limited”. Next to that information on acute health problems like occurrences of a stroke, heart attack or cancer are used as health determinants. Each of the

three variables is defined to have two categories ("Yes" and "No/Missing information"). Persons with missing information are allocated to the main group of persons with no stroke, no heart attack or no cancer, respectively.
The second module aims at analysing the effects of the mental health state on care utilisation. The module consists of the two generated variables of cognitive impairment and depression. A person's cognitive impairment and depression are measured by a combination of divergent questions which are joined to two indices. The SHARE dataset covers several variables that measure individual's cognitive function. Five of these items ("orientation", "numeracy", "verbal fluency", "recall 1" and "recall 2") are used to build an index of "cognitive impairment" (CI) with a maximum of 18 points (for details see Ziegler (forthcoming)). By choosing cut-off points, four categories of the new variable of cognitive impairment have been defined (0 to 7 points for "severe cognitive impaired", 8 to 11 points for "moderate impaired", 12 to 13 "mild impaired" and 14 to 18 for "not impaired"). The persons with missing information are treated as an additional category.
Depression is measured using the EURO-D scale, which lists 12 items on how people feel and perceive their life. Depression is diagnosed if more than three items are answered negatively (Dewey and Prince, 2005). Persons with missing information are also summed up in an additional category.
The models are computed by using the pooled dataset (all countries) and separately by the three welfare state regions.

3 Determinants of types of care

3.1 Care arrangements in European welfare state regions

First, the overall distribution of the types of care is presented, including all persons. Analysing all countries combined, it emerges that 85.5% of the population 50+ lives without limitations in ADLs and without care (Table 2). The proportion of persons in need of care amounts to 14.5% of the population. Among the population in need of care persons living with at least one ADL limitation but receiving no care exhibit the highest proportion, formal and mixed care takes the medium position and informal care exhibits the smallest proportion – but the differences are small. Variations become larger if welfare state regions are analysed separately. The fraction of people in need of care is highest in Central Europe (17.3%), immediately followed by the South (16.4%), while it is comparably low in the North (9.8%). In Central Europe most people in need are formally or mixed cared, while in Spain and Italy most people are informally cared. In the North formal care is higher than informal care, but both together come up comparably small. This is probably due to the fact that in Northern countries the highest rates of institutionalised elderly exist. This weakens of course the strength of home care and the results are somehow affected as persons living in nursing homes are excluded from the analysis.

3.2 The links between family characteristics and types of care

In all countries combined (Table 3 upper left quarter) the descriptive numbers reveal that persons living without a partner show higher values in all three types of care compared to persons living with a partner. Striking differences show up if the welfare state regions are considered separately. For the category No care, with ADL limitations an above-average difference between persons that live with or without a partner shows up in the South (lower

right quarter), with the proportion of persons that receive no care although they suffer from limitations in ADLs being 5.4% higher if persons live without a partner.

Table 2 Distribution of types of care in the whole population and among the population in need of care in all nine countries combined and in three welfare state regions

TOTAL POPULATION 50+ (in %)

	ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
No care, no ADL limitations	85.5	82.8	90.2	83.6
No care, with ADL limitations	5.5	6.2	5.0	4.9
Formal and mixed care	4.8	7.4	3.0	2.8
Informal care	4.2	3.7	1.8	8.7
Popluation in need for care (in %)	14.5	17.3	9.8	16.4

POPULATION IN NEED OF CARE 50+ (in %)

	ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
No care, with ADL limitations	37.9	35.8	51.0	29.9
Formal and mixed care	33.1	42.8	30.6	17.1
Informal care	29.0	21.4	18.4	53.0

Source: SHARE Wave 2, release 2.3.0, own calculations. Health data set.

Depending on the living arrangement the difference in the usage of formal and mixed care is below-average in the South with a difference of 3.2% between persons living with and without partners, while the difference is above average in Central Europe with 6.3%. In regard to informal care, the most considerable values are found in the North, where in contrast to all other regions, informal care is higher if a person lives with a partner (+1.2%) whereas it is smaller in the other two regions (-0.2 in Central Europe and -6.8% in the South).

In regard to the second variable distance to the closest living son or daughter the overall proportions follow no clear trend within the category no care, no limitations in ADLs. They show somehow a decreasing trend within no care, with limitations in ADLs, implying a reduction of lacking care with increasing proximity of the closest living child. The same is observable for the category mixed and formal care, whereas the proportions of informal care increase with increasing geographical proximity of the closest living child. Differences between welfare state regions are small. The only outstanding trend is found in the North, where informal care does not increase but rather show a decreasing trend with increasing geographical proximity of the child.

The third family variable considers the time resources of the closest living child by analysing the child's employment status. Looking at the results for all countries combined the results of having a retired child living close are eye-catching and show considerable differences to other employment statuses and in-between the types of care. Striking is that the average proportion of all analysed Europeans in formal and mixed care that have a retired child living close adds up to 20.3%, whereas the proportion in the South only amounts 13.7%. Furthermore, the average proportion of all analysed Europeans in informal care that have a retired child living close adds up to 13.4%, whereas the proportion in the North only amounts 1.7% whereas it adds 36.8% in Italy and Spain.

Table 3: Descriptive Results, all countries, weighted values

		ALL COUNTRIES				CENTRAL EUROPE			
		No care, no ADL limitations	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***	***No care, no ADL limitations***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
Living arrangement	*With partner/spouse*	88.6	4.0	3.4	4.0	86.1	4.6	5.7	3.7
	Without partner/spouse	78.1	8.7	8.3	4.9	74.6	9.5	12.0	3.9
Distance to closest living son or daughter	*Daughter > 5 kms*	86.2	5.9	5.5	2.4	82.7	7.0	8.5	1.8
	Daughter < 5 kms	83.2	6.3	5.7	4.8	79.7	7.5	8.8	4.0
	Daughter HH	86.3	4.2	2.4	7.0	86.4	4.0	4.1	5.4
	Son > 5 kms	86.6	5.3	5.4	2.7	83.5	5.9	7.5	3.0
	Son < 5 kms	85.6	5.8	5.2	3.5	83.7	5.3	8.3	2.8
	Son HH	87.4	4.1	3.1	5.4	85.0	5.0	5.1	4.9
	Missing	84.6	5.4	5.5	4.6	80.1	5.9	8.8	5.2
Occupation of closest living child	*Full-time*	86.4	5.1	4.5	4.1	84.3	5.4	6.8	3.5
	Part-time	86.4	5.9	4.7	2.9	82.6	6.8	7.2	3.4
	Not employed	86.6	5.1	3.6	4.6	84.6	5.4	6.5	3.5
	Retired	53.0	13.4	20.3	13.4	48.8	18.0	23.9	9.3
	Missing	86.6	4.9	4.8	3.7	81.7	6.0	7.8	4.4
	Total	**85.8**	**5.3**	**4.7**	**4.3**	**83.0**	**5.9**	**7.3**	**3.7**
		NORTHERN EUROPE				**SOUTHERN EUROPE**			
		No care, no ADL limitations	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***	***No care, no ADL limitations***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
Living arrangement	*With partner/spouse*	92.7	3.8	1.3	2.2	87.3	3.3	2.0	7.4
	Without partner/spouse	85.5	7.8	5.8	1.0	72.0	8.7	5.2	14.2
Distance to closest living son or daughter	*Daughter > 5 kms*	90.4	4.9	3.0	1.7	83.4	5.3	3.7	7.6
	Daughter < 5 kms	89.4	4.9	3.2	2.5	78.9	6.3	3.9	11.0
	Daughter HH	93.5	4.1	0.7	1.7	83.1	4.5	1.6	10.8
	Son > 5 kms	90.3	5.3	2.6	1.8	85.4	2.6	6.5	5.5
	Son < 5 kms	89.3	5.5	3.3	1.9	80.8	7.1	3.6	8.6
	Son HH	94.2	3.3	1.5	0.9	86.4	3.5	1.8	8.3
	Missing	90.3	6.1	1.8	1.8	86.1	2.3	3.5	8.1
Occupation of closest living child	*Full-time*	90.1	5.1	2.7	2.1	84.7	4.4	2.8	8.1
	Part-time	90.7	5.0	2.2	2.1	85.6	5.2	3.9	5.2
	Not employed	92.7	4.2	1.7	1.3	82.4	5.7	1.5	10.4
	Retired	68.4	11.1	18.8	1.7	43.2	6.3	13.7	36.8
	Missing	92.3	4.7	1.7	1.3	87.1	2.4	3.6	6.9
	Total	**90.5**	**5.0**	**2.6**	**1.8**	**83.5**	**4.6**	**2.8**	**9.1**

Source: SHARE Wave 2, Release 2.3.0., family data set, own calculations.

In the following, the regression results for the family variables are presented. For all countries combined the results reveal that it makes a clear-cut difference for the type of care if a person lives with or without a partner (Table 4 – upper left quarter). Being in need of care and living without a partner is significantly linked with a higher risk of receiving formal and mixed care or no care although suffering from limitations in ADLs. If no partner or spouse is available for a dependent person informal care is significantly lower compared to persons living with a partner. (Detailed regression results are presented in Appendix B). The overall picture changes if the three predefined welfare state regions were analysed. In Northern countries (Table 3 lower left quarter) partners seem to be the essential source of informal caregiving as persons living without a partner exhibit a much lower risk of receiving informal care compared to persons living with a partner. These partnerless living people in need of care seem to be caught up by formal and mixed care arrangements as the risk of receiving formal and mixed care increases strongly compared to people living with a partner.

The same trends show up in Central and Southern Europe, but at a smaller degree. Especially very small is the difference in the South: persons in need of care that do not have a partner seem to be even so cared informally like persons with partners (Table 4 – lower right quarter). The results show no significant difference – so the high informal care arrangements seem to

have another strong source of informal care, since also formal care does not increase significantly if people live without a partner. Central Europe takes a medium position between these two extremes exhibiting significant differences in all three types of care: Effects are positive for persons living without a partner in formal and mixed care as well as in the category no care, although limitations in ADLs exist, whereas effects for partnerless living persons are negative in informal care – strongest is the difference in the category of persons that receive no care but have limitations.

Table 4 Effects of family variables on types of care for all countries combined and by welfare state region

		ALL COUNTRIES			CENTRAL EUROPE		
		No care, with ADL limitations	Formal and mixed care	Informal care	No care, with ADL limitations	Formal and mixed care	Informal care
Living arrangement	***With partner/spouse***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Without partner/spouse	+++	+++	- -	+++	+	- -
Distance to closest living son or daughter	***Daughter > 5 kms***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Daughter < 5 kms			+++			
	Daughter HH		- -	+++	- -	-	+++
	Son > 5 kms						+++
	Son < 5 kms				- - -		
	Son HH		- -	+++			+++
Occupation of closest living child	***Full-time***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Part-time	+++					
	Not employed	+++				+++	
	Retired		+++	++		+++	
		NORTHERN EUROPE			**SOUTHERN EUROPE**		
		No care, with ADL limitations	**Formal and mixed care**	**Informal care**	**No care, with ADL limitations**	**Formal and mixed care**	**Informal care**
Living arrangement	***With partner/spouse***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Without partner/spouse	+	++	- - -	+++		
Distance to closest living son or daughter	***Daughter > 5 kms***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Daughter < 5 kms						
	Daughter HH						+++
	Son > 5 kms						
	Son < 5 kms						
	Son HH						
Occupation of closest living child	***Full-time***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Part-time				+++		
	Not employed				+++		
	Retired		+++				+++

RG = Reference group, Comparison by columns: '+' means higher risk, '-'means lower risk. Highest effects are presented by three signs and lowest by only one sign. If there is no sign, values are not significant. Control variables are: age, gender, country, education and area of living.
Source: SHARE Wave 2, Release 2.3.0, own calculations.

Comparison Wave 2 to Wave 1

- In Wave 1 the same connections for living arrangement and type of care are observed with almost the same strength of the effects as found in Wave 2.

Next to the existence of a partner living in the same household it makes a significant difference for the type of care if a son or daughter is reachable in a geographical sense: With increasing geographical proximity of the closest living son or daughter informal care

significantly increases and formal and mixed care decrease. The strongest effects occur if the selected child and parent in need of care live co-residently: Compared to daughters that live more than five kilometres away (reference group) the risk of dependent parents to receive informal care increases significantly if they live co-residently with a son or a daughter or if the daughter lives near by. In total, the effects of daughters are stronger than for sons. The opposite effect of proximity appears for formal care: Living with a daughter or son means a reduction in the risk of receiving formal or mixed care. Hence, again effects are stronger if the co-residing child is a daughter. The risk of being in need but receiving no care is not significantly affected by the living distance of children if all countries are analysed combined. The above presented trends are exceptionally strong and almost only pronounced in Central Europe. The living distance of sons and daughters seem to be more important here for the type of care than in Southern and Northern Europe: Having a daughter or son living in the same household or building leads to a higher risk of informal care and a lower risk of receiving no care if the parent suffers from at least one kind of limitations in ADLs. Formal and mixed care is negatively affected if the daughter lives together with the parent in need of care. In the North no significant connection is observable. In the South only informal care shows a reaction on the living distance: The effect is positive but only for daughters living in the same household.

Comparison Wave 2 to Wave 1

- The results for informal care and No care although limitations in ADLs exist are in general quite similar in both Waves.
- Bigger differences occur if analysing formal and mixed care: There is no clear-cut trend for decreasing formal and mixed care with decreasing distance of the closest living child in Wave 1. Somehow, especially in the South, we can speak about the opposite effect of increasing formal and mixed care with increasing proximity, what cannot be explained as there is no big difference in the proportion of formal and mixed cared persons between the two Waves.

Furthermore, the employment status of the closest living child is essential for the type of care a dependent elderly uses. Analysing all countries combined, significant increases in the use of formal and mixed care as well as informal care occur if the closest living child is retired compared to full-time employed children.

Having a part-time working or not employed close living child has only and surprisingly an effect for the risk of receiving no care although persons suffer from limitations: The risk rises significantly compared to persons that have a full-time employed child living close.

Studying the welfare state regions separately, it becomes obvious that the higher informal care of persons with retired children exclusively exists in the South. Whereas in the North and centre of Europe having a retired close living child is significantly connected with higher formal and mixed care use.

So, children, being old by themselves, represent an important caregiving potential, but in the South, they or their parents do not use support by formal care services, probably because it is not available. In Central and Northern Europe retired children of parents in need of care use to a very high amount formal care service as supporters or even substitutes. In Central Europe next to having a retired child also having a not employed child affects formal and mixed care significantly positive. Additionally, it is considerable that in Italy and Spain the proportion of persons that receive no care although they suffer from at least one kind of limitations in ADLs is higher if the closest living child is not employed or part-time employed.

Comparison Wave 2 to Wave 1

- Not employed children: Differences for informal care in the South and North appear: While in Wave 2 in general employment of the closest living child shows no effect on informal care a highly significant increase in informal care is observable if the child is not employed compared to a full-time employed child in the South and in the North. That can probably imply the following: while in the South perhaps non-employment is more a consequence of the upcoming need of a parent to be cared for, in the North non-employment is a condition for informal care only.
- Retired children: Differences for formal and mixed care in the South and North: While in Wave 2 in the North a retired child was only important for a higher formal and mixed care, it is important for formal and mixed care as well as informal care in Wave 1. But the effect is stronger for formal and mixed care.
- While in Wave 2 in the South a retired child is only important for a higher informal care, it was important for a higher formal and mixed care only in Wave 1.

3.3 The links between health factors and types of care

Effects of physical health determinants on the type of care

In the first module, physical health determinants of care need and care receipt are analysed.
As expected, there is a strong positive relation between the degree of physical limitation and care need and care utilisation. The higher the degree of limitation, the higher the risk of care need and care receipt. In general, most of the severely limited persons do not receive any type of care (see Table 5). If severely limited persons receive care, they are predominantly formally and mixed cared (18.4%).
This trend can be noticed for Central and Northern European countries (24.6% or 12.7%) but not for the Southern European countries (2.9%). In Italy and Spain, most of the severely limited persons are informally cared (10.3%).

The descriptive results of the variables of stroke, heart attack and cancer are also as expected. In general, the prevalence of care need and/or receipt is higher for persons who experienced a stroke, a heart attack or live with a diagnosed cancer. Most of the persons who suffer from one of these acute health problems do not receive or need help. Exceptions are persons who survived a stroke. “Only” 56.5% of the stroke survivors are not limited in daily activities and receive no care (see Table 5). That underlines the severity of the disease.
In the Central and Southern European countries, the%ages are even smaller than the average of all countries under study (48.1 and 42.2%). In general, formal and mixed care is the predominating type of care for each of the three health problems. However, Italy and Spain also show divergent trends. In the Southern countries, persons are mainly informally cared even if they suffered a stroke (27.2%), a heart attack (19.8%) and/or a cancer disease (26.2%).

Table 5 Descriptive results of care settings by physical health problems and welfare state regimes (in %)

		ALL COUNTRIES				CENTRAL EUROPE			
		No care, no ADL limitations	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***	***No care, no ADL limitations***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
(General) Limitations	*Not limited*	95.6	1.7	1.6	1.1	93.5	2.4	3.2	1.0
	Moderately limited	83.4	7.7	4.1	4.8	82.8	7.8	5.7	3.7
	Severely limited	51.1	15.7	18.4	14.8	45.8	16.5	24.6	13.1
	Missing	66.7	0.0	33.3	0.0	50.0	0.0	50.0	0.0
Stroke	*No/missing*	86.5	5.3	4.5	3.8	83.9	5.9	7.0	3.3
	Yes	56.5	12.3	16.1	15.1	48.1	16.0	18.4	17.4
Cancer	*No/missing*	86.1	5.4	4.5	4.0	83.4	6.1	6.9	3.6
	Yes	72.2	7.2	12.5	8.1	67.5	7.6	18.1	6.8
Heart attack	*No/missing*	87.5	4.9	4.0	3.6	85.2	5.4	6.2	3.2
	Yes	70.4	10.1	11.1	8.4	65.3	11.7	15.7	7.2
	Total	**85.5**	**5.5**	**4.8**	**4.2**	**82.8**	**6.2**	**7.4**	**3.7**
		NORTHERN EUROPE				**SOUTHERN EUROPE**			
		No care, no ADL limitations	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***	***No care, no ADL limitations***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
(General) Limitations	*Not limited*	98.0	1.0	0.4	0.5	83.6	4.9	2.8	8.7
	Moderately limited	87.7	7.4	3.0	1.9	96.1	1.4	0.5	2.1
	Severely limited	65.4	15.6	12.7	6.2	79.0	7.7	2.9	10.3
	Missing	100.0	0.0	0.0	0.0	36.7	14.0	13.3	36.0
Stroke	*No/missing*	90.9	4.9	2.7	1.6	90.9	4.9	2.7	1.6
	Yes	72.4	9.6	11.3	6.8	72.4	9.6	11.3	6.8
Cancer	*No/missing*	90.8	4.9	2.6	1.7	84.3	4.8	2.7	8.2
	Yes	80.4	6.6	9.8	3.2	60.3	7.8	5.7	26.2
Heart attack	*No/missing*	91.5	4.5	2.4	1.6	85.9	4.5	2.3	7.4
	Yes	80.3	8.8	7.6	3.3	64.7	8.7	6.8	19.8
	Total	**90.2**	**5.0**	**3.0**	**1.8**	**83.6**	**4.9**	**2.8**	**8.7**

Source: SHARE Wave 2, Release 2.3.0, all cases, own calculations.

The regression models which control for age group, gender, country, education and area of living permit a more detailed insight. In these regression models, a general significant increase of care need and care receipt can be stated for a rising grade of physical limitation (see Table 6). This increase is highest for informal care, but only visible in Central European countries. In the Northern and Southern European countries the relative risks are highest for formal and mixed care. In general, persons with limitations in ADLs and moderate general limitations receive predominantly no care. These trends can be stated for both Central and Northern European countries, while persons with the same characteristics in Southern Europe are predominantly formally and mixed cared.

Table 6 Regression results of care settings by physical health problems and welfare state regimes

		ALL COUNTRIES			CENTRAL EUROPE		
		No care, with ADL limitations	***Formal and mixed care***	***Informal care***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
(General) Limitations	***Not limited***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Moderately limited	+++	+	++	+++	+	++
	Severely limited	+	++	+++	+	++	+++
Stroke	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes	+	+++	++	+	++	+++
Cancer	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes		+++	++		+++	++
Heart attack	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes	+	+++	++	+++	+++	
		NORTHERN EUROPE			**SOUTHERN EUROPE**		
		No care, with ADL limitations	***Formal and mixed care***	***Informal care***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
(General) Limitations	***Not limited***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Moderately limited	+++	++	+	+	+++	++
	Severely limited	++	+++	+	+	+++	++
Stroke	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes		++	+++	+	+++	++
Cancer	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes		+++	++	+	++	+++
Heart attack	***No/missing***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Yes		+++			++	+++

RG = Reference group, Comparison by columns: '+' means higher risk, '-' means lower risk. Highest effects are presented by three signs and lowest by only one sign. If there is no sign, values are not significant. Control variables are: age, gender, country, education, area of living, and mental health determinants.
Source: SHARE Wave 2, Release 2.3.0, own calculations.

In the model which includes persons of all nine countries, the highest effects of the acute health problems stroke, heart attack and cancer can be stated for formal and mixed care. However, the only exception is the effect of stroke on the choice of the care arrangement. It can be noticed that the effect of stroke is highest in informal care in the Central and Northern European countries and in formal and mixed care in the Southern countries. Additionally, the effects of heart attack and cancer are stronger on receiving informal care than on receiving formal and mixed care in the Southern European countries only. (More detailed results can be found in Appendix C)

Comparison Wave 2 to Wave 1

- Comparing the results of Wave 1 and 2, only few differences can be observed. In Wave 1. The Southern countries show very high risks of care need and care receipt for severely limited persons. In contrast to the results of physical limitations of Wave 2, highest increases for formal and mixed care can only be noticed for the Southern countries, while the Northern and Central European countries follow the general trend of highest effects of limitations on receiving informal care.
- The results for stroke, heart attack and cancer are close to the results of Wave 1. The only exceptions are the countries in Northern Europe, where a contrary trend can be found for stroke and heart attack. While effects of stroke are stronger for informal care and the effects of heart attack are stronger for formal and mixed care in Wave 1, the trends are reverse in Wave 2.

Effects of mental health determinants on the types of care

Cognitive impairments and depressions show an ever growing importance in elderly people's health in almost every European country. As expected, the results of the descriptive analysis show the same effect of the level of cognitive impairment on care need and care receipt in all regions: The higher the grade of cognitive impairment, the higher the proportion of persons with care need and care receipt (all types). Another notable fact is the high proportion of persons with profound restrictions in activities of daily living (ADL) and severe cognitive impairments but without receiving any type of care (12.1%, see Table 7). These trends are observed in all welfare state regions. However, country differences can be stated when analysing the distribution of persons by types of care. In Central and Northern countries, most of the persons with severe cognitive impairments and care need receive formal and mixed care (22.5 and 19.1%), while persons with the same characteristics are predominantly informally cared (17.0%) in Southern European countries.

In accordance to the descriptive results for cognitive impairment are those for persons with depression. It is notable that the vast majority of persons with depression are identified as persons with no care need and no care receipt (70.6% see Table 7). Only a very small group of persons with depression stated to receive any type of care (especially in the Northern European countries). When analysing the trends for the welfare state regions separately, a strong divergence can be observed. While persons with depression in the Central European countries are mostly formally and mixed cared (13.4%), the affected persons in the Southern countries are predominantly informally cared (15.3%) or receive no care, as persons suffering from depressions in the Northern countries (13.1%). These trends are independent of the severity of cognitive impairment, since in Central and Northern European countries the proportion of persons in formal and mixed care arrangements is higher for all levels of impairment than the proportion of informally cared persons (and vice versa in Italy and Spain).

The results of the multivariate analysis support the conclusions. As already seen in the descriptive analysis, a general effect of an increasing risk of care need and care receipt with an increasing level of cognitive impairment can be stated (see Table 8). In general, this effect is most profound for formal and mixed care. By decomposing the effects by welfare state regions, the effect is (slightly) stronger for informal care than for formal and mixed care in Central European countries only. In the Northern and Southern countries, the effects of level of cognitive impairment on care receipt are clearly stronger for formal and mixed care than for informal care.

Table 7 Descriptive results of care settings by mental health problems and welfare state regimes (in %)

		ALL COUNTRIES				CENTRAL EUROPE			
		No care, no ADL limitations	*No care, with ADL limitations*	*Formal and mixed care*	*Informal care*	*No care, no ADL limitations*	*No care, with ADL limitations*	*Formal and mixed care*	*Informal care*
Cognitive impairments	*No cognitive impairment*	91.4	3.8	2.7	2.1	89.1	4.3	4.5	2.2
	Mild cogn. impairment	84.2	6.3	5.4	4.1	77.2	8.7	9.5	4.6
	Moderate cogn. impairment	77.5	8.9	7.1	6.5	71.9	10.9	11.5	5.7
	Severe cogn. impairment	61.7	12.1	13.3	12.9	53.2	14.0	22.5	10.2
	Missing	56.5	5.1	20.0	18.4	61.7	4.5	20.4	13.4
Depression	*No depression*	91.2	3.6	3.0	2.2	88.6	4.2	4.9	2.3
	Depression	70.6	11.3	9.1	8.9	67.7	11.9	13.4	7.0
	Missing	54.0	6.1	21.5	18.4	53.2	6.4	26.6	13.8
	Total	**85.5**	**5.5**	**4.8**	**4.2**	**82.8**	**6.2**	**7.4**	**3.7**
		NORTHERN EUROPE				**SOUTHERN EUROPE**			
		No care, no ADL limitations	*No care, with ADL limitations*	*Formal and mixed care*	*Informal care*	*No care, no ADL limitations*	*No care, with ADL limitations*	*Formal and mixed care*	*Informal care*
Cognitive impairments	*No cognitive impairment*	93.5	3.8	1.3	1.4	93.2	2.1	0.9	3.8
	Mild cogn. impairment	87.0	6.5	4.0	2.5	91.2	2.7	1.1	4.9
	Moderate cogn. impairment	78.2	10.2	8.7	2.9	82.1	6.5	2.3	9.2
	Severe cogn. impairment	62.9	13.9	19.1	4.0	66.5	10.4	6.1	17.0
	Missing	72.4	6.7	17.1	3.8	36.6	5.2	20.9	37.3
Depression	*No depression*	93.5	3.3	2.0	1.2	92.3	2.6	1.0	4.1
	Depression	75.8	13.1	6.9	4.2	70.6	9.2	4.9	15.3
	Missing	74.2	6.7	15.0	4.2	36.8	5.3	20.3	37.6
	Total	**90.2**	**5.0**	**3.0**	**1.8**	**83.6**	**4.9**	**2.8**	**8.7**

Source: SHARE Wave 2, all cases, own calculation

In general, mild cognitively impaired persons with ADL limitations show a higher risk of receiving no care than the risk of receiving informal or formal and mixed care. However, that general effect is only determined by the trend in Central Europe, while there are no effects in Northern and Southern Europe.

For depression, the strongest, general effect can be stated for no care with ADL limitations and informal care. These trends are similar in the country groups, except of the Southern European countries, where the effect is most profound for formal and mixed care (Detailed results can be found in Appendix D).

Comparison Wave 2 to Wave 1

- Compared to the results of SHARE Wave 1, only small shifts can be stated. In the first Wave of the SHARE survey, the general effect of increasing informal care receipt by level of cognitive impairment is more profound than in Wave 2 (especially for Central European countries). The results for depression in Wave 1 are very similar to the results of Wave 2.

Table 8 Regression results of care settings by mental health problems and welfare state

		ALL COUNTRIES			CENTRAL EUROPE		
		No care, with ADL limitations	***Formal and mixed care***	***Informal care***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
Cognitive impairments	***No cognitive impairment***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Mild cogn. impairment	+++	++	+	+++	+	++
	Moderate cogn. impairment	++	+++	+	+++	+	++
	Severe cogn. impairment	+	+++	++	+	++	+++
Depression	***No depression***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Depression	+++	+	++	++	+	+++
		NORTHERN EUROPE			**SOUTHERN EUROPE**		
		No care, with ADL limitations	***Formal and mixed care***	***Informal care***	***No care, with ADL limitations***	***Formal and mixed care***	***Informal care***
Cognitive impairments	***No cognitive impairment***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Mild cogn. impairment		+++				
	Moderate cogn. impairment	++	+++		+++		
	Severe cogn. impairment	++	+++		++	+++	+
Depression	***No depression***	*RG*	*RG*	*RG*	*RG*	*RG*	*RG*
	Depression	+++	+	++	+	+++	++

RG = Reference group, Comparison by columns: '+' means higher risk, '-' means lower risk. Highest effects are presented by three signs and lowest by only one sign. If there is no sign, values are not significant. Control variables are: age, gender, country, education, area of living, and physical health determinants
Source: SHARE Wave 2, Release 2.3.0, all cases, own calculation

4 Discussion and conclusion

Based on the interplay of different welfare state and care regimes as well as on historically grown cultural values and on available care resources, it was hypothesised that care arrangements could appear quite different in various regions of Europe depending on family characteristics as well as on varying health factors.

In general it emerges that formal and mixed care is strongest used in Central Europe whereas informal care settings dominate the care landscape in Southern Europe. In Northern Europe both, formal and informal care together, appears to be very low. That is probably due to the fact that a high number of persons in need of care live in institutions.

Family characteristics

Summing up the results of the family model for all countries combined it became obvious that, as hypothesised, that dependent persons that live with a partner or spouse receive rather informal care and to a less extent formal and mixed or no care. But these overall results are highly influenced by regional particularities.

As expected, in Northern and Central Europe, informal care is positively affected and formal and mixed care is negatively affected if a dependent person lives with a partner. But the relationship is far more and highly distinctive in the North. That is probably due to the fact that living alone in old age is a widespread living arrangement in the North. If informal care is given, partners and spouses carry the main and almost only caregiver role in the North.

In the South partners do not matter for the use of informal and formal care in private households. To have a partner is only essential for the superior question if care is received by a person with limitations in ADLs or if not: Living without a partner is connected with a higher risk of being not cared although it is needed. That is also found in Central Europe. The highest proportions of Southern and Central Europeans that have limitations in ADLs but are not cared for and live without a partner are divorced or widowed. As only persons with children are included in the analysis, the question arises, why do not the children help their parent in need, as the family is in the South and less but still strong also in the conservative Central Europe an important resource of support? It can be assumed that parents and children connect somehow only less emotional closeness (Szydlik, 2008). At the same time it is possible that exogenous circumstances keep the children from caring. Children can be demanded by other family responsibilities, their jobs or other existential tasks, so they are not able to fulfil an additional social role. Following this it is imaginable that parents hide their limitations, hence to protect their children from overloading care tasks – especially in the South, where any kind of public support is comparably low developed. The last fact implies that there are persons without co-residing partners at risk and should be considered by local authorities as persons in need of public support.

As the effects of having no partner already implied, children and their characteristics are – dependent on the region - differently important for the care arrangement. The characteristic of geographical proximity of the closest living son or daughter has – as expected - no effect on the choice of a type of care in Northern countries. Children are not seen as natural caregivers; the state takes on responsibility if elderly parents are in need. So children and also dependent parents may live their life further on according to values of autonomy and individualism. But that should not imply that children do not care at all. The term *personal care* in the report is very restrictive: care tasks are defined as help with basic support, as e.g. help with dressing or getting up, while help with domestic tasks or paper work are excluded. That should be considered as for example Brandt et al. (2009) also find by analysing SHARE data that help with personal care tasks is rather low developed in the North. But they show also that children's help in the household or in dealing with authorities is compared to other European regions highest in Northern Europe. In contrast to that for the South they find that mainly personal care is done by children to a great amount. That fits to our results on geographical proximity of the closest living son or daughter: The living distance does only matter slightly. That is probably due to the fact that children take over care tasks more or less independent of their own concerns and because family ties – here measured in geographical proximity - are anyway strong. Hence, the proximity does not matter, because almost all children feel the responsibility to care and will probably adjust life circumstances to care responsibilities - if not already existing.

In-between these north-south-extremes are the Central European countries situated. There, children's geographical availability is an important factor for the care arrangement with closer proximity – especially co-residence - leading to higher informal care and lower formal and mixed care arrangements. This implies that both types substitute each other or support each other if living conditions of children or dependent parents demand for it.

Next to the geographical availability the timely availability of children is a crucial factor that determines which type of care is chosen – but of course with differing outcomes for the three welfare state regions.

A first remarkable effect can be observed if the closest living child is retired: While in Northern and Central Europe formal and mixed care increases if dependent parents have a retired close living child; in the South informal care increases. That implies that retired and old children use formal care services and nurses to substitute for or support their own caregiving in the North and centre of Europe.

Contrasting to that being retired seems to be a precondition for caregiving to dependent parents in the South. That is remarkable as these results firstly reveal that all over Europe an ageing process of caregivers takes place; the older the parents become, the older are potentially caregiving children. Secondly these "new caregiver generation" is reliant on formal care services that support or substitute their own caregiving, because they are old and probably limited by themselves. That support of the older caregivers is lacking in the South.
A further striking outcome is again found for Italy and Spain: If the closest living child of a mother or father in need of care is part-time employed or not employed, the parents carry a higher risk of not being cared. That could be an explanation of the already above mentioned questioned, when discussing the results for the living arrangements. It was asked: What hinders children in caring for their widowed or divorced parents in countries where family ties and responsibilities are supposed to be strongest? The answer is probably a mixture of many factors, but the results of the employment status imply that children in more instable working conditions – meaning being not employed or working in part time[1] – are probably less able to care for a dependent parent. Next to that it is, as already mentioned, imaginable that parents hide their limitations to protect their children that have to cope with poor and stressful living situations. The implication is again: Southern families need more support by professional care services than they have today. It is widely known that Southern countries' formal care sector is strongly connected with legal and illegal employed migrant female care workers that often live within the family[2]. Private in-house employment is since decades a usual labour market characteristic of Southern European countries. But lacking policies to balance work and life – especially for women that function as the informal pillar of the welfare state – make Southern Europeans to find their own private and low-cost balancing instruments: They hire care workers on a private basis. Since that time Southern European countries became immigration countries. In 2007 78% of all domestic workers and private care assistants that were employed in Italian households were foreign (Di Santo and Ceruzzi 2010). In Spain in 2009 about 63% of all domestic workers had a migration background (León 2009). Although there have been regularisation processes in the early 2000 and in recent years, still a high number of those domestic care workers are not legally employed and work without a contract or social insurance, probably because it is too expansive for employers. Public provisions for example for the dependent elderly are almost only cash benefits and they are quite small. The labour market situation improved in the sense of a smaller black care market in the past decades. But it is still more a question of money and less a question of need if persons in need of care want to engage professional helpers and caregivers (Di Santo and Ceruzzi 2010). Next to the financial problem it is questionable if these formal care settings are future-oriented and real solutions to sustain and develop professional care services in coming decades. Ageing processes are also evolving in other parts of the world so it is doubtful if the migration flows of good educated women will continue to fill the gap of lacking care personnel.

[1] Eurostat data show that in all Southern European countries the main reason for part-time work is the inability to find a full-time job (Corral and Isusi, 2005)

[2] Within-family living care workers could cause some biases in the results. As informal care within the household is defined by the question "Is there someone living in this household who has helped you regularly during the last twelve months with personal care, such as washing, getting out of bed, or dressing?" it is possible that these hired care workers are measured as informal care givers but they are in fact formal care givers – meaning that a person from outside the social environment give care.

Health factors

Physical health factors

It was assumed that persons with mild or moderate physical limitations predominately receive informal care or no care at all. As expected, persons with non-severe limitations show higher risks of getting no care than receiving formal and mixed or informal care in Central and Northern countries. However, mildly limited persons are mainly formally cared in Southern European countries. Divergent effects of selection bias may be an explanation for these trends. Thus, a higher intention of institutionalisation in the Northern and Central European countries may lead to the effect that even persons with mild or moderate physical limitations in these countries tend to step into an institution, while persons in Southern European countries still remain in private households. To decrease the caregiver's burden, formal care services – probably often in form of privately employed migrant care workers - were used to support the informal caregivers.

In Hypothesis VIb was assumed that there is a difference in the type of care for persons with severe (general) physical limitations by welfare state region. In general, the results confirm this hypothesis, but there are the following notable exceptions: Persons with severe limitations show the highest risk of receiving formal and mixed care in Northern European countries (analogous to the hypothesis), but also in Southern European countries (contrary to the hypothesis). Further contrasting the expectation, severely limited persons in Central European countries have a higher risk to be cared for informally than cared for formally or in a mixed care arrangement.

The care settings for persons with acute health problems (stroke, heart attack or cancer) are very similar in the Central and Northern European countries, but contrasting in Southern Europe. As hypothesised, persons suffering from a cancer disease or a heart attack have the highest risks of receiving formal and mixed care in Central and Northern European countries, and the highest risks for informal care in the Southern European countries. However, the results for stroke are contrary to the hypothesis: The study states the highest prevalence of informal care for stroke survivors in Central and Northern European countries, while the prevalence is highest for formal and mixed care in Southern Europe. A possible explanation for these results is that a higher percentage of persons who suffered a stroke steps into an institution in Central and Northern Europe, while stroke survivors in Southern Europe receive assisted home care.

Cognitive health factors

It is observable that persons with mild or moderate cognitive impairments receive predominantly informal care or no care in Central Europe only. In Northern and Southern Europe, persons with mild or moderate cognitive impairment show an explicit higher risk of getting formal and mixed care than receiving informal or no care at all.

For persons that have severe cognitive impairments or depressions was expected that they are rather informally cared in Southern Europe, while in Northern and Central Europe formal and mixed care is used more often. But that has to be rejected. The results show that persons with cognitive impairments - even with mild or moderate level - exhibit a distinct higher risk of formal and mixed care receipt than getting informal or no care. In contrast, persons with severe cognitive impairments in Central Europe show the highest prevalence of informal care. The trends for depression are inconsistent. While depressed persons are predominantly informally cared in Central Europe, the prevalence is highest for no care in Northern Europe and for formal and mixed care in Southern Europe. These heterogeneous trends can be partly explained by the difficulty of detecting depression and by socio-cultural and individual disparities in recognition of depression as a serious disease.

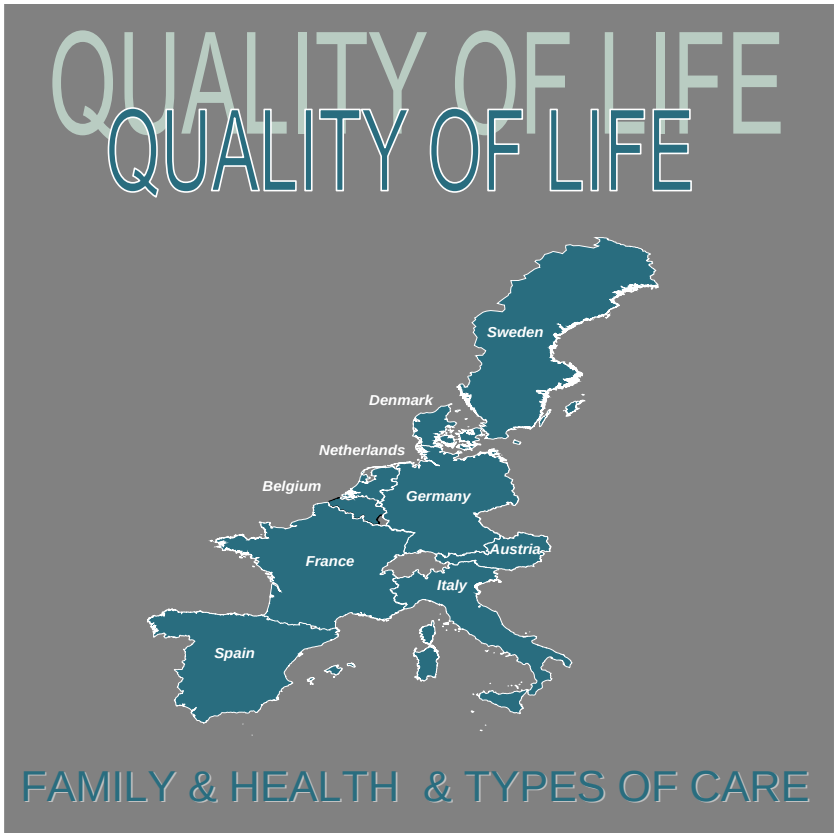
To sum up, the analyses reveal that family as well as health factors are very important determinants of the type of care, depending on the institutional settings provided by the welfare state. In general in the Northern countries a high acceptance of formal care has been found and lower levels of informal care. In Central Europe the meaning of available informal resources have the strongest effects on the choice of care arrangements. In the South informal care is the dominant care type. The results imply that the demographic changes may have a higher impact on care arrangements in Central and Southern Europe: Policymaker should recognise that there are differences between the welfare state regions that require region- and culture-specific support for care arrangements.

Furthermore, the results of Wave 1 show in general the same distribution of types of care across the regions as found in Wave 2. There are some differences between the two Waves if special effects of for example the geographical proximity or the physical limitations are considered in more detail. It is unclear why these different effects occur between the two Waves. The release of Wave 3 will probably shed light on these aspects.

V

Part B

Quality of life, types of care and other determinants



1 Theoretical background

1.1 Care types and welfare state regions

An advantage of having a partner and or children besides higher quality of life is that in case of care need people can more often stay in their home and do not have to move into institutions. If no partner exists children are likely to take over. But if care is included into the correlation between parents and children the quality of life can change. Care puts a high burden on both carer and people who are looked after. Mette (2005) finds that dependent elderly who live with another person than a spouse or with several persons among whom a spouse can be included show the lowest life satisfaction level. This effect can be influenced by the type of care, the degree of free choice and the societal support. Quality of life is not only influenced by individual life course experiences and psychological resources but also by the constraints and opportunities different societies provide. The role of environments of ageing can be described with a three-dimensional framework linking individual, psychological and social, and environmental factors which is described in Walker (2005). Southern European countries are often seen as more collectivistic, while Northern European countries are thought to have a more individualistic tradition. Formal support provided by the state is much higher in Northern European countries, informal help from the family is much higher in Southern European countries while Central European countries are somewhere in between (for a more detailed description of the Welfare Regimes and the impact on the care system see the first part of this report). This is confirmed in several studies: A study about formal and informal care among single-living elderly in Europe also done with SHARE data (Bolin et al., 2008) found that in Southern Europe – regions with strong family ties – informal care was more prevalent and also substituted formal care more often. On the one hand, family members might be expected to a higher extent to provide care but on the other hand, the scarce availability of professional care and social norms pushes some people into the role of care providers. Also within the EUROFAMCARE project the amount of care given was found to be higher and the availability of professional support much lower in Southern European countries than in other European countries, which might influence the perceived burden (Lamura et al., 2008). Within the OASIS project Daatland and Lowenstein (2005) analysed intergenerational solidarity between the countries Norway, England, Israel, Germany and Spain. They find that intergenerational relationships in Northern countries are more person-driven and less prescriptive and in Southern Europe more duty driven and prescriptive but conclude that all in all there are no strong differences between the countries. When they restrict their analyses to people in need of care above age 75 the picture is as expected: informal help from family is highest in Spain and the welfare-state support is highest in Norway. However, the access to services did not seem to have crowded-out the family. “Instead, it seems to have changed the family role in the care system, possibly towards less burdensome tasks” (Daatland and Lowenstein, 2005). However, some crowding-out might exist because Norway has the highest proportion of elderly who manage with formal care only. Total help levels are higher in Norway and Israel where high service levels exist, than in Spain and Germany where low service levels force the family to take over responsibility.

But what are the impacts of these support differences on the quality of life? Do people in need of care feel more often as a burden when they are dependent on the family help instead of being able to choose the care type? There seems to be some evidence: Parents who receive help from a child are more likely to have ambivalent relationships with that child, with the highest effect in Spain (Silverstein et al., 2010). When interpreting the relationship between elderly who are dependent on care and their children one has to keep in mind, that adult children care about the well-being of the parents, but make irreversible location

decisions often long before the care is needed (Rainer & Siedler, 2010). Furthermore there are cultural differences in distance and mobility. Tesch-Römer et al. (2003), who looked within the same project at social support and care need, expected a positive correlation between family support and quality of life based on the 'main effect hypothesis of social support' but also on the 'buffer hypothesis of social support'. Their results show negative relations between support from families and services and subjective quality of life. They provide two possible explanations: First, the measured health might not capture the support needed and given by families and services and therefore cannot be controlled for. Second, people might feel threatened with their autonomy and identity. They furthermore show that "in countries with a strong infrastructure of services (Norway, England, Israel) the correlations between service support and quality of life are zero, while in countries with a low infrastructure of services (Germany, Spain) the correlations are substantial and negative" and conclude that there are differences between countries which differ in their acceptance of personal services. Mette (2005) finds with data from the ECHP that dependent elderly are less satisfied with their main activity in Southern Europe, where informal care is more widespread. This might imply that "public help insufficiency forces dependent elderly to live accompanied by other persons". Their results show, that living with several people leads to a lower satisfaction. One effect which could ease the effect of dependency might be reciprocity. When elderly who receive help from their children can pay back e. g. in form of financial payments, they might feel less as a burden (Leopold and Raab, forthcoming).

The welfare states play an important role with the lowest quality of life prevailing in Southern European countries and the highest quality of life in the North. This is confirmed in other studies (Mette, 2005; Motel-Klingebiel et al., 2009). This finding might be influenced by culture specific answer behaviour, cultural norms and diverging references for evaluation (Motel-Klingebiel et al., 2009; Suh et al., 1998). But research shows that the differences exist and are not merely an artefact (Diener et al., 1999). However, a liberalisation of the welfare systems might influence the quality of life only slightly because distributions and relevant social structure indicators are only partly shaped by welfare regimes (Motel-Klingebiel et al., 2009).

Concepts on urban and rural areas have changed over time. Rural life often has been seen as idyllic and separated from the stressful urban life. Modernists have emphasised the backwardness of rural life but this view then is again outrun by counter-urbanisation and globalisation (Shucksmith et al., 2009). Since the quality of life is influenced by many life domains they might be outweighed by each other, e. g. a better housing by a worse access to health supply. An analysis in the European Union has shown little evidence of urban-rural differences on quality of life (Shucksmith et al., 2009). However, their analysis shows differences between richer and poorer countries with poorer countries in Southern and Eastern Europe showing lower levels of perceived welfare and quality of life.

Hypotheses I: People in need of care have a lower quality of life. Since the different welfare states provide a different institutional context, the quality of life is assumed to be different according to the type of care received. If people with care need receive only informal care their quality of life could be lower in Southern European countries where less alternatives are provided and more pressure lies on the family. In Northern states where more formal support is provided receiving only informal care might be a free choice and people might therefore have a higher quality of life.

People who receive care and provide financial transfers at the same time have a higher quality of life.

Controlling for other life domains an urban or rural living area should have no influence on the quality of life.

1.2 Determinants of quality of life

Age

Over the life course many studies find a U-shaped relation between quality of life and age (Easterlin, 2006). In old age quality of life is often assumed to decrease. Although not all literature results prove this assumption (Gwozdz and Sousa-Poza, 2009), many studies find a declining quality of life in older ages, the following three studies all above age 85: Gwozdz and Sousa-Poza (2009) find a declining life satisfaction after age 85 for Germany with GSOEP data, Mette (2005) finds a lower well-being score after age 85 in all 10 ECHP countries combined and Smith et al., (2002) confirm this finding with the longitudinal Berlin Aging Study for Germany. Several factors can explain this relatively stable quality of life over lifespan except for the oldest old: Elderly might adapt better to worsening conditions, they might compare themselves with people in their own age who are worse off, it might be a selection effect and happy people may life longer (Gwozdz and Sousa-Poza, 2009), or people readjust their goals to a closer fit between ideal and real aims (Campbell et al., 1976). In oldest age, however, the capacity of the individual to adapt to declining health may reach a critical limit: "The accumulated chronic strain of dealing with the effects of multiple physical illnesses, frailty, functional impairment, and social losses that characterise the Fourth Age appears to test the limits of adaptive self-related processes" (Smith et al., 2002). A more positive conclusion is drawn by Diener et al., (1999). They say that the new challenge will be the pursuit of happiness because of the increasing healthy life span: "…as the healthy life span increases toward its possible outer limit of approximately 130 years, might people become habituated to so many bad and good events that their emotional lives become bland?".

Hypothesis II: Controlling for other variables, increasing age has only a small effect on a worse estimation of quality of life except for the highest ages, where there is an influence of age on bad quality of life.

Most studies and literature reviews do not find a gender effect on quality of life (Diener 1999, Mette, 2005; Tesch-Römer et al., 2003). This might be unexpected because women suffer more often from depression (World Health Organization 2001) which is also confirmed with our data as can be seen in Table F2 in Appendix F. But Diener et al. (1999) provide as possible explanation for this paradox that women in general have more extreme emotional lives and experience not only negative emotions more often but also positive ones which outweigh the effect. Grossman and Wood (1993) found that the encouragement to be emotionally responsive influenced the range of emotions regardless of the gender. Female gender roles, however, include more often e.g., caregiving responsibilities which increase emotional responsiveness (Diener, 1999). But gender roles might shift: Today's elderly females are different from males insofar as they have less education, have been housewives more often, are widowed and never married more often. All factors influence quality of life and will change in future which makes it likely that also gender differences in quality of life will change (Antonucci and Ajrouch, 2007). A gender effect over welfare states is shown by Motel-Klingebiel et al., (2009). They find a lower life-satisfaction and a lower overall quality of life for women in Mediterranean countries but no effect in other countries.

Hypothesis III: Gender has no significant effect on quality of life. Possibly women in the South have a lower quality of life compared with men.

Physical health

A vast amount of literature confirms the effect of health and especially perceived health on quality of life (e.g. Berg et al., 2006; Borg et al., 2006; Deeg, 2007; Gwozdz and Sousa-Poza, 2009; Li, 2005; Smith et al., 2002; Tesch-Römer et al., 2003) and is undermined by the development of an own sub-field of health-related quality of life (HRQoL) as has been described above. Cross-sectional results could conceal causality: people with lower quality of life could also rate their health lower (Bowling and Farquhar, 1996). But longitudinal analyses confirm the influence of subjective poor health on low life satisfaction (Gwozdz and Sousa-Poza, 2009). Some studies find that the influence of health on quality of life in old age might be overestimated (Deeg, 2007; Diener et al., 1999). Diener et al., (1999) explain the paradox between health and subjective well-being: 'good health' often obtains the highest ratings among several life domains (Campbell et al., 1976) but at the same time the global life satisfaction of severely ill patients and non-patients differs only slightly (Breetvelt and Van Dam, 1991). Coping strategies such as downward comparison might play a role. People who tend to compare themselves with people who are worse off perceive their quality of life as better (Frieswijk et al., 2004). People's personality might affect their tendency to adapt to negative life events (Diener et al., 1999). Ill older people might consider health as less important and view other aspects of life as more important (Deeg, 2007).

Specific illnesses such as cancer or heart failure are found to be less influencing (Baumann et al., 2009, Johansson et al., 2008). It is rather the general perceived burden of the illnesses or limitations and the possible constriction e. g. because of hospitalisation.

Hypothesis IV: People with bad physical health will estimate their quality of life as worse. The effect should be stronger with subjective health measures and less influencing with specific illnesses.

Mental health

Mental health such as cognitive impairments and depression is a very constricting factor for well-being because mental problems often change the autonomy of people's life, a very important aspect of a positive quality of life. A large amount of literature has shown a correlation between depression and quality of life. Depression excludes the experience of positive well-being, and is associated with impairment and disabilities in role functioning (Angermeyer et al., 2002).

The above described loss of autonomy of people's lives is even more severe for people with dementia and cognitive impairments. Dementia leads in its end stages to complete dependency. Two contradictory views to the quality of life with dementia exist. One is that having dementia is so bad that it would be preferable to be dead because of the complete loss of autonomy. Another view is that with good care there is hope, that people with dementia will have a good overall quality of life (Nuffield Council on Bioethics, 2009), e. g. a study with 23 people showed that 21 of them with early-stage dementia rated their quality of life as 'good' or 'better' (Katsuno, 2005). However, the challenge in capturing the quality of life of people with dementia is the measurement: is the person him- or herself still able to answer the questions? Several measures for the quality of life of people with dementia have been developed (Ready and Ott, 2003). Three approaches of the assessment of the quality of life

with dementia exist: self reports by the individual, proxy reports by a family member or caregiver and direct observation of behaviors assumed to be related to quality of life (Weyerer and Schäufele, 2003). While the self-rating is very important, deficits of memory, attention, judgment, insight and communication increasingly aggravate the interview and the correct acquisition of the data. The problems with proxy interviews and observations are that they might not measure the subjective quality of life felt by the person. Proxies tend to underestimate the quality of life because they filter a subjective measure through their opinion and they are influenced by their relationship towards the person and the care burden. Observations could also be limited: is really observed what is important to the person's quality of life and are all observers alert to subtle nuances of affect (Weyerer and Schäufele, 2003)?

Hypothesis V: A depression and cognitive impairments abet a bad perception of the quality of life. People with mental illnesses and especially cognitive impairments increasingly lose autonomy which leads to a worse estimation of their quality of life.

Socio-economic status variables (SES)

Higher economic resources and a higher standard of living influence the quality of life positively (Andrews and Withey, 1976; Campell et al., 1976; Mette, 2005). Pinquart and Sörensen (2000) look at gender differences and find that SES is more important for the quality of life for males than for females. However, some studies show that SES in older age plays a less important role because other variables are more influencing such as health and mobility (Smith et al., 1996). Maybe the country looked at influences the importance of money: Diener et al., (1999) find only a slight effect of higher income in rich nations but wealthy nations are much happier than poor ones. Weidekamp-Maicher and Naegele (2007) show that it is less the absolute income level than the living standard it enables. Knesebeck et al., (2007) show a cultural effect. They look at the effect of income, financial net worth and home ownership and find generally a higher influence on quality of life in Central European countries.

Hypothesis VI: We assume that people with higher education, no difficulties to meet ends needs and people who give financial transfers have a higher quality of life. The effect should be more pronounced in Central and Northern European countries.

Family characteristics

Social contact is very important for the well-being of people (Mette, 2005) and since social networks become smaller with age the importance of a partner and other family rises (Wagner and Wolf, 2001). The literature shows that life satisfaction is higher for married than for non-married and for people living with a partner than for people living without a partner, respectively (Diener et al., 1999; Mannell and Dupuis, 1996; Silverstein et al., 2010). Antonucci and Ajrouch (2007) point to the importance of a partner not only because the life usually is more stable and the income higher but also because a lifelong partner is especially familiar, shares individual memories and beliefs and gives a sense of competence, self-worth and ability besides love, commitment and support. Also a selection effect of healthier people into marriage plays a role (Mastekaasa, 1994), but the longitudinal positive effect of the

marriage is stronger (Diener, 1999). However, some studies also find no effect of a partner when control variables are included (Tesch-Römer et al., 2003). The effect often vanishes when social participation is controlled for, which is correlated with the marital status or with the existence of a partner (Mette, 2005).

Life satisfaction of people with children usually is higher compared with childless people (Wagner et al., 1999; Motel-Klingebiel et al., 2003). Tesch-Römer et al. (2003) find that people with one and two children have the highest life satisfaction, but when they control for other variables only small effect between having no children or one child remains. Margolis and Myrskylä (2010) confirm that elderly parents are happier when they have children. However, authors find that in countries with low governmental support such as in Southern Europe parents are happier. Their explanation is that the children might take over care which otherwise would be difficult to obtain. Motel-Klingebiel et al. (2003) also obtain a lower quality of life for childless people, but differentiated by country differences are smaller in Spain than e. g. in Germany and Norway.

Hypothesis VII: People with a partner and or with children have a higher quality of life than people without. This effect could be stronger in the South, where stronger family ties exist.

People who are more socially integrated have a higher quality of life and better physical and mental health while people with only few social contacts tend to have a lower quality of life and are more marginalised and stigmatised (Antonucci and Ajrouch, 2007; Mette, 2005). However, social networks can also be a source of stress when they create additional demands on time because of role strain. Informal caregiving might be such a factor not only for the people who give the support but also for the people who receive the support. “Too much support may foster dependency, causing the receiver to lose autonomy and develop low self-esteem” (Antonucci and Ajrouch, 2007). However, if the burden of the care is not too high the support could also increase the quality of life on both sides. It increases feelings of personal achievement for the career and it creates a feeling of being worthy and loved in the care receivers. The quality of the relation and the subjective evaluation of the support are important for quality of life. Also reciprocity plays an important role especially in a long-term family context. In older age people more often receive help in form of time and support while the middle generation might receive financial support.

Hypothesis VIII: Social Participation enhances quality of life disregarding the cultural context.

2 Data and methods

In the SHARE quality of life is defined as the degree of satisfaction of human needs. For measuring quality of life, a new short form CASP-12, with the four domains C=control, A=autonomy, S=self-realisation and P=pleasure, was designed by Knesebeck et al. (2005). It is based on the CASP-19 developed by Hyde et al., (2003).

The 12 items measuring quality of life in the SHARE capture how often respondents experience certain feelings on a 4-point scale from ‘often’ to ‘never’ (Knesebeck et al. 2005).

They were in the second Wave asked in the section AC ‘Well-Being’. No Proxy was allowed for this section. In the first Wave the questions were asked in the 'drop-off' file. The 'drop-off' questionnaire was only given to people who completed the main questionnaire which resulted in a larger number of missings than in Wave 2. Therefore Wave 2 was taken for the analysis and results between the Waves are not comparable.

The variables were recoded such that 'often' was always the negative answer. Points from one, 'often'; to four, 'never', were given, and the sum over all variables calculated. A possible range from 12 to 48 indicated very low to very high quality of life.

For the logistic regression a binary variable with ‘good’ and ‘poor’ quality of life was created. Bad quality of life was defined as having less than 34 points which applies to 25.4% of the people.

Further regressions were calculated with the variables ‘feelings’ and ‘depression’ in order to check the consistency of the results. The variables are seen as close to the ones that measure quality of life. The variable ‘feelings’ comprises eight different feelings people have experienced (yes/no) during the last week. A category with negative feelings was chosen when people expressed more than two negative feelings (22.2%). In the SHARE data the EURO-D scale is used to measure depression (Dewey and Prince 2005). People are rated as depressed when more than three out of twelve items were responded negatively (23.7%).

As control variables for the regression we used the variables that were also analysed in part one of this report such as age, gender, country, education, living area, partnership status, distance to children, type of care, activity limitations, stroke, heart attack, cancer, cognitive status. Because the effect of the distance to children was small and no difference between the sex of the child was seen we grouped this variable only into the distances and not furthermore into the gender of the child. For the quality of life it is furthermore important to control for several other variables. We included as mental attitudes the variables ‘depression’ and ‘chances that five years from now your standard of living will be better/worse than today’. The latter could be seen as a socio-economic variable, but is here rather regarded to as a degree of optimism. As socio-economic variables we chose ‘is household able to make ends meet’ and ‘given financial gift of 250 Euro or more’. The latter again is not simply a measure of wealth but furthermore a sign of generational exchange. The variable ‘social activities’ comprises seven items and is measured if any of these are done: taken part in voluntary work, care for disabled adult, provide help to friends, attendance of training course, gone to sport or social club, religious organisation, political organisation.

3 Determinants of the quality of life – the link between quality of life, care arrangements and health

On the scale from 12 (very low quality of life) to 48 (very high quality of life) the weighted mean number of points over all people is 36.3. Differentiated by welfare region there are strong differences between the North with 39.5 and the South with 33.8 points. The Central European countries are in between with 37.3 points. Table 9 shows the mean number of points within several socio-demographic and health variables. Care need has a strong impact on the quality of life while the care type seems to be less influencing. Compared with people without care need people with ADL impairments who receive no care and people with formal and mixed care have a lower quality of life by 5.2 points and people with informal care supply even by 6.6 points. The effect is strong in all regions. As expected, does age influence the quality of life: While 50-59 year old people have a mean of 37.5 points they decrease for 80+ year olds to 32.8. Interestingly, the lowest quality of life for the 80+ year old people in the

North is still higher (37.0) than the highest quality of life for 50-59 year old people living in Southern Europe (35.9). Females rate their quality of life on average 1.3 points lower than males. The difference is negligible in the Northern countries (0.3) and highest in Southern countries (2.2). Also strong country differences exist from 32.9 points in Italy to 40.4 points in Denmark. Physical and mental health shows a great influence on the quality of life. About 6.7 points difference are found for people with and without severe activity limitations. The influence is highest in the South and lowest in North. A stroke, a heart attack and cancer lead to lower estimations of the quality of life of 3.8, 3.0 and 1.3 points, compared with people without these respective conditions. Severe cognitive impairments lead to a quality of life of only 30.4 and when no impairment is prevalent it rises to 38.2 points. A depression lowers the mean quality of life by 7.0 points. Again, the effect for mental health is strong in all regions and the smallest difference is seen for Northern countries. Only a small difference of 0.5 points is found between people who live in rural and urban areas. High education enhances a higher quality of life with 39.0 points compared with 34.4 points for low educated people. People in Central and Southern Europe seem to be more influenced by education than people in northern regions. The difference between the highest and the lowest educational group is 3.8, 4.3 and 1.0, respectively. The difference between the regions is small, with highest quality of life loss in Central, followed by Southern and Northern countries. Singles in all regions rate their quality of life lower than people who live with a partner. The distance of the children shows an unexpected effect with a slightly higher quality of life when children live further away. However, the effect is small and cannot be confirmed in Central and Northern Europe. When people participate in social activities their quality of life is higher than for people who do not participate in social activities. The quality of life is about 9 points lower for people who live in households with great difficulties to make ends meet with the total monthly household income compared with people without difficulties. People who give financial gifts of more than 250 Euro feel better by 0.7 points in the North and by 1.7 points in Central countries. An expected change in the living standard for the better increases the quality of life of people in Northern by 2.3 and in Southern countries by 6.1 points compared with those who expect a change for the worse.

Table 10 shows the effect of the type of care on quality of life. We estimated several models with a step-wise inclusion of the control variables. In model 1 only age, gender and country are included. We can see that people in need of care have a more than three-fold risk for poor quality of life, regardless of the type of care. Within the welfare regions the effects are slightly more distinct: in the North the strongest effect is found for people with formal and mixed care, followed by informal and ‘No care given but ADL limitations’. In Central Europe the effect is lowest for formal and mixed care and in the South for informal care, but with less difference between the groups than in the North. In model 4 all control variables are included and we can see that the effect of care need on the quality of life becomes much smaller. This strong effect is caused by health, because it persists from model 2 onwards, where besides age, gender and country all health variables are included. No change between models 2 and 3 (not shown), where additionally the socio-demographic variables are included; and between models 3 and 4 with the additional variables social activities, goals, finances is found for the effect of type of care on quality of life. In Central and Southern European countries there is a tendency that the quality of life is worst for people who have limitations in activities of daily living but receive no care. No effect exists between formal and mixed and informal care.

Table 9 Mean quality of life by different variables by welfare area

		ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Type of care	*No Care, no ADL limitations*	37.1	38.1	40.0	34.8
	No Care, with ADL limitations	31.9	33.3	35.0	28.5
	Formal and mixed care	31.9	32.3	33.8	29.7
	Informal care	30.6	33.3	36.5	28.2
	Missing	39.7	44.8	40.1	30.8
Age groups	*50 to 59*	37.5	38.0	39.7	35.9
	60 to 69	37.1	38.1	40.3	34.5
	70 to 79	35.5	36.8	39.3	32.6
	80+	32.8	34.2	37.0	30.0
Gender	*Female*	35.7	36.9	39.4	32.8
	Male	37.0	37.8	39.7	35.0
Country	Austria	37.7	37.7		
	Belgium	36.7	36.7		
	France	36.2	36.2		
	Germany	38.0	38.0		
	Denmark	40.4		40.4	
	The Netherlands	39.9		39.9	
	Sweden	38.4		38.4	
	Spain	35.3			35.3
	Italy	32.9			32.9
(General) Limitations	*Not limited*	38.3	39.1	41.0	36.4
	Moderately limited	34.8	36.5	38.8	31.5
	Severely limited	31.6	32.7	35.6	27.5
Stroke	*No/missing*	36.4	37.4	39.6	33.9
	Yes	32.7	33.4	36.6	29.9
Cancer	*No/missing*	36.4	37.4	39.6	33.9
	Yes	35.1	35.4	38.7	32.2
Heart attack	*No/missing*	36.7	37.6	39.8	34.3
	Yes	33.6	34.9	37.4	30.4
Cognitive impairments	*No cognitive impairment*	38.2	38.4	40.1	36.4
	Mild cogn. impairment	35.7	36.2	38.9	34.7
	Moderate cogn. impairment	33.6	34.8	37.3	32.5
	Severe cogn. impairment	30.4	31.7	34.8	29.6
	Missing	32.6	34.4	36.7	29.3
Depression	*No depression*	38.2	38.8	40.6	36.3
	Depression	31.2	32.7	34.7	29.1
	Missing	32.4	32.4	35.4	31.9

Source: SHARE Wave 2, Release 2.3.0, all cases, own calculations.

Table 9 Mean quality of life by different variables (continued)

		ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Area of living	*Urban*	36.6	37.2	39.4	34.4
	Rural	36.1	37.4	39.8	33.5
	Missing	36.3	37.7	38.5	34.2
Education	*Low degree*	34.4	35.4	39.0	32.9
	Middle degree	37.6	37.6	40.0	36.4
	High degree	39.0	39.2	40.0	37.2
	Missing	35.5	35.4	38.4	34.1
Living arrangement	*With partner/spouse*	37.0	38.1	40.3	34.6
	Without partner/spouse	34.6	35.6	37.9	32.1
Distance to closest living son or daughter	*Same HH*	35.8	37.3	39.6	34.1
	< 5 km	36.2	37.3	39.8	32.9
	> 5 km	37.0	37.5	39.5	33.4
	No children	36.2	36.6	38.2	35.0
	Missing	37.0	37.7	39.9	34.4
Social activities	*No*	34.9	36.2	38.2	33.2
	Yes	38.1	38.5	40.1	35.7
HH able to make ends meet	*Easily*	39.8	39.9	41.0	37.7
	Fairly easily	37.4	37.9	39.3	35.9
	Some difficulties	34.0	34.8	36.8	33.0
	Great difficulties	30.8	31.6	33.9	30.1
	Missing	36.1	37.5	40.4	34.4
Financial transfer given	*No*	36.9	36.7	39.6	33.7
	Yes	38.4	38.4	40.2	34.8
	Missing	37.4	37.2	40.2	34.0
Changes in living standard	*Better*	39.3	39.2	40.7	37.1
	About same	37.8	37.7	39.9	34.3
	Worse	35.6	36.1	38.5	31.0
	Total	**36.3**	**37.3**	**39.5**	**33.8**

Source: SHARE Wave 2, Release 2.3.0, all cases, own calculations.

Table 10 Risk of poor quality of life (in percentage-point changes to the reference group, RG=100%)

MODEL 1		ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Type of care	*No Care, no ADL limitations*	**-71.7**	**-71.1**	**-75.0**	**-70.5**
	No Care, with ADL limitations	-3.0	-2.3	-13.5	8.5
	Formal and mixed care	-4.5	-15.9	**58.3**	6.2
	Informal care	RG	RG	RG	RG
MODEL 4					
Type of care	*No Care, no ADL limitations*	**-31.2**	**-26.9**	**-39.9**	**-34.9**
	No Care, with ADL limitations	4.6	18.8	-20.4	18.9
	Formal and mixed care	0.8	1.2	12.5	5.0
	Informal care	RG	RG	RG	RG

Significant results are displayed in bold font

Model 1 controlled for age, gender, country

Model 4 controlled for health, socio-economic variables and social activities, goals, finances

Source: SHARE Wave 2, all cases, own calculation

Table 11 shows the regression results for quality of life for all countries together and separately by welfare regions. The table displays a significant positive or negative impact of the variable value in comparison to the reference group within a variable. E. g. the type of care increases the risk for poor quality of life strongly in all care types compared with no care. For age within all countries we see that in age group 80+ the strongest increase of poor quality of life occurs in comparison with age group 50-59. In age group 70-79 we find the second strongest increase while in age group 60-69 there is no significant effect. In the South quality of life does not significantly differ by age. Male gender increases the risk for poor quality of life in all regions but in the South. Activity limitations increase the risk according to the severity grade. If particular diseases are included the effect is less strong and not significant in the South effect for cancer which unexpectedly leads to a lower risk for poor quality of life. Stroke and heart attack increase the risk for poor quality of life while cancer has no influence in other regions but the South. Also mental impairments increase the risk for poor quality of life, cognitive impairments gradually by severity grade. The variables living area, education and distance to children have no significant influence.

Living without a partner increases the risk significantly while the participation in social activities and giving financial transfers of more than 250 Euro decreases it. A strong effect can be seen when people are not able to meet ends needs: in all regions the risk increases gradually. If people estimated their future living standard to increase it has a positive influence on their quality of life and vice versa.

In the appendix Table F1 shows the odds ratios and p-values of the regression. In Table F2 in the appendix different proxies were taken to measure quality of life. First we look at ‘bad feelings’ and secondly at ‘depression’ (see data and method section) and compare results for poor quality of life measured with CASP with bad feelings and depression (all welfare states together).

*Table 11 Determinants of quality of life**

		ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Type of care	***No Care, no ADL limitations***	RG	RG	RG	RG
	No Care, with ADL limitations	+++	+++	+	+++
	Formal and mixed care	+++	++	+++	++
	Informal care	+++	++	++	+
Age groups	***50 to 59***	RG	RG	RG	RG
	60 to 69				
	70 to 79	++	+++	++	
	80+	+++	+++	+++	
Gender	***Females***	RG	RG	RG	RG
	Males	+	+	+	
(General) Limitations	***Not limited***	RG	RG	RG	RG
	Moderately limited	+	+	+	++
	Severely limited	++	++	++	++
Stroke	***No/missing***	RG	RG	RG	RG
	Yes	+	+	+	
Cancer	***No/missing***	RG	RG	RG	RG
	Yes				-
Heart attack	***No/missing***	RG	RG	RG	RG
	Yes	+	+		
Cognitive impairments	***No cognitive impairment***	RG	RG	RG	RG
	Mild cogn. impairment	+	++		+
	Moderate cogn. impairment	++	++	++	++
	Severe cogn. impairment	+++	+++	+++	+++
Depression	***No depression***	RG	RG	RG	RG
	Depression	+	+	+	+

*Positive or negative effects of variable values within a variable are shown in comparison with the reference group. The results have to be interpreted by column within a variable and welfare group. The number of plusses / minuses depends on the number of values per variable minus the reference group and graduates the effect.

Table 11 Determinants of quality of life (continued)*

		ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Area of living	***Urban***	RG	RG	RG	RG
	Rural				
Education	***Low degree***	RG	RG	RG	RG
	Middle degree				-
	High degree				
Living arrangement	***With partner/spouse***	RG	RG	RG	RG
	Without partner/spouse	+	+	+	+
Distance to closest living son or daughter	*Same HH*	RG	RG	RG	RG
	< 5 km				
	> 5 km				
	No children				
Social activities	***No***	RG	RG	RG	RG
	Yes	-	-	-	-
HH able to make ends meet	***Easily***	RG	RG	RG	RG
	Fairly easily	+	+	+	+
	Some difficulties	++	++	++	++
	Great difficulties	+++	+++	+++	+++
Financial transfer given	***No***	RG	RG	RG	RG
	Yes	-	-		-
Changes in living standard	*Better*	--	--	--	--
	About same	RG	RG	RG	RG
	Worse	+	+	+	+

4 Discussion and conclusion

Our results show that being in need of care increases the risk for poor quality of life. However, it is rather the fact of being in need of care – caused by poor health - than the type of care received that influences the quality of life. Differences between the welfare systems are small.

Support and welfare regime

The results we obtained with the SHARE data show, as expected, that people who are in need of care have a higher risk of poor quality of life. People who do not get help with their ADL problems rate their quality of life worst in Central and Southern European countries while people in the North have the lowest quality of life when they have formal and mixed care. There are no differences between the groups 'formal and mixed' and 'informal' care in Central and Southern countries.

From our hypotheses and the literature results we would have expected different result. It seems obvious that people who have ADL problems but receive no care are least happy with their quality of life. But we would have expected different results on the quality of

life in groups with formal and mixed and informal care. Since welfare regimes in the South provide a lower infrastructure of services, there is more pressure on the family to provide this service. We assumed that this would put more stress on the caregiver and –receiver relationship and influence the quality of life of the care receiver negatively; and vice versa in the northern countries: when they have an informal care arrangement it is of higher quality of life.

Our results might be influenced by the sample because in the SHARE data only people in private households are included. The degree of institutionalisation is different across Europe and has a clear North – South gradient resulting from different cultural backgrounds with stronger family links in Southern Europe and stronger political actions in Northern Europe (for a more detailed description of living conditions and care need see Ziegler and Doblhammer (2006)). Furthermore, there are several factors we could not control for. The quality of life of people who receive care can be positively influenced "by compensating for the deficits in his/her living environment, by meeting the needs caused by physical dependency, and by decreasing perceived loneliness and supporting the psychological well-being of the patient" (Vaarama et al., 2007). Further factors could play are role: A study finds that people in Spain ranked social relations as less important for their quality of life (Fernández–Ballesteros, 2002). This finding, which is contrary to many other studies, might be explained by the fact that the role of the family is so central in Spain that people underestimate its importance (Antonucci and Ajrouch, 2007).

One effect which could ease the effect of dependency might be reciprocity. When elderly who receive help from their children can pay back e. g. in form of financial payments, they might feel less as a burden (Leopold and Raab, forthcoming). We included this effect and measured financial transfers of at least 250 Euro. It is proven in our data that people who give financial transfers have a lower risk of quality of life than people who do not give transfers. The effect is slightly higher and more significant in the South than in other welfare regions. Different norms regarding reciprocity might exist in different regions.

A study on urban-rural differences in quality of life across the European Union (Shucksmith et al., 2009) finds no differences between urban and rural areas and confirms our results. However, when they take richer and poorer countries into account it shows that poorer countries in the South and East rural areas have a much lower level of perceived welfare and quality of life.

Age

Results confirm our hypothesis that with increasing age the self-estimated quality of life becomes worse but only slightly: people aged 70-79 have a 14% higher risk of poor quality of life and people above age 80 a 27% higher risk. A model where only age, gender and country are included shows steeper age gradients (236% at ages 80+, not shown), which means that when other variables are controlled for age is not the main factor explaining quality of life. Other studies even find no age effect anymore once health is controlled for (Borg et al., 2006; Diener et al., 1999).

Gender

Contrary to our hypothesis males have an 11% higher risk of poor quality of life. The effect is highest in Northern Europe with 36% but not existent in Southern Europe. For feelings and depression we find an inverse effect: males have a 26% and 56% lower risk than females to have bad feelings or depression, respectively.

A gender effect over welfare states is shown by Motel-Klingebiel et al. (2009). They find a lower life-satisfaction and a lower overall quality of life for women in Mediterranean countries but no effect in other countries. While this contradicts our findings for quality of

life, we also see a higher risk for women for bad feelings and depression with a higher gender difference in the South (not shown).

Physical health

It is difficult to define "health" with regard to old age and quality of life, various measures have different impacts (Smith et al., 2002). As physical health variables we chose 'activity limitations' and the illnesses 'stroke', 'heart attack' and 'cancer'. All variables show a strong correlation with quality of life: when people have severe limitations their risk for poor quality of life more than doubles while it still nearly doubles when moderate limitations exist. A stroke or a heart attack increase the risk by 36% and 18%, respectively. Cancer does not seem to influence the risk. The term 'cancer' might comprise too many different kinds of the disease with different aetiopathologies. The results are in line with our hypothesis and show that not certain illnesses per see influence the quality of life but rather the limitations caused by them. Self-estimated limitations are a much higher predictor of quality of life. People in Southern Europe generally seem less influenced by activity limitations and illnesses.

Mental health

We included the mental health variables cognitive function and depression. A severe cognitive impairment doubles the risk for poor quality of life while a depression even quadruples the risk. Furthermore, estimation about how the future living will change could reflect mental attitude or even future goals. The variable has a strong influence: when people assume that their future living will be worse, they have a 42% higher risk to also report a poor quality of life compared with people who assume no change. For people in the South the effect is strongest with 73% while it is lowest in Central Europe with 30%. A better living standard assumption decreases the risk for poor quality of life by 42% for all countries combined, and 53 or 27% in the South and North, respectively.

Here the information on quality of life is usually based on self-estimates and in some cases on proxy information. When only cognitively impaired people are included into our analysis of quality of life we do not find changes in the general conclusion for all variables. Table 12 shows the effect of the type of care on the quality of life for the total sample and for cognitively impaired people. Generally, we see the same influence. The effect for poor quality of life when no care is received by ADL problems exist is slightly stronger in Central and Southern Europe. For informal care we see no significantly higher risk for poor quality of life compared with no care, however, a small sample size might influence the results. Care need for people with cognitive impairments is high and thus only few people might be in this group.

Our results for mental health and quality of life might generally be influenced by the fact that the institutionalised population is mainly not included. The care need in the end stages of dementia is very high and most severe cases with cognitive impairments have to move into institutions (see Ziegler forthcoming). Thus the impact of cognitive impairments on the quality of life might be more pronounced. However, a different perception of the affected person and adequate adjusted care might have a positive influence as has been discussed above.

Table 12 Influence of the Type of Care on the Quality of Life for the Total Sample and Cognitively Impaired People by Welfare Region (Full Model; in percentage-Point Changes to the Reference Group, RG=100%)

	Type of care	ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
Total sample	***No Care, no ADL limitations***	**RG**	**RG**	**RG**	**RG**
	No Care, with ADL limitations	**49.94**	**55.37**	**29.88**	**91.10**
	Formal and mixed care	**44.85**	**36.21**	**90.27**	50.07
	Informal care	**45.53**	**36.80**	**64.65**	**60.96**
Cognitively impaired persons	***No Care, no ADL limitations***	**RG**	**RG**	**RG**	**RG**
	No Care, with ADL limitations	**70.17**	**82.60**	**64.00**	90.20
	Formal and mixed care	**43.78**	**33.90**	**127.40**	10.50
	Informal care	23.40	17.20	48.80	7.00

Significant Results are displayed in bold font

The Nuffield Council on Bioethics (2009) gives some suggestions how the quality of life of people with dementia could be enhanced: enabling autonomy so that the person can be encouraged to retain and express their sense of self. The caregiver has to be supported to understand the needs of the person with dementia, relationships that are important to the person should be fostered and activities that they enjoy enabled. For the well-being it is important that attention is paid to the expressed desires and feelings. Positive moment-to-moment experiences are as important as a slowing in cognitive dysfunction. Providing this support for a good quality of life and well-being crucially depends on care and encouragement, a good relationship with carer and the carer's understanding of the effects of dementia (Quinn et al., 2009). (Caring for a person with dementia can be very demanding and stressful for the caregiver and influence his or her quality of life. Studies have shown that caregivers are less healthy than non-caregivers (Moise et al., 2004). However, the caregiver's perspective is not purpose of this study.)

Family characteristics

Generally we can confirm our hypothesis: people who live with a partner and or children have a higher quality of life. People without partner have an about 31% higher risk of bad QoL, disregarding the welfare regime. Overall, we find a 24% higher risk of poor quality of life for childless people. Differentiated by welfare groups we see that the effect comes from the Central countries, where this risk is 46%, while in the North there is a non-significant 30% higher risk and in the South no difference at all. Also the proximity of the children does not play a role in the South, as well as in the other regions except that in Central Europe people with children closer than 5 km have a higher risk of negative quality of life than people with children who live further than 5 km away. We also find no significant effect when our analysis is done with the number of children instead of the distance of the closest living child (not shown).

Social participation

People who participate in social activities have a 32% lower risk for poor quality of life which is relatively stable in the different regions. The results show that not only the social interaction with the partner or with children is very important for the well being of people, but generally the contact with other people. Giving financial transfers can also be seen as a kind

of social interaction. Often good contact to that person or a reciprocal relation but also dependency to the receiving person is a precondition for giving transfers. Our results confirm our hypothesis that people who give financial transfers have a 14% lower risk for poor quality of life. For people in the South this effect increases to 20%.

Socio-economic status variables (SES)

As socio-economic variables we included education and if the household is able to make ends meet. While education does not seem to influence the quality of life, the financial situation plays an important role: if the household has great difficulties to make ends meet the quality of life has a more than 5 times increased risk for poor quality of life compared with a household without problems. Using this variable instead of the income shows more directly the perceived needs for the living standard and enables a better comparison between the countries. The effect is strongest in Central Europe (559%) and less strong in Southern Europe with 275%. The variable 'financial transfers given' is used here as a proxy for reciprocity, but could also be seen as an SES variable. People who give (and who are able to give) financial transfers of at least 250 Euro have a lower risk for poor quality of life, especially in Southern Europe.

To conclude, quality of life is a complex concept which is influenced by several factors. Besides perceived and mental health, care need, financial constraints to make ends meet are the most influencing factors in our analysis. Generally, quality of life is lower in Southern and highest in Northern countries.

Results show that it is rather the care need than the type of care which influences the quality of life. Care need is driven by health which is among the driving factors: people with worse health have a lower quality of life than in people with better health. However, the quality of life might still be high and might be influenced by people's perception of the situation. The findings show that it is important to take multidimensional aspects of quality of life into account.

Several points have to be taken into account when interpreting the results of our study: first, the sample includes primarily the population living in private households. This not only excludes people living in institutions, a group which might evaluate its quality of life very differently from the people living in private households, it excludes this group systematically different by country because of varying institutionalisation rates. Second, the concept of quality of life is very broad and it is thus hardly possible to capture it within a survey, trying to take into account: "that the happy person is blessed with a positive temperament, tends to look on the bride side of things, and does not ruminate excessively about bad events, and is living in an economically developed society, has social confidants, and possesses adequate resources for making progress toward valued goals" (Diener et al., 1999). The personality is very important for quality of life and thus some studies even conclude that also genetics might play a role (Diener et al., 1999).

Thirdly, more attention should be paid to the increase in heterogeneity with higher age, especially in the Southern European countries (Motel-Klingebiel et al., 2003; Motel-Klingebiel et al., 2009; Mollenkopf and Walker, 2007). Further influencing factors we did not include might be inter- and intra-cohort inequality patterns (Motel-Klingebiel et al., 2009). Some studies suggest a life-course approach because "only comparing changes in life satisfaction during the different stages can produce a genuine understanding and notion of the levels and changes in life-satisfaction among the oldest old" (Gwozdz and Sousa-Poza, 2009). With the SHARE this would be possible when the third Wave becomes available.

Generally, besides a positive temperament there are many influenceable factors for a positive quality of life. It is very important to support an active, happy and successful life, to try to keep healthy and to nourish a social network.

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VII Appendices

Appendix A – Operationalisation of variables

Table A1: Derivation of the dependent variable Types of care

	Question	***Answer categories***	***Used categories***
Formal care	**HC032_** RECEIVED HOME CARE IN OWN HOME Please look at card 17. During the last twelve months, did you receive in your own home any of the kinds of care mentioned on this card?	1. Professional or paid nursing or personal care 2. Professional or paid home help, for domestic tasks that you could not perform yourself due to health problems 3. Meals-on-wheels 96. None of these	1. Professional or paid nursing or personal care
Informal care			
Informal care inside	**SP020_** SOMEONE IN THIS HOUSEHOLD HELPED YOU REGULARLY WITH PERSONAL CARE And is there someone living in this household who has helped you regularly during [the time since the last interview/the last twelve months] with personal care, such as washing, getting out of bed, or dressing? (daily or almost daily during at least three months, without help because of short term sickness)	1. Yes 5. No	
Informal care from outside*	**SP002_** RECEIVED HELP FROM OTHERS Please look at card 38. Thinking about the time since the last interview that is since/the last twelve months has any family member from outside the household, any friend or neighbour given you or your husband/wife/partner any kind of help listed on this card?	1. Yes 5. No 1. personal care, i.e. dressing, including putting on shoes and socks, bathing or showering, eating, e.g. cutting up your food, getting in or out of bed, using the toilet, including getting up or down 2. practical household help, e.g. with home repairs, gardening, transportation, shopping, household chores 3. help with paperwork, such as filling out forms, settling financial or legal matters	1. Yes 5. No 1. personal care, i.e. dressing, including putting on shoes and socks, bathing or showering, eating, e.g. cutting up your food, getting in or out of bed, using the toilet, including getting up or down
	SP005_ HOW OFTEN RECEIVED HELP In the time since the last	1. Almost daily 2. Almost every week 3. Almost every month 4. Less often	1. Almost daily 2. Almost every week

	interview/In the last twelve months, how often altogether have you or your husband/wife/partner received such help from this person?		
Mixed care	***If a person receives informal and formal care as defined above***		
No care but limitations in ADLs	**PH049_**HEALTH AND ACTIVITIES Please look at card 12.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. (Because of a health or memory problem, do you have difficulty doing any of the activities on card 12?	1. Dressing, including putting on shoes and socks 2. Walking across a room 3. Bathing or showering 4. Eating, such as cutting up your food 5. Getting in or out of bed 6. Using the toilet, including getting up or down 7. Using a map to figure out how to get around in a strange place 8. Preparing a hot meal 9. 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	1. Dressing, including putting on shoes and socks 2. Walking across a room 3. Bathing or showering 4. Eating, such as cutting up your food 5. Getting in or out of bed 6. Using the toilet, including getting up or down**

* The informal care dimensions were only available at household level. They were individualized by using information on household size, health status and limitations in daily living activities.

** is captured by the variable ADLS2 with two categories: (0) no ADL limitations and (1) one or more limitations with ADL.

Table A2: Composition of independent variables

Control variables	***Details of composition***
Age	The age of respondents is built by counting interview year – year of birth. Four age groups were formed: 50 to 59, 60 to 69, 70 to 79 and 80+.
Sex	-
Country	-
Education	Education is coded according to the International Standard Classification of Education (ISCED 1997): Level 0 Pre-primary education Level 1 Primary education or first stage of basic education Level 2 Lower secondary or second stage of basic education Level 3 (Upper) secondary education Level 4 Post-secondary non-tertiary education Level 5 First stage of tertiary education (not leading directly to an advanced research qualification) Level 6 Second stage of tertiary education (leading to an advanced research qualification) Three education groups were built based on this classification Low education - Level 0 to Level 2 Medium education - Level 3 High education - Level 4 to Level 6
Area of living	*Is based on the generated variable areabldg which is derived from iv009_ and ho037.* **IV009_** WHICH AREA BUILDING LOCATED In which type of area is the building located? 1. A big city 2. The suburbs or outskirts of a big city 3. A large town 4. A small town 5. A rural area or village **HO037_** AREA WHERE YOU LIVE Please look at card 41.How would you describe the area where you live? 1. A big city 2. The suburbs or outskirts of a big city 3. A large town 4. A small town 5. A rural area or village

The welfare state assignment

Region/Welfare state arrangement	**Country**
North	Denmark, the Netherlands, Sweden
Central	Austria, Belgium, France, Germany
South	Italy, Spain

Family variables

	Question	*Categories*	*Operationalisation*
Living arrangement	**CV009_** LIVING WITH SPOUSE/PARTNER Are you...	1. Living with a spouse 2. Living with a partner 3. Living as a single	1. Living with a spouse or partner 2. Living as a single
Distance to closest living son or daughter	**CH001_** NUMBER OF CHILDREN How many children do you have that are still alive? Please count all natural children, fostered, adopted and stepchildren including those of your husband/your wife/your partner.*	1…20	Number of children > 1
	CH005_ SEX OF CHILD N Is child male or female? **	1. Male 2. Female	
	CH007_ WHERE DOES CHILD N LIVE Please look at card 33.Where does child N live? **	1. In the same household 2. In the same building 3. Less than 1 kilometre away 4. Between 1 and 5 kilometres away 5. Between 5 and 25 kilometres away 6. Between 25 and 100 kilometres away 7. Between 100 and 500 kilometres away 8. More than 500 kilometres away 9. More than 500 kilometres away in another country	1. in the same household or building 2. less than 5 kilometres away 3. more than 5 kilometres away
	Four out of all children have been selected to collect more information on them, e.g., the occupational status. Hence, also information on the selected children have been individualized. Furthermore, the information on sex and living distance were ascribed to the selected four children. In a next step the variable closest living son or daughter was built by comparing the distances of the children and selecting the closest living child. If children live at the same distance, the first selected child was chosen. Thereby, the information on sex was kept, so at the end it is possible to distinguish between daughters and sons.		
	Geographical proximity of the closest living son or daughter	1. Daughter lives in the same household or building 2. Daughter lives less than 5 kilometres away 3. Daughter lives more than 5 kilometres away 4. Son lives in the same household or building 5. Son lives less than 5 kilometres away 6. Son lives more than 5 kilometres away	

Occupation of closest living child* **	CH016_ CHILD OCCUPATION Please look at card 35.What is child N's employment status?	1. Full-time employed 2. Part-time employed 3. Self-employed or working for own family business 4. Unemployed 5. In vocational training/ retraining/education 6. Parental leave 7. In retirement or early retirement 8. Permanently sick or disabled 9. Looking after home or family 97. Other	1. Full-time employed / self-employed or working for own family business 2. part-time employed 3. Unemployed, in vocational training/ retraining/education, Parental leave, permanent sick or disabled, looking after home or family, other 4. in retirement or early retirement

* This question is only answered by the so called family respondent. Data were individualized and ascribed to all persons that have the same household ID and are spouses of the family respondent.

** Data have also been individualized.

*** These information are available for the four selected children. They have been individualized. Using the same mechanism as for the living distance, the occupation of the closest living child has been built.

Health variables

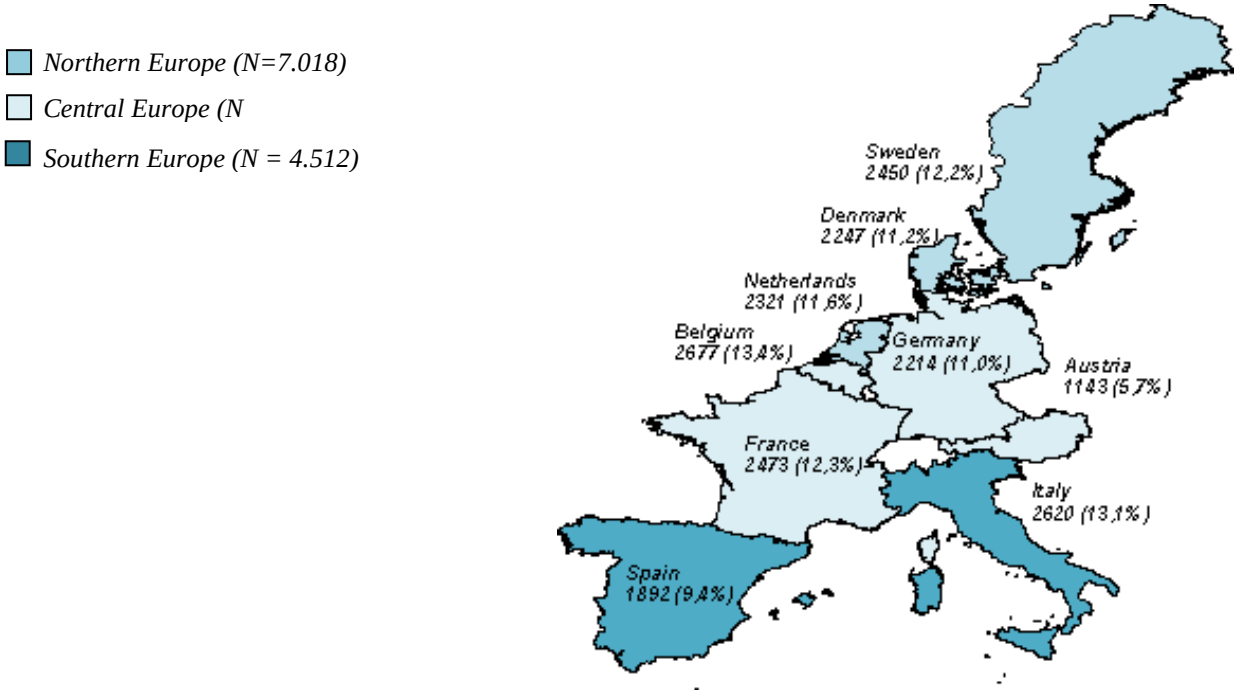
	Question	*Categories*	*Operationalisation*
Limitations	**PH005_ LIMITED ACTIVITIES -** For the past six months at least, to what extent have you been limited because of a health problem in activities people usually do?	1. Severely limited 2. Limited, but not severely 3. Not limited	1. Not limited 2. Moderately limited 3. Severely limited 4. Missing information
Stroke	**PH006_ DOCTOR TOLD YOU HAD CONDITIONS -** Please look at card 8. Has a doctor ever told you that you had/Do you currently have any of the conditions on this card? With this we mean that a doctor has told you that you have this condition, and that you are either currently being treated for or bothered by this condition. Please tell me the number or numbers of the conditions.	1. A heart attack including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure 2. High blood pressure or hypertension 3. High blood cholesterol 4. A stroke or cerebral vascular disease 5. Diabetes or high blood sugar 6. Chronic lung disease such as chronic bronchitis or emphysema 7. Asthma 8. Arthritis, including osteoarthritis, or rheumatism 9. Osteoporosis 10. Cancer or malignant tumour, including leukaemia or lymphoma, but excluding minor skin cancers 11. Stomach or duodenal ulcer, peptic ulcer 12. Parkinson disease 13. Cataracts 14. Hip fracture or femoral fracture 15. Other fractures 16. Alzheimer's disease, dementia, organic brain syndrome, senility or any other serious memory impairment 17. Benign tumor (fibroma, polypus, angioma) 96. None 97. Other conditions, not yet mentioned	1. No Stroke/Missing information 2. Stroke
Heart Attack	See above	See above	1. No/Missing 2. Yes
Cancer	See above	See above	1. No Cancer/Missing information 2. Cancer
Cognitive Impairment	**CF003_** DATE-DAY OF MONTH: Which day of the month is it?	1. Day of month given correctly 2. Day of month given incorrectly/doesn't know day	1. Not cognitive impaired 2. Mild cognitive impaired

	CF004_ DATE-MONTH Which month is it?	1. Month given correctly 2. Month given incorrectly/doesn't know month	3. Moderate cognitive impaired 4. Severe cognitive impaired 5. Missing information
	CF005_ DATE-YEAR Which year is it?	1. Year given correctly 2. Year given incorrectly/doesn't know year	
	CF006_ DAY OF THE WEEK Can you tell me what day of the week it is?	1. Day of week given correctly 2. Day of week given incorrectly/doesn't know day	
	CF008_ TEN WORDS LIST LEARNING FIRST TRIAL - Now please tell me all the words you can recall.	1. Butter 2. Arm 3. Letter 4. Queen 5. Ticket 6. Grass 7. Corner 8. Stone 9. Book 10. Stick 96. None of these (Number of correctly recalled words)	
	CF010_ VERBAL FLUENCY SCORE – The score is the sum of acceptable animals. Any member of the animal kingdom, real or mythical is scored correct, except repetitions and proper nouns.	(0 – 100)	
	CF012_ NUMERACY-CHANCE DISEASE 10 PERC. OF 1000 If the chance of getting a disease is 10 per cent, how many people out of 1000 (one thousand) would be expected to get the disease?	1. 100 2. 10 3. 90 4. 900 97. Other answer	
	CF013_ NUMERACY-HALF PRICE - In a sale, a shop is selling all items at half price. Before the sale, a sofa costs 300 [{local currency}]. How much will it cost in the sale?	1. 150 [{local currency}] 2. 600 [{local currency}] 97. Other answer	

	CF014_ NUMERACY-6000 IS TWO-THIRDS WHAT IS TOTAL PRICE - A second hand car dealer is selling a car for 6,000 [{local currency}]. This is two-thirds of what it costs new. How much did the car cost new?	1. 9,000 [{local currency}] 2. 4,000 [{local currency}] 3. 8,000 [{local currency}] 4. 12,000 [{local currency}] 5. 18,000 [{local currency}] 97. Other answer	
	CF015_ AMOUNT IN THE SAVINGS ACCOUNT - Let's say you have 2000 [{local currency}] in a savings account. The account earns ten per cent interest each year. How much would you have in the account at the end of two years?	1. 2420 [{local currency}] 2. 2020 [{local currency}] 3. 2040 [{local currency}] 4. 2100 [{local currency}] 5. 2200 [{local currency}] 6. 2400 [{local currency}] 97. Other answer	
	CF016_ TEN WORDS LIST LEARNING DELAYED RECALL | A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you can remember now?	1. Butter 2. Arm 3. Letter 4. Queen 5. Ticket 6. Grass 7. Corner 8. Stone 9. Book 10. Stick 96. None of these (Number of correctly recalled words)	
Depression	Generated variable: EURODCAT	Variable base on these items: euro1: depression euro2: pessimism euro3: suicidality euro4: guilt euro5: sleep euro6: interest euro7: irritability euro8: appetite euro9: fatigue euro10: concentration euro11: enjoyment euro12: tearfulness	1. No depression 2. Depression 3. Missing information

Appendix B – Wave 2 - Family Model Results

Map B1: Welfare states and number of respondents in Family Model Dataset



Source: SHARE data, Wave 2, release 2.3.0, Base Map: ESRI inc.

Table B1 Distribution of types of care over whole population and over population in need of care, for all countries and separately for the three welfare state regions, weighted values

TOTAL POPULATION 50+ (in %)

	ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
No care, no ADL limitations	85.6	82.9	90.3	83.4
No care, with ADL limitations	5.3	5.9	5.0	4.6
Formal and mixed care	4.7	7.3	2.6	2.8
Informal care	4.2	3.7	1.8	9.1
Missing	0.2	0.2	0.3	0.1
Popluation in need for care (in %)	14.2	16.9	9.4	16.5

POPULATION IN NEED OF CARE 50+ (in %)

	ALL COUNTRIES	CENTRAL EUROPE	NORTHERN EUROPE	SOUTHERN EUROPE
No care, with ADL limitations	37.3	34.9	53.2	27.9
Formal and mixed care	33.1	43.2	27.7	17.0
Informal care	29.6	21.9	19.1	55.2

Source: SHARE Wave 2, Release 2.3.0, Dataset: Family Model, own calculations.

Table B2 Descriptive results – WAVE 2

		ALL COUNTRIES				CENTRAL EUROPE				NORTHERN EUROPE				SOUTHERN EUROPE			
		No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care
Age groups	50 to 59	92.3	3.2	2.6	2.0	90.4	3.3	4.5	1.8	94.3	3.5	1.1	1.0	93.2	2.0	0.9	3.9
	60 to 69	90.3	4.1	2.7	2.9	87.3	4.9	5.2	2.6	93.2	3.9	1.1	1.8	90.9	2.7	0.9	5.4
	70 to 79	81.9	7.0	5.3	5.8	79.5	7.9	7.9	4.8	87.9	6.3	3.3	2.6	78.6	6.2	3.6	11.6
	80+	63.4	11.2	14.2	11.1	55.7	12.8	21.0	10.6	76.7	10.0	10.4	2.9	58.8	10.4	9.2	21.6
Gender	Female	83.5	6.2	5.6	4.7	80.7	6.5	8.8	4.1	89.1	5.8	3.3	1.7	80.4	6.2	3.2	10.3
	Male	88.4	4.3	3.6	3.7	85.8	5.2	5.6	3.3	92.2	4.0	1.9	1.9	87.4	2.7	2.4	7.5
Country	Austria	86.4	5.7	2.9	5.0	86.4	5.7	2.9	5.0								
	Belgium	81.3	6.9	8.4	3.4	81.3	6.9	8.4	3.4								
	France	80.6	4.9	12.1	2.3	80.6	4.9	12.1	2.3								
	Germany	86.2	5.9	2.8	5.1	86.2	5.9	2.8	5.1								
	Denmark	90.1	3.8	3.9	2.1					90.1	3.8	3.9	2.1				
	The Netherlands	91.1	4.2	2.7	1.9					91.1	4.2	2.7	1.9				
	Sweden	90.4	6.8	1.3	1.5					90.4	6.8	1.3	1.5				
	Italy	84.0	4.7	2.2	9.2									84.0	4.7	2.2	9.2
	Spain	82.7	4.5	3.8	8.9									82.7	4.5	3.8	8.9
Education	Low degree	81.0	6.9	5.8	6.2	76.0	8.2	10.4	5.4	86.8	7.3	4.0	1.9	81.0	5.5	3.0	10.5
	Medium degree	88.7	4.5	4.1	2.7	85.8	5.3	6.0	2.9	92.1	4.0	1.6	2.3	92.9	1.9	2.1	3.1
	High degree	92.3	2.7	2.8	2.2	89.8	3.3	4.3	2.6	94.6	2.5	1.6	1.4	93.7	1.2	0.9	4.3
	Missing	82.1	6.6	8.3	3.1	82.9	5.1	8.9	3.2	83.7	9.9	6.4	0.0	75.0	1.9	9.6	13.5
Area of living	Urban	86.8	5.2	4.4	3.6	82.8	6.5	7.2	3.5	90.7	4.7	2.7	1.8	84.6	3.8	3.4	8.2
	Rural	84.9	5.5	4.9	4.7	83.1	5.6	7.4	3.9	90.4	5.4	2.3	1.9	82.9	5.3	2.4	9.4
	Missing	84.9	4.1	5.4	5.6	84.3	4.4	7.6	3.6	89.3	4.6	4.1	2.0	80.7	3.0	3.6	12.7
Living arrangement	With partner/spouse	86.1	4.6	5.7	3.7	86.1	4.6	5.7	3.7	92.7	3.8	1.3	2.2	87.3	3.3	2.0	7.4
	Without partner/spouse	74.6	9.5	12.0	3.9	74.6	9.5	12.0	3.9	85.5	7.8	5.8	1.0	72.0	8.7	5.2	14.2
Distance to closest living son or daughter	Daughter > 5 kms	86.2	5.9	5.5	2.4	82.7	7.0	8.5	1.8	90.4	4.9	3.0	1.7	83.4	5.3	3.7	7.6
	Daughter < 5 kms	83.2	6.3	5.7	4.8	79.7	7.5	8.8	4.0	89.4	4.9	3.2	2.5	78.9	6.3	3.9	11.0
	Daughter HH	86.3	4.2	2.4	7.0	86.4	4.0	4.1	5.4	93.5	4.1	0.7	1.7	83.1	4.5	1.6	10.8
	Son > 5 kms	86.6	5.3	5.4	2.7	83.5	5.9	7.5	3.0	90.3	5.3	2.6	1.8	85.4	2.6	6.5	5.5
	Son < 5 kms	85.6	5.8	5.2	3.5	83.7	5.3	8.3	2.8	89.3	5.5	3.3	1.9	80.8	7.1	3.6	8.6
	Son HH	87.4	4.1	3.1	5.4	85.0	5.0	5.1	4.9	94.2	3.3	1.5	0.9	86.4	3.5	1.8	8.3
	Missing	84.6	5.4	5.5	4.6	80.1	5.9	8.8	5.2	90.3	6.1	1.8	1.8	86.1	2.3	3.5	8.1
Occupation of closest living child	Full-time	86.4	5.1	4.5	4.1	84.3	5.4	6.8	3.5	90.1	5.1	2.7	2.1	84.7	4.4	2.8	8.1
	Part-time	86.4	5.9	4.7	2.9	82.6	6.8	7.2	3.4	90.7	5.0	2.2	2.1	85.6	5.2	3.9	5.2
	Not employed	86.6	5.1	3.6	4.6	84.6	5.4	6.5	3.5	92.7	4.2	1.7	1.3	82.4	5.7	1.5	10.4
	Retired	53.0	13.4	20.3	13.4	48.8	18.0	23.9	9.3	68.4	11.1	18.8	1.7	43.2	6.3	13.7	36.8
	Missing	86.6	4.9	4.8	3.7	81.7	6.0	7.8	4.4	92.3	4.7	1.7	1.3	87.1	2.4	3.6	6.9

Table B3 Regression results - all countries –WAVE 2

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-2.85**	*0.00*	**-2.87**	*0.00*	**-3.96**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.36**	*0.00*	**1.19**	*0.13*	**1.60**	*0.00*
	70 to 79	**2.20**	*0.00*	**2.19**	*0.00*	**3.15**	*0.00*
	80+	**3.81**	*0.00*	**6.97**	*0.00*	**8.51**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.85**	*0.03*	**0.81**	*0.01*	**0.85**	*0.03*
Country	*Austria*	**0.76**	*0.07*	**0.26**	*0.00*	**1.32**	*0.13*
	Belgium	**1**	.	**1**	.	**1**	.
	Denmark	**0.59**	*0.00*	**0.40**	*0.00*	**0.70**	*0.06*
	France	**0.74**	*0.02*	**1.70**	*0.00*	**0.77**	*0.13*
	Germany	**0.81**	*0.10*	**0.19**	*0.00*	**1.39**	*0.03*
	Italy	**0.52**	*0.00*	**0.21**	*0.00*	**1.56**	*0.00*
	The Netherlands	**0.49**	*0.00*	**0.25**	*0.00*	**0.66**	*0.02*
	Spain	**0.51**	*0.00*	**0.38**	*0.00*	**1.95**	*0.00*
	Sweden	**0.82**	*0.09*	**0.10**	*0.00*	**0.46**	*0.00*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.68**	*0.00*	**0.89**	*0.22*	**0.66**	*0.00*
	High degree	**0.45**	*0.00*	**0.65**	*0.00*	**0.56**	*0.00*
	Missing	**1.01**	*0.97*	**1.75**	*0.02*	**0.87**	*0.65*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.04**	*0.61*	**1.08**	*0.35*	**1.07**	*0.38*
	Missing	**0.85**	*0.44*	**1.53**	*0.03*	**1.11**	*0.61*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.70**	*0.00*	**1.70**	*0.00*	**0.75**	*0.01*
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.92**	*0.46*	**0.95**	*0.65*	**1.33**	*0.05*
	Daughter HH	**0.81**	*0.14*	**0.61**	*0.00*	**2.03**	*0.00*
	Son > 5 kms	**0.93**	*0.57*	**0.96**	*0.73*	**1.10**	*0.56*
	Son < 5 kms	**0.94**	*0.57*	**0.98**	*0.88*	**1.03**	*0.84*
	Son HH	**0.89**	*0.38*	**0.77**	*0.07*	**1.68**	*0.00*
	Missing	**0.85**	*0.54*	**0.97**	*0.93*	**1.93**	*0.05*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**1.09**	*0.50*	**1.08**	*0.58*	**0.94**	*0.67*
	Not employed	**1.36**	*0.00*	**1.12**	*0.30*	**1.14**	*0.18*
	Retired	**1.34**	*0.13*	**1.76**	*0.00*	**1.62**	*0.02*
	Missing	**1.42**	*0.14*	**1.27**	*0.35*	**0.94**	*0.83*

Reference group: No care, no limitations in ADLs

Valid	*20,001*
Missing	*36*
Total	*20,037*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table B4 Regression results - Central Europe – WAVE 2

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-2.82**	*0.00*	**-3.00**	*0.00*	**-4.08**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.62**	*0.00*	**1.35**	*0.02*	**1.58**	*0.01*
	70 to 79	**2.42**	*0.00*	**2.03**	*0.00*	**2.95**	*0.00*
	80+	**4.43**	*0.00*	**6.65**	*0.00*	**10.55**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.01**	*0.92*	**0.79**	*0.01*	**0.91**	*0.45*
Country	*Austria*	**0.77**	*0.10*	**0.26**	*0.00*	**1.41**	*0.07*
	Belgium	**1**	.	**1**	.	**1**	.
	France	**0.73**	*0.01*	**1.71**	*0.00*	**0.76**	*0.12*
	Germany	**0.83**	*0.16*	**0.18**	*0.00*	**1.44**	*0.02*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.65**	*0.00*	**1.00**	*0.98*	**0.54**	*0.00*
	High degree	**0.45**	*0.00*	**0.69**	*0.01*	**0.48**	*0.00*
	Missing	**0.60**	*0.20*	**1.33**	*0.36*	**0.61**	*0.30*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**0.92**	*0.39*	**1.19**	*0.07*	**0.99**	*0.93*
	Missing	**0.89**	*0.69*	**1.34**	*0.26*	**0.79**	*0.54*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.71**	*0.00*	**1.53**	*0.00*	**0.60**	*0.00*
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.92**	*0.61*	**0.98**	*0.87*	**1.47**	*0.11*
	Daughter HH	**0.67**	*0.05*	**0.68**	*0.06*	**2.82**	*0.00*
	Son > 5 kms	**0.80**	*0.19*	**0.98**	*0.88*	**1.52**	*0.09*
	Son < 5 kms	**0.69**	*0.04*	**0.99**	*0.97*	**0.94**	*0.82*
	Son HH	**0.82**	*0.26*	**0.88**	*0.44*	**2.59**	*0.00*
	Missing	**0.67**	*0.26*	**1.23**	*0.56*	**4.18**	*0.01*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**0.98**	*0.93*	**1.21**	*0.28*	**0.99**	*0.95*
	Not employed	**1.22**	*0.15*	**1.31**	*0.03*	**1.23**	*0.22*
	Retired	**1.42**	*0.17*	**1.83**	*0.00*	**1.16**	*0.64*
	Missing	**1.77**	*0.07*	**1.15**	*0.66*	**0.71**	*0.48*

Reference group: No care, no limitations in ADLs

Valid	*8,496*
Missing	*11*
Total	*8,507*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table B5 Regression results - Northern Europe – WAVE 2

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.19**	*0.00*	**-3.24**	*0.00*	**-3.97**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**0.94**	*0.72*	**0.80**	*0.44*	**1.28**	*0.33*
	70 to 79	**1.35**	*0.09*	**1.97**	*0.01*	**2.27**	*0.00*
	80+	**2.17**	*0.00*	**5.02**	*0.00*	**4.58**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.87**	*0.25*	**0.93**	*0.69*	**0.93**	*0.67*
Country	***Denmark***	**1**	.	**1**	.	**1**	.
	The Netherlands	**0.84**	*0.31*	**0.58**	*0.01*	**1.09**	*0.68*
	Sweden	**1.45**	*0.01*	**0.22**	*0.00*	**0.79**	*0.29*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.73**	*0.04*	**0.48**	*0.00*	**1.21**	*0.36*
	High degree	**0.43**	*0.00*	**0.50**	*0.00*	**0.69**	*0.11*
	Missing	**1.75**	*0.07*	**2.07**	*0.09*	**0.00**	.
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.17**	*0.18*	**0.79**	*0.20*	**1.06**	*0.75*
	Missing	**0.71**	*0.37*	**1.86**	*0.14*	**1.33**	*0.55*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.70**	*0.00*	**2.68**	*0.00*	**0.34**	*0.00*
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.89**	*0.55*	**0.86**	*0.56*	**1.32**	*0.29*
	Daughter HH	**1.05**	*0.87*	**0.45**	*0.20*	**1.88**	*0.14*
	Son > 5 kms	**1.12**	*0.55*	**0.73**	*0.24*	**0.92**	*0.76*
	Son < 5 kms	**1.11**	*0.59*	**0.81**	*0.39*	**0.92**	*0.77*
	Son HH	**1.02**	*0.94*	**0.74**	*0.47*	**0.82**	*0.67*
	Missing	**1.80**	*0.22*	**0.71**	*0.61*	**2.06**	*0.40*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**1.11**	*0.63*	**0.66**	*0.22*	**0.89**	*0.67*
	Not employed	**1.21**	*0.27*	**0.74**	*0.29*	**0.71**	*0.23*
	Retired	**1.47**	*0.29*	**1.96**	*0.07*	**1.67**	*0.41*
	Missing	**0.73**	*0.48*	**1.19**	*0.78*	**0.37**	*0.22*

Reference group: No care, no limitations in ADLs

Valid	*7,000*
Missing	*18*
Total	*7,018*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table B6 Regression results - Southern Europe – WAVE 2

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.95**	*0.00*	**-5.18**	*0.00*	**-3.54**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.92**	*0.02*	**1.63**	*0.31*	**1.81**	*0.00*
	70 to 79	**4.37**	*0.00*	**6.58**	*0.00*	**3.84**	*0.00*
	80+	**8.56**	*0.00*	**24.96**	*0.00*	**9.35**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.52**	*0.00*	**0.79**	*0.27*	**0.78**	*0.03*
Country	***Italy***	**1**	.	**1**	.	**1**	.
	Spain	**0.94**	*0.69*	**1.71**	*0.01*	**1.20**	*0.12*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.58**	*0.10*	**1.18**	*0.67*	**0.48**	*0.00*
	High degree	**0.28**	*0.03*	**0.53**	*0.29*	**0.58**	*0.06*
	Missing	**0.74**	*0.77*	**4.41**	*0.01*	**2.48**	*0.03*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.09**	*0.60*	**0.87**	*0.51*	**1.10**	*0.43*
	Missing	**0.88**	*0.77*	**1.71**	*0.18*	**1.28**	*0.37*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.57**	*0.02*	**1.33**	*0.25*	**1.13**	*0.40*
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.95**	*0.88*	**1.05**	*0.91*	**1.18**	*0.54*
	Daughter HH	**0.87**	*0.67*	**0.64**	*0.33*	**1.57**	*0.08*
	Son > 5 kms	**0.83**	*0.66*	**1.83**	*0.20*	**0.77**	*0.45*
	Son < 5 kms	**1.29**	*0.45*	**1.07**	*0.88*	**1.10**	*0.73*
	Son HH	**1.03**	*0.92*	**0.72**	*0.46*	**1.35**	*0.24*
	Missing	**0.32**	*0.17*	**0.28**	*0.13*	**0.69**	*0.47*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**1.92**	*0.08*	**1.74**	*0.31*	**0.93**	*0.83*
	Not employed	**1.67**	*0.01*	**0.83**	*0.54*	**1.22**	*0.15*
	Retired	**0.72**	*0.56*	**1.12**	*0.82*	**2.09**	*0.02*
	Missing	**2.30**	*0.23*	**4.22**	*0.05*	**2.16**	*0.08*

Reference group: No care, no limitations in ADLs

Valid	*4,505*
Missing	*7*
Total	*4,512*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Appendix C – Wave 2 - Health Model Results

Table C1 Descriptive results, weighted values, in %

		ALL COUNTRIES				CENTRAL EUROPE				NORTHERN EUROPE				SOUTHERN EUROPE		
		No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care
Age groups	50 to 59	91.2	3.7	2.7	2.4	88.8	4.2	4.8	2.2	93.6	3.7	1.3	1.4	92.0	2.7	0.8
	60 to 69	81.6	7.1	5.6	5.7	79.0	8.2	8.0	4.8	87.5	6.3	3.9	2.3	79.0	6.2	3.4
	70 to 79	66.1	11.2	13.1	9.5	59.5	13.2	18.1	9.2	77.6	9.9	10.1	2.3	62.1	9.9	9.2
	80+	37.0	18.5	27.2	17.4	26.1	14.1	46.7	13.0	57.0	17.2	20.4	5.4	26.9	25.6	11.5
Gender	Female	83.0	6.5	5.9	4.6	80.1	6.9	9.0	4.0	88.5	6.0	3.8	1.7	80.4	6.6	3.1
	Male	88.4	4.3	3.7	3.7	85.9	5.3	5.5	3.3	92.0	4.0	2.2	1.9	87.5	2.9	2.5
Country	Austria	85.5	6.1	3.2	5.2	85.5	6.1	3.2	5.2							
	Belgium	80.8	7.2	8.6	3.3	80.8	7.2	8.6	3.3							
	France	80.3	5.2	12.2	2.4	80.3	5.2	12.2	2.4							
	Germany	86.4	6.1	2.7	4.8	86.4	6.1	2.7	4.8							
	Denmark	89.4	3.9	4.6	2.1					89.4	3.9	4.6	2.1			
	The Netherlands	90.9	4.3	3.0	1.9					90.9	4.3	3.0	1.9			
	Sweden	90.2	6.7	1.6	1.4					90.2	6.7	1.6	1.4			
	Italy	84.1	5.1	2.1	8.7									84.1	5.1	2.1
	Spain	82.9	4.6	3.8	8.7									82.9	4.6	3.8
Education	Low degree	80.9	7.0	6.1	6.0	75.7	8.5	10.7	5.1	86.6	7.1	4.5	1.8	81.1	5.5	3.1
	Medium degree	88.4	4.9	4.0	2.7	85.6	5.5	5.9	3.0	91.8	4.3	1.6	2.3	91.9	3.6	2.0
	High degree	91.9	3.0	2.9	2.2	89.4	3.6	4.4	2.6	94.1	2.7	1.9	1.3	93.2	2.1	0.7
	Missing	82.0	6.8	8.4	2.9	83.6	4.7	8.8	2.9	82.4	9.8	7.8	0.0	75.0	5.0	8.3
Area of living	Urban	86.6	5.3	4.6	3.6	82.9	6.5	7.1	3.5	90.4	4.7	3.2	1.7	84.4	4.2	3.4
	Rural	84.6	5.8	5.0	4.6	82.6	6.0	7.6	3.8	90.0	5.6	2.5	1.8	83.1	5.5	2.4
	Missing	84.8	4.1	5.8	5.3	83.9	4.6	7.9	3.6	87.8	5.0	5.4	1.8	82.7	2.6	3.1
(General) Limitations	Not limited	95.6	1.7	1.6	1.1	93.5	2.4	3.2	1.0	98.0	1.0	0.4	0.5	83.6	4.9	2.8
	Moderately limited	83.4	7.7	4.1	4.8	82.8	7.8	5.7	3.7	87.7	7.4	3.0	1.9	96.1	1.4	0.5
	Severely limited	51.1	15.7	18.4	14.8	45.8	16.5	24.6	13.1	65.4	15.6	12.7	6.2	79.0	7.7	2.9
	Missing	66.7	0.0	33.3	0.0	50.0	0.0	50.0	0.0	100.0	0.0	0.0	0.0	36.7	14.0	13.3
Stroke	No*	86.5	5.3	4.5	3.8	83.9	5.9	7.0	3.3	90.9	4.9	2.7	1.6	84.9	4.7	2.3
	Yes	56.5	12.3	16.1	15.1	48.1	16.0	18.4	17.4	72.4	9.6	11.3	6.8	42.2	10.2	20.4
Heart attack	No*	87.5	4.9	4.0	3.6	85.2	5.4	6.2	3.2	91.5	4.5	2.4	1.6	85.9	4.5	2.3
	Yes	70.4	10.1	11.1	8.4	65.3	11.7	15.7	7.2	80.3	8.8	7.6	3.3	64.7	8.7	6.8
Cancer	No*	86.1	5.4	4.5	4.0	83.4	6.1	6.9	3.6	90.8	4.9	2.6	1.7	84.3	4.8	2.7
	Yes	72.2	7.2	12.5	8.1	67.5	7.6	18.1	6.8	80.4	6.6	9.8	3.2	60.3	7.8	5.7
Cognitive impairment	No cogn. impairment	91.4	3.8	2.7	2.1	89.1	4.3	4.5	2.2	93.5	3.8	1.3	1.4	93.2	2.1	0.9
	Mild cogn. impairment	84.2	6.3	5.4	4.1	77.2	8.7	9.5	4.6	87.0	6.5	4.0	2.5	91.2	2.7	1.1
	Moderate cogn. impairment	77.5	8.9	7.1	6.5	71.9	10.9	11.5	5.7	78.2	10.2	8.7	2.9	82.1	6.5	2.3
	Severe cogn. impairment	61.7	12.1	13.3	12.9	53.2	14.0	22.5	10.2	62.9	13.9	19.1	4.0	66.5	10.4	6.1
	Missing	56.5	5.1	20.0	18.4	61.7	4.5	20.4	13.4	72.4	6.7	17.1	3.8	36.6	5.2	20.9
Depression	No depression	91.2	3.6	3.0	2.2	88.6	4.2	4.9	2.3	93.5	3.3	2.0	1.2	92.3	2.6	1.0
	Depression	70.6	11.3	9.1	8.9	67.7	11.9	13.4	7.0	75.8	13.1	6.9	4.2	70.6	9.2	4.9
	Missing	54.0	6.1	21.5	18.4	53.2	6.4	26.6	13.8	74.2	6.7	15.0	4.2	36.8	5.3	20.3

*incl. Persons with missing information

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table C2 Regression results – all countries – WAVE 2

		No Care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.88**	*0.00*	**-4.05**	*0.00*	**-4.99**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.48**	*0.00*	**1.54**	*0.00*	**1.38**	*0.00*
	70 to 79	**2.06**	*0.00*	**3.25**	*0.00*	**2.06**	*0.00*
	80+	**5.60**	*0.00*	**11.02**	*0.00*	**6.47**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.79**	*0.00*	**0.72**	*0.00*	**1.00**	*0.98*
Country	*Austria*	**0.70**	*0.02*	**0.28**	*0.00*	**1.35**	*0.09*
	Belgium	**1**	.	**1**	.	**1**	.
	Denmark	**0.57**	*0.00*	**0.42**	*0.00*	**0.61**	*0.01*
	France	**0.76**	*0.02*	**1.64**	*0.00*	**0.73**	*0.06*
	Germany	**0.60**	*0.00*	**0.12**	*0.00*	**1.05**	*0.76*
	Italy	**0.41**	*0.00*	**0.13**	*0.00*	**1.49**	*0.00*
	The Netherlands	**0.39**	*0.00*	**0.20**	*0.00*	**0.51**	*0.00*
	Spain	**0.49**	*0.00*	**0.37**	*0.00*	**2.59**	*0.00*
	Sweden	**0.77**	*0.03*	**0.11**	*0.00*	**0.40**	*0.00*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.90**	*0.23*	**1.13**	*0.22*	**0.90**	*0.33*
	High degree	**0.70**	*0.00*	**0.95**	*0.63*	**0.86**	*0.22*
	Missing	**1.17**	*0.49*	**1.86**	*0.01*	**0.80**	*0.46*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.03**	*0.63*	**1.07**	*0.38*	**1.07**	*0.42*
	Missing	**0.87**	*0.50*	**1.44**	*0.06*	**1.07**	*0.72*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**3.75**	*0.00*	**2.53**	*0.00*	**3.30**	*0.00*
	Severely limited	**10.60**	*0.00*	**13.29**	*0.00*	**14.80**	*0.00*
	Missing	**0.00**	*1.00*	**14.67**	*0.05*	**0.00**	.
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.73**	*0.00*	**2.69**	*0.00*	**2.40**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.08**	*0.59*	**2.52**	*0.00*	**1.83**	*0.00*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.21**	*0.02*	**1.35**	*0.00*	**1.30**	*0.00*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.29**	*0.01*	**1.27**	*0.04*	**1.22**	*0.09*
	Moderate cogn. impairment	**1.52**	*0.00*	**1.61**	*0.00*	**1.42**	*0.00*
	Severe cogn. impairment	**1.80**	*0.00*	**2.45**	*0.00*	**1.90**	*0.00*
	Missing	**0.76**	*0.31*	**2.54**	*0.00*	**2.56**	*0.00*
Depression	***No depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.02**	*0.00*	**1.59**	*0.00*	**2.01**	*0.00*
	Missing	**1.42**	*0.17*	**1.94**	*0.00*	**2.32**	*0.00*

Reference group: No care, no limitations in ADL

Valid	*22,139*
Missing	*37*
Total	*22,176*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table C3 Regression results – Central Europe – WAVE 2

		No Care with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.66**	*0.00*	**-3.80**	*0.00*	**-4.83**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.51**	*0.00*	**1.39**	*0.00*	**1.41**	*0.02*
	70 to 79	**2.01**	*0.00*	**2.81**	*0.00*	**2.10**	*0.00*
	80+	**4.52**	*0.00*	**10.75**	*0.00*	**5.04**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.83**	*0.06*	**0.69**	*0.00*	**1.03**	*0.81*
Country	*Austria*	**0.76**	*0.06*	**0.29**	*0.00*	**1.47**	*0.03*
	Belgium	**1**	.	**1**	.	**1**	.
	France	**0.75**	*0.02*	**1.64**	*0.00*	**0.70**	*0.04*
	Germany	**0.64**	*0.00*	**0.13**	*0.00*	**1.18**	*0.30*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.82**	*0.08*	**1.16**	*0.19*	**0.73**	*0.03*
	High degree	**0.68**	*0.01*	**0.91**	*0.49*	**0.76**	*0.13*
	Missing	**0.61**	*0.23*	**1.43**	*0.26*	**0.66**	*0.40*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**0.91**	*0.31*	**1.21**	*0.04*	**1.02**	*0.88*
	Missing	**0.90**	*0.71*	**1.37**	*0.22*	**0.93**	*0.83*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**2.94**	*0.00*	**2.18**	*0.00*	**2.66**	*0.00*
	Severely limited	**8.84**	*0.00*	**10.90**	*0.00*	**12.61**	*0.00*
	Missing	**0.00**	*1.00*	**13.83**	*0.06*	**0.00**	.
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**2.15**	*0.00*	**2.34**	*0.00*	**2.98**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.06**	*0.77*	**2.41**	*0.00*	**1.50**	*0.08*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.29**	*0.03*	**1.29**	*0.03*	**1.15**	*0.34*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.52**	*0.00*	**1.28**	*0.07*	**1.43**	*0.05*
	Moderate cogn. impairment	**1.63**	*0.00*	**1.42**	*0.01*	**1.56**	*0.01*
	Severe cogn. impairment	**1.69**	*0.00*	**2.07**	*0.00*	**2.16**	*0.00*
	Missing	**0.51**	*0.09*	**1.72**	*0.03*	**3.25**	*0.00*
Depression	***No Depression***	**1**	.	**1**	.	**1**	.
	Depression	**1.79**	*0.00*	**1.43**	*0.00*	**1.90**	*0.00*
	Missing	**2.26**	*0.02*	**1.83**	*0.03*	**1.95**	*0.06*

Reference group: No care, no limitations in ADL

Valid	*9,518*
Missing	*12*
Total	*9,530*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table C4 Regression results – Northern Europe – WAVE 2

		No Care with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.80**	*0.00*	**-5.36**	*0.00*	**-5.74**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.23**	*0.15*	**1.81**	*0.01*	**1.37**	*0.13*
	70 to 79	**1.70**	*0.00*	**3.24**	*0.00*	**1.69**	*0.05*
	80+	**4.21**	*0.00*	**10.72**	*0.00*	**6.59**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.87**	*0.26*	**0.71**	*0.05*	**1.14**	*0.46*
Country	***Denmark***	**1**	.	**1**	.	**1**	.
	The Netherlands	**0.65**	*0.01*	**0.36**	*0.00*	**0.95**	*0.80*
	Sweden	**1.36**	*0.04*	**0.19**	*0.00*	**0.82**	*0.38*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.88**	*0.38*	**0.57**	*0.02*	**1.51**	*0.05*
	High degree	**0.61**	*0.00*	**0.87**	*0.54*	**0.98**	*0.94*
	Missing	**1.62**	*0.13*	**1.70**	*0.21*	**0.00**	*0.98*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.24**	*0.08*	**0.80**	*0.21*	**1.16**	*0.39*
	Missing	**0.91**	*0.80*	**1.78**	*0.16*	**1.10**	*0.85*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**6.48**	*0.00*	**5.10**	*0.00*	**3.67**	*0.00*
	Severely limited	**15.37**	*0.00*	**22.49**	*0.00*	**14.89**	*0.00*
	Missing	**0.00**	*1.00*	**0.00**	*1.00*	**0.00**	.
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.24**	*0.36*	**1.70**	*0.04*	**2.47**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.98**	*0.94*	**2.72**	*0.00*	**1.62**	*0.07*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.09**	*0.54*	**1.56**	*0.02*	**1.13**	*0.58*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.12**	*0.54*	**1.57**	*0.10*	**1.19**	*0.50*
	Moderate cogn. impairment	**1.48**	*0.03*	**2.97**	*0.00*	**1.27**	*0.37*
	Severe cogn. impairment	**2.01**	*0.01*	**5.66**	*0.00*	**1.73**	*0.14*
	Missing	**0.80**	*0.68*	**5.84**	*0.00*	**1.21**	*0.77*
Depression	***No Depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.43**	*0.00*	**1.73**	*0.00*	**2.13**	*0.00*
	Missing	**0.76**	*0.59*	**0.82**	*0.68*	**1.21**	*0.75*

Reference group: No care, no limitations in ADL

Valid	*7,601*
Missing	*18*
Total	*7,619*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table C5 Regression results – Southern Europe – WAVE 2

		No Care with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.81**	*0.00*	**-7.67**	*0.00*	**-4.68**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.91**	*0.00*	**1.80**	*0.04*	**1.41**	*0.02*
	70 to 79	**3.04**	*0.00*	**5.15**	*0.00*	**2.39**	*0.00*
	80+	**12.71**	*0.00*	**11.07**	*0.00*	**8.99**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.57**	*0.00*	**1.03**	*0.89*	**0.92**	*0.48*
Country	***Italy***	**1**	.	**1**	.	**1**	.
	Spain	**1.23**	*0.20*	**3.54**	*0.00*	**1.81**	*0.00*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**1.24**	*0.45*	**3.60**	*0.00*	**0.73**	*0.23*
	High degree	**0.99**	*0.97*	**0.92**	*0.90*	**1.03**	*0.93*
	Missing	**1.90**	*0.32*	**4.15**	*0.03*	**2.25**	*0.09*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.05**	*0.77*	**0.77**	*0.22*	**1.03**	*0.80*
	Missing	**0.73**	*0.48*	**1.42**	*0.42*	**1.31**	*0.36*
(General) Limitations	*Moderately limited*	**1**	.	**1**	.	**1**	.
	Severely limited	**3.08**	*0.00*	**4.30**	*0.00*	**3.53**	*0.00*
	Missing	**9.71**	*0.00*	**31.05**	*0.00*	**18.38**	*0.00*
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**2.34**	*0.01*	**6.75**	*0.00*	**2.58**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.80**	*0.09*	**2.73**	*0.01*	**2.84**	*0.00*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.29**	*0.20*	**1.62**	*0.05*	**1.64**	*0.00*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.19**	*0.52*	**1.39**	*0.47*	**1.05**	*0.83*
	Moderate cogn. impairment	**1.60**	*0.05*	**1.87**	*0.11*	**1.30**	*0.15*
	Severe cogn. impairment	**1.85**	*0.01*	**2.69**	*0.01*	**1.60**	*0.02*
	Missing	**1.18**	*0.75*	**3.80**	*0.01*	**2.35**	*0.01*
Depression	***No Depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.00**	*0.00*	**2.53**	*0.00*	**2.07**	*0.00*
	Missing	**1.40**	*0.54*	**6.20**	*0.00*	**4.37**	*0.00*

Reference group: No care, no limitations in ADL

Valid	*5,020*
Missing	*7*
Total	*5,027*

Source: SHARE Wave 2, Release 2.3.0, own calculations

Appendix D - Wave 1 - Family Model Results

Table D1 Distribution of types of care over whole population and over population in need of care, for all countries and separately for the three welfare state regions, weighted values

TOTAL POPULATION 50+ (in %)				
	ALL COUNTRIES	***CENTRAL EUROPE***	***NORTHERN EUROPE***	***SOUTHERN EUROPE***
No care, no ADL limitations	85.6	83.5	89.8	84.1
No care, with ADL limitations	5.6	5.9	5.3	5.4
Formal and mixed care	4.6	7.0	2.3	2.4
Informal care	4.1	3.7	2.4	8.0
Missing	0.1	0.0	0.1	0.1
Popluation in need for care (in %)	14.3	16.6	10.0	15.8

POPULATION IN NEED OF CARE 50+ (in %)				
	ALL COUNTRIES	***CENTRAL EUROPE***	***NORTHERN EUROPE***	***SOUTHERN EUROPE***
No care, with ADL limitations	39.2	35.5	53.0	34.2
Formal and mixed care	32.2	42.2	23.0	15.2
Informal care	28.7	22.3	24.0	50.6

Table D2 Descriptive results – WAVE 1

		ALL COUNTRIES				CENTRAL EUROPE				NORTHERN EUROPE				SOUTHERN EUROPE			
		No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care
Age groups	50 to 59	91.9	3.4	2.1	2.5	90.9	3.3	3.5	2.2	93.3	3.8	1.0	1.9	91.8	3.0	0.9	4.3
	60 to 69	90.1	4.5	2.9	2.5	88.2	4.6	4.8	2.4	93.1	4.2	1.0	1.7	90.1	4.4	1.4	4.1
	70 to 79	81.6	7.1	6.0	5.2	77.9	7.6	9.5	5.0	88.2	6.4	2.9	2.5	81.6	7.0	2.3	9.1
	80+	61.7	12.6	14.0	11.8	58.0	13.8	18.9	9.3	72.4	11.5	10.0	6.1	54.0	11.5	9.1	25.4
Gender	Female	83.8	6.1	5.6	4.6	81.4	6.4	8.3	4.0	88.5	5.4	3.3	2.8	82.3	6.2	2.7	8.8
	Male	88.0	5.0	3.4	3.6	86.0	5.2	5.4	3.3	91.6	5.1	1.3	2.1	86.5	4.5	2.0	7.0
Country	Austria	87.6	4.8	2.1	5.5	87.6	4.8	2.1	5.5								
	Belgium	81.2	6.8	8.9	3.1	81.2	6.8	8.9	3.1								
	France	78.8	5.7	12.9	2.5	78.8	5.7	12.9	2.5								
	Germany	88.8	5.4	1.3	4.5	88.8	5.4	1.3	4.5								
	Denmark	88.5	5.7	3.8	2.0					88.5	5.7	3.8	2.0				
	The Netherlands	90.9	4.3	2.6	2.3					90.9	4.3	2.6	2.3				
	Sweden	89.9	5.9	1.4	2.8					89.9	5.9	1.4	2.8				
	Italy	84.9	5.7	1.5	8.0									84.9	5.7	1.5	8.0
	Spain	83.5	5.2	3.3	8.0									83.5	5.2	3.3	8.0
Education	Low degree	81.3	6.9	6.0	5.7	76.4	7.8	11.0	4.7	86.6	6.8	3.3	3.3	82.2	6.0	2.5	9.2
	Medium degree	89.2	4.6	3.4	2.8	87.4	5.0	4.2	3.4	91.9	4.1	2.1	1.9	93.1	3.1	1.7	2.1
	High degree	91.9	3.5	2.6	2.0	90.2	3.6	4.0	2.2	94.1	3.5	0.9	1.5	90.7	3.1	1.9	4.3
	Missing	86.5	8.8	3.4	1.4	78.6	10.7	7.1	3.6	92.6	6.2	1.2	0.0	83.3	16.7	0.0	0.0
Area of living	Urban	87.0	5.1	3.9	3.9	84.7	5.3	6.4	3.7	90.3	5.0	2.3	2.4	84.7	5.1	2.4	7.8
	Rural	84.5	6.0	5.2	4.3	82.6	6.2	7.5	3.7	89.5	5.8	2.2	2.5	83.9	5.8	2.5	7.9
	Missing	85.5	4.8	3.4	6.3	87.5	8.0	2.3	2.3	86.6	1.5	7.5	4.5	79.2	5.7	0.0	15.1
Living arrangement	With partner/spouse	86.4	4.8	5.3	3.5	86.4	4.8	5.3	3.5	92.4	4.0	1.1	2.5	87.5	4.2	1.9	6.4
	Without partner/spouse	75.9	8.5	11.4	4.1	75.9	8.5	11.4	4.1	84.1	8.4	5.4	2.1	75.9	8.6	3.6	11.9
Distance to closest living son or daughter	Daughter > 5 kms	86.7	6.0	4.5	2.7	83.8	6.1	7.1	3.0	90.5	5.2	2.1	2.2	86.0	8.9	1.0	4.1
	Daughter < 5 kms	84.2	6.1	5.3	4.4	81.2	6.7	8.2	3.9	89.1	5.4	2.8	2.7	82.3	6.1	2.2	9.5
	Daughter HH	86.0	3.9	3.5	6.5	85.1	4.4	5.4	5.1	93.5	3.3	0.8	2.4	83.4	3.7	2.7	10.2
	Son > 5 kms	86.9	6.8	4.2	2.1	84.8	6.7	6.4	2.0	89.0	6.8	2.0	2.2	90.2	7.1	0.8	2.0
	Son < 5 kms	83.8	6.2	6.4	3.6	81.5	6.6	8.8	3.0	87.6	5.5	4.3	2.6	80.4	6.5	5.2	8.0
	Son HH	87.4	4.6	3.0	4.9	85.6	4.9	5.1	4.3	94.5	3.0	0.7	1.8	85.9	5.2	1.6	7.4
	Missing	84.2	4.6	5.1	6.0	81.6	4.1	8.0	6.4	89.5	5.9	1.1	3.5	82.7	3.6	2.9	10.8
Occupation of closest living child	Full-time	86.5	5.6	4.4	3.5	84.5	5.6	6.7	3.2	89.7	5.8	2.3	2.2	86.0	5.4	2.3	6.3
	Part-time	86.5	6.2	3.9	3.4	80.2	9.1	5.9	4.8	93.8	3.0	1.6	1.6	90.2	3.5	2.9	3.5
	Not employed	85.6	5.2	3.8	5.3	84.4	5.4	6.4	3.8	91.0	4.4	1.8	2.8	81.6	5.7	1.6	11.1
	Retired	58.2	11.6	19.0	11.2	59.4	10.9	22.3	7.4	60.9	10.9	20.3	7.8	50.5	14.3	8.8	26.4
	Missing	86.9	4.4	4.4	4.3	83.8	4.4	7.1	4.7	91.7	4.8	1.0	2.6	85.7	3.1	4.0	7.1

Source: SHARE Wave 1, own calculations

Table D3 Regression results – all countries – WAVE 1

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.09**	*0.00*	**-3.29**	*0.00*	**-3.87**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.28**	*0.01*	**1.49**	*0.00*	**1.14**	*0.25*
	70 to 79	**1.96**	*0.00*	**2.83**	*0.00*	**2.61**	*0.00*
	80+	**3.78**	*0.00*	**7.25**	*0.00*	**8.14**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.99**	*0.91*	**0.76**	*0.00*	**0.82**	*0.01*
Country	*Austria*	**0.77**	*0.06*	**0.23**	*0.00*	**1.76**	*0.00*
	Belgium	**1**	.	**1**	.	**1**	.
	Denmark	**0.93**	*0.58*	**0.49**	*0.00*	**0.77**	*0.24*
	France	**0.93**	*0.50*	**1.61**	*0.00*	**0.82**	*0.23*
	Germany	**0.81**	*0.10*	**0.11**	*0.00*	**1.46**	*0.01*
	Italy	**0.73**	*0.01*	**0.15**	*0.00*	**1.74**	*0.00*
	The Netherlands	**0.60**	*0.00*	**0.25**	*0.00*	**0.74**	*0.08*
	Spain	**0.83**	*0.15*	**0.37**	*0.00*	**1.85**	*0.00*
	Sweden	**0.75**	*0.02*	**0.13**	*0.00*	**0.88**	*0.41*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.72**	*0.00*	**0.87**	*0.15*	**0.68**	*0.00*
	High degree	**0.56**	*0.00*	**0.67**	*0.00*	**0.53**	*0.00*
	Missing	**1.56**	*0.12*	**0.85**	*0.73*	**0.31**	*0.10*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.17**	*0.02*	**1.23**	*0.01*	**0.93**	*0.34*
	Missing	**0.92**	*0.81*	**0.70**	*0.40*	**1.24**	*0.47*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.54**	*0.00*	**1.59**	*0.00*	**0.80**	*0.02*
	Missing	**4.91**	*0.01*	**5.42**	*0.02*	**0.00**	.
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.97**	*0.77*	**1.12**	*0.39*	**1.24**	*0.12*
	Daughter HH	**0.81**	*0.12*	**1.24**	*0.17*	**2.02**	*0.00*
	Son >5 kms	**1.19**	*0.13*	**0.97**	*0.84*	**0.86**	*0.37*
	Son < 5 kms	**1.06**	*0.59*	**1.44**	*0.01*	**1.13**	*0.43*
	Son HH	**0.99**	*0.92*	**1.14**	*0.38*	**1.60**	*0.00*
	Missing	**0.77**	*0.33*	**1.20**	*0.56*	**3.98**	*0.00*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**1.18**	*0.18*	**0.99**	*0.96*	**1.01**	*0.96*
	Not employed	**1.18**	*0.06*	**1.12**	*0.29*	**1.45**	*0.00*
	Retired	**1.25**	*0.24*	**1.90**	*0.00*	**1.54**	*0.02*
	Missing	**1.35**	*0.18*	**1.27**	*0.39*	**0.63**	*0.17*

Reference group: No care, no limitations in ADLs

Valid	*20,734*
Missing	*19*
Total	*20,753*

Source: SHARE Wave 1, own calculations.

Table D4 Regression results – Central Europe - WAVE 1

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-3.20**	*0.00*	**-3.11**	*0.00*	**-3.82**	*0.00*
Age groups	*50 to 59*	**1**	.	**1**	.	**1**	.
	60 to 69	**1.42**	*0.01*	**1.63**	*0.00*	**1.22**	*0.24*
	70 to 79	**2.37**	*0.00*	**3.08**	*0.00*	**3.01**	*0.00*
	80+	**4.91**	*0.00*	**6.29**	*0.00*	**7.97**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.99**	*0.93*	**0.79**	*0.01*	**0.90**	*0.37*
Country	*Austria*	**0.77**	*0.07*	**0.23**	*0.00*	**1.73**	*0.00*
	Belgium	**1**	.	**1**	.	**1**	.
	France	**0.94**	*0.62*	**1.61**	*0.00*	**0.82**	*0.25*
	Germany	**0.78**	*0.06*	**0.11**	*0.00*	**1.41**	*0.03*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.78**	*0.03*	**0.87**	*0.19*	**0.73**	*0.02*
	High degree	**0.55**	*0.00*	**0.68**	*0.00*	**0.53**	*0.00*
	Missing	**1.67**	*0.25*	**1.01**	*0.98*	**0.82**	*0.79*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.26**	*0.02*	**1.31**	*0.00*	**0.90**	*0.35*
	Missing	**1.28**	*0.58*	**0.26**	*0.07*	**0.44**	*0.26*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.39**	*0.00*	**1.53**	*0.00*	**0.70**	*0.01*
	Missing	**4.57**	*0.08*	**6.23**	*0.04*	**0.00**	.
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.90**	*0.51*	**1.09**	*0.59*	**1.07**	*0.75*
	Daughter HH	**0.79**	*0.23*	**1.22**	*0.30*	**1.77**	*0.01*
	Son >5 kms	**1.20**	*0.24*	**0.94**	*0.71*	**0.72**	*0.16*
	Son < 5 kms	**1.10**	*0.55*	**1.20**	*0.24*	**0.84**	*0.43*
	Son HH	**0.95**	*0.74*	**1.11**	*0.55*	**1.60**	*0.02*
	Missing	**0.56**	*0.14*	**1.14**	*0.72*	**4.44**	*0.00*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**1.75**	*0.00*	**1.04**	*0.82*	**1.28**	*0.22*
	Not employed	**1.33**	*0.03*	**1.15**	*0.27*	**1.13**	*0.44*
	Retired	**1.06**	*0.82*	**1.50**	*0.06*	**1.11**	*0.73*
	Missing	**1.60**	*0.15*	**1.31**	*0.38*	**0.54**	*0.19*

Reference group: No care, no limitations in ADLs

Valid	*9,846*
Missing	*4*
Total	*9,850*

Source: SHARE Wave 1, own calculations

Table D5 Regression results – Northern Europe – WAVE 1

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-2.92**	*0.00*	**-3.91**	*0.00*	**-3.62**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**0.95**	*0.77*	**0.77**	*0.39*	**0.86**	*0.52*
	70 to 79	**1.36**	*0.07*	**1.65**	*0.08*	**1.51**	*0.08*
	80+	**2.35**	*0.00*	**5.46**	*0.00*	**4.35**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.15**	*0.23*	**0.62**	*0.02*	**0.74**	*0.07*
Country	***Denmark***	**1**	.	**1**	.	**1**	.
	The Netherlands	**0.67**	*0.02*	**0.56**	*0.01*	**0.96**	*0.88*
	Sweden	**0.80**	*0.14*	**0.27**	*0.00*	**1.11**	*0.64*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.63**	*0.00*	**0.77**	*0.27*	**0.63**	*0.03*
	High degree	**0.58**	*0.00*	**0.51**	*0.03*	**0.49**	*0.00*
	Missing	**1.35**	*0.49*	**0.67**	*0.70*	**0.00**	*1.00*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.17**	*0.21*	**1.11**	*0.61*	**1.09**	*0.62*
	Missing	**0.31**	*0.25*	**4.36**	*0.01*	**2.37**	*0.11*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.82**	*0.00*	**2.62**	*0.00*	**0.53**	*0.01*
	Missing	**10.71**	*0.01*	**11.06**	*0.05*	**0.00**	.
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**1.22**	*0.30*	**1.24**	*0.48*	**1.30**	*0.32*
	Daughter HH	**1.00**	*0.99*	**0.85**	*0.77*	**1.55**	*0.23*
	Son >5 kms	**1.30**	*0.16*	**1.30**	*0.40*	**1.22**	*0.47*
	Son < 5 kms	**1.07**	*0.74*	**2.15**	*0.01*	**1.30**	*0.32*
	Son HH	**0.81**	*0.46*	**0.56**	*0.31*	**0.96**	*0.91*
	Missing	**1.48**	*0.39*	**1.97**	*0.54*	**2.21**	*0.25*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**0.61**	*0.05*	**0.83**	*0.64*	**0.77**	*0.42*
	Not employed	**1.07**	*0.71*	**1.25**	*0.42*	**1.54**	*0.05*
	Retired	**1.53**	*0.23*	**3.61**	*0.00*	**2.55**	*0.02*
	Missing	**1.05**	*0.91*	**0.63**	*0.64*	**0.88**	*0.83*

Reference group: No care, no limitations in ADLs

Valid	*6,686*
Missing	*11*
Total	*6,697*

Source: SHARE Wave 1, own calculations.

Table D6 Regression results – Southern Europe – WAVE 1

		No care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.33**	*0.00*	**-9.22**	*0.00*	**-5.35**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.57**	*0.03*	**2.62**	*0.02*	**1.22**	*0.31*
	70 to 79	**2.20**	*0.00*	**5.12**	*0.00*	**2.95**	*0.00*
	80+	**4.28**	*0.00*	**29.04**	*0.00*	**12.60**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**0.81**	*0.17*	**0.71**	*0.15*	**0.76**	*0.04*
Country	***Italy***	**1**	.	**1**	.	**1**	.
	Spain	**1.12**	*0.45*	**2.27**	*0.00*	**0.95**	*0.66*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.58**	*0.07*	**1.20**	*0.66*	**0.45**	*0.01*
	High degree	**0.56**	*0.12*	**1.21**	*0.70*	**0.62**	*0.14*
	Missing	**3.31**	*0.14*	**0.00**	.	**0.00**	*1.00*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.00**	*0.98*	**0.98**	*0.93*	**0.79**	*0.07*
	Missing	**1.07**	*0.91*	**0.00**	*1.00*	**1.48**	*0.37*
Living arrangement	***With partner/spouse***	**1**	.	**1**	.	**1**	.
	Without partner/spouse	**1.45**	*0.04*	**0.80**	*0.42*	**1.06**	*0.72*
	Missing	**0.00**	.	**0.00**	.	**0.00**	*1.00*
Distance to closest living son or daughter	***Daughter > 5 kms***	**1**	.	**1**	.	**1**	.
	Daughter < 5 kms	**0.68**	*0.20*	**1.98**	*0.30*	**1.83**	*0.07*
	Daughter HH	**0.63**	*0.11*	**3.26**	*0.06*	**2.86**	*0.00*
	Son >5 kms	**0.84**	*0.62*	**0.40**	*0.43*	**0.50**	*0.21*
	Son < 5 kms	**0.85**	*0.60*	**4.04**	*0.03*	**1.81**	*0.09*
	Son HH	**0.89**	*0.68*	**2.81**	*0.10*	**2.38**	*0.01*
	Missing	**0.34**	*0.18*	**1.02**	*0.99*	**6.09**	*0.04*
Occupation of closest living child	***Full-time***	**1**	.	**1**	.	**1**	.
	Part-time	**0.69**	*0.40*	**1.56**	*0.38*	**0.60**	*0.20*
	Not employed	**1.08**	*0.68*	**0.98**	*0.95*	**1.71**	*0.00*
	Retired	**1.40**	*0.42*	**2.19**	*0.08*	**1.65**	*0.11*
	Missing	**1.53**	*0.49*	**4.26**	*0.07*	**0.61**	*0.54*

Reference group: No care, no limitations in ADLs

Valid	*4,202*
Missing	*4*
Total	*4,206*

Source: SHARE Wave 1, own calculations.

Appendix E – Wave 1 – Health Model Results

Table E1 Distribution of types of care over whole population and over population in need of care, for all countries and separately for the three welfare state regions, weighted values

TOTAL POPULATION 50+ (in %)				
	ALL COUNTRIES	***CENTRAL EUROPE***	***NORTHERN EUROPE***	***SOUTHERN EUROPE***
No care, no ADL limitations	85.4	83.2	89.5	83.9
No care, with ADL limitations	5.8	6.0	5.5	5.7
Formal and mixed care	4.7	7.0	2.5	2.5
Informal care	4.1	3.7	2.3	7.8
Missing	0.1	0.1	0.2	0.1
Popluation in need for care (in %)	14.6	16.7	10.3	16.0

POPULATION IN NEED OF CARE 50+ (in %)				
	ALL COUNTRIES	***CENTRAL EUROPE***	***NORTHERN EUROPE***	***SOUTHERN EUROPE***
No care, with ADL limitations	39.7	35.9	53.4	35.6
Formal and mixed care	32.2	41.9	24.3	15.6
Informal care	28.1	22.2	22.3	48.8

Source: SHARE Wave 1, own calculations.

Table E2 Descriptives, weighted values

		ALL COUNTRIES				CENTRAL EUROPE				NORTHERN EUROPE				SOUTHERN EUROPE			
		No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care	No Care, no ADL limitations	No Care, with ADL limitations	Formal and mixed care	Informal care
Age groups	50 to 59	91.9	3.5	2.1	2.5	91.0	3.4	3.4	2.3	93.4	3.7	1.0	1.9	91.5	3.3	0.9	4.3
	60 to 69	89.9	4.6	3.0	2.5	88.1	4.7	4.7	2.5	92.6	4.6	1.3	1.6	90.4	4.3	1.2	4.1
	70 to 79	81.5	7.3	6.1	5.1	77.5	7.9	9.7	4.9	88.3	6.2	2.9	2.6	81.9	7.3	2.3	8.4
	80+	61.5	13.2	14.0	11.3	58.9	13.8	18.5	8.8	71.3	13.3	10.2	5.3	53.6	11.9	9.9	24.6
Gender	Female	87.9	5.2	3.4	3.5	85.9	5.4	5.4	3.3	91.6	5.0	1.4	2.0	86.8	4.8	1.9	6.5
	Male	83.3	6.4	5.7	4.6	81.1	6.5	8.3	4.0	87.9	6.0	3.5	2.6	81.6	6.5	2.9	8.9
Country	Austria	87.8	4.8	2.3	5.1	87.8	4.8	2.3	5.1								
	Belgium	81.2	6.9	8.7	3.2	81.2	6.9	8.7	3.2								
	France	77.6	6.3	13.4	2.7	77.6	6.3	13.4	2.7								
	Germany	88.8	5.4	1.3	4.5	88.8	5.4	1.3	4.5								
	Denmark	87.8	6.2	4.0	1.9					87.8	6.2	4.0	1.9				
	The Netherlands	90.7	4.4	2.8	2.1					90.7	4.4	2.8	2.1				
	Sweden	89.6	6.3	1.4	2.7					89.6	6.3	1.4	2.7				
	Italy	84.7	5.8	1.6	7.9									84.7	5.8	1.6	7.9
	Spain	83.1	5.6	3.5	7.8									83.1	5.6	3.5	7.8
Education	Low degree	80.8	7.3	6.2	5.7	75.7	8.3	11.2	4.8	86.3	7.1	3.5	3.1	81.8	6.4	2.7	9.1
	Medium degree	89.3	4.6	3.3	2.8	87.7	5.0	4.0	3.3	91.8	4.3	2.2	1.8	93.0	3.3	1.4	2.3
	High degree	91.6	3.6	2.7	2.1	89.9	3.6	4.1	2.4	93.8	3.7	1.0	1.5	91.9	2.5	2.0	3.6
	Missing	85.2	8.5	4.5	1.7	79.4	8.8	7.4	4.4	90.5	7.4	2.1	0.0	83.3	16.7	0.0	0.0
Area of living	Urban	84.2	6.2	5.3	4.3	82.2	6.4	7.5	3.8	89.4	5.9	2.4	2.3	83.8	5.9	2.6	7.6
	Rural	86.7	5.5	4.0	3.8	84.7	5.5	6.3	3.6	89.9	5.4	2.5	2.2	84.3	5.5	2.4	7.9
	Missing	86.4	4.3	3.4	6.0	87.6	7.2	3.1	2.1	87.5	1.4	6.9	4.2	82.1	4.5	0.0	13.4
(General) Limitations	Not limited	95.4	1.9	1.7	1.1	93.8	2.3	3.0	1.0	97.5	1.5	0.6	0.4	95.9	1.6	0.4	2.2
	Moderately limited	82.4	8.3	4.7	4.6	81.3	8.3	7.0	3.4	87.2	7.5	2.8	2.5	78.3	9.4	2.7	9.7
	Severely limited	53.3	16.0	15.9	14.9	48.3	15.7	21.8	14.2	68.0	15.7	8.2	8.1	33.0	17.7	14.4	34.9
	Missing																
Stroke	No*	86.5	5.5	4.3	3.7	84.5	5.8	6.4	3.3	89.6	5.6	2.5	2.3	85.0	5.6	2.3	7.1
	Yes	58.5	13.0	14.7	13.9	53.8	12.5	20.4	13.2	70.1	15.2	7.9	6.7	43.3	8.3	12.5	35.8
Heart attack	No*	87.2	5.2	3.9	3.6	85.3	5.5	5.9	3.3	91.0	5.0	2.2	1.9	86.1	4.9	2.0	7.1
	Yes	72.8	9.9	9.9	7.5	69.6	9.3	14.5	6.6	80.7	9.3	4.7	5.3	67.0	12.3	6.6	14.0
Cancer	No*	85.9	5.7	4.4	4.0	83.8	5.9	6.6	3.6	89.9	5.5	2.3	2.2	84.5	5.6	2.3	7.6
	Yes	78.2	7.0	8.9	5.8	74.0	7.8	12.9	5.3	85.9	5.5	5.3	3.3	72.0	8.7	6.0	13.3
Cognitive impairment	No cogn. impairment	91.1	4.2	2.8	2.0	89.2	4.4	4.4	2.0	93.0	4.3	1.2	1.6	93.2	3.0	0.6	3.2
	Mild cogn. impairment	85.7	5.8	4.5	4.0	82.1	6.6	6.5	4.8	87.3	6.2	3.9	2.7	90.9	3.9	1.4	3.9
	Moderate cogn. impairment	81.8	7.8	5.9	4.5	77.0	9.5	9.2	4.3	84.4	7.2	5.3	3.1	86.3	5.8	2.0	5.8
	Severe cogn. impairment	63.5	11.4	11.5	13.6	57.7	11.5	19.8	11.0	61.3	18.4	12.2	8.1	68.4	9.3	5.1	17.1
	Missing																
Depression	No depression	91.1	3.8	3.0	2.2	88.8	4.2	4.6	2.3	93.3	3.7	1.7	1.3	92.9	2.7	0.9	3.5
	Depression	70.9	11.5	8.8	8.9	68.9	11.3	13.0	6.8	76.4	12.3	5.4	5.9	69.5	11.0	4.8	14.8
	Missing	58.7	9.8	15.4	16.1	57.1	6.6	20.3	16.0	69.6	16.5	5.2	8.7	46.4	8.7	15.9	29.0

Source: SHARE Wave 1, own calculations.

Table E2 Regression Results Health Model – All countries – WAVE 1

		No Care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.19**	*0.00*	**-4.24**	*0.00*	**-5.05**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.27**	*0.01*	**1.43**	*0.00*	**0.87**	*0.19*
	70 to 79	**1.68**	*0.00*	**2.24**	*0.00*	**1.24**	*0.04*
	80+	**2.89**	*0.00*	**5.18**	*0.00*	**2.48**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.05**	*0.41*	**0.72**	*0.00*	**0.98**	*0.82*
Country	*Austria*	**0.66**	*0.00*	**0.24**	*0.00*	**1.36**	*0.06*
	Belgium	**1**	.	**1**	.	**1**	.
	Denmark	**0.89**	*0.41*	**0.47**	*0.00*	**0.59**	*0.02*
	France	**0.99**	*0.90*	**1.63**	*0.00*	**0.81**	*0.18*
	Germany	**0.58**	*0.00*	**0.08**	*0.00*	**1.05**	*0.73*
	Italy	**0.59**	*0.00*	**0.13**	*0.00*	**1.66**	*0.00*
	The Netherlands	**0.48**	*0.00*	**0.21**	*0.00*	**0.50**	*0.00*
	Spain	**0.75**	*0.02*	**0.41**	*0.00*	**2.21**	*0.00*
	Sweden	**0.67**	*0.00*	**0.11**	*0.00*	**0.67**	*0.01*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.86**	*0.07*	**1.03**	*0.74*	**0.90**	*0.32*
	High degree	**0.75**	*0.00*	**0.97**	*0.82*	**0.87**	*0.27*
	Missing	**1.50**	*0.16*	**0.84**	*0.68*	**0.46**	*0.20*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.13**	*0.05*	**1.27**	*0.00*	**0.99**	*0.90*
	Missing	**0.67**	*0.24*	**0.59**	*0.18*	**1.02**	*0.94*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**4.02**	*0.00*	**2.74**	*0.00*	**3.60**	*0.00*
	Severely limited	**9.97**	*0.00*	**11.68**	*0.00*	**16.43**	*0.00*
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.57**	*0.00*	**2.24**	*0.00*	**2.35**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.88**	*0.29*	**1.56**	*0.00*	**1.15**	*0.29*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.03**	*0.69*	**1.17**	*0.08*	**1.10**	*0.29*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.07**	*0.47*	**1.18**	*0.15*	**1.43**	*0.00*
	Moderate cogn. impairment	**1.18**	*0.06*	**1.10**	*0.37*	**1.21**	*0.09*
	Severe cogn. impairment	**1.32**	*0.01*	**1.60**	*0.00*	**2.32**	*0.00*
	Missing	**1.00**	*1.00*	**2.23**	*0.00*	**2.47**	*0.00*
Depression	***No depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.17**	*0.00*	**1.77**	*0.00*	**2.08**	*0.00*
	Missing	**1.79**	*0.02*	**2.02**	*0.00*	**2.68**	*0.00*

Reference group: No care, no limitations in ADL

Valid	*23,272*
Missing	*23*
Total	*23,295*

Source: SHARE Wave 1, own calculations.

Table E3 Regression Results Health Model – Central Europe – WAVE 1

		No Care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.24**	*0.00*	**-4.09**	*0.00*	**-5.12**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.38**	*0.01*	**1.51**	*0.00*	**0.94**	*0.70*
	70 to 79	**2.12**	*0.00*	**2.45**	*0.00*	**1.46**	*0.02*
	80+	**3.47**	*0.00*	**4.13**	*0.00*	**2.10**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.06**	*0.50*	**0.75**	*0.00*	**1.03**	*0.81*
Country	*Austria*	**0.66**	*0.00*	**0.24**	*0.00*	**1.36**	*0.06*
	Belgium	**1**	.	**1**	.	**1**	.
	France	**1.01**	*0.96*	**1.65**	*0.00*	**0.80**	*0.17*
	Germany	**0.57**	*0.00*	**0.09**	*0.00*	**1.03**	*0.82*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.92**	*0.42*	**1.02**	*0.89*	**1.00**	*0.97*
	High degree	**0.74**	*0.03*	**1.00**	*0.98*	**0.99**	*0.96*
	Missing	**1.50**	*0.38*	**1.04**	*0.94*	**1.23**	*0.74*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.25**	*0.02*	**1.33**	*0.00*	**1.06**	*0.62*
	Missing	**0.98**	*0.96*	**0.33**	*0.08*	**0.44**	*0.27*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**3.56**	*0.00*	**2.57**	*0.00*	**3.17**	*0.00*
	Severely limited	**9.25**	*0.00*	**9.89**	*0.00*	**15.70**	*0.00*
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.65**	*0.00*	**2.22**	*0.00*	**2.40**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.91**	*0.58*	**1.47**	*0.01*	**1.07**	*0.75*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.93**	*0.52*	**1.19**	*0.12*	**1.02**	*0.91*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.08**	*0.56*	**1.04**	*0.79*	**1.91**	*0.00*
	Moderate cogn. impairment	**1.18**	*0.17*	**0.97**	*0.78*	**1.29**	*0.13*
	Severe cogn. impairment	**1.06**	*0.74*	**1.35**	*0.04*	**2.64**	*0.00*
	Missing	**0.43**	*0.04*	**1.66**	*0.06*	**2.84**	*0.00*
Depression	***No depression***	**1**	.	**1**	.	**1**	.
	Depression	**1.92**	*0.00*	**1.64**	*0.00*	**1.63**	*0.00*
	Missing	**2.00**	*0.04*	**1.99**	*0.01*	**2.60**	*0.00*

Reference group: No care, no limitations in ADL

Valid	*11,181*
Missing	*7*
Total	*11,188*

Source: SHARE Wave 1, own calculations.

Table E4 Regression Results Health Model – Northern Europe – WAVE 1

		No Care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.14**	*0.00*	**-5.11**	*0.00*	**-5.45**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.13**	*0.42*	**1.07**	*0.81*	**0.79**	*0.27*
	70 to 79	**1.36**	*0.06*	**1.71**	*0.05*	**1.07**	*0.76*
	80+	**2.40**	*0.00*	**5.76**	*0.00*	**1.68**	*0.05*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.11**	*0.39*	**0.51**	*0.00*	**0.92**	*0.61*
Country	***Denmark***	**1**	.	**1**	.	**1**	.
	The Netherlands	**0.51**	*0.00*	**0.42**	*0.00*	**0.82**	*0.42*
	Sweden	**0.72**	*0.03*	**0.21**	*0.00*	**1.08**	*0.73*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.71**	*0.03*	**0.92**	*0.70*	**0.77**	*0.22*
	High degree	**0.74**	*0.06*	**0.67**	*0.16*	**0.73**	*0.16*
	Missing	**1.08**	*0.85*	**0.53**	*0.41*	**0.00**	.
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**1.11**	*0.39*	**1.11**	*0.59*	**1.15**	*0.41*
	Missing	**0.27**	*0.20*	**2.02**	*0.23*	**2.08**	*0.21*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**4.13**	*0.00*	**3.82**	*0.00*	**4.12**	*0.00*
	Severely limited	**9.88**	*0.00*	**13.66**	*0.00*	**14.13**	*0.00*
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.35**	*0.14*	**1.64**	*0.07*	**1.62**	*0.05*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.74**	*0.16*	**1.63**	*0.05*	**1.21**	*0.45*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**0.99**	*0.95*	**0.97**	*0.89*	**1.54**	*0.02*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**1.17**	*0.38*	**2.14**	*0.00*	**1.30**	*0.28*
	Moderate cogn. impairment	**1.05**	*0.78*	**2.04**	*0.01*	**1.23**	*0.40*
	Severe cogn. impairment	**2.07**	*0.00*	**4.22**	*0.00*	**2.44**	*0.00*
	Missing	**1.12**	*0.79*	**3.25**	*0.02*	**1.44**	*0.47*
Depression	***No depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.29**	*0.00*	**1.78**	*0.00*	**2.84**	*0.00*
	Missing	**2.21**	*0.06*	**1.62**	*0.37*	**3.23**	*0.02*

Reference group: No care, no limitations in ADL

Valid	*7,321*
Missing	*12*
Total	*7,333*

Source: SHARE Wave 1, own calculations.

Table E4 Regression Results Health Model – Southern Europe – Wave 1

		No Care, with ADL limitations		Formal and mixed care		Informal care	
	Intercept (b)	**-4.89**	*0.00*	**-7.98**	*0.00*	**-4.54**	*0.00*
Age groups	***50 to 59***	**1**	.	**1**	.	**1**	.
	60 to 69	**1.23**	*0.30*	**1.51**	*0.29*	**0.84**	*0.38*
	70 to 79	**1.31**	*0.19*	**1.98**	*0.08*	**1.10**	*0.62*
	80+	**2.48**	*0.00*	**9.80**	*0.00*	**3.94**	*0.00*
Gender	***Female***	**1**	.	**1**	.	**1**	.
	Male	**1.00**	*0.98*	**0.89**	*0.62*	**0.93**	*0.58*
Country	***Italy***	**1**	.	**1**	.	**1**	.
	Spain	**1.25**	*0.14*	**4.15**	*0.00*	**1.39**	*0.02*
Education	***Low degree***	**1**	.	**1**	.	**1**	.
	Middle degree	**0.93**	*0.79*	**1.98**	*0.13*	**0.74**	*0.31*
	High degree	**0.78**	*0.53*	**2.34**	*0.10*	**0.88**	*0.73*
	Missing	**7.28**	*0.01*	**0.00**	.	**0.00**	*1.00*
Area of living	***Urban***	**1**	.	**1**	.	**1**	.
	Rural	**0.96**	*0.76*	**1.12**	*0.60*	**0.80**	*0.10*
	Missing	**0.61**	*0.43*	**0.00**	*0.99*	**0.86**	*0.76*
(General) Limitations	***Not limited***	**1**	.	**1**	.	**1**	.
	Moderately limited	**4.98**	*0.00*	**4.62**	*0.00*	**3.80**	*0.00*
	Severely limited	**13.90**	*0.00*	**52.36**	*0.00*	**23.60**	*0.00*
Stroke	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**2.02**	*0.04*	**4.85**	*0.00*	**4.35**	*0.00*
Cancer	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.15**	*0.63*	**1.52**	*0.29*	**1.31**	*0.30*
Heart attack	***No/missing***	**1**	.	**1**	.	**1**	.
	Yes	**1.40**	*0.05*	**1.29**	*0.31*	**1.04**	*0.81*
Cognitive impairments	***No cognitive impairment***	**1**	.	**1**	.	**1**	.
	Mild cogn. impairment	**0.96**	*0.88*	**1.33**	*0.55*	**1.01**	*0.97*
	Moderate cogn. impairment	**1.26**	*0.30*	**1.61**	*0.27*	**1.17**	*0.48*
	Severe cogn. impairment	**1.44**	*0.12*	**1.60**	*0.30*	**1.96**	*0.00*
	Missing	**3.83**	*0.01*	**3.85**	*0.04*	**3.60**	*0.00*
Depression	***No depression***	**1**	.	**1**	.	**1**	.
	Depression	**2.70**	*0.00*	**2.91**	*0.00*	**2.40**	*0.00*
	Missing	**1.13**	*0.84*	**3.34**	*0.05*	**2.58**	*0.03*

Reference group: No care, no limitations in ADL

Valid	*4,770*
Missing	*4*
Total	*4,774*

Source: SHARE Wave 1, own calculations.

Appendix F Quality of life model results

Table F1: Logistic Regression Results for Determinants of quality of life

		ALL COUNTRIES		CENTRAL EUROPE		NORTHERN EUROPE		SOUTHERN EUROPE	
	Intercept (b)	**-3.08**	*0.00*	**-3.10**	*0.00*	**-3.20**	*0.00*	**-2.58**	*0.00*
Type of care	***No Care, no ADL limitations***	**1**		**1**		**1**		**1**	
	No Care, with ADL limitations	**1.52**	*0.00*	**1.62**	*0.00*	**1.32**	*0.07*	**1.83**	*0.00*
	Formal and mixed care	**1.47**	*0.00*	**1.38**	*0.00*	**1.87**	*0.00*	**1.61**	*0.10*
	Informal care	**1.45**	*0.00*	**1.37**	*0.03*	**1.66**	*0.02*	**1.54**	*0.01*
Age groups	***50 to 59***	**1**		**1**		**1**		**1**	
	60 to 69	**0.99**	*0.91*	**1.00**	*0.99*	**0.89**	*0.30*	**1.06**	*0.53*
	70 to 79	**1.22**	*0.00*	**1.23**	*0.01*	**1.31**	*0.03*	**1.19**	*0.11*
	80+	**1.37**	*0.00*	**1.29**	*0.02*	**1.84**	*0.00*	**1.22**	*0.19*
Gender	***Female***	**1**		**1**		**1**		**1**	
	Male	**1.11**	*0.01*	**1.15**	*0.02*	**1.36**	*0.00*	**0.91**	*0.22*
Country	*Austria*	**1.04**	*0.66*	**1.02**	*0.88*				
	Belgium	**1**		**1**					
	Germany	**1.05**	*0.64*	**1.50**	*0.00*				
	France	**0.58**	*0.00*	**1.69**	*0.00*				
	Denmark	**1.68**	*0.00*			**0.53**	*0.00*		
	The Netherlands	**1.36**	*0.00*			**0.55**	*0.00*		
	Sweden	**0.56**	*0.00*			**1**			
	Italy	**1.47**	*0.00*					**2.71**	*0.00*
	Spain	**3.31**	*0.00*					**1**	
(General) Limitations	***Not limited***	**1**		**1**		**1**		**1**	
	Moderately limited	**1.73**	*0.00*	**1.66**	*0.00*	**1.45**	*0.00*	**2.07**	*0.00*
	Severely limited	**2.58**	*0.00*	**2.64**	*0.00*	**2.56**	*0.00*	**2.14**	*0.00*
Stroke	***No/missing***	**1**		**1**		**1**		**1**	
	Yes	**1.36**	*0.00*	**1.32**	*0.07*	**1.69**	*0.00*	**0.83**	*0.47*
Cancer	***No/missing***	**1**		**1**		**1**		**1**	
	Yes	**1.18**	*0.01*	**1.24**	*0.01*	**1.17**	*0.17*	**1.08**	*0.53*
Heart attack	***No/missing***	**1**		**1**		**1**		**1**	
	Yes	**0.93**	*0.42*	**0.93**	*0.61*	**1.04**	*0.80*	**0.63**	*0.04*
Cognitive impairments	***No cognitive impairment***	**1**		**1**		**1**		**1**	
	Mild cogn. impairment	**1.26**	*0.00*	**1.22**	*0.02*	**1.10**	*0.49*	**1.42**	*0.00*
	Moderate cogn. impairment	**1.52**	*0.00*	**1.27**	*0.01*	**1.48**	*0.00*	**1.85**	*0.00*
	Severe cogn. impairment	**1.99**	*0.00*	**1.66**	*0.00*	**2.03**	*0.00*	**2.34**	*0.00*
	Missing	**2.00**	*0.00*	**2.16**	*0.00*	**1.43**	*0.38*	**2.06**	*0.03*
Depression	***No depression***	**1**		**1**		**1**		**1**	
	Depression	**4.21**	*0.00*	**4.07**	*0.00*	**4.77**	*0.00*	**4.13**	*0.00*
	Missing	**2.97**	*0.00*	**2.99**	*0.00*	**4.29**	*0.00*	**1.84**	*0.08*

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table F1: Logistic Regression Results for Determinants of quality of life (continued)

		ALL COUNTRIES		CENTRAL EUROPE		NORTHERN EUROPE		SOUTHERN EUROPE	
Area of living	***Urban***	**1**		**1**		**1**		**1**	
	Rural	**0.98**	*0.70*	**1.03**	*0.66*	**0.96**	*0.65*	**0.94**	*0.39*
	Missing	**1.16**	*0.18*	**0.96**	*0.83*	**1.60**	*0.05*	**1.20**	*0.38*
Education	***Low degree***	**1**		**1**		**1**		**1**	
	Middle degree	**0.93**	*0.19*	**1.01**	*0.89*	**0.86**	*0.18*	**0.77**	*0.02*
	High degree	**0.99**	*0.85*	**0.91**	*0.29*	**1.05**	*0.66*	**1.16**	*0.30*
	Missing	**1.04**	*0.79*	**1.12**	*0.59*	**0.94**	*0.83*	**0.88**	*0.74*
Living arrangement	***With partner/spouse***	**1**		**1**		**1**		**1**	
	Without partner/spouse	**1.31**	*0.00*	**1.28**	*0.00*	**1.44**	*0.00*	**1.29**	*0.01*
Distance to closest living son or daughter	*Same HH*	**0.97**	*0.70*	**0.92**	*0.50*	**0.97**	*0.88*	**1.01**	*0.96*
	< 5 km	**1.06**	*0.52*	**1.03**	*0.78*	**1.12**	*0.51*	**1.03**	*0.86*
	> 5 km	**1**		**1**		**1**		**1**	
	No children	**1.09**	*0.32*	**1.09**	*0.47*	**1.19**	*0.40*	**1.01**	*0.95*
	Missing	**1.18**	*0.08*	**1.27**	*0.08*	**1.36**	*0.14*	**0.91**	*0.63*
Social activities	***No***	**1**		**1**		**1**		**1**	
	Yes	**0.68**	*0.00*	**0.66**	*0.00*	**0.72**	*0.00*	**0.68**	*0.00*
HH able to make ends meet	***Easily***	**1**		**1**		**1**		**1**	
	Fairly easily	**1.57**	*0.00*	**1.65**	*0.00*	**1.42**	*0.00*	**1.46**	*0.01*
	Some difficulties	**2.96**	*0.00*	**3.60**	*0.00*	**2.61**	*0.00*	**2.23**	*0.00*
	Great difficulties	**5.21**	*0.00*	**6.59**	*0.00*	**4.27**	*0.00*	**3.75**	*0.00*
	Missing	**2.24**	*0.00*	**2.87**	*0.00*	**1.04**	*0.94*	**1.99**	*0.02*
Financial transfer given	***No***	**1**		**1**		**1**		**1**	
	Yes	**0.86**	*0.00*	**0.89**	*0.09*	**0.87**	*0.17*	**0.80**	*0.01*
	Missing	**0.74**	*0.20*	**0.39**	*0.02*	**1.31**	*0.60*	**1.07**	*0.86*
Changes in living standard	*Better*	**0.58**	*0.00*	**0.66**	*0.00*	**0.73**	*0.01*	**0.47**	*0.00*
	About Same	**1**		**1**		**1**		**1**	
	Worse	**1.42**	*0.00*	**1.30**	*0.00*	**1.37**	*0.00*	**1.73**	*0.00*
Nagelkerkes R^2		**0.43**		**0.36**		**0.32**		**0.42**	

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table F2: Regression results CASP, Feelings, Depression; All Welfare States Together

		POOR QUALITY OF LIFE		BAD FEELINGS		DEPRESSION	
	Intercept (b)	**-3.08**	*0.00*	**-2.61**	*0.00*	**-1.73**	*0.00*
Type of care	***No Care, no ADL limitations***	**1**		**1**		**1**	
	No Care, with ADL limitations	**1.52**	*0.00*	**1.47**	*0.00*	**1.98**	*0.00*
	Formal and mixed care	**1.47**	*0.00*	**1.66**	*0.00*	**1.45**	*0.00*
	Informal care	**1.45**	*0.00*	**1.83**	*0.00*	**2.11**	*0.00*
Age groups	***50 to 59***	**1**		**1**		**1**	
	60 to 69	**0.99**	*0.91*	**0.82**	*0.01*	**0.74**	*0.00*
	70 to 79	**1.22**	*0.00*	**0.94**	*0.45*	**0.67**	*0.00*
	80+	**1.37**	*0.00*	**0.85**	*0.15*	**0.66**	*0.00*
Gender	***Female***	**1**		**1**		**1**	
	Male	**1.11**	*0.01*	**0.74**	*0.00*	**0.44**	*0.00*
Country	*Austria*	**1.04**	*0.66*	**1.06**	*0.66*	**0.60**	*0.00*
	Belgium	**1**		**1**		**1**	
	Germany	**1.05**	*0.64*	**1.55**	*0.00*	**0.55**	*0.00*
	France	**0.58**	*0.00*	**0.69**	*0.00*	**1.21**	*0.00*
	Denmark	**1.68**	*0.00*	**0.57**	*0.00*	**0.71**	*0.00*
	The Netherlands	**1.36**	*0.00*	**0.56**	*0.00*	**0.57**	*0.00*
	Sweden	**0.56**	*0.00*	**0.85**	*0.20*	**0.60**	*0.00*
	Italy	**1.47**	*0.00*	**1.51**	*0.00*	**1.18**	*0.02*
	Spain	**3.31**	*0.00*	**1.15**	*0.28*	**1.01**	*0.87*
(General) Limitations	***Not limited***	**1**		**1**		**1**	
	Moderately limited	**1.73**	*0.00*	**1.95**	*0.00*	**2.41**	*0.00*
	Severely limited	**2.58**	*0.00*	**2.86**	*0.00*	**5.18**	*0.00*
Stroke	***No/missing***	**1**		**1**		**1**	
	Yes	**1.36**	*0.00*	**1.14**	*0.40*	**1.40**	*0.00*
Cancer	***No/missing***	**1**		**1**		**1**	
	Yes	**1.18**	*0.01*	**1.22**	*0.02*	**1.15**	*0.01*
Heart attack	***No/missing***	**1**		**1**		**1**	
	Yes	**0.93**	*0.42*	**1.29**	*0.06*	**1.30**	*0.00*
Cognitive impairments	***No cognitive impairment***	**1**		**1**		**1**	
	Mild cogn. impairment	**1.26**	*0.00*	**1.15**	*0.11*	**1.39**	*0.00*
	Moderate cogn. impairment	**1.52**	*0.00*	**1.35**	*0.00*	**1.57**	*0.00*
	Severe cogn. impairment	**1.99**	*0.00*	**1.51**	*0.00*	**2.38**	*0.00*
	Missing	**2.00**	*0.00*	**1.48**	*0.18*	**1.97**	*0.00*
Depression	***No depression***	**1**		**1**			
	Depression	**4.21**	*0.00*	**9.43**	*0.00*		
	Missing	**2.97**	*0.00*	**2.75**	*0.00*		

Source: SHARE Wave 2, Release 2.3.0, own calculations.

Table F2: Regression results CASP, Feelings, Depression; All Welfare States Together (continued)

		POOR QUALITY OF LIFE		BAD FEELINGS		DEPRESSION	
Area of living	***Urban***	**1**		**1**		**1**	
	Rural	**0.98**	*0.70*	**0.90**	*0.10*	**1.19**	*0.00*
	Missing	**1.16**	*0.18*	**0.87**	*0.40*	**1.24**	*0.04*
Education	***Low degree***	**1**		**1**		**1**	
	Middle degree	**0.93**	*0.19*	**0.98**	*0.81*	**0.95**	*0.26*
	High degree	**0.99**	*0.85*	**1.03**	*0.76*	**0.96**	*0.45*
	Missing	**1.04**	*0.79*	**1.39**	*0.13*	**1.22**	*0.14*
Living arrangement	***With partner/spouse***	**1**		**1**		**1**	
	Without partner/spouse	**1.31**	*0.00*	**2.00**	*0.00*	**1.17**	*0.00*
Distance to closest living son or daughter	*Same HH*	**0.97**	*0.70*	**0.76**	*0.03*	**0.90**	*0.15*
	< 5 km	**1.06**	*0.52*	**0.86**	*0.26*	**0.87**	*0.08*
	> 5 km	**1**		**1**		**1**	
	No children	**1.09**	*0.32*	**0.85**	*0.21*	**0.95**	*0.55*
	Missing	**1.18**	*0.08*	**0.85**	*0.26*	**0.97**	*0.75*
Social activities	***No***	**1**		**1**		**1**	
	Yes	**0.68**	*0.00*	**0.74**	*0.00*	**0.97**	*0.50*
HH able to make ends meet	***Easily***	**1**		**1**		**1**	
	Fairly easily	**1.57**	*0.00*	**1.05**	*0.56*	**1.23**	*0.00*
	Some difficulties	**2.96**	*0.00*	**1.51**	*0.00*	**1.54**	*0.00*
	Great difficulties	**5.21**	*0.00*	**2.05**	*0.00*	**2.18**	*0.00*
	Missing	**2.24**	*0.00*	**1.05**	*0.84*	**1.32**	*0.13*
Financial transfer given	***No***	**1**		**1**		**1**	
	Yes	**0.86**	*0.00*	**1.01**	*0.92*	**1.22**	*0.00*
	Missing	**0.74**	*0.20*	**1.14**	*0.57*	**1.11**	*0.64*
Changes in living standard	*Better*	**0.58**	*0.00*	**0.92**	*0.35*	**0.88**	*0.02*
	About Same	**1**		**1**		**1**	
	Worse	**1.42**	*0.00*	**1.50**	*0.00*	**1.30**	*0.00*
Nagelkerkes R^2		**0.43**		**0.45**		**0.27**	

Source: SHARE Wave 2, Release 2.3.0, own calculations.