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# The Very Old

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An Expert Report on the Situation of Persons Over 80 Years of Age

**BZgA**  
Bundeszentrale  
für  
gesundheitliche  
Aufklärung



The Federal Centre for Health Education (BZgA) is a specialist authority in the portfolio of the Federal Ministry of Health and is based in Cologne. In the field of health promotion, it carries out both information and communication tasks (educational function) and quality assurance tasks (clearing and coordination function).

The Centre's information and communication tasks include educating the public on topics with particular priority in terms of health. Working together with cooperation partners, campaigns covering issues such as AIDS prevention, addiction prevention, sex education and family planning are carried out. The BZgA's current target-group-specific focus is the promotion of health among children and young people. In the quality assurance sector, the formulation of scientific principles, the development of guidelines and the execution of market surveys on media and measures in selected areas are among the BZgA's major tasks.

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The Very Old—An Expert Report on the Situation of Persons Over 80 Years of Age

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## » Preface

No development in the coming years will have such an effect in Germany as the demographic changes resulting from the rising number of older people. The life expectancy of the residents of Germany has doubled over the past 130 years and will continue to increase. In the year 2009, the life expectancy of a newborn male was 77.7 years, that of a newborn female 82.7 years. By 2060 male newborns are expected to have an average life expectancy of 87.7 years, and female newborns will have reached an average value of 91.2 years.

An important goal in society is to enable people to enjoy as high a level of life quality as possible in the time they have left. This means that older people must be able to remain as active as possible and to possess a high level of self-determination. Only then can they tap their possibilities and resources to the maximum. For this reason, health promotion and prevention play an ever-greater role in our aging society. Health is the major prerequisite to independence and active participation in social life. Health has a high value both for individuals and for society in general.

The group of older people, however, is extremely heterogeneous. Their backgrounds and their biographies vary widely, as do their chances and risks for health. Being mindful of all the very different lifestyles, life phases and vulnerabilities as well as resources, chances and skills people have at their disposal is one of the most important conditions for developing effective strategies to promote health. It is imperative that health promotion and prevention begin in the early phases of life and continue throughout the entire course of life. Nevertheless, even prevention offers that commence at a high age have a positive effect on the health and independence of their recipients.

In order to obtain an overview of the diverse lives of older persons in Germany, the BZgA commissioned the Institut für Gerontologische Forschung e.V. (Institute for Gerontological Research) to draw up three separate expert reports, two of which have already appeared: "The Young-Old," which looked at the group of persons 55 to 65 years old (BZgA 2011); and the expert report "Old People," which was concerned with persons 65 to 80 years of age (BZgA 2013). The present expert report takes a look at the various life conditions of residents of Germany who are older than 80 years.

This expert report is based on a targeted analysis of national data available to the public. It considers the socioeconomic background, the extent of social relations and the health situation among very old persons over 80 years in Germany. In addition, it examines the areas of leisure time, volunteer work, living conditions as well as nursing care. This expert report enables us to obtain a comprehensive picture of the situation of those over 80 years in Germany as well as providing insights into the diverse circumstances of longevity.

With this publication, the BZgA presents those active in the fields of health promotion and prevention with a differentiated analysis of the present state of activities directed toward health promotion and prevention among older people.

Cologne, January 2015

Prof. Dr. Elisabeth Pott

Director of the German Federal Centre for Health Education (BZgA)



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# 01

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## » Introduction

In 2011, the group of the very old whose life situation is presented in this expert report was comprised of some 4.4 million persons. More than half of them belong to the relatively younger group of persons between 80 and 85 years of age; a third is 85 to 90 years old; and one seventh thereof is older than 90 years. Very old age in Germany is the domain of women: Some two thirds of all persons over 80 years are women, the majority of them are widows.

For many people the 80th birthday marks the beginning of very old age—a phase in life that necessarily ends with death. Persons over 80 have often already had to take leave from loved ones and friends—their own parents, often their spouses, sometimes even their own children. Friends and family of their age groups may be sick, frail or have already died. And yet today people reach very old age with very different levels of physical

and mental health: Some remain very active and healthy, whereas other already suffer from chronic diseases, are frail and cannot manage their daily life or only in a limited fashion.

People who today reach the age of 80 and beyond can look back at a long and generally varied life. Those who turned 80 in the year 2013 were born in 1933. Depending on the database looked at and the age group studied, in this expert report we investigate the lives of people who may have spent their childhood during World War I, lived through the worldwide economic depression or World War II. They received an education and were provided with a value system in often very fragile and precarious times, in part under dictatorship; their early years and adolescence were burdened with existential woes, death and violence. They started their families in these times, buried relatives, had to flee their homeland and experienced persecution.

The ravages of war and the long silence about their experiences were to characterize the post-war time of this generation for many years to come—in part to the present day.

Following World War II they were divided up to live under very different political systems in East and West. Many of them addressed the task of building a new, better society full of hope and enthusiasm, others were concerned more with creating prosperity and the consumption of material goods. The large majority of this age group came to terms with their lives under both systems, starting a family or working to stabilize their home through uncertain times.

The building of the “wall” between the two Germanys cemented the division of German society and the membership in the respective political arena. For decades to come it was unclear whether the situation would ever change. For most people from this generation everyday life had a certain continuity and steady progress. In West Germany the age group in question here generally lived according to rather traditional roles, where the man supports the family and the woman devotes herself to the household and raising the children. In East Germany, on the other hand, this generation experienced greater equality in society, seen in the high level of women who worked outside the home (though less through the contributions men made to household work). This generation experienced as adults or sometimes as retirees the political and economic events leading up to the student protest movement in the 1960s, the oil crisis and women’s liberation movement in West Germany; in East Germany the same is true for the Prague Spring and the Monday demonstrations of the late 1980s.

Nearly 30 years after the erection of the “wall” there occurred a new, profound social upheaval—albeit one that mostly affected those living in East

Germany. People who today are 80+ years old were at that point in time just commencing retirement or had already retired. In contrast to the following generations, they had had little or no experience with unemployment. But they had to experience, for some for the second or even third time, a complete and radical change in the political landscape that questioned even the very basic of existing social values and norms.

The generation of persons now over 80 years of age can reflect on a life characterized by continual employment, where emancipation and self-fulfillment played a subordinate role. As children and adolescents they were exposed to extreme, in part existentially threatening strains that were rarely worked through and continued to shape their opinions and perceptions throughout their life—and sometimes became active once again in later life.

In this expert report, we first look at the scope, the composition and the different lifestyles that prevail in this age group (Chapter 02). We look at the statistics on how many men and women over 80 live in Germany, how many of them have an immigration background, and how large the households of the very old are. In the next chapter (Chapter 03) we examine the social situation and the material resources of the very old. We are particularly interested in the amount and distribution of their retirement benefits as well as their assets from sources that provided their means of subsistence. At the end of that chapter, we also scrutinize the matter of old-age poverty and risk of poverty both as an existential threat and as a risk to health especially among older people who live alone. The main topic in Chapter 04 is social relations, that is, not just family and neighborly networks, but also with respect to the themes of loneliness as a risk factor particularly for widowed old people.

Chapter 05 devotes much space to the health situation of the 80+-year-olds and the various different dimensions of health, illness and death in old age. Care-dependency is also a concern of all people over 80 years. Thus, Chapter 06 investigates in detail the question of need for assistance and care, caretaking relatives and care settings. Despite failing health, most very old people continue to live an active life, pursue their hobbies or are involved in social affairs. Their access to information, particularly their individual mobility, are important preconditions to their social participation even at a high age. The next chapter (Chapter 07) concerns the theme of leisure time. Growing old within one's own four walls is important to most people, and the very old tend to spend much time at home. The conditions under which they live thus determine their autonomy and quality of life. That is the concern of Chapter 08.

The goal of this expert report is to present a differentiated depiction of the situation of 80+-year-olds today and paint a broad picture of the richness of life as a very old person. It surveys the resources and potentials necessary to live a good life in old age—and it addresses the risk factors that can lead to loneliness and infirmity. It also points out a number of links to the subject of health promotion, which has previously played only a minor role among the very old.

This expert report employed as its database exclusively sources that are publicly available. The overall data pool on persons over 80 years of age is meager and sometimes fragmentary, and the age groupings found in the various sources are not uniform.<sup>1</sup> The available data for persons over 85 years, those who live in institutional care settings as well as those with an immigration background are particularly faulty. During the preparation of this expert report, the German Federal Statistics Office (Statistisches Bundesamt) published the most recent numbers from the population extrapolation based on the census of 2011. According to these numbers, as of 31 December 2012, there were not, as previously assumed, 4.4 million persons over 80 years living in Germany, but only 4.3 million, or 100,000 fewer than presumed (Statistisches Bundesamt 2014a). The difference is nearly equally divided among men (–37,000) and women (–45,000). However, it must be considered that these statistics are based on very small samples, for example, for men over 90 years, which can clearly change. Inasmuch as such changes are apparent, we have reported them in the text.

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1 Because of the state of the database, we were forced to revert to sources stemming from different age groups. In order to provide a comprehensive picture of people over 80 years, we employed data sources from the years 2005 to 2013. A look at the most important sources shows that the selection criteria of age groups vary widely between the various sources, and in part even within individual sources. Many analyses look at the larger age groups of 65+-year-olds, 75+-year-olds or 80+-year-olds, whereas other address only those between 75 and 85 years of age. Even if the data did not exactly fit our age group under consideration, we nevertheless utilized them for this expert report, inasmuch as other better data were not available. The respective age groups studied are always given explicitly in the text. The goal was to provide as comprehensive a picture as possible.

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# 02

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## » Demography: The Very Old at a Glance

This chapter provides an overview of persons 80 years and older living in the Federal Republic of Germany. It highlights their gender distribution, their educational background and the number of very old with an immigrant background. It then turns its attention to their marital status and the lifestyles they keep.

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### » 02.1 Age and Sex

At the end of 2011, 4,401,224 persons 80 years and older were living in Germany—or, put differently, about 5 % of the total population belongs to this

age group.<sup>2</sup> Approximately half of this age group are less than 85 years, and a total of 3,740,395 persons were between 80 and 90 years of age. 660,829 persons were older than 90. In the group of 80- to 85-year-olds nearly 40 % are men, whereas in the next age group of 85–90-year-olds their number falls to ca. 30 %. Only 173,100 men are 90 years and older, though their percentage remains the same at about 26 %. In the overall age group of persons 80 years and older, there are 1,474,225 men and about twice as many women (2,916,999) [see Table 1].

Thus, woman and their specific life experiences form the basis for our impression of old age in Germany. For this reason, some speak of the “feminization of old age” [Tews 1993, pp. 15–43],

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2 On the inexactitude of extrapolating the population data and the deviations present in the most recent census data, see the Introduction.

## Population in Germany according to sex and age groups

	Age group			
	80 to 85 years	85 to 90 years	80 to 90 years	90+ years
Total	2,367,684	1,372,711	3,740,395	660,829
Men	913,112	398,013	1,311,125	173,100
Women	1,454,572	974,698	2,429,270	487,729

» Tab. 1: Population in Germany, acc. to sex and age groups, 2011  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin. DOI 10.5156/GEROSTAT)

due not the least to the fact that women live about 5 years longer on average than men. In addition, the cohort of those presently over 80 years of age is characterized by the large number of women, a result in part from the loss of such a large number of men during World War II. These demographic effects of the war, however, are now slowly receding, such that the number of men in the age group 80+ years rose from 27 % in 2000 to 34 % in 2011 (Statistisches Bundesamt et al. 2013, p. 15).

## » 02.2 The Very Old with an Immigrant Background

The coming decades will see ever more very old persons in Germany who have an immigrant background.<sup>3</sup> Presently the proportion of persons older than 75 years with an immigrant background—and in this age group this nearly always means having

immigrated themselves—lies at a relatively low level of 7.6 % (Statistisches Bundesamt 2013a, pp. 55 f.).

According to the microcensus of 2012, 609,000 persons over 75 years have an immigration background. In the age group 75–85 years the number is 496,000 (228,000 men and 268,000 women); in the age group 85–95 years there were 108,000 persons (34,000 men and 74,000 women); and in the age group 95+ years there were merely 5,000 (ibid.). Table 2 shows the various countries of origin.

More than half of the very old with an immigration background who were 75 and older (i.e., 317,000 persons) are so-called (repatriated) ethnic Germans (Statistisches Bundesamt 2013a, pp. 59 f.). However, the data collected by the Federal Statistics Office do not always contain proper information on the country of origin and the year of immigration. (Repatriated) ethnic Germans are considered Germans according to Article 116 of the German constitution, regardless of whether they previously possessed German citizenship or not.

3 People with an immigrant background are defined according to the current definition of the German Federal Office of Statistics as persons who “arrived on the territory of the Federal Republic of Germany after 1949 as well as all foreigners born in Germany and all persons born as Germans with at least one parent who had immigrated to Germany or was born as a foreigner in Germany” (Statistisches Bundesamt 2013a, p. 6).

### Selected countries of origin according to age

Present or previous citizenship	Age 75–85	Age 85–95
Poland	57,000	13,000
Romania	35,000	11,000
Greece	15,000	–
Italy	20,000	–
Turkey	33,000	–
Ukraine	17,000	–
Russian Federation	49,000	11,000
Near and Middle East	39,000	9,000
Thereof Kazakhstan	29,000	6,000

» Tab. 2: Immigration background acc. to age, selected countries of origin. Source: Extrapolation of census data up to 2011 (Statistisches Bundesamt 2013a, pp. 55 f.)

They and their relatives of non-German descent can apply for German citizenship once they have arrived in Germany.

During the 1980s Poland was the main country of origin of repatriated ethnic Germans, whereas in the 1990s the majority came from Russia and the former Russian republics (Forschungsverbund 2009, p. 19). This group of repatriated ethnic Germans had experiences of immigration that generally spanned many generations of the family. The result is a relatively large proportion of older persons in this group—a great number of them having already reached retirement age at the time of immigration (i.e., 55+ years). But also some very old persons immigrated, among them already widowed women (Mika 2007), which served to increase the already present disproportionate number of women in this age group. According to Mika (2006, p. 72), the even lower life expectancy of the men in this group (compared to men stemming from Germany) also contributed to the discrepancy in life expectancy between the two sexes.

A very different migration history may be found in those immigrants who were recruited to come to Germany from the southern European countries in the 1960s and 1970s and had their families move with them. They stayed to work in Germany, founded families and grew old (cf. Özcan and Seifert 2004).

Some 100,000 persons over 75 years with an immigration background have now assumed German citizenship (Statistisches Bundesamt 2013a, pp. 59 f.): 155,000 persons in the age group 75–85 years and 22,000 in the age group 85–95 years have retained their foreign citizenship (29,000 Turkish, 16,000 Italian, 14,000 Greek, 12,000 Russian Federation and 10,000 Ukraine; Statistisches Bundesamt 2013a, pp. 57 f.).

## Original citizenship of (repatriated) ethnic Germans

Original citizenship of (repatriated) ethnic Germans (with German citizenship)	Age 75–85	Age 85–95
Poland	45,000	8,000
Romania	27,000	8,000
Former Soviet Union, thereof	70,000	16,000
Kazakhstan	25,000	–
Russian Federation	30,000	7,000
Total	258,000	59,000
Thereof women	152,000	42,000

» Tab. 3: (Repatriated) ethnic Germans acc. to original countries and age. Source: Extrapolation of census data before 2011 (Statistisches Bundesamt 2013a, pp. 59 f.)

## » 02.3 Educational Background

The most common general school qualification among persons 65 and older is the German secondary school (Hauptschule): Some 62 % of the men and 70 % of the women completed this level. Separate data on the school qualification and vocational training of those 80 and older do not exist.

## Highest school qualification of those 65+ years

65+ years	w/o school diploma	Secondary school	Middle school	Abitur
Men (w/o immigration background)	1.2 %	62.1 %	15.3 %	20.6 %
Women (w/o immigration background)	2.0 %	69.9 %	18.5 %	8.2 %
Men (w/immigration background)	24.6 %	43.7 %	10.0 %	21.5 %
Women (w/immigration background)	28.2 %	42.7 %	11.9 %	16.4 %

» Tab. 4: Highest school qualification of those 65+ years, acc. to sex and immigration background. Source: Microcensus 2012 (BAMF 2014, Tab. 5.4)

## » 02.4 Marital Status and Household Lifestyles

How do those over 80 live? With whom do they share a household (inasmuch as they live in a private household and not in a nursing facility)? What is their partnership situation? First, we look at the marital status.

Over half of those in the group of persons over 80 years are widowed, about one third is married and only a small number is divorced or single. Widowhood is an event that is primarily experienced by women. The older married women get to be, the more unlikely it becomes that they will be able to experience the final period of their life together with their partner. Widowhood is thus not an individual fateful act, but rather, because of the higher life expectancy among women, is considered to be a “normative” rather than just a “critical” life event. It has become an expected and predictable fact that married women will become widows in their older years (Tesch-Römer 2010, p. 132). More than half of the women who reach the age of 85 have experienced the death of their partner (850,659).

The statistics gathered by the German Social Security system register when women begin receiv-

ing a widow's pension, which provides information on the approximate average age of widowhood: “Women whose application for a widow's pension was approved in the year 2001 were on average 67.4 years old upon receiving their first pension payment [...] In the former West Germany the age at which women received their first widow's pension payment has risen by circa 8 years since the year 1960” (Engstler and Menning 2003, p. 85). The age of the first widow's pension has likely risen since 2001 even further. The calculation of the average age at widowhood, however, is somewhat distorted since the early deaths of women are included in the statistic: According to Insa Fooker (1999, p. 226), the most common age at widowhood is 72 years for women and 77 years for men.

Of the women in the age group 80+ years, some 8 % are single; this reflects the effects of World War II on the marriage probability of this generation following the war. Another 6 % are divorced, and 22 % are still married. The large majority, however, is widowed: 64 % have experienced the death of their partner. Very old men, on the other hand, are three times more likely to still be married, namely, 61 %, whereas only 5 % are single, 4 % divorced and 30 % widowed (Statistisches Bundesamt et al. 2013, p. 213). Thus, widowhood is a female phenomenon—because of their higher life expectancy as well as because the men in this age group tend

### Marital status of persons over 80 according to sex

Sex	Marital status				
	Total	Single	Married	Widowed	Divorced
Men	1,484,225	76,407	903,066	439,365	65,387
Women	2,916,999	243,662	644,137	1,864,759	164,441
Total	4,401,224	320,069	1,547,203	2,304,124	229,828

» Tab. 5: Marital status of those over 80 years acc. to sex, 2011 [Deutsches Zentrum für Altersfragen, DOI 10.5156/GEROSTAT]

to have wives younger than them: In 2009, 77 % of the men 65 years and older had younger wives (Statistisches Bundesamt 2011a, p. 18). In the age group of persons 80+ years old, there were 439,365 widowed men and 1,864,759 widowed women.

Marital status is also reflected in the household lifestyles adopted by the very old. In the year 2011, 22 % of the women in the age group 80+ years (Statistisches Bundesamt et al. 2013, p. 213) were living with their husbands and 1 % with an unmarried partner (these data as well as those that follow cover only those very old persons who were living in private households); 11 % of them were living with persons other than their spouses, in particular with their adult children or with siblings, nonrelated residents and same-sex partners who were not registered as life companions.<sup>4</sup> More than two thirds of the women 80 years and older (67 %) live alone in a single-person household; of those 80–84 years, the rate is 61 %, of those 85–89 years it is 73 %, and in women 90+ years the rate is 78 % (Nowossadek and Engstler 2013, p. 16).

Thus, the situation of women over 80 years is significantly different from that of men over 80 years, since the latter generally (67 %) still live with their spouse or with an unmarried partner (2 %). About one third (28 %) of all men over 80 years live alone, another 3 % with other persons (Statistisches Bundesamt et al. 2013, p. 213). Tables 50 and 51 in the Appendix provide more detailed information concerning the size and type of household of those widowed and single according to age and sex.

What do we know about the multiple-person households in which the very old live? In particular we are interested in discovering more about the situation of those who have experienced the death of their partner or spouse: Following this critical life event do they remain alone in their accustomed surroundings or are they integrated into the household of a family member (or, albeit rarer, of another person or persons)? What are the differences here between widowed men and women?

According to the SHARE Study (2004)<sup>5</sup>, 5.8 % of men and 10.6 % of women over 80 years live in the household of one of their adult children. Further 20.4 % of the men and 24.1 % of the women over 80 years live in the same building as one of their adult children (Börsch-Supan et al. 2005, Tab. 4A.11).

According to the microcensus of 2011 (see Table 51 in the Appendix), about 6 % of the men and women over 80 years live in a household with more than two other persons: 69,000 men (13 % of whom are widowed) and 149,000 women (75 % of whom are widowed). Some 14 % of the widowed men and women between 80 and 90 years live in multiperson households. Based on these data we cannot say for certain whether the widowed persons in question moved to such a multiperson household after the death of their partner or spouse—or whether they had been living there previously. The proportion of widowed very old persons in multiperson households increases slightly with increasing age, so that those widowed and over 90 years of age have a slightly higher rate (18 % of women and 14 % of men) of living in a household with several persons.

4 There are no reliable data available concerning same-sex partnerships among older persons, despite the fact that it is assumed that some 5–8 % of the population is homosexually oriented. For this age group adopting a positive homosexual identity and an open approach to sexuality and partnership is often difficult since they have experienced massive discrimination and indeed criminalization not only during the Nazi dictatorship, but also in the subsequent Adenauer era in the 1950s and 1960s (cf. Hessisches Ministerium für Arbeit, Familie und Gesundheit 2009, pp. 4 f.).

5 Survey of Health, Aging and Retirement in EURpe—a representative survey of the age group 50+ years; some results are also available for the age group 80+ years.

## Population according to number of generations in the private household

Sex	Population of all households	In households with two generations	In households with three and more generations	In one-person households
Males	1,365,000	69,000 = 5 %	14,000 = 1 %	385,000 = 28 %
Females	2,478,000	207,000 = 8 %	54,000 = 2 %	1,661,000 = 67 %

» Tab. 6: 80+ population acc. to number of generations in the private household, in absolute numbers and %, 2011 (GeroStat – Deutsches Zentrum für Altersfragen, Berlin. DOI 10.5156/GEROSTAT)

In many cases they are being supported or cared for in these households.

Inasmuch as the very old are integrated into the household of one of their own adult children, they are part of a two-generational household. The presence of grandchildren expand such a household by a further generation. Table 6 shows the incidence of multigenerational households with persons over 80 years: About 10 % of the women and 6 % of the men live in a household with two or more generations.

The proportion for the widowed group, however, is somewhat higher: 13 % of the widowed women and 9 % of the widowed men live together with several generations (cf. Table 52 in the Appendix). This value is even higher for older women: For widowed women over 90 years the proportion is 17 %, whereas the number of men in this category is too small to measure. About 5 % of the single women over 80 years live in multigenerational households. Here, too, the number of men is too small to measure.

## 80+ population according to size of household and community

Size of community (residents)	All households	Single households	Two-person households	Households with more than two persons
< 5,000	997,000	500,000	408,000	90,000
5,000–<10,000	423,000	214,000	177,000	32,000
10,000–<20,000	592,000	307,000	248,000	39,000
20,000–<50,000	748,000	385,000	321,000	42,000
50,000–<100,000	366,000	195,000	154,000	10,000
100,000–<200,000	264,000	154,000	103,000	–
200,000–<500,000	318,000	178,000	132,000	8,000
>500,000	558,000	329,000	216,000	12,000

» Tab. 7: 80+ population acc. to size of household and community, 2011, in absolute numbers (GeroStat – Deutsches Zentrum für Altersfragen, Berlin. DOI 10.5156/GEROSTAT)

Growing old in a large household is, generally speaking, a phenomenon of smaller communities. Nearly a quarter (23%) of the 80+-year-olds live in

municipalities of less than 5,000 residents, and 9% of these very old persons live in households of at least 3 persons.

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# 03

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## » Social Situation and Material Resources: Income, Assets, Risk of Poverty

Where is the source of income of the very old? How many receive old-age retirement benefits and how large are their assets? How many very old persons are at risk of poverty, and how many depend on welfare payments?

Generally speaking, old people in Germany belong to a social group that enjoys a good material situation in the latter part of their life and is satisfied with its standard of living. In the group of persons 70 to 85 years, 63.3 % consider their standard of living to be either good or very good; only 5.1 % think it is poor or very poor (GeroStat, Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/

GEROSTAT). There are, however, some persistent differences between the sexes and between those living in the eastern and western part of Germany. According to the German Aging Survey (DEAS) of 2008<sup>6</sup>, about 6 % of the women in East Germany consider their standard of living to be poor or very poor, which can also be said of 4.4 % of the men living in West Germany. Yet only 1.4 % of the men living in East Germany are of this opinion (cf. Table 53 in the Appendix).

The data reveal many differences not only regarding these subjective opinions, but also regarding the income situation in private households

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6 The DEAS of 2008 included the age group of persons 70–85 years of age, with a standardized interview inquiry based on a disproportionately weighted sample from the German Registration Offices, which is representative only for those residents living in private households.

and the risk of poverty, as this chapter will show. Whereas the very old are entitled to predominantly good retirement benefits acquired during stable working lives and can in part profit from the assets they have accumulated over time, these average values do not properly reflect the risks facing certain parts of this age group.

according to the Social Security Act XII—basic security payments—and in part assistance for special circumstances.

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## » 03.1 Sources of Income in Old Age

Where do the very old get their income? Income from earnings plays only a marginal role in the lives of the very old: According to a study by the insurance company Generali (2013)<sup>7</sup>, only 3 % of the 80–85-year olds reported still working, whether as supplemental income or in their previous profession, whether part or full time (Generali Zukunftsfonds 2012, p. 89). For most of the very old persons surveyed, the end of their career lay more than 20 years back.

In the microcensus the 80+-year-olds were asked where they got the “majority of the means for their support” (cf. Table 8). The overwhelming majority reported living mainly off their retirement payments (whether from their own work-life or from survivor’s benefits) as well as (in West Germany) from company pensions. 1.4 % of them live off their assets, interest payments or rental income. 7 % of the women are supported by relatives, and 1.3 % rely on welfare payments (compared to 1 % of the men in this age group), which includes payments

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## » 03.2 Retirement Paths

How did those over 80 transition to retirement? The average age in this age group (born 1913 to 1934) upon receiving their first retirement payment was lowest at 62 years (West Germany) for women born in the year 1917 (data for East Germany not available). The highest age at retirement was 63.1 years for women born in 1925 (thus 88 years old in 2013). For someone who turned 80 in the year 2013 (born 1933), this average age at retirement was 63 years (i.e., in 1996) (cf. Figure 49 in the Appendix).

Retirement thus generally lay many years in the past, and the direct transition from employment to retirement has become an even rarer event since. Based on the data from the DEAS sample from 2002, we can see that, for all of Germany (Figure 1), 92 % of the men and 63 % of the women born between 1917 and 1922 transitioned directly from employment to retirement (DZA 2005). Among the men born between 1928 and 1932, this was true for only 75 %, with the transition from early retirement or unemployment increasing to 15 %. In those born from 1933 to 1937, the latter proportion increases to 19 %. Among women, there is an initial rise in the transition from employment to retirement—parallel to the decrease in the number of homemakers. This tendency, however, falls in those women born from

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<sup>7</sup> The Generali Aging Study of 2013 collected data for the age group 65 to 85 years following a structured, quantitative interview inquiry, which is representative only for the German-language population living in private households.

## Means of subsistence of persons 80+ according to region and sex

Region	Sex	Main source of subsistence					
		Total population	Gainful employment	Social security, pension	Support of relatives	Assets/ interest/ rental income	Welfare payments
Germany	Total	4,273 <sup>8</sup>	9	3,933	197	60	51
	m	1,448	5	1,392	8	24	14
	w	2,825	–	2,541	189	36	37
West*	Total	3,403	8	3,072	195	59	47
	m	1,169	–	1,116	8	24	13
	w	2,234	–	1,957	188	35	35
East**	Total	870	–	860	–	–	–
	m	279	–	276	–	–	–
	w	591	–	584	–	–	–

– = not specified because of poor database

\* through 2004 includes West Berlin, after 2005 w/o Berlin

\*\* through 2004 includes East Berlin, after 2005 includes all of Berlin

» Tab. 8: Main source of means of subsistence of 80+ population, acc. to region and sex, in 1,000s, 2011  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

1933 to 1937, where 19% transitioned to retirement from early retirement or unemployment (ibid.)<sup>9</sup>

A look at the situation in East Germany clearly shows that the transition to retirement differs greatly among the oldest and the youngest cohorts we are concerned with. The youngest cohorts were strongly affected by the high unemployment in the East following reunification, which often led to an abrupt and forced end of their careers, whereas the

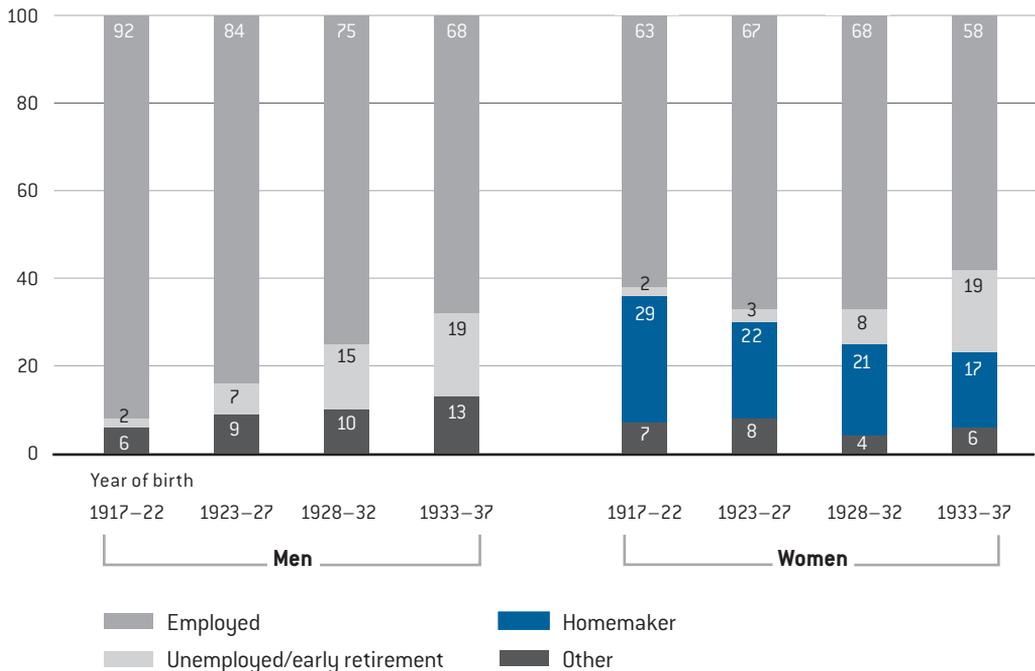
oldest among our population still experienced the “nearly universal pattern of a smooth transition from employment to retirement” (Motel-Klingebiel and Engstler 2008, p. 144).

In the earlier German Democratic Republic (DDR), 87% of those born between 1923 and 1927 experienced a direct transition from employment to retirement, whereas only 42% of those persons born 1933 to 1937 and living in East Germany after

8 The number of 4,273,000 of persons 80+ years old stated in the microcensus of 2011 does not agree with the data calculated by the Federal Statistics Office based on an extrapolation of the population figures according to demographic characteristics. See Chapter 01 and the Introduction for a discussion of this matter.

9 In order to properly interpret this development, we need to consider the “intensively” used rules from the 1990s for early retirement (in addition to the difficult job market that ensued in East Germany following reunification). First, women were allowed to claim retirement benefits because of unemployment or severe disabilities even at age 60. Second, there were many possibilities of ending one’s employment early—among others, semiretirement and early retirement + long-term unemployment insurance (Bäcker 2012, p. 10).

## Employment status before receiving retirement benefits



>> Fig. 1: Employment status before receiving retirement benefits acc. to cohort (DZA 2005, p. 5)

reunification experienced this sort of transition. On the other hand, 45 % of this cohort was unemployed or in early retirement before receiving their first retirement payment (ibid.). This development may be clearly seen in Table 9, which compares the DEAS surveys of 2002 and 2008 of persons from 70 to 85 years.<sup>10</sup> The youngest cohorts of East German

retirees in the age group in question here were often faced with an involuntary shortening of their work-life due to the overall job market situation, resulting in deductions from their retirement payments: 37.4 % of the men and 28.6 % of the women in East Germany in the age group 70–85 years (DEAS 2008, cf. Tab. 9), compared to 13 % and 6.9 %

<sup>10</sup> The comparison of the DEAS data from 2002 and 2008 is relevant in order to observe the transition to retirement for the older cohorts. The basis survey from 2002 comprised the years 1917 and thereafter (up through 1962), whereas the survey from 2008 included the cohorts from 1923 on (up through 1968). Persons born in 1917 were 96 years old in 2013, but 85 years old at the time of the survey in 2002.

## Employment status before receiving retirement benefits

Region	Sex	Year	Employment status before receiving retirement benefits			
			Employed, full or part time	Unemployed	Homemaker	Unable to work/ other
Germany	M	2002	81.4	9.3	0.5	8.9
	M	2008	72.5	17.6	0.1	9.8
	W	2002	66.3	4.6	23.3	5.9
	W	2008	57.6	11.8	22.3	8.3
West*	M	2002	84.2	7.3	0.6	7.9
	M	2008	77.1	13.0	0.1	9.7
	W	2002	61.6	4.1	28.8	5.5
	W	2008	57.2	6.9	28.1	7.8
East**	M	2002	68.0	18.6	0.0	13.5
	M	2008	52.8	37.4	0.0	9.9
	W	2002	83.6	6.6	2.6	7.2
	W	2008	59.0	28.6	2.4	10.0

\* former West Germany + West Berlin; \*\* former East Germany + East Berlin

» Tab. 9: Employment status before receiving retirement benefits, age group 70–85 years, acc. to sex and region, 2002 und 2008, in % (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

of those in West Germany, respectively, transitioned from unemployment or early retirement to receiving retirement benefits.

## » 03.3 Benefits from Retirement and Pension Systems

Retirement benefits as well as—especially among women—survivor benefits comprise the main source of income of the very old. In East Germany, income sources other than statutory social security

payments are rare in this age group since most other systems of retirement benefits did not take hold in East Germany until after reunification. In West Germany, on the other hand, additional benefits from employment, such as company pensions, supplementary benefits paid to civil servants as well as the pensions paid to civil servants, and the special old-age benefits for farmers are—besides assets and support payments—important sources of income. Table 10 shows the average amount of benefits paid out as well as how many of those 75+ years were receiving how much from the various sources [in some cases accumulated]. This table reflects only those payments made because of own employment; benefits received because of

### Amount of own benefits, according to retirement system and age

Sex/Region	Age	Statutory social security	Company pension	Pension for civil servants	Additional benefits for civil servants	Retirement benefits for farmers
Men/ West*	75–85	1,144 (90)	499 (31)	2,145 (10)	399 (9)	457 (6)
	85+	1,117 (89)	436 (29)	1,711 (14)	406 (11)	423 (8)
Men/ East**	75–85	1,206 (99)	–	–	–	–
	85+	1,217 (99)	–	–	–	–
Women/ West	75–85	478 (86)	165 (7)	1,650 (1)	278 (8)	305 (2)
	85+	453 (83)	198 (5)	1,655 (1)	306 (7)	247 (1)
Women/ East	75–85	720 (99)	–	–	–	–
	85+	659 (99)	–	–	–	–

– Not specified; \* former West Germany + West Berlin; \*\* former East Germany + East Berlin

>> Tab. 10: Amount of own retirement benefits, acc. to retirement system and age (does not include residents of nursing facilities), net sum in EUR and in %, 2011 (BMAS 2011, pp. 52 f.)

entitlements from deceased spouses (“widow’s benefits”)—a very important and sometimes sole source of income especially for very old women—are provided in Table 11.

Whereas widows in West Germany tend to receive much higher payment from various different retirement systems, the widow’s benefits in East Germany stem almost exclusively from the statutory social security system. According to the study

### Amount of entitlement payments to widows

Sex/region	Age	Statutory social security	Company pension	Pension for civil servants	Additional benefits for civil servants	Retirement benefits for farmers
Women/ West*	75–85	650 (87)	361 (17)	1,139 (10)	259 (9)	352 (7)
	85+	645 (86)	234 (15)	1,108 (11)	225 (7)	307 (6)
Women/ East**	75–85	609 (99)	–	–	–	–
	85+	626 (100)	–	–	–	–

– not specified; \* former West Germany + West Berlin; \*\* former East Germany + East Berlin

>> Tab. 11: Amount of entitlement payments to widows 75–85 and 85+ years, acc. to retirement system (does not include residents of nursing facilities), net sum in EUR and in %, 2011 (BMAS 2011, pp. 58 f.)

## Average retirement benefits

Sex/Age group	Retirees total	Average benefits in EUR
Men 80–84 years	986,618	1,088.17
Men 85–89 years	458,928	1,098.23
Men 90+ years	164,138	1,103.99
Women 80–84 years	1,545,144	826.24
Women 85–89 years	1,100,197	863.73
Women 90+ years	593,491	886.46

» Tab. 12: Retirees' average retirement payment (in EUR), acc. to age and sex (in absolute numbers)  
(Deutsche Rentenversicherung Bund 2013, pp. 152 f.)

“Old-Age Security in Germany ASID 2011” (BMAS 2011, p. 65), the low level of widow’s benefits paid out to East German women is less a matter of low entitlements from their deceased spouses as the higher proportion of own income they have which is then counted against their widow’s benefits.

About 37 % of the male recipients of survivor benefits in West Germany in the age group 75–85 years (average payment 276 EUR) and 28 % of those 85+ years (average payment 241 EUR) receive their payment from the statutory social security system. In East Germany, because of the historically overall higher level of employment among women, this is the case in 72 % of the men in the age group 75–85 years (average payment 240 EUR) and 50 % in the age group 85+ years (average payment 329 EUR) (BMAS 2011, pp. 59 and 67).

## Retirement Benefits from the Statutory Social Security System

It became clear that the payments made by the statutory social security system, depending on the sex and region of the recipient, represents the

central source of income for persons 75 years and older. For this reason, we will concentrate here on that part of the retirement systems.

The German National Statutory Social Security System provides payments to 4,848,416 persons older than 80 years; this number includes retirement benefits from own employment and entitlement benefits. The difference between this number and the total number of persons over 80 years (ca. 400,000) results from the fact that the social security system also pays out retirement benefits to both Germans and non-Germans living abroad.

Table 13 provides information on how many persons were receiving a single retirement payment (from own employment or a survivor entitlement) and the average amount of this payment. Some 350,000 women and 12,000 men were recipients solely of benefits to widows/widowers, whereas 1.1 million women (and 1.4 million men) received retirement benefits solely from their own employment.

Table 14 shows the number of retirees who receive multiple payments. It illustrates the fact that 1.7 million women over 80 years of age receive an entitlement payment in addition to their own social security payment; the widow’s benefits lie

### Average amount of retirement benefits of persons with only one retirement plan

Sex/age group	No. retirees	Average amount in EUR	No. receiving widow's benefits	Average retirement benefits in EUR
Men 80–84 years	882,512	1,070.13	5,348	193.41
Men 85–89 years	393,194	1,078.45	4,178	180.57
Men 90+ years	133,889	1,085.21	2,189	178.62
Women 80–84 years	650,468	542.74	135,703	435.60
Women 85–89 years	357,123	544.22	111,892	462.62
Women 90+ years	140,536	582.54	94,421	555.71

>> Tab. 13: Retirees receiving a single retirement payment (own retirement or entitlement), acc. to age and sex (in absolute numbers), average amount of benefits (in EUR), 2012 (Deutsche Rentenversicherung Bund 2013, pp. 152 f.)

on average 150 to 200 EUR higher than their own retirement benefits.

The individual entitlements in the statutory social security system depend on the wages and salaries paid to persons insured under the system. The amount of retirement benefits is thus a result of the income of an individual in comparison to the average income of all insured persons—over the entire course of one's employment.<sup>11</sup> Someone who worked many years and had a high income during that time will receive a higher retirement payment than someone who worked only few years or had a lower income. The social inequalities stemming from employment are thus extended into the retirement age (Künemund and Schroeter 2008, p. 12). The large spread in the amount of retirement benefits are not reflected in the average retirement

payments depicted here. Note that the average amount is also reduced by the lower payments of those persons who paid into the system early on in their career only to later become self-employed or enter the civil service, both of which are covered by other retirement systems.

Thus, generally speaking, neither high nor low average individual retirement benefits on their own reflect the entire income situation of the households, since that may be affected by other sources of income. For example, in East Germany the average retirement benefits are much higher than those in West Germany<sup>12</sup> (BMAS 2011, pp. 60 f.), but the payments from statutory social security system comprise a larger portion of the overall income than in the West (cf. Noll and Weick 2012, p. 3). For this reason, on average men from East Germany in the

11 For a more detailed look at how the retirement benefits are calculated for the states from the former East and West Germany, see [www.deutsche-rentenversicherung.de](http://www.deutsche-rentenversicherung.de)

12 This is due especially to the "near total absence of low retirement benefits" like those found in West Germany, "among other things because of the small sums paid to civil servants and the self-employed who paid into the statutory social security system for only a short time." In addition, "especially the oldest retiree cohort in East Germany profited from the very favorable, in part lump-sum-like calculations that were applied for the retirement benefits as part of the consolidation of the East German social-security system with the West Germany system" (BMAS 2011, p. 63).

### Combination of insured person's retirement benefits and survivor's benefits

Sex/Age group	No.	Average benefits in EUR	Thereof (in EUR):	
			Insured person's benefits	Survivor's benefits
Men 80–84 years	98,742	1,297.79	1,073.02	224.77
Men 85–89 years	61,548	1,286.85	1,080.46	206.40
Men 90+ years	28,057	1,265.78	1,074.12	101.66
Women 80–84 years	758,110	1,139.07	496.12	642.96
Women 85–89 years	630,297	1,115.63	465.33	650.30
Women 90+ years	356,752	1,093.30	437.23	656.07

» Tab. 14: Multiple recipients with combination of own retirement benefits and survivor's benefits, 2012 (Deutsche Rentenversicherung Bund 2013, pp. 152 f.)

age group 75 to 85 years enjoy only 78 %, in the age group 85+ years only 81 % of the individual net income of the men in West Germany in these age groups (BMAS 2011, p. 81).

One reason behind the differences in the incomes in East and West also lies in the income differences between retirees who receive statutory retirement benefits and those (exclusively West German) retirees who receive pensions: The mean household income of pensioners, according to Noll and Weick's data from the microdatabase derived from the income and consumer sample of 2008, was nearly twice that of the retirees living off statutory benefits (Noll and Weick 2012, p. 4).

### Situation of Very Old Women Receiving Statutory Social Security Payments

Employment among women in West Germany, particularly in the cohort under study here, was characterized by shorter times of employment and thus shorter times of payment into the statutory

retirement insurance system. Women also tended to work only part time and to earn less than men. In West German old-age households, only 27 % of the retirement payments from the statutory system and from pensions belong to women, whereas in East Germany the number is 40 % (Engstler et al. 2011, p. 78, acc. to Trischler and Kistler 2011). The average retirement benefits from own employment of the women in the age group in question here in West Germany are so low that they are unable to live off these sums (cf. Table 10). Thus, survivor's entitlements of deceased spouses function as the major source of income for widowed West German women (cf. Table 11). The retirement benefits of East German women from own employment, on the other hand, lie considerably higher than those of women from West Germany (cf. Table 10)—the result of a 20 % higher rate of employment among women in the former German Democratic Republic (DDR) beginning in the 1970s (Schäffgen 1998, p. 144) and the lower differential in wage levels between men and women.

In 2008, only 2.4 % of the East German women 70 to 85 years old had retired with the status of

homemaker, whereas in West Germany this rate was 28.1% (German Aging Survey, DOI 10.5156/GEROSTAT): In the cohort under study here, the model of a “modified provider marriage” was dominant in West Germany. Many West German women worked only occasionally or temporarily and were otherwise active at home, raising the children and taking care of relatives, so that they built up only minimal or no own entitlements in the statutory social security system. Different from the situation in East Germany, there is a “clear (negative) relationship between the number of children raised by a woman and her own entitlement to retirement benefits. An increase in the number of children always meant a lower average retirement payment for West German women” (BMFSFJ 2011a, p. 203; cf. also Strauß and Ebert 2010).

The time spent raising children received official recognition in the statutory social security system in 1986. For those mothers now over 80 years of age there are two different possible regulations: Since 1987 mothers born before 1921 have the right to receive “parenting allowances,” i.e., a lump sum paid out per child (100% of the present benefits, i.e., 28.07 EUR in West Germany and 24.92 EUR in East Germany based on the values valid on 1 July 2012). This sum is not included as part of the normal retirement benefits and is thus not counted against income-based social transfer payments, such as basic social security benefits and housing allowances. At the end of 2010, approximately 315,000 women were receiving such parenting allowances, 100,000 of whom were not getting any retirement benefits from own employment. This means the parenting allowances were either being

added to the survivor’s benefits or were in fact the only retirement benefits they were receiving from the statutory social security system (Bäcker and Kistler 2012). Mothers born after 1921 who have given birth to children before the year 1992 are granted a “child-rearing period” in the social security system equal to an earned retirement point for a maximum of one year’s time.<sup>13</sup>

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## >> 03.4 Possessions and Assets

The possession of real estate is regarded as an important part of old-age financial security, not only because of the possible rental income, but also because of the lower costs of living involved (cf. Chapter 08.2). Owning property is widespread among older people living in rural areas, though here too there are large differences between East and West Germany. Whereas nearly two thirds of all 70–85-year-olds in former West Germany have real estate holdings, only about half of this age group in former East Germany own property (there are no separate data available only for those 85+). East German properties also tend to have a lower average value than those in the West (Frick and Grabka 2009, p. 55).

According to the SOEP 2007, about half of the retirees without an immigration background (not differentiated by age or region) were living in a self-owned dwelling (14% also owned other properties).

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<sup>13</sup> An earned retirement point corresponds to the monthly standard retirement benefit for one year of insured employment at the average wage. This formula is used to calculate the individual monthly retirement benefits based on the present retirement value and the retirement points earned over the woman’s lifetime.

### Possession of real estate according to region and sex (in %)

Region	Sex	Possession of real estate	No possession of real estate
Germany	Men	65.7	34.3
	Women	62.8	37.2
	Total	64.0	36.0
West*	Men	69.3	30.7
	Women	66.7	33.3
	Total	67.8	32.2
East**	Men	50.0	50.0
	Women	47.0	53.0
	Total	48.2	51.8

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

» Tab. 15: Possession of real estate acc. to region and sex, age group 70–85 years, in %, 2008  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

This is true, however, only for about one third of the retirees who do not have German citizenship or were repatriated ethnic Germans (here only 5 % own other properties as well). Also, the mean value of the owner-occupied properties in these latter groups was considerably lower (39,000 EUR and 25,000 EUR, respectively, compared to 69,000 EUR among retirees without an immigration background (Frick et al. 2009, pp. 88 and 192; cf. also Chapter 08.2).

In Germany private assets are largely unequally distributed (Frick and Grabka 2009), and this is true too for retirees. High cash reserves are found almost exclusively in West Germany: Slightly more than 10 % of the men between 70 and 85 years of age have cash reserves of EUR 100,000 and more (German Aging Survey 2008). The difference between men and women as well as between East and West is not as large in the groups with no or few cash reserves. Half of the women and a third of the men aged 70–85 years have a cash reserve of

less than EUR 5,000 at their disposal. In many cases, this means they will be unable to react properly to unforeseen expenses (such as need for care). In the former West Germany, this is true of 40 % of the women and 28 % of the men.

The uneven distribution of assets occurs not only between the regions of East and West Germany and between the sexes, but also between persons with and without an immigration background. Low levels of assets as well as the complete lack of assets (no data for age groups) is higher among retirees with an immigration background: “About one fourth of the households of persons with an immigration background have no assets whatsoever, compared to 15 % of the households of native Germans (...). The assets of immigrants are thus not only lower, but also more unevenly distributed” (BAMF 2012, p. 185, acc. to Frick et al. 2009, pp. 187 f.). Especially retirees who do not possess German citizenship as well as repatriated ethnic Germans possess more often no or only minimal assets: 34 % of

## Extent and amount of cash reserves

Region	Sex	Amount of cash reserves in EUR				
		None	< 5.000	5.000– 25.000	25.000– 100.000	100.000+
Germany	Men	17.8	11.2	31.6	28.4	11.0
	Women	27.4	15.7	28.0	22.3	6.6
	Total	23.2	13.7	29.5	25.0	8.5
West*	Men	16.9	11.0	30.7	28.7	12.8
	Women	27.3	13.8	26.3	24.3	8.2
	Total	22.7	12.6	28.2	26.2	10.2
East**	Men	21.8	12.1	35.4	27.2	3.5
	Women	27.8	23.2	34.5	14.4	0.0
	Total	25.3	18.5	34.9	19.8	1.5

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

>> Tab. 16: Extent and amount of cash reserves, age group 70–85 years. 2008. in % (GeroStat – Deutsches Zentrum für Altersfragen. Berlin. DOI 10.5156/GEROSTAT)

retired non-Germans and 28 % of repatriated ethnic Germans are completely without assets or in debt, compared to 15 % of retirees without an immigration background and 12 % of naturalized citizens (Frick et al. 2009, p. 86).

West Germany in the age group 75–85 years, and highest at EUR 1,698 for men in West Germany in the age group 85+ years.

In those households in which two or more persons with income reside, the individual level of income does not reveal much about the true income situation. Thus, in order to get a realistic feel for things, we have to look at the net household income. In single-person households, of course, the situation is a very different one since, as noted above, these are generally households of very old and widowed women. As depicted, a low individual net income is usually found among women in West Germany (cf. Table 54 in the Appendix). Inasmuch as they live alone, they belong in the group of persons at risk of old-age poverty, as the next section reveals.

## >> 03.5 Level of Income and Extent of Low Income

According to ASID 2001 (BMAS 2011, p. 81), the average personal net income (regardless of its source) was lowest at EUR 1,047 for women in

## Average personal net income

Sex	Men		Women	
	West*	East**	West*	East**
75–85 years	1,683 EUR	1,308 EUR	1,047 EUR	1,064 EUR
85+ years	1,698 EUR	1,377 EUR	1,122 EUR	1,135 EUR

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

» Tab. 17: Average personal net income, acc. to age and sex, in EUR, 2011 (BMAS 2011, p. 81)

20 % of the single-person households of those over 80 years have an income of less than EUR 900 per month; the highest rate of ca. 21 % is found among those 80–85 years (cf. Table 55 in the Appendix). In absolute numbers, 409,000 persons over 80 years live in single-person households (92 % thereof women) with an income of less than EUR 900 and can thus be considered to lie partially below the poverty level (EUR 848 in 2011; cf. the section on income poverty and risk of poverty below). West German women are especially at risk: According to the microcensus of 2011 ca. 75 % of all very old persons in single-person households with an income of less than EUR 900 are women from West Germany. Even a small proportion of the multiple-person households has such a low household net income: 11,000 multiple-person households with two or more retirees with income have a net household income of less than EUR 900 a month, and some 77,000 such households have less than EUR 1,300.

## » 03.6 Relative Income Poverty and Poverty Risk

There are two different ways to calculate poverty and thus also the risk of old-age poverty (cf. Seils 2013): The first declares those persons to be “poor” who are entitled to welfare or basic social security payments according to social security statutes. The second declares that, according to the definition of the OECD, “relative (income) poverty” or – depending on the official version – “danger of poverty” is found in persons who have an income of less than 60 % of the median income, i.e., of the average income relative to the median value. Measuring relative poverty based on the median income<sup>14</sup> is now an accepted method throughout EURpe because it defines the sociocultural poverty level as a value relative to the overall income and affluence level. According to this method, household income is converted to a per capita income, i.e., the cost efficiency of larger households is taken into account,

14 The median is better equipped to handle “outliers” since it describes the income that (after ordering all persons by increasing equivalent income) divides the population in half. That is, one half has more and the other half has less income than the median.

## Net household income

Households	Monthly net household income in EUR								
	< 500	500–900	900– 1,300	1,300– 1,500	1,500– 1,700	1,700– 2,000	2,000– 2,300	2,300– 2,600	< 2,600
Single-person household	37	372	724	279	172	138	82	41	74
Multiple-person household, single income	–	–	15	10	8	9	7	–	11
Multiple-person household, 2+ incomes	–	13	70	79	108	158	136	90	198
Multiple-person retiree household, single income	–	–	15	10	8	9	7	–	10
Multiple-person retiree household, 2+ incomes	–	11	66	78	107	156	134	89	187

» Tab. 18: Net household income in single- and multiple-person (retiree) households, 2011, 80+ years (in 1,000s)  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

and an “equivalent income” is determined based on “need-weighted” income.

When calculating income poverty according to the microcensus, one includes interest income from cash reserves, but not assets in the form of real estate – since they provide no income if not rented out, though they do contribute to the wealth of a household (different from the calculation of the income poverty on the basis of SEOP). This method, some emphasize, may lead to an overestimation of old-age poverty. On the other hand, one should note that the proportion of home ownership among old people in East Germany is about one third less than that among the old in West Germany, which in turn leads to an underestimation of the differences in old-age poverty between East and West.

As shown in the previous section, 409,000 single-person households of persons 80+ years have an income of less than EUR 900. In 2011, the median income used for determining the poverty limit for a single-person household was set at 848 EUR. For a household in which two adults (and up to two children) live, this median income works out to be EUR 1,781. Any household with less income is thus considered to be at risk of poverty. For 2011, this was true for 14 % of those 75+ years old (Seils 2013, p. 364; special analysis of the microcensus data).

Calculated on the basis of the Socioeconomic Panel (SOEP), which allows for greater differentiation according to age, in 2009 some 861,000 75–84-year-olds (or 14.6 % of this age group) were

## Risk of poverty

Age	Germany total		West Germany*		East Germany*	
	No. persons	%	No. persons	%	No. persons	%
75–84	861,000	14.6 %	700,000	16.8 %	161,000	14.8 %
85+	196,000	12.6 %	167,000	12.6 %	29,000	12.5 %

\* The source material does not reveal whether Berlin was included in the data for East Germany.

» Tab. 19: Risk of poverty, persons with income less than 60 % of the equivalently weighted median income, in absolute numbers and in %, 2009 [Bundesregierung 2011, p. 10]

affected by relative poverty or were considered at risk of poverty since they had less than 60 % of the median income available to them: In West Germany, 700,000 persons (16.8 %) in this age group and in East Germany 161,000 persons (14.8 %) were affected. For persons 85+ years old, the quota for all of Germany was 12.6 % (196,000 persons) and thus slightly lower: In West Germany, 167,000 persons (12.6 %) and in East Germany 29,000 persons (12.5 %) in this age group were affected [Bundesregierung 2011, p. 10].

The poverty quota among persons older than 75 years (age of head of household) has risen slightly (by 2 %) since the year 2000. The increase is greater (3 %), however, in the single households in

all of Germany, and in particular in East Germany, where it was 11.8 % in the years 2000/2002, only to fall to 8.8 % in the years 2005/2007 and then increase again by 5 % to 14.4 % in the years 2007/2009 [Statistisches Bundesamt et al. 2013, p. 176]. A lower educational and vocational level among those 65+ years of age increases their risk of poverty [Bundesregierung 2011, pp. 13 f.]. The risk is highest in communities of between 20,000 and 100,000 inhabitants (17.1 %) [ibid., p. 16].

## Extent of poverty in Germany

Age of head of household	Germany total		East Germany (incl. Berlin)	
	Proportion of population 2009–2011	Poverty quota 2009–2011	Proportion of population 2009–2011	Poverty quota 2009–2011
75+	9.5 %	12.6 %	9.1 %	9.4 %
75+ couple	4.8 %	9.1 %	5.0 %	6.4 %
75+ single	4.0 %	16.6 %	3.7 %	14.4 %

» Tab. 20: Extent of poverty in Germany acc. to type of household [Statistisches Bundesamt et al. 2013, p. 176]

## Risk of poverty quota according to immigration status

Age group 80+ acc. to immigration status poverty quota	Risk
Immigrated foreigners	41 %
Total with immigration background	23 %
German citizens with immigration background	19 %
Without immigration background	13 %

>> Tab. 21: Risk of poverty quota in age group 80+, acc. to immigration status, in % (Fuhr 2012, p. 552)

## Income Poverty among the Very Old with an Immigrant Background

The income poverty quota is overproportionately higher for the very old who have an immigrant background, in particular those who immigrated to Germany but do not have German citizenship (cf. Table 21). Many of the 80+-year-old immigrants came to Germany from southern European countries as part of the recruitment agreements and family reunion programs of the 1960s and 1970s. They were employed primarily in low-paying industrial jobs and thus accumulated smaller retirement entitlements. According to the calculations of the microcensus of 2010 (Fuhr 2012, p. 554), 52 % of those over 65 with an immigration background had as their last employment jobs as unskilled or semi-skilled workers at the lower end of the pay scale and with little or no chance of advancement (this is especially true for the women from these countries, who were additionally the victims of pay discrimination; cf. Mattes 2005, pp. 95 f.). A comparison shows that 33 % of persons with a nonimmigrant background held such jobs. The proportion of persons with an immigrant background holding higher-level and civil-service jobs or who were

self-employed is also considerably lower than in the overall population (ibid.; Fuhr 2012, p. 554). The lower incomes received by these persons in old age thus reflect the lower earnings and lower chances experienced during their working life (Frick et al. 2009, pp. 36 f.).

In order to take a closer look at the various countries of origin of persons with an immigrant background at risk of poverty, we must take recourse to data concerning the old-age poverty of all retirees, which are not differentiated according to age. Yet here, too, the data speak clearly: Retirees with an immigrant background are at especially high risk of relative income poverty—21.1 % compared to 9.2 % of the retirees without an immigration background. 44.8 % of the retirees originally from Turkey and the former Yugoslavia as well as 23.7 % of the (repatriated) ethnic Germans are thus considered poor (BAMF 2012a, p. 199, based on data from SOEP 2007).

## » 03.7 Welfare Recipients

### Basic Social Security in Old Age

The second method of measuring poverty in old age is oriented toward the amounts stipulated as necessary for subsistence according to the German Social Security Act XII/Welfare or “Basic Social Security in Old Age and Reduced Earning Capacity.” These sums effectively reflect the politically determined sociocultural poverty level. The level designated as that of “basic social security” thus describes the absolute poverty threshold.

At the end of 2012, 2.7 % of the German population over 65 years of age (2.3 % of men and 3.1 % of women) were thus considered to be affected by old-age poverty through the fact that they were receiving such support payments (Statistische Ämter des Bundes und der Länder 2013). The quota of persons receiving this basic social security payment among the old of foreign nationality is particularly high: In 2011, 12.7 % of the non-Germans 65 years and older were in this category, compared to 2.1 % of the German population (Seils 2013, p. 366).

Broken down according to age groups, the statistical data for basic social security payments are available for the end of 2009 (Bundesregierung 2011, p. 36). Accordingly, there were 110,512 recipients of basic old-age social security (2 % in the age group 75–84 years. Among those 85+ years, there were 36,981 recipients, also ca. 2 %. According to the welfare statistics of the Federal Statistics Office (dated 31 December 2009), 58,184 of those persons at least 65 years and older who were receiving basic social security and were

affected by reduced earning capacity were living in care facilities (Bundesregierung 2011, p. 60).

Entitlement to basic social security benefits in- curs when a person’s income, for example, from the statutory social security system, is not sufficient to cover basic everyday costs. The income of a partner, whether married or not, is taken into con- sideration in this calculation, but that of children is not. The expertises written by Becker (2010) and Martens (2008) expressed the criticism that the amounts paid under this method were in fact not sufficient to cover basic needs and did not guaran- tee the social participation of the recipient. When looking at the statistics for basic social security in old age one must also reckon with a large number of unreported or undetected cases. According to an assessment made by Becker (2012), based on the data of the Socioeconomic Panel (SOEP), in the year 2007 there were at least one million persons 65 years and older who were entitled to such pay- ments, but only 340,000 were actually receiving them.

### Care Assistance

According to the microcensus, a total of 3.6 % of the women and 2 % of the men over 80 years in West Germany as well as 2 % of the women in East Germany (the values for men in East Germany are tenuous) were receiving welfare payments accord- ing to the German Social Security Act XII (cf. Table 56 in the Appendix).

Besides the basic old-age social security pay- ments, benefits for “help in special circumstances” (according to Chapters 5 to 9 of the German Social Security Act XII) such as those for “care assistance” are considered welfare payments. “Care assist- ance” is a social transfer payment made to persons

## Reception of care assistance

	Men 80+	Women 80+
Outside of care facilities, thereof	5,985	24,804
Allowance for severe care needs	1,477	5,746
For considerable needs	877	4,058
For appropriate needs	10,050	4,249
Assumption of costs of special caretaker	3,486	15,030
In care facilities, thereof	20,839	136,225
Semi-residential care	128	709
Short-term care	516	2,394
Inpatient care, thereof	20,456	134,470
Care level 0	1,352	5,064
Care level 1	6,542	40,892
Care level 2	9,371	62,323
Care level 3	5,247	40,937
Total	26,528	159,310

» Tab. 22: Reception of care assistance, 2010, in absolute numbers (Statistisches Bundesamt 2013b, p. 25)

in need of care who cannot pay for their care from their own available means.<sup>15</sup> A total of 138,307 persons over 80 years (on 31 December 2010) or 185,838 of persons over 80 in the course of the year 2010<sup>16</sup> (cf. Table 22) received such social benefits, corresponding to 3.2 % of this age group (total persons over 80 in the year 2010).

## Compensation for War Victims

The cohort under study here is likely the last in which the health detriments incurred during World War II play a role and trigger benefits for war victims. The statistics available on the compensation of war victims are not differentiated according to age, and no information is available on when the injury took place. Nevertheless, we may assume that the vast majority of the recipients of this type of benefit now belongs to the very old age group

<sup>15</sup> In this case, different from the situation in "basic old-age social security," children are held liable for supporting their parent(s).

<sup>16</sup> Multiple entries can be excluded as they would have been flagged upon application.

and is receiving compensation because of injuries sustained during World War II. Clearly, this group is being decimated with every passing year. On 31 December 2012, 29,441 persons were receiving such benefits according to the National Compensation Legislation and the Compensation Legislation for Former Prisoners; 12,389 thereof were receiving payments to subsidize care and 12,387 to pay for assistance in special circumstances (Statistisches Bundesamt 2013c, p. 11).

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## » 03.8 Conclusion

This chapter has taken a differentiated look at the material situation of persons in Germany over 80 years of age. Whereas most in this age group enjoy a relatively good protection from material need and are presently less vulnerable to poverty than the following generation will be, a closer look at the age group of 80+-year-olds still reveals considerable inequalities.

The backbone for their means of subsistence in this group of over 80-year-olds remains the statutory social security system: Only about 14 % in this age group have recourse to (additional) assets. The average benefits from the retirement payments in West Germany is nominally lower than in the East, but the additional benefits from other retirement systems in the former West Germany play an important role, in particular the on average 100 % higher pensions paid to retired civil servants. Against this background, the average net income of men in East Germany lies 20 % below that of their contemporaries in West Germany.

The situation of women, however, is very different. Because of the large number of women who were employed fulltime in the former German Dem-

ocratic Republic, women today in East Germany generally have their own entitlements and receive retirement benefits large enough to support them. The vast majority of their West German contemporaries in this cohort, on the other hand, worked only part time or did not work at all (housewives) and today are (at least partially) dependent on receiving survivor's benefits from their deceased spouses.

Private assets are also unequally distributed in those 80+ years old. A high level of assets is not present in East Germany, and real-estate holdings are rare. Especially retirees with an immigration background, in particular those without German citizenship, often have no or only few assets to their name.

Besides the very old with an immigration background, single-person households have a low income and are at risk of old-age poverty. More than 400,000 persons over 80 years live in single-person households (92 % thereof women) and must make do with less than EUR 900—which is near the official poverty level for 2011 (OECD) of EUR 848. Very old women in single-person households thus comprise a major risk group for old-age income poverty. The number of persons at risk of poverty among the 80–85-year-olds is higher than among the next younger group. In other words, the risk of poverty increases with age.

Poverty in old age has a number of far-reaching consequences: Increases in the cost of energy and housing, for instance, cannot be absorbed by persons living on a fixed income. Cutting back on household costs, foregoing all health exams that cost money and doing without vacations are but a few examples of the effects of poverty on social participation and enjoying a healthy and active old age.

About 2 % of all very old persons receive “basic social security” payments and thus lie below the

absolute level designated as poverty. If all types of support according to the German Social Security Act XII are considered, then 3.6% of the women and 2% of the men over 80 years of age in West Germany as well as 2% of the women in East Germany (the data for men in the East are uncertain) receive welfare payments. Social transfer payments for “care assistance” were paid out to 3.2% of those over 80 years in the year 2010.

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# 04

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## » Social Relationships

Group activities, exchanging ideas, counseling and advising one another, building trust and helping out – for most people maintaining contact with others is an important source of satisfaction and of meaning in life up through old age. At the same time, social relationships serve as an important resource for coping with emotional and health-related burdens and for providing practical assistance in everyday life. However, because of the ever-smaller database available as the population ages, there are few truly representative data at our disposal that can tell us how the very old experience their social relationships. We have to make do with the data available, which in part do not encompass all age groups or do not include representative studies. Yet a look at all the data available shows that, if we include the surveys done at the local level or on particular groups, we can discover something like the developmental tendencies present in the social relationships of the very old. Still, there is quite a

gap in the research regarding how the very old who live in nursing care facilities as well as those with considerable health issues, particularly dementia, experience their social relationships.

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### » 04.1 Satisfaction with Social Relationships in Old Age

“I enjoy being around other people”—this statement is one 70 % of those 80–85 years old can agree with, whereas 22 % say they “don’t need much contact with others,” and 15 % prefer being alone [Generali Zukunftsfonds et al. 2012, p. 168]. According to the Generali Aging Study of the Very Old (2014, p. 15)<sup>17</sup>, 76 % of those over 85 years felt “joy and satisfaction from emotionally deep

encounters with other people.” 72 % were very concerned with “the life situation and the development of people close to them—especially family members and those in the next generation(s).”

As in the younger cohorts, this age group too considers their social life—partnership, family, friends and relatives—to play a major role in their life. Yet these very different social relationships bring with them their own cultural, social and psychological features. For example, friendships with nonrelatives, marriage or nonmarriage partnerships, relations between children and parents as well as those between siblings all have different defining characteristics, dynamics and psychosocial effects—and they can change considerably over the course of a lifetime [cf. Tesch-Römer 2010]. Growing older means all of these social networks are subject to change and upheaval: The death of a spouse, the need for care, the death of long-time friends and relatives, the feeling of being “left behind” as well as finally one’s own health deficits and limited mobility all contribute to making it difficult for the very old to realize their social needs. One of the most important findings in the Generali Aging Study (for the cohort of persons 65 to 85 years old) was that not one’s age, but one’s health condition determines satisfaction with social contacts (Generali Zukunftsfonds 2012, p. 169): The poorer one’s health is judged to be, the worse the social relations are assessed. It remains unclear, however, whether these factors mutually affect each other.

On average, single, divorced and childless older persons as well as those who live in metropolitan

areas (regardless of their marital status) are less satisfied with their social contacts (*ibid.*, pp. 170 f.). Also, older persons with a lower socioeconomic status are less satisfied with their social relations (*ibid.*, p. 169)—a finding that also emerged in the study “Gesundheit in Deutschland aktuell 2009 (GEDA)” (Health in Germany now 2009) (RKI 2011a, see Chapter 05) on the assessment of social support on the part of 65–80-year-olds<sup>18</sup> and apparently continues in the very old.

Less satisfied with their social contacts are also those 65–85-year-olds with an immigration background (Generali Zukunftsfonds 2012, p. 169). This discovery agrees with those surveys done specifically on persons with an immigration background, and it also correlates with the high level of low socioeconomic status and health impairments in this group (Fokkema and Naderi 2013 on the feelings of loneliness among 50–79-year-olds with a Turkish background). Low socioeconomic status, combined with a (subjectively) poor state of health, must thus be seen as a risk factor for unsatisfactory social relations.

The correlation between subjective health status and general satisfaction in life may also be found in the Second Heidelberg Study of 100-Year-Olds<sup>19</sup> (Jopp et al. 2013, p. 44). Whereas among 100-year-olds a positive self-assessment of health status correlates with higher satisfaction in life, a number of measurable health aspects, “such as, for example, cognitive capabilities, the number of health problems (e.g., diseases or functional limitations), the ability to carry out the necessary everyday

17 The Generali Hochaltrigen-Studie 2014 (Generali Aging Study of the Very Old) studied persons over 85 years. It was a nonrepresentative, qualitative interview study with 400 persons in which the proportion of persons with a middle or high educational level was overrepresented and those living in care facilities underrepresented (Generali Zukunftsfonds 2014).

18 Because of the size of the sample, there are no representative data available for the very old.

19 The Second Heidelberg Study of 100-Year-Olds was carried out from 2011 to 2013 with 100 women and 12 men aged 100 years. The core sample consisted of 95 100-year-olds who lived in the Rhein-Neckar region of Germany in private households and care institutions. This study is meant to be valid for the Rhein-Neckar region as well as in all of Germany (Jopp et al. 2013, pp. 13 f.).

tasks to live an independent life, or also health-related limitations to one's activities" (ibid.) were not related to satisfaction in life.

Surprisingly, the Heidelberg Study of 100-Year-Olds showed that the social resources considered in this research, "such as, for example, the number of children, the presence of a near friend or the amount of time spent with others, e.g., the family" (ibid.) had no effect on overall satisfaction in life—even though it is well known that social aspects generally do affect quality of life. The authors of the Heidelberg Study assume, as do the authors of other, similar studies, that the experienced *quality* of one's social relations and not their *quantity* is decisive for determining satisfaction in old age (cf. Pinqart and Soerensen 2000). Perrig-Chiello (1997) also discovered in their studies that not the size of one's circle of friends, but the stability of the relationship to at least one person is pivotal for one's satisfaction in life. The detachment of satisfaction in life from existing social contacts in the very old may be a clue to understanding that the well-being of 100-year-olds feeds off the meaningful social relations in the past: "... that the most important things guaranteeing satisfaction in life are psychological strengths, more so than health, social resources and the more objective circumstances of life" (Jopp et al. 2013, p. 45).

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## » 04.2 Partnership

If, and for as long as, people live in a partnership, their partner is generally the most important person and contact in their life (Höpflinger 2014, p. 5). Yet living in a partnership becomes rarer with increasing age, especially among women, since, as

a rule, they experience the death of their partner after many decades of going through life together.

As previously mentioned, only about one third of the women in the age group 80–85 years is still married, whereas nearly 70% of the men at that age are still living in a partnership (see Chapter 02). Any assessment of the role of partnership not based on age group and sex is thus not very meaningful. Yet it is still very important to note that, in the age group of 75–85-year-olds, both those still married and those living with a partner (listed separately in the Generali Aging Study of 2013) have a positive view of partnership: 59% of them say that, after a long marriage, their relationship is "strongly characterized by routine," and 59% report "really enjoying the time" they spend together (Generali Zukunftsfonds 2012, p. 192). Again, the quality of the relationship depends on the state of health: In the overall age group 65–85 years, 68% were blessed with good or very good health, whereas 42% described their state of health as "not particularly good/poor." Here, too, it remains open as to how these two factors influence each other. In the DEAS 2008 study, 61% of those in the age group 70–85 years report having differences with their partners seldom or never, with 7% reporting differences of opinions as occurring "often" or "very often" (Nowossadek and Engstler 2013, p. 11).

The attachment to one's partner is not just an important emotional bond. In joint households, couples can support each other instrumentally as well—especially regarding the common household duties and chores. In the cohort we studied, there prevailed the traditional sex-specific division of work, with the housewife active on the "home-front"—a pattern that perseveres even when both partners no longer are employed. According to the DEAS 2008 study, in 56% of the households of 70–85-year-olds the woman is still responsible for

doing the housework, in 35 % it is equally divided between the two spouses, and 7 % of the cases the man is responsible (Nowossadek and Engstler 2013, p. 12; surprisingly, this age group does not differ from the younger group of 55–69-year-olds). Overall, in the group of 55–85-year-olds women tend to be unhappy about their having the responsibility for doing the housework, whereas most men seem to be content with this solution (ibid., p. 13).

In the Generali Aging Study of 2013, 25 % of those 75–85 years old reported being dependent on the help of their partner to cope with everyday life (Generali Zukunftsfonds 2012, p. 192). Against the background of the fact that many women end up widowed in old age, it is alarming to read that 64 % of those 75 to 85 years of age agree with the statement: “I wouldn’t know what to do if I didn’t have my partner.”

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## >> 04.3 Family Relations

### Parent-Child Relations

The surveys at our disposal agree that adult children, inasmuch as present, are the most important persons of reference and support, particularly when the partner has already deceased. Whereas a majority meet with other relatives only sporadically (Generali Zukunftsfonds 2012, p. 172), the relationship to one’s own adult child(ren) and to one’s grandchild(ren) is generally close. The relations between parents and children, however, do change with increasing age: Older parents experience an increasing number of physical ailments and must adapt to the role of receiving assistance from oth-

ers (e.g., in the household). These new “reversed” roles, asymmetric relations and dependencies pose a challenge to the parent-child relationship, especially when decisions have to be made for—or against—present or future care arrangements. Such situations may result in closer contacts, but they may also spawn new conflicts or arouse old ones (cf. Tesch-Römer 2010, pp. 149 f.).

Being part of an intergenerational family is considered meaningful by most and is often initiated via the daycare of the grandchildren. It becomes less important when the grandchildren are no longer in need of such attention. For the oldest of the very old generation it also becomes important that their own children are “no longer the youngsters” they once were—that they too are gradually being confronted with their own age-related limitations. In some cases, they even fail to outlive their own parents.

From the DEAS 2008 survey we know that, at least among the 70–85-year-olds, only 11.1 % no longer have children who are still alive, whereas 21.8 % have one living child, about 66 % have two and more children still alive (Gerostat 2014, DOI 10.5156/GEROSTAT). According to the SHARE study 16.7 % of those over 80 years have no living child and 29.1 % have one child still alive (Börsch-Supan et al. 2005, Table 4A.15).

According to the DEAS 2008 study, nearly all of the 70–85-year-olds describe their relationship to their child(ren) as “close” (90.7 %) or “average” (6.9 %), whereas only 2.4 % say the relationship is “not close” (Motel-Klingebiel, Wurm et al. 2010, Table Appendix A 8-5). With rising age and following the loss of or outliving of other important persons in their life, the relationship to their adult child(ren) grows to be even more important: 74 % of those 100 years and older who have children say a child is the main person in their life; those 100 years and older who have no children say other relatives (30 %) or

friends (30%) are their most important references (Jopp et al. 2013, p. 31).

About one third of the 75–85-year-olds without children regret not having children, whereas 21% do not regret it and 10% are undecided or provided no information on this question (Generali Zukunftsfonds 2012, p. 207).

Regarding personal contacts, and in particular access to assistance in everyday life (not, however, for emotional support), the local environment is decisive. Table 23 shows that about half of those 70 to 85 years old live with at least one adult child near them or at least in the same town (about 6% of the men and women over 80 live in households with more than two persons, cf. Table 51 in the Appendix). According to the SHARE survey of 2004, 5.8% of the men and 10.6% of the women over 80 years live in the same household as an adult child; further 20.4% of the men and 24.1% of the women in the same building (Börsch-Supan et al. 2005, Table 4A.11; cf. Chapter 02 on multigenerational households). An analysis of the data from the German Aging Survey of 2008 shows that only about 10% live more than 2 hours away from an adult child (cf. Table 23).<sup>20</sup>

The SHARE study reveals that, among the age group 80+ years, 42.3% of the men and 57.3% of the women have daily contact with an adult child, whereas 32.2% of the men and 29.7% of the women have contact several times a week (Börsch-Supan et al. 2005, Table 4A.12).

According to the Generali Aging Study of 2013 (Generali Zukunftsfonds 2012, p. 174), 43% of the 80- to 85-year-old parents see their children daily

or nearly every day, and another 34% see them several times a month. Such daily contact thus lies about 10% higher than the respective contacts in the younger age groups. Across all age groups (65–85 years), however, old people in West Germany tend to have more direct and daily contact with their children (37%) than do those from East Germany (25%). Also, the extent of contact among old people with a lower educational level (46% daily or almost daily) differs from that of old people with a middle (33%) and high educational level (23%). In cities with 100,000 and more inhabitants, those with daily contact lies at 24%—the lowest level (ibid.). Widowed persons (in the age group 65–85 years) have more nearly daily contact (41%) than do those who are still married (33%). The least contact is found among the divorced: About half of them have contact less than “several times a month” with their children (ibid.).

A further finding is that those who do live near a child or children also engage in more extensive conversations (ibid., p. 184). Of all 80–85-year-olds, 14% report having a lengthy conversation with their family, friends and acquaintances every day or nearly every day. Further 28% have such exchanges at least several times a month. These values agree with those from younger age groups (65+ years). If we look at the data for the entire age range from 65–85 years, we discover that those who have (nearly) daily contact with their children also have the most conversations: 25% (almost) daily, 37% several times a week. This value is higher even than among persons with a large group of acquaintances (17% and 34%, respectively, regard-

20 The analysis by Baykara-Krummes of the DEAS 2002 study data shows that somewhat more of the 70–85-year-olds with an immigration background (2002), namely, 27.5% live in the same household, same house or close vicinity as their families (compared to 21.5% of this age group without an immigration background). However, 7% of this group is confronted with the fact that their children live outside of Germany (compared to 1.6% of those 70–85-year-olds without an immigration background) (Menning and Hoffmann 2009a, p. 16, according to calculations done by Baykara-Krumme 2007 on the basis of data from the DEAS 2002 study).

## Distance of residence to next adult child

Region	Sex	The next closest adult child lives			
		In the neighborhood	In the same town or city	In another town or city, maximum of 2 hours away	Further away
Germany	Men	18.0	33.7	37.7	10.7
	Women	21.2	33.9	35.7	9.2
	Total	19.8	33.8	36.6	9.8
West*	Men	18.2	32.1	39.7	10.1
	Women	21.9	34.1	35.3	8.7
	Total	20.3	33.2	37.2	9.3
East**	Men	17.0	40.8	28.9	13.3
	Women	18.3	32.9	37.4	11.4
	Total	17.8	36.2	33.9	12.2

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

>> Tab. 23: Distance of residence to next adult child, 70 to 85 years old, DEAS 2008, in % (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

less of the amount of contact with their children). Those who see their children only a few times a month or less than a few times have a lengthy conversation in 32 % and 22 % of the cases, respectively. On the other hand, these numbers also reveal that a large part of the old people in question (65+, thus long before becoming very old) only seldom have extensive conversations: 40 % of those who see their children daily and 50 % who have a large number of acquaintances have such conversations less than several times a month. Among those who see their children less than several times a month as well as among the childless this rate rises to 80 % and 66 %, respectively (ibid.).

## Grandchildren

According to the SHARE study, only 6.9 % of those over 80 years do not have any grandchildren (Börsch-Supan et al. 2005, Table 4A.16). Grandchildren can often be an important link in the integration in a multigenerational situation—they are the connection between the family future an older member may not experience and the biographical present and past. Older people pass along their “family memories,” and their interactions with their grandchildren provide a way to reconnect to the past—both their own childhood and their own parenthood (Höpflinger 2014, pp. 10 f.). Taking part in processes of “generativity” and mutual “generational learning” (Lüscher and Liegle 2003) can be very meaningful.

The frequency of contact to adult children also increases when grandchildren are present: When grandparents visit their grandchildren, they necessarily meet up with their children more often. However, statistics show that the contact between grandparents and grandchildren decreases with increasing age, especially when the latter no longer need intensive caretaking. According to DEAS 2008, about 18 % of 70–85-year-olds (both men and women alike) do participate in watching out for their grandchildren. This number, however, is 50 % lower among the older people in East Germany where institutional child caretaking is widespread (Motel-Klingebiel, Wurm et al. 2010, Table in Appendix A 8-12). According to the Generali Aging Study, 22 % of those 80–85 years of age have contact with their grandchildren every day or nearly every day, and another 38 % see them several times a month (Generali Zukunftsfonds 2012, p. 175). The Generali Aging Study on the Very Old 2014 (Generali Zukunftsfonds 2014, p. 23) clearly shows that taking part in the lives of the next generation(s) of a family is an important part of the lives of the very old (say 85 % of those queried). A third reported having “existential conversations especially with younger members of the family.”

Yet grandchildren tend not to become the caretakers of the very old as much as their own adult children (Künemund und Hollstein 2000, p. 252). A Swiss study by Höpflinger et al. reveals that the mutual, normative expectations of support that characterize parent-child relationships manifest themselves toward grandchildren only in a weak form: “In many cases the relationship to the grandchildren is not interpreted as one of intergenerational support and assistance, but as a purely personal relationship between young and old” (Höpflinger et al. 2006, pp. 79 f.).

## Other Relatives

Other relatives play only a minor role in the social life of old people, and in fact a majority of them are seen only a couple of times every year. Only some 6 % have daily contact with other relatives (Generali Zukunftsfonds 2012, p. 172). Höpflinger (2014, p. 12), however, notes that siblings in their later years do tend to (re)take an important role in their lives: The common family past and belonging to the same or nearly same generation provide a closeness and with it the joint confrontation with the process of aging. The relationship between siblings connects “the family past to the biographical present. Experience shows that earlier rivalries melt away in later years.” Yet the tendency that primarily women tend to their family relations is also still present, so that the contact between sisters is closer than that between brothers (ibid.).

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## » 04.4 Multiple Family Assistance

One of the central findings of both the German Aging Survey 2008 and the Generali Aging Study of 2013 was that there is a close-knit network of exchange relationships in which families both instrumentally and financially provide mutual support. Nonrelated persons who provide cognitive, emotional and instrumental support for the very old presently play only a minor role (Künemund and Hollstein 2000, p. 253; cf. Chapter 04.5). This situation is different in Germany (being a conservative welfare state) than it is in the Scandinavian and Benelux countries, where many caretaking tasks including housekeeping assistance are largely

## Material support provided and received

Region	Yes, material support received	Yes, material support provided
Germany total	4.3	30.7
West*	4.3	30.9
East**	4.3	30.0

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

>> Tab. 24: Material support, age group 70–85 years, 2008, in % (DEAS GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT Deutscher Alterssurvey (DEAS) 2008)

provided by professionals (Haber Kern and Brandt 2010, p. 194, based on the SHARE data of 2004). Additionally, in Germany friends and relatives also play a much smaller role in providing informal assistance (ibid., p. 191).

According to the Generali Aging Study, 65 % of the 65–85-year-olds agree with the statement: “My family is my one and all” (Generali Zukunftsfonds 2012, p. 211). This rate falls, however, when the frequency with which parents interact with their children decreases: Only 43 % agree with this statement if they report having good relations with their children but do not actually see them very often. On the other hand, 92 % of those who see their children (nearly) every day are able to “count on support from family members” if they “get into a difficult situation and need help.” 85 % of those who see their family several times a month agree with this statement, whereas the value falls to 59 % among those who have less contact. Whereas a total of 80 % and 79 % of those married and widowed, respectively, can rely on their family, the rate is only 65 % of the divorced and 44 % of the singles (ibid., p. 212).

Overall, 77 % of those 65–85 years can depend on family members for support if they were to become involved in a difficult situation. 56 % could “also rely on someone outside the family” for help

if need be. A total of 87 % are sure of receiving assistance in an emergency (Generali Zukunftsfonds 2012, pp. 212 f.). This means, of course, that over 10 % would be unable to resort to anyone in an emergency.

## Financial Support

Can older people rely on their families in financial emergencies? In the Generali Aging Study, overall 59 % of 65–85-year olds answered this question positively (Generali Zukunftsfonds 2012, p. 213). This rate, however, much like the overall rate of support in the family, depends on how much the parents actually see their children. 72 % of the parents who see their children daily agree with the statement, whereas only 43 % agree if they see their children only rarely. Whereas a total of 57 % of those married and 58 % of those widowed could rely on their family in a financial strait, only 48 % of the divorced and 34 % of the singles would have recourse. However, the granting of financial assistance is more widespread than the receipt of help on the part of one’s children, as Table 24 tells us.

The age group of 70–85-year-olds materially support especially their children (17.4 %) and their grandchildren (18 %) (Mahne and Motel-Klingebiel

## Everyday support by children

Type of support	75–79-year-olds	80–85-year-olds
Help with technical matters	58	59
Small tasks and repairs around the house	41	50
Running errands	36	52
Helping out in the home/garden	32	41
Help with official affairs	35	47
Trips to the doctor or other appointments	35	50
Help preparing meals	7	16
Long-term care and assistance	5	12

» Tab. 25: Everyday support by children, in % (Generali Altersstudie 2013, p. 211)

2010, p. 203). 14% of them report having transferred money or noncash benefits with a value of EUR 1,000 or more within the last year (15% report a smaller sum), whereas only 2% of this age group were on the receiving end of such a transfer (Motel-Klingebiel et al. 2010, p. 75).

## Receiving and Providing Support in Everyday Life

According to DEAS 2008, 4.6% of those 70 to 85 years old with children provided them with instrumental help. A larger proportion of them, however, received instrumental help: 11.9% from their own children and 3% from their grandchildren (Mahne und Motel-Klingebiel 2010, pp. 203 f.). Such support proved to remain stable over time (since 1996) (Motel-Klingebiel et al. 2010, Table in Appendix A 8-9). In the Generali Aging Study of 2013 (Generali Zukunftsfonds 2012, pp. 209 f.) we learn more about what such support benefits actually look like. That study asked the following: “What do your

children or grandchildren do for you, now or in the past?”

Table 25 shows that, with increasing age, parents receive more support from their children. The clearest increase is the help provided for tasks that require mobility (such as going to the doctor’s, shopping) or intensively cognitive and functional tasks (such as visits to authorities, filling out applications, talking with doctors, etc.).

Table 26 reveals that instrumental help is provided (or can be provided) less the older one gets to be, but that financial help is provided all the more. “Listening, being there for one’s children” continues to play a role for over half of the 80–85-year-olds. Asked how much time they invest in such assistance, this age group answers with an average of 9 hours a month—which is 4 hours less than that among the younger age group 75–79 years of age (Generali Zukunftsfonds 2012, pp. 218 and 222).

The Generali Study of the Very Old (Generali Zukunftsfonds 2014, pp. 21 f.) clearly reveals that “the idea of caring” is still very high on the list of the “important experiences of the very old.” This is expressed in the concern and support of

younger family members in conversations (78 %) or everyday life (65 %). These results, however, tend to be somewhat vague and may stem from the “privileged” nature of the sample. This study also suggests that the concern expressed for the circumstances of close relatives is diminished on the part of older men as well the very old with poor health (ibid., pp. 20 f.).

The Second Heidelberg Study of 100-Year-Olds reports that most of the 100-year-olds whose children were still alive still had a child as their main contact person (whereas 30 % reported other relatives and friend as the most important person in the lives). Inasmuch as the 100-year-olds lived near their child(ren), most (60 %) reported receiving assistance from them: “33 % of the 100-year-olds received help from daughters, 25 % from sons. Only six 100-year-olds reported receiving help from both a daughter and a son at the same time” (Jopp et al. 2013, p. 31). However, it should be noted here that the children of these 100-year-olds themselves had necessarily reached an old age (i.e., 54 % were older than 70 years), which hindered their ability to support their parents because of their own age-related deficits (ibid., pp. 30 f.). 100-year-olds without

children living near them experienced only little help with everyday tasks (ibid., p. 31). Only about one third of those whose child(ren) did not live nearby or were no longer alive at all were receiving help from other relatives. Even where friends and neighbors were the primary contacts (30 %—thus just as much as relatives), they tended to provide only little instrumental support.

An analysis of the SHARE data clearly shows the gender-specific nature of support—something not present in the Generali Aging Study of 2013: “Mothers are helped more, and daughters help out more than sons, so that many daughter-mother dyads are reported in care situations. This is followed by son-mother and daughter-father relationships. The lowest level is that of the help provided by sons to their fathers” (Brandt 2009, p. 80).

## Support provided to children by older parents

Type of support	75–79-year-olds	80–85-year-olds
Listening, just being there for the children	62	57
Caretaking, e.g., of grand- or greatgrandchildren	41	29
Regular financial support, e.g., to children, contribution to grandchildren’s allowance	38	40
Helping out in an emergency	35	18
Small tasks and repairs around the house/garden	22	12
Going on vacation together	18	16

» Tab. 26: Support provided to children by older parents, in % (Generali Altersstudie 2013, p. 218)

## » 04.5 Friendships and Acquaintances

The family has the role of connecting the generations, whereas friendships and acquaintances primarily come into action with persons of the same age (Generali Zukunftsfonds 2012, p. 173). A third of those 80 to 85 years old have contact with persons under 30 years rarely more than a few times a year, and a further third of them never have such contact, unless the person in question belongs to their own family (ibid., p. 237). Of all 65–85-year-olds about half regularly get together with a solid circle of friends and acquaintances; 38 % report having a “large circle of friends,” and 79 % many long-term friendships (ibid., p. 173).

However, from age 80 onward the social networks change: Old friends enter nursing facilities or die; one’s own health deteriorates, limiting mobility. The feeling of being “left behind” may prove to depress those who live on. 66 % of the 80–85-year-olds have already lost good friends and relatives, whereas among those 75–79 years this is true only for 44 % (ibid., p. 177). Consequently, the number of 80–85-year-olds who still enjoy a “large circle of friends” falls from 37 % (75–79-year-olds) to 28 %. Less than one third of the 80–85-year-olds (29 %) report having friends with whom they “talk about everything”—that represents 11 % less than in the age group of 75–79-year-olds (ibid.). Nevertheless, the number of persons in this age group who wish they had more social contacts remains constant: At

13 % it is even 2 % higher than in the next younger age group.

According to the DEAS 2008 study, those 70 to 85 years old report having an average of four persons in their social network (Motel-Klingebiel et al. 2010, Table in Appendix A 9-1). Table 27 also reveals that more persons in this age group from East Germany, namely, a third of the East German women, have no one or only one person whom they consider “personally important with regular contact.”<sup>21</sup>

### Social Support Outside the Family

Do older persons have recourse to support from outside the family, someone to whom they can turn in times of need? According to the Generali Aging Study 2013, 56 % of the 65–85-year-olds answered this question positively. The agreement is highest among singles (71 %) and the divorced (68 %), followed by widowed (58 %) and married persons (53 %) (Generali Zukunftsfonds 2012, p. 214). This demonstrates that people without partners can and do have viable networks they can rely on in an emergency. Married persons, on the other hand, are concentrated more on their partner and their immediate family: 29 % of the married persons and 28 % of the widowed in this age group report having no one to lean on. Among the divorced and single persons in this age group, the rates are 22 % and 17 %, respectively.

The DEAS study asked whether nonfamilial networks were a source of “tea and sympathy.” In 2008, 26.4 % of the 70–85-year-old women

21 The question posed here also included marriage partners and adult children: “We are concerned here with persons who are important to you and with whom you have regular contact. That includes work colleagues, neighbors, friends and acquaintances as well as members of your household and relatives. Which persons are important to you?”

## Size of personal network (in %)

Region	Age	Sex	Important persons with regular contact		
			0 or 1	2–4	> 5
Germany total	70–85	Men	22.2	40.3	37.6
	70–85	Women	21.2	43.5	35.3
	70–85	Total	21.6	42.1	36.3
West*	70–85	Men	21.2	39.4	39.4
	70–85	Women	18.6	43.9	37.5
East**	70–85	Men	26.3	44.0	29.7
	70–85	Women	31.8	41.8	26.4

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

>> Tab. 27: Size of personal network: important persons in one's life with regular contact, 70–85 years, 2008, in %  
 (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT Deutscher Alterssurvey, DEAS 2008)

answered positively, whereas only 13.7% of the same-aged men did so (Motel-Klingebiel et al. 2010, Table in Appendix A 9-7). Compared to older surveys these results have not changed over time: In contrast to the younger cohorts that receive more nonfamilial attention than the same-aged persons in earlier surveys, 12.6% of the 70–85-year-old men and 19.6% of the same-aged women reported being in need of more contact and comfort (ibid., Table in Appendix A 9-9).

Across all age groups the results of the European Social Survey show that 14% (West Germany) and 10% (East Germany) of the widowed persons (among whom, as mentioned, mostly women are to be found) have no personal contact person (Statistisches Bundesamt et al. 2008, pp. 376 f., based on calculations of the European Social Survey of 2004/2005).

There are no more recent representative data for the very old on the exchange of instrumental assistance in everyday life among nonrelated contact persons. Again, we have to revert to the Heidelberg Study of 100-Year-Olds, which showed that they play an important role in social exchange and emotional support – and are mentioned just as often as relatives are as being the primary contacts in life. Yet they seem to play a subordinate role in actual everyday assistance (Jopp et al. 2013, p. 31).

For the next younger age group of persons, 65 to 80 years, we have results from the study “Health in Germany Now 2009” (RKI 2011a), which point to major differences in how this age group experiences social support (both within and outside the family), depending on their educational level and place of residence (East-West).<sup>22</sup> Because we have

<sup>22</sup> The extent of subjectively experienced “social assistance” is measured according to the “Oslo 3 Social Support Scale,” which is defined by three variables: the number of close contacts, experience with concern from other people and how easy it is to obtain practical help from one's neighbors.

no representative data for the age group of persons over 80 years, we refer here to the fact that older people younger than 80 in East Germany and those with a low educational level experience much greater deficits of support than those in West Germany with a higher educational level. In the 65–80-year-olds with a “low educational level” in West Germany, about 20 % of both the men and women report receiving only “little assistance,” whereas in East Germany the rate lies at about 33 %. Among those with a “middle or high educational level,” the differences between East and West Germany are less distinct among men and more distinct among women: 17 % of the women in the East and 10 % in the West with a high educational level experience only little support (ibid.).

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## » 04.6 Loneliness

Old, isolated, lonely—that is the horror vision that so often characterizes our image of what it means to grow old. But how realistic is the experience of loneliness really? Loneliness is a subjective feeling and, different from social isolation, one that cannot be measured or quantified. We must differentiate here: Old people who live withdrawn and isolated from others need not necessarily be lonely; conversely, one can be lonely even while living with a partner.

Loneliness is the subjective experience of a lack of close relations and personal attachment. Weiss (1973) defines emotional loneliness as the unsatisfied need for a close attachment to others, whereas social loneliness is the unsatisfied need for social integration. Both forms of loneliness are exacerbated by a lack of (potential) “significant others,” of quality relations and of available

resources. Loneliness is also stigmatized and can be a source of shame.

Especially the critical life event of losing a spouse—and that generally means losing the or a central person in one’s life after a long (sometimes lifelong) period, reducing one’s social circle almost immediately—can lead to an existential crisis in the “surviving” partner. This can sometimes lead to just such loneliness and isolation (cf. the increase in loneliness following the loss of a partner described by Dykstra et al. 2005). This is all the more the case if the mourning process occurs simultaneously with other factors that foster loneliness, for example, the experience of poor or deteriorating health (ibid.), a lack of resources (cf. Pinquart and Sörensen 2000; Fokkema and Naderi 2013), dissatisfaction with one’s living arrangements (cf. Scharf and Gierveld 2008) and restrictions to one’s mobility (cf. Drennan et al. 2008).

The feeling of loneliness is well known among the very old, more than among younger cohorts. Every third 80–85-year-old feels lonely sometimes (26 %) or often (7 %). On the other hand, 27 % feel lonely only seldom, and 36 % never feel lonely (Generali Zukunftsfonds 2012, p. 179). The Generali Study of the Very Old 2014 shows that experiencing phases of loneliness increases with age: 32 % of those 85–89 years old felt lonely, rising to 51 % in the age group 90 to 94 years and to 56 % in the age group 95 to 98 years (Generali Zukunftsfonds 2014, pp. 19 f.). Women were more vulnerable (46 %) than men (25 %) (ibid., p. 20). A “lower socioeconomic status” also correlates with strong feelings of loneliness (49 % compared to 39 % with a middle and 33 % with a high socioeconomic status) (ibid., p. 21). Poor health also correlates with phases of loneliness (50 %) more than does good health (32 %) (ibid., p. 23).

The Generali Aging Study 2013 shows that, across all age groups from 65 to 85 years, the feeling of

loneliness correlates with one's subjective health condition: About every 10th old person (11 %) who describe their health status as "not good/poor" also say they are "often lonely," and over a third (36 %) say they are "sometimes lonely." Old people without partners are also affected: 10 % of those without a partner say they are "often lonely," and 32 % say they are "sometimes lonely." 7 % of old people without children report being "often lonely," which is more than the average (4 %). However, a high level of contact with children does not protect from loneliness: 4 % of those who have (nearly) daily contact with their child(ren) still consider themselves to be "often lonely," another 17 % as "sometimes lonely" (Generali Zukunftsfonds 2012, p. 179).

In contrast to the results of the Generali Aging Study of the Very Old (see above), only 40 % of those queried in the Heidelberg Study of 100-Year-Olds reported feelings of loneliness (Jopp et al. 2013, pp. 33 f.). This study sees a higher risk of loneliness among 100-year-olds who "have fewer grandchildren, a lower overall level of happiness, poorer subjective health, more health-related limitations, distinct hearing problems, more intensive pain and clearer depressive symptoms" (ibid., p. 35). In addition, those who reported being lonely had a greater incidence of not seeing their family as often as they wished (ibid.). The central protector against loneliness among the 100-year-olds, it turns out, was living together with others in a private household.

Taken together, we observe an increase in loneliness with increasing age, although this occurs less

among the 100-year-olds. Because of the different survey instruments used, the values calculated can only serve as a general orientation.

Gender differences were not reported in the studies under consideration. According to the DEAS studies<sup>23</sup>, it is generally women who feel "very lonely" (the majority of whom are widows): 2.7 % of the East German 70–85-year-old women (and 2 % of the West German women). Men are less susceptible to being "slightly lonely" and "very lonely" and describe themselves more often as "average lonely." About a fourth of the 70–85-year-old men consider themselves "average lonely" or "very lonely."

Besides these sex-related and regional differences in feelings of loneliness, there are also differences among the very old with and without an immigration background. Representative data for the age group in question here do not exist, but the study by Fokkema and Naderi (2013, based on data from the Generations and Gender Survey 2005–2006) does provide data on loneliness among those 50–79 years old with a Turkish immigration background. It reveals a very strong risk of loneliness in this group. Their study also concludes that partnership as well as contact with adult children and grandchildren are not in the position to protect those older people who stem originally from Turkey from a high level of loneliness (10 % higher than age-matched Germans). The authors see the reason for this in health problems in combination with socioeconomic factors (lower income level, unsatisfactory living arrangements). It would be advantageous to initiate a study on the question of the relationship between these factors

23 Feelings of loneliness were ascertained as follows: "Construct variables from the middle level of agreement with the following statements: (1) I miss having people with whom I feel at ease. (2) There are enough people there to help me if I am experiencing problems. (3) I often feel forsaken. (4) I know a number of people I can truly depend on. (5) I miss having comfort and warmth. (6) There are enough people there with whom I feel closely connected. The values of the Loneliness Scale according to Jong Gierveld and van Tilburg (2006) were summarized in three categories by dividing the possible values (1–4) into three equal parts. In addition, the mean value of the scale from 1 (not at all lonely) to 4 (very lonely) was calculated."

## Feelings of loneliness

Region	Age group	Sex	Loneliness acc. to 2008 DEAS		
			Rather low	Middle	Rather high
Germany total	70–85 years	Men	75.6	23.3	1.2
	70–85 years	Women	78.1	19.8	2.1
West*	70–85 years	Men	74.2	24.6	1.3
	70–85 years	Women	77.3	20.8	2.0
East**	70–85 years	Men	81.6	17.7	0.7
	70–85 years	Women	81.4	15.9	2.7

\* Former West Germany + West Berlin; \*\* Former East Germany + East Berlin

» Tab. 28: Feelings of loneliness, acc. to age, sex and region, in % of age group  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT, Deutscher Alterssurvey (DEAS) 2008)

and the influence of group-specific experiences in life, for example, experiences of marginalization, stigmatization or racism (cf. also Hubert et al. 2009 on the psychological state of older immigrants from Turkey).

## » 04.7 Conclusion

Having fulfilling relationships with others remains a goal of great importance to one's quality of life up to a very high age, though things then do change. Evaluations of the most recent surveys reveal a strong familial orientation among the modern generation of very old people: With increasing age—and especially following the loss of one's husband (less so of one's wife)—adult children (if present) become the most important contact persons. Only about one fifth of the very old do not (or no longer) have a child, and even fewer (7 %) have no grandchildren. Whereas the size of their

social network is diminished, the amount of daily contact with their children increases – and with it the probability of having extensive conversations. Older people who do not see their child(ren) on a regular basis as well as those with no partner or child(ren) tend to experience such conversations less often. Grandchildren provide contact (sometimes the only contact) between the older and younger generations and play an important role in intergenerational integration. Two thirds of the very old have only little contact with 30-year-olds not in their immediate family.

The mutual exchange of assistance and support is especially intensive within families, whereas nonrelated persons play only a minor role. Even in emergencies is the trust in one's familial safety net clearly higher than in receiving support from outside the family. Nevertheless, unmarried and childless persons more often have nonfamilial support networks. All the same, some 10 % of those 65–85 years old have the feeling that, in an emergency, they would not be able to rely on anyone—whether within or outside the family.

The very old tend to show more concern for family members and provide financial support to them, whereas with increasing age they tend to receive more practical help in everyday life, particularly from their adult child(ren). Very old persons without children or with little contact to their children in turn receive little such support.

How the very old perceive the quality of their social networks as well as their risk for loneliness depend greatly on their subjective health status and their socioeconomic status. There is a need for studies that scrutinize how these factors influence each other. The results of various studies reveal that there is a small, but nevertheless vulnerable

group of very old persons with an increased risk of unsatisfactory social support, among others especially very old women from East Germany, very old persons with an immigration background and, generally speaking, anyone at risk of old-age poverty and with health problems.

In the group under study here, the experience of loneliness increases with increasing age, the main risk factors being widowhood, poor subjective health and low socioeconomic status. Overall, single, divorced and childless persons evaluate their social relations as generally poorer. Nearly 40% of this age group, however, enjoy being alone and do not feel to be in need of more contact with others.

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# 05

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## » Health

The transition from the age group of 65–80-year-olds to that of 80+-year-olds is characterized by an almost exponential increase in health-related problems, functional restrictions and chronic diseases. The overall reduction in mortality at high age and the still-increasing life expectancy have led to their being ever more persons in the age group of very old persons. Especially the increase in multimorbidity and the chronification of disease syndromes have had the consequence that independence becomes impossible for many people who live to a very old age, and ever more of them are in need of assistance and care. Many of these chronic diseases occurring among the very old can no longer be properly treated or cured, so that it becomes of greater importance that suitable forms of therapy and rehabilitation be enacted to ensure a high level of quality of life and independence. Good strategies for coping with such situations as well as positive

self-esteem are the most important psychological skills necessary for confronting the negative impact of disease and deficits in old age (Rott and Jopp 2012, p. 476).

This chapter provides first an overview of the health status of the very old. Then it gives very specific information on functional limitations and disabilities, on physical and mental diseases as well as health risks. The latter strongly influence life expectancy and mortality, as shown in the first section below. The next sections are devoted to the question of how best to approach such health-related problems and risks in the very old, which preventative, therapeutic and rehabilitative measures can be used, which care offers can be made and the costs involved in these endeavors.

## » 05.1 Overview of the Health Situation

Reliable and representative statistics on the prevalence of diseases, the incidence of new cases and health risks in general among the German population over 80 years are still a rarity (Motel-Klingebiel et al. 2013, pp. 8 f.; Rott and Jopp 2012, p. 475). The central disease registries (e.g., on cancer and strokes), the official statistics on mortality (cause of death statistics), on inpatient care (hospital diagnosis statistics), on nursing care (care statistics) as well as the microcensus generally reflect separate values for those over 80. Representative health surveys, on the other hand, often do not regard the very old because of the difficulty of reaching out to them, or the data gathered are not representative.<sup>24</sup> These limitations are also valid for the German Aging Survey (DEAS) and the Survey of Health, Ageing and Retirement in Europe (SHARE), which only rarely publish results on persons older than 80 years and do not query persons living in care facilities (Andersen-Ranberg et al. 2005; Andersen-Ranberg et al. 2008, BMFSFJ 2013).

The health surveys carried out by the Robert Koch Institute, in particular the “Study on the Health of Adults in Germany” (DEGS) and the telephone survey “Health in Germany Now” (GEDA) are, for the reasons stated above, not or only barely suitable for depicting the health situation of the very old. The basis sample of the first wave of the DEGS (cf. Gößwald et al. 2012) surveyed only persons up through the age of 79 years; and in the main publications of the GEDA surveys of 2009 and 2010 (RKI

2011a, 2012a), the old-age population is combined in an open category of persons 65 and older – even though some of those interviewed were 100 years old! An exception to this rule may be found in the GEDA report “Prevalence and Morbidity Among Adults in Germany” (Fuchs et al. 2012), which uses data for persons 75 and older (reflected in Chapter 05.3 to 05.5 below). Here, too, however, the very old population of persons living in nursing care facilities is missing completely, which must be considered when interpreting the results of that study. The Berlin Aging Study (Mayer and Baltes 1996), which comprised 516 participants ranging from 70 to 103 years of age, is thus an important source for information on the health situation of the very old, though it is representative only for West Berlin. Recently, the Barmer GEK and the AOK (both statutory health-insurance companies) supplied anonymized data that can be used for longitudinal analyses on the health situation of the very old both in private households and in care facilities, despite the fact that the data are not completely representative due to the specific structure of the respective insured clientele.

The risk of functional restrictions and disorders not only differs between the various age groups and the cohorts in question, it is also socially unevenly distributed over the entire course of life (cf. Lampert 2009). Disadvantaged groups in the population and persons with a lower socioeconomic status (i.e., with lower educational level and lower income) become ill more often and die earlier, though women generally have a higher life expectancy than men (Lampert and Kroll 2014). For this reason, it is important to differentiate the health situation of the very old on the basis of social attributes. The poor database, however, generally allows us to list

<sup>24</sup> Generally, only those old people are addressed who live in private households and who are mentally unimpaired, but not the increasing group of older persons who live in nursing homes (cf. Saß et al. 2010, p. 404).

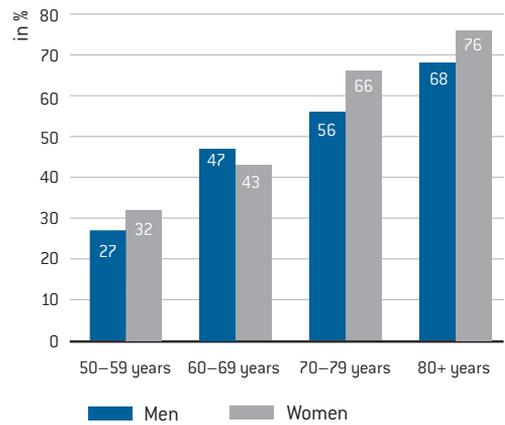
only those differences that emerge based on age and sex, whereas differences in social status and educational level, regional differences in East and West, and differences in immigration background are possible only where the corresponding data are available. Since the age group of the very old does not always commence with 80, but sometimes begins with 75-year-olds and sometimes even with 85-year-olds, we have always included the age-group information in our comments.

## Subjective State of Health

Subjective state of health expresses how people see their own health status. This, in addition to any medical diagnoses and findings, defines a holistic evaluation of health that includes mental and social aspects besides all physical ones. Subjective state of health grows poorer with increasing age, but does not keep up with the rate of deterioration of actual physical health—these two parameters diverge considerably. Subjective state of health has proved to be a better indicator of future mortality among old people than any diagnostically objective health status [Menning 2006, p. 13].

This decline of subjective health status parallel to increasing age manifests itself in the SHARE survey done in 2004 in 11 European countries on the themes of the social situation, health, and social and familial networks of persons 50+ years. In the German sample (see Figure 2), 27% of the men and 32% of the women between 50 and 59 years of age reported their state of health to be “fair,” “poor” or “very poor.” These values rise continually with rising age and reach their zenith among those over 80 years, with 68% of the men and 76% of the women reporting these evaluations. From age 50 years onward, with the exception of the age group 60–69 years, older women report overall poorer

## Subjective state of health

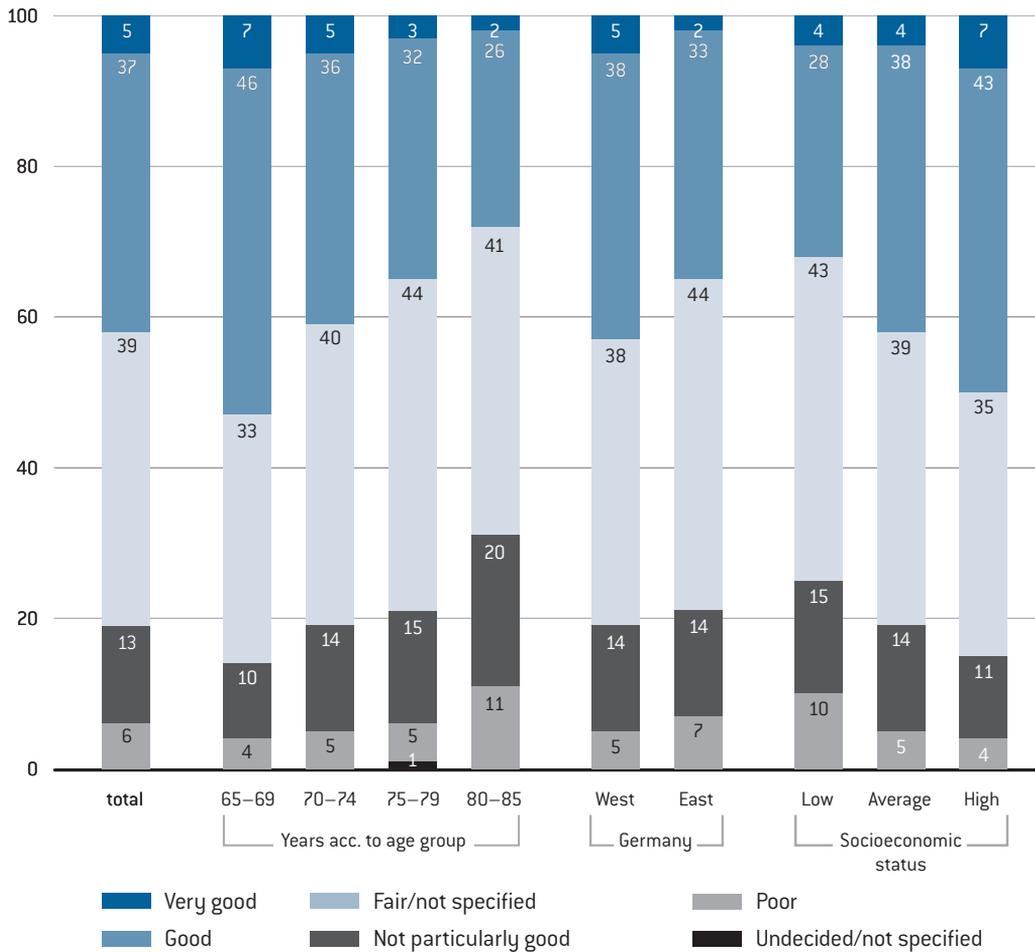


» Fig. 2: Subjective state of health (“fair,” “poor” or “very poor”), acc. to age and health, SHARE 2004 [Menning 2006, p. 15], Question: “How would you judge your state of health ... good, very good, fair, poor, very poor?”

health than men of the same age group. Here we must remember that in the SHARE study about two thirds of those over 80 years were no older than 84 years and were living in private households [Andersen-Ranberg et al. 2005, p. 35]: If the very old who live in institutions had been included, it would have produced even worse values for subjective state of health, especially for women.

Very similar answers were given to the respective question posed by the Generali Aging Study of 2013, where 68% of the men and 75% of the women between 80 and 85 years of age considered their health status to be “fair,” “not particularly good” or “poor” [Generali Zukunftsfonds 2012, p. 259]. But also men from younger age groups judged their health status to be slightly better than women do [ibid.]. Subjective health status deteriorates

## Assessment of subjective state of health



>> Fig. 3: Assessment of subjective state of health (Generali Aging Study 2013, p. 258). Question: "How would you describe your present state of health? Would you say ..." (in %, undecided, not specified = < 0.5 %, Basis: Germany total, 65-85-year-olds)

continually with rising age (cf. Figure 3), such that the number of those queried reporting a poor subjective health status doubled from 5% of the 75-79-year-olds to 11% of those 80-85 years of age. 65% of the latter also stated that their health

status had gotten somewhat or considerably worse over the past 3 years. Of those 65 to 69 years old this was true only for 42% (ibid., pp. 260 f.).

The subjective health status of those 65+ years old is also determined by social status: Whereas

the differences between those living in East and West Germany only moderately favor the West German population, 10% of those with a low socioeconomic status say that their health status is “poor,” a value twice that of the persons queried with middle (5%) or higher (4%) socioeconomic status.<sup>25</sup> This finding for subjective health status thus replicates the well-known health inequality in the German population found in many other studies (cf. Lampert and Kroll 2014). It should be mentioned, however, that the data in the Generali Aging Study were not differentiated according to age groups, which makes specific statements about the social differences in those over 80 years impossible.

## Health Problems

The microcensus of the Federal Statistics Office last posed questions on health in 2009, among other things concerning problems stemming from diseases and accidents (Statistisches Bundesamt 2011b, p. 9).<sup>26</sup> According to this report, 29% of the older people (75+ years) said that they had been ill or injured in the previous 4 weeks; this compares to 15% of the overall population. The proportion of persons sick or injured increases continually in the second half of life, and there are only minimal differences between men and women (see Figure 4).

On the SHARE survey of 2004, perhaps because of the broad wording of the question, many more of the older respondents admitted having long-term health problems, diseases or disabilities. The

proportion in the respective age groups increases continually, from 44% of the men and 46% of the women between 50 and 60 years, to 76% of the men and 84% of the women over 80 years. Thus, in 2004, more than three fourths of the very old population were suffering from chronic diseases, with women showing a somewhat higher incidence than men (Menning 2006, p. 12; see Figure 5). No explanations for the gender-specific differences are available.

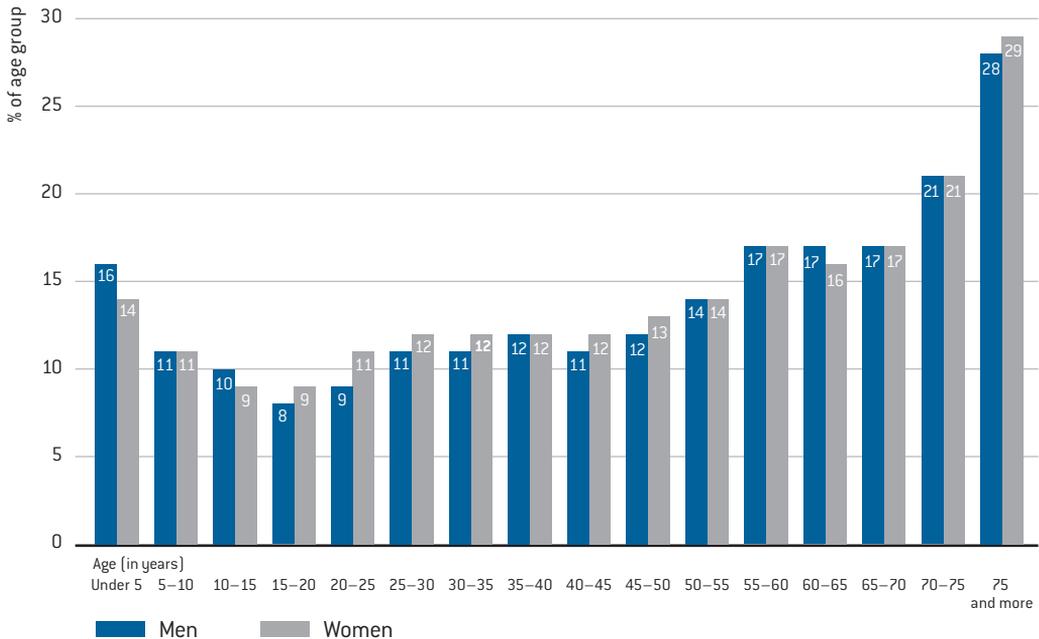
## Multimorbidity

The rate of multimorbidity, i.e., the probability of suffering from multiple diseases at the same time, rises with increasing age. The medical care of old and very old persons with several different disorders poses special challenges to caretakers since previous diagnostic and therapeutic procedures are specifically attuned to individual, chronic diseases. The interactions among the various diseases, which may produce varied or nonspecific symptoms and syndromes, have hardly been studied. Progressive chronic diseases and functional limitations or disabilities are then combined with age-related functional organic deficits (such as loss of muscle tone, bone loss, vision problems, pulmonary problems) to reduce the overall reserves of the organism. The result is that the body, particularly following major stresses (e.g., infections or extreme climatic circumstances), cannot react properly. Such older persons, with their various diseases and injuries,

25 Socioeconomic status in the Generali Aging Study of 2013 was an index value culled from the data for school education and occupation of the person being interviewed and of that person's present or earlier partner as well as the person's net monthly equivalent income (Generali Zukunftsfonds 2012, p. 586).

26 The additional program entitled “Questions on Health” is carried out every 4 years. In 2009, it was addressed to 1% of the general population (i.e., ca. 340,000 households with ca. 700,000 individuals). Answering the questions concerning the themes “health status (disease and accident victims),” “health risks (smoking habits)” and “body dimensions (height, weight, BMI)” was voluntary (cf. Statistisches Bundesamt 2011b, p. 3).

## Diseases and injuries from accidents



» Fig. 4: Diseases and injuries from accidents in the past 4 weeks, 2009, acc. to age and sex (relative to general population with data on health) [Statistisches Bundesamt 2011b, p. 9]

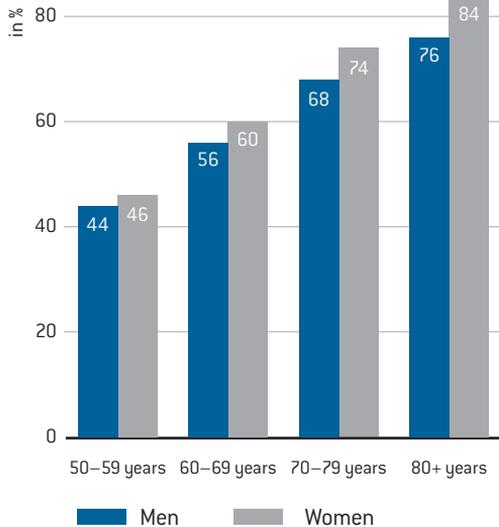
have a higher risk for even further health deteriorations that may end fatally or result in the need for long-term assistance or care. The goal of medical efforts is thus no longer to heal or provide therapy for individual diseases, but rather to maintain or restore a measure of life quality and independence [BMG 2012, p. 92; Scheidt-Nave et al. 2010, p. 441].

To date there are no reliable definitions for measuring multimorbidity, so that the existing estimates on the incidence in the older population cannot be compared. The values given in the epidemiological

studies<sup>27</sup> vary considerably, depending on which and how many diseases are counted, how the sample being queried was recruited, and whether or not the very old are included [BMG 2012, p. 94; Scheidt-Nave et al. 2010, p. 442]. All estimates agree that the prevalence of multimorbidity rises continually with increasing age [Scheidt-Nave et al. 2010, p. 441]. Analyses of the Aging Surveys of 1996, 2002 and 2008 also show that the prevalence in the respective age groups decreases over time, meaning the present generation of old people

<sup>27</sup> Epidemiology is the study of how diseases spread in the population.

## Chronic health problems



» Fig. 5: Proportion of those queried with chronic health problems, acc. to age and sex, SHARE 2004 (Menning 2006, p. 12). Question: “Some people have chronic or long-term health problems. Long-term health problems are understood as having had the problems for a long time and probably having them for a long time in the future. In this sense, do you have long-term health problems, diseases or disabilities?” (proportion of “yes” answers)

is overall healthier than the previous generation(s) (10 years ago) (BFMSFJ 2009a, p. 22). These results, however, have been verified only up to the threshold of the very old age group: No representative data are available for very old persons (DEAS), or, as in the case of the GEDA surveys (cf. Fuchs et al. 2012, p. 577), only those living in private

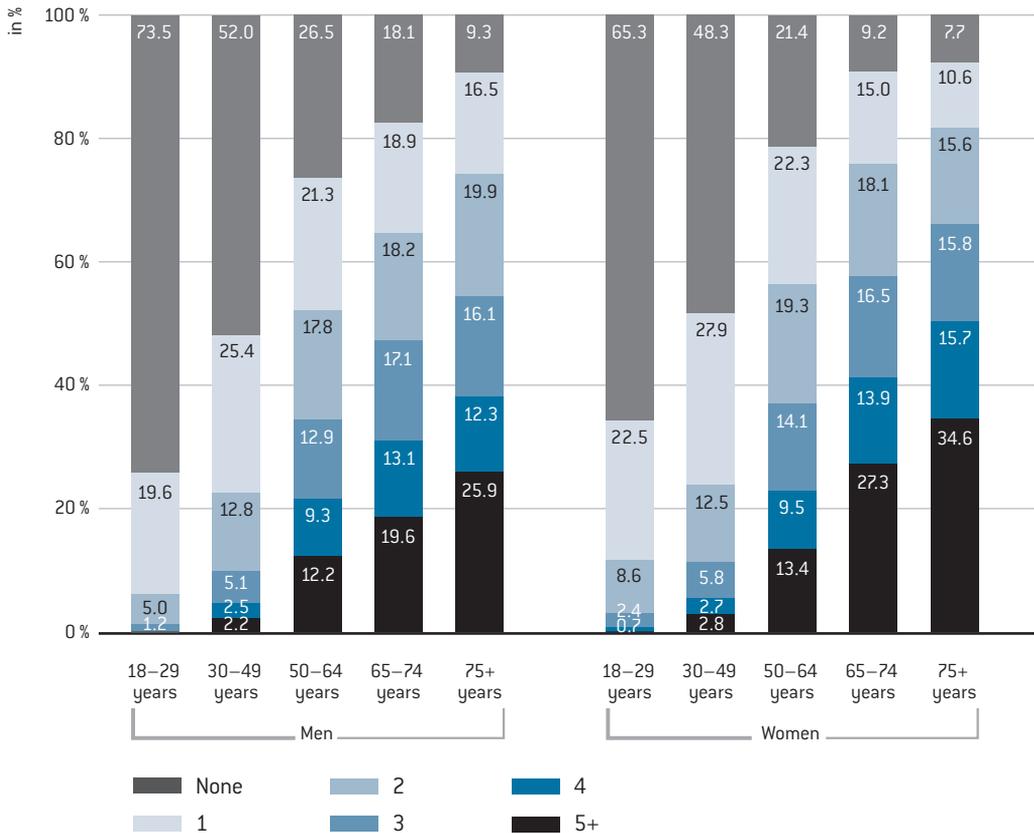
households were considered – leaving out everyone residing in institutional settings. In addition, the composition of the age groups in samples of the very old is not always clear: The age groups comprising persons 75+, 80+ or 85+ years do not include information on the distribution or means of these open-ended categories. There are no representative data on the multimorbidity of older persons with an immigration background (BAMF 2011, BAMF 2012a). The GEDA survey presumes fluency in German among all respondents (Fuchs et al. 2012, p. 577), so that persons with an immigration background are likely to be underrepresented in that survey.

The best insights into multimorbidity among the very old are found in the Berlin Aging Study (Mayer and Baltes 1996).<sup>28</sup> The doctors associated with that project diagnosed five or more syndromes in women than in men. The groups of the “young old” and the “old old” are very different: 19% of the men and 27% of the women aged 70–84 years had at least five different afflictions, whereas in those 85+ years old 41% of the men and 54% of the women had at least five afflictions. Interestingly, the diagnoses of their general physicians (GPs) differed considerably from those of the project doctors: In both age groups only about one fourth of the women and men had been diagnosed by their GPs with the five afflictions (Steinhagen-Thiessen and Borchelt 1996, p. 167). Perhaps very old persons, especially women, are not being examined exactly enough by their GPs.

A continual rise in multimorbidity in persons of high or very high age (in women the rates are always slightly higher) was also found in the German

<sup>28</sup> The main sample of the Berlin Aging Study (BASE), which was carried out between 1990 and 1993, comprised 516 random citizens of West Berlin between the ages of 70 and 103. The age groups 70–74, 75–79, 80–84, 85–89, 90–94 and 95+ each had the same number of 43 women and 43 men (Mayer and Baltes 1996, p. 25). Although the BASE study is representative only for West Berlin, according to the authors the biomedical findings can be extended to the entire West German population (ibid., pp. 44 f.).

## Several simultaneous afflictions/diseases



>> Fig. 6: Proportion of persons with several simultaneous afflictions/diseases, acc. to sex and age, GEDA 2009 (Fuchs et al. 2012, p. 579)

SHARE sample of 2004 (Menning 2006, p. 13). Whereas 21 % of the men and 24 % of the women in the age group of 50–59-year-olds reported having at least two doctor-diagnosed diseases (chosen from a list of 14 different diseases or risk factors and one open category), this rate tripled in those over 80 years of age—to 63 % in men and 68 % in women.

Up-to-date, differentiated results on multimorbidity and individual disease groups among those over 75 years may be deduced from a special analysis of the telephone health survey “Health in Germany Now” (GEDA) using data from 2009 (Fuchs et al. 2012). In this study, a total of 21,262 persons 18 to 100 years old living in private households were questioned by telephone concerning 22 chronic

health problems. This sample included 738 women and 482 men over 75 years. Age- and sex-specific prevalences were calculated for individual health problems and syndromes as well as combinations thereof. The most common afflictions reported by both men and women were high blood pressure, hypercholesterolemia (high cholesterol values), chronic back pain, adipositas (extreme overweight) and osteoarthritis. These health problems increased over the course of the lifetime and in later life led to increased rates of multimorbidity, with more women than same-aged men being afflicted by multimorbidity (see Figure 6). The highest values were found, as expected, among the 75+-year-olds: Of the men over 75 years, 74 % suffered from two or more afflictions or diseases (65- to 74-year-olds: 63 %); 26 % of the men from this age group reported at least five afflictions or diseases (65- to 74-year-olds: 20 %). The respective value for women over 75 years for two diagnoses was 82 % (65- to 74-year-olds: 76 %) and 35 % for at least five diagnoses (65- to 74-year-olds: 27 %).

## Changes to Health over Time

The health sciences generally differentiate between three dimensions of health: somatic/mental health, functional health and subjective health (Tesch-Römer and Wurm 2009a, pp. 12–15). Somatic/mental health (see Chapters 05.3 and 05.4) is concerned with whether an individual has physical and mental diseases and, if yes, how many. Functional health (see Chapter 05.2) describes a person's ability to satisfy basic needs and carry out activities

of daily living. Because chronic diseases and multimorbidity are so rampant in old age, measures to retain functional health are of major importance in this phase of life. Subjective health in turn means, as described above, the self-assessment of one's own health status. Discovering age group-related differences along these three dimensions would help us to understand how they affect individual aging processes (age effects), the various time impacts (period effects) and/or differences between the age groups (cohort effects) (Wurm et al. 2009, p. 79).

An analysis of the longitudinal data of the German Aging Survey (BMFSFJ 2013, pp. 30–35) shows how these dimensions change with increasing age (see Figure 7) and which social differences based on educational level are observed.<sup>29</sup>

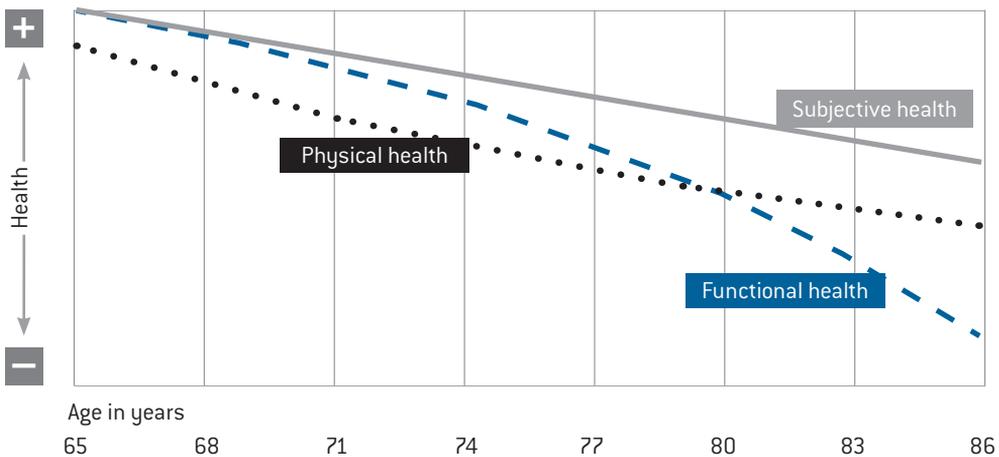
Health status diminishes with increasing age among all persons queried, even though both the subjective and functional health status were at a higher level than physical health at the beginning of the age phase of 65 years. Whereas physical and subjective health decline steadily, functional health takes an accelerated path downward. Then, at the beginning of very old age functional health falls under the level of the other two dimensions—and the gap even grows larger over the next few years (up to the highest observed age of 86 years). The increase in chronic and multimorbid illnesses would thus appear to be less well compensated for in the transition to very old age, limiting the mobility and independence of 80+-year-olds considerably.

The previously so important educational level loses some of its meaning for physical health and subjective health with the transition to very

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<sup>29</sup> This analysis is based on repeated surveys conducted in the scope of the German Aging Survey (DEAS). To this end, persons 40+ years were interviewed between 1996 and 2011 up to four times concerning their life situation. From these panel data one can distill statements reflecting developmental courses, among others health development (BMFSFJ 2013, p. 8). The level of education was determined based on the last school level as high, middle and low.

## Changes in physical, functional and subject health with increasing age



>> Fig. 7: Changes in physical, functional and subjective health with increasing age  
 [German Aging Surveys 1996–2011, BMFSFJ 2013, p. 31]

old age. The values for persons with a high level of education and those with a middle or low level converge greatly in this phase (BMFSFJ 2013, pp. 32–35). The reasons may lie in an overall social convergence of life circumstances following retirement or in the higher morbidity and mortality among socially disadvantaged groups—leading to the selective survival of the healthier members of these groups. In any case, the result is that the social differences in physical health disappear at a very old age (cf. Mayer et al. 1996, p. 606; Lampert 2009, p. 131). Functional health, however, remains unequally distributed even at a very old age: Very old persons with a high educational level have a higher level of mobility and independence than very old persons with a lower level of education (BMFSFJ 2013, pp. 32–35). This difference can be explained by the fact that better education is connected to

better social and financial resources, a healthier lifestyle and more competent coping with health impairments (ibid.). Nevertheless, there is still room for improving the functional health of socially disadvantaged very old persons, if they were to receive the necessary social and financial support.

The next generations to reach old age will be better educated and overall healthier than those now at that age. The future will also bring a general improvement in the physical/mental, functional and subjective health of the very old. Comparisons of the various cohorts point to this development, based on the samples taken in the Aging Surveys of 1996, 2002 and 2008 (Wurm et al. 2010), although persons over 85 years of age were not documented there.

## » 05.2 Functional Limitations, Need for Assistance and Disabilities

### Functional Limitations

According to the WHO definition, people are functionally healthy when they have the physical and mental functions of a healthy human being; when they can carry out all activities in their living environment that may be expected of someone without health problems; and when they can evolve fully in all areas of life important to them (Menning and Hoffmann 2009b, p. 63). The increasing number of health afflictions and chronic diseases that occur with rising age lead to decreases in functional health and with that the ability to lead an independent life in old age. This risk, as mentioned in the previous section, is particularly high for persons with a low educational level, since they have fewer resources to compensate for their health restrictions than their better-educated contemporaries. The need for assistance or care takes hold when everyday activities can no longer be mastered on one's own because of severely limited functional health (see in more detail Chapter 06 "Care and Care Relationships").

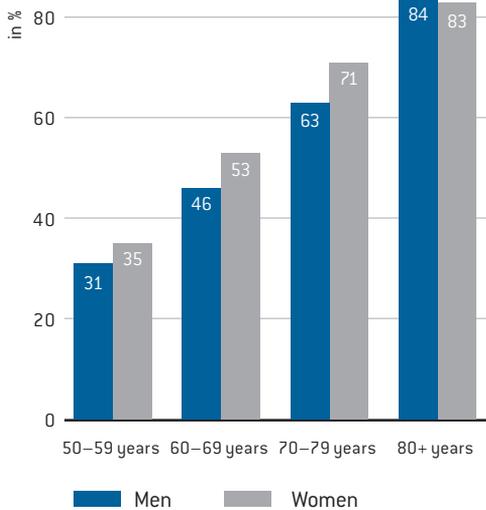
Based on an analysis of the German SHARE data from 2004, Menning (2006) showed that limits to activity (as measured by the "Global Activity Limitation Indicator") steadily increase up to a high age. Whereas only a third of the men and women 50 to 59 years old reported having had health problems during the last 6 months which limited their

activities, this was true for 80% of those queried who were over 80 years (Menning 2006, p. 4; see Figure 8).

As with the health afflictions and diseases, here, too, women report higher numbers than men. Menning and Hoffmann (2009b, pp. 63 f.) explain the convergence of the values among the 80+-year-olds from the fact that the SHARE sample comprised only persons living in private households. Because more older women than men live in nursing facilities (cf. Chapter 06 "Care and Care Relationships"), the true proportions for functional limitations were underestimated more for women than for men.

The rise in functional limitations with increasing age can also be exhibited for individual areas using the data from the repeat sample of the Aging Survey 2002 (Menning 2006, pp. 5–7). Both sensory impairments (hearing and sight) as well as mobility limitations (climbing stairs, walking long distances) are clearly dependent on age. The largest increases were found in the transition to very old age, i.e., between the age group of the 65–74-year-olds and the 75–84-year-olds: Among the 75–84-year-olds 30% had difficulties reading the newspaper (65–74-year-olds: 19%), and 17% had difficulties recognizing people on the street (65–74-year-olds: 8%). These values included the use of vision aids such as glasses. 20% of the 75–84-year-olds had difficulty hearing during telephone conversations (65–74-year-olds: 11%), 26% in group or public situations (65–74-year-olds: 16%). Finally, because of their present state of health, 24% of the 75–84-year-olds had difficulty climbing several flights of stairs (65–74-year-olds: 10%) and 25% walking more than 1 kilometer (65–74-year-olds: 11%). According to the Generali Aging Study 2013, the number of people who need walking aids of some sort (cane, walker, rollator) due to such

## Activity limitations



>> Fig. 8: Activity limitations (Global Activity Limitation Indicator), acc. to age and sex, SHARE 2004 (Menning 2006, p. 4)

problems increases exponentially, from 4 % of the 65–69-year-olds to 8 % of the 70–74-year-olds, to 15 % of the 75–79-year-olds, to 34 % of 80–85-year-olds (Generali Zukunftsfonds 2012, p. 305).

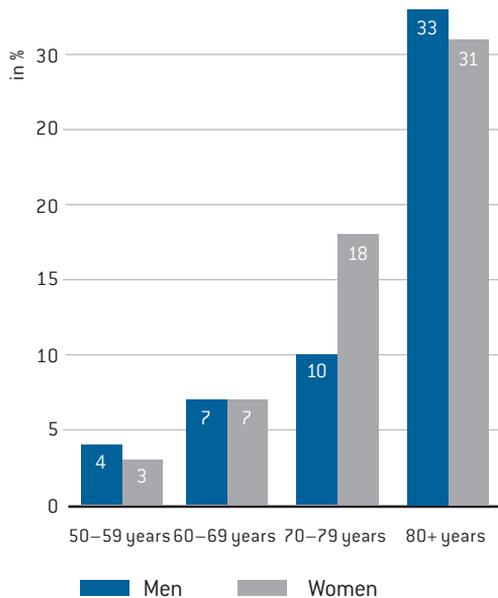
Reduced vision (age-related farsightedness = *presbyopia*, cataracts), poor hearing and limited mobility can be compensated for in part through the use of suitable apparatus or appropriate operations, thus increasing life quality and independence. From a prevention viewpoint, it is important to recognize that sensomotoric limitations represent risk factors for falls and the resulting hip and thigh fractures as well as for depression (Menning and Hoffmann 2009b, pp. 64 f.).

## Difficulties in Activities of Daily Living

Reduced functional health has a major influence on daily life and how much support is necessary. “Activities of daily living” (ADL) reflect the so-called basal activities involved in caring for oneself (e.g., eating, drinking, getting dressed, personal hygiene), whereas the “instrumental activities of daily living” (IADL) measure the extent to which a person can see to his or her own household (e.g., shopping, cooking, washing clothes, taking care of financial affairs, etc.). Need for assistance and care is considered present when a person cannot carry out individual tasks of ADL and IADL on his or her own (cf. Menning 2006, p. 8).

The SHARE data from the German sample reveal that the proportions of those queried in private households with one or more impairment in ADL or IADL rise with increasing age. 10 % of the men and 18 % of the women between 70 and 79 years, but 33 % of the men and 31 % of the women over 80 years had problems with basal activities of self-sufficiency (Menning 2006, p. 8; see Figure 9). The proportions of those queried who have difficulties in everyday life with at least one instrumental activity because of health or memory problems also rise with age: 16 % of the men and 27 % of the women between 70 and 79 years as opposed to 39 % of the men and 44 % of the women over 80 years (Menning 2006, p. 9; see Figure 10). Menning and Hoffmann (2009b, pp. 75 f.) were also able to show, based on an analysis of the longitudinal data of the Socioeconomic Panel (SOEP), that the need for assistance in ADL among the very old in private households leveled off and that the need for assistance in IADL actually fell in the years 1992 to 2005. They ascribed this development to the overall better health of the younger age groups and the increased use of technical aids that make coping with everyday life easier.

## Limitations in ADL



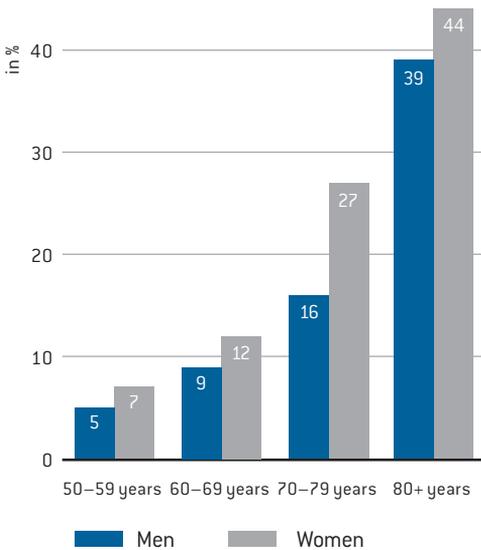
» Fig. 9: Proportion of those queried with at least one ADL limitation, acc. to age and sex, SHARE 2004 [Menning 2006, p. 8]. Question: “Have you had problems with the following activities because of health problems or because of memory? Getting dressed, including putting on socks and shoes; going across the room; bathing or showering; eating, e.g., cutting up your food; getting into and out of bed; using the bathroom, including sitting down on and getting up from the stool?”

Of course, very old persons living in nursing care facilities are much more greatly affected by such limitations in everyday activities than the rest of the population. Data on this may be found in the 2005 study entitled “Möglichkeiten und Grenzen selbständiger Lebensführung in Einrichtungen (MuG IV)” [Chances and Limits of Independent Living in Institutions] [Schneekloth 2006, quoted

acc. to Menning 2006, p. 11]. There we read that, according to the caretakers, the following proportions of residents were not (or only with great difficulty) able to perform basal activities of daily living (ADL) alone: showering/bathing (88%), getting dressed/undressed (77%), bladder and bowel control (68%), using the toilet on their own (64%), walking about in their room (56%), eating/drinking (39%). The residents were not (or only with great difficulty) able to perform the following instrumental activities of daily living (IADL): using public transportation (91%), shopping (89%), managing own financial affairs (85%), paying someone else a visit (80%), finding their way around outside (78%), making a telephone call (56%). On the other hand, institutional residents in need of care do have many everyday skills that can and should be fostered and mobilized [ibid.].

A rare insight into the health situation of the “very, very old” may be found in the Second Heidelberg Study of 100-Year-Olds [Jopp et al. 2013]. The 100-year-olds studied there and their relatives report an average of four health problems that lead to restrictions in everyday life. Hearing and sight problems as well as falls were mentioned most often. Compared to the First Heidelberg Study of 100-Year-Olds from 2000/2001, the state of functional health of the 100-year-olds, however, had improved. Today, a large majority of this age group is still able to carry out basic and extended activities of everyday living on their own. There were, however, large differences between the individual types of activities: Whereas 83% said they could eat, 52% make a phone call and 53% go to bed and get up on their own, only 6% were able to do housework, 13% to take a shower and 22% to prepare a meal on their own [ibid., pp. 22 f.]. The mental capacity of the 100-year-olds has also gotten better since 2000/2001, though about half of them still suffer

## Limitations in IADL



>> Fig. 10: Proportion of those queried with at least one IADL limitation, acc. to age and sex, SHARE 2004 (Menning 2006, p. 9). Question: "Have you had problems with the following activities because of health problems or because of memory? Using a map to get around in a strange place; preparing a warm meal; shopping for groceries; making a telephone call; taking your medicines; working around the house or garden; dealing with money matters, e.g., paying bills or controlling spending."

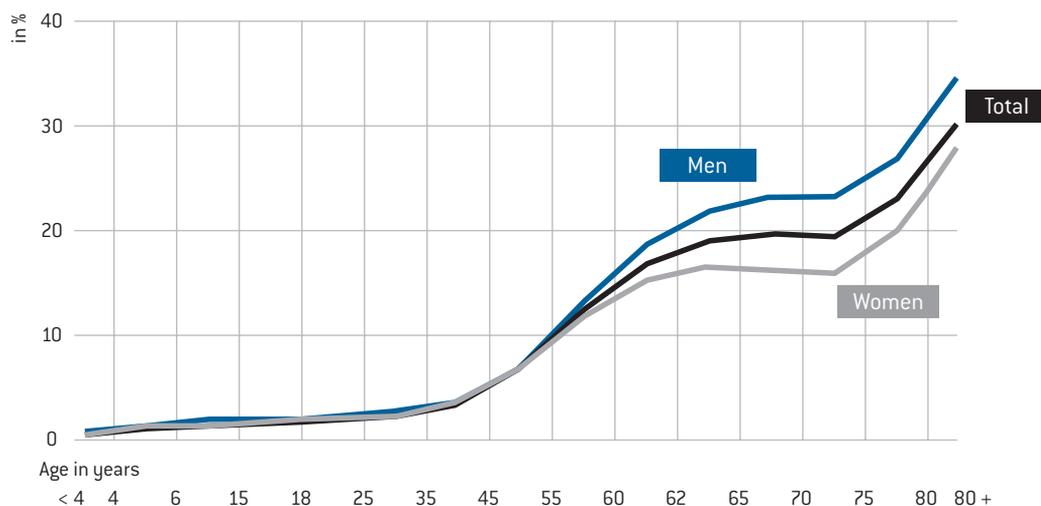
from an fair or high number of limitations. Thus, it is not surprising that four out of five 100-year-olds queried report receiving benefits from the German nursing care insurance program. The authors of that study come to the conclusion that the increase in life expectancy has not led to more people 100+ years old becoming sick and impaired; rather, in their opinion, the results highlight the fact that preventative and medical-rehabilitative offers can be meaningful and effective even at a very high age (ibid., pp. 63 f.).

## Disability

In contrast to the concepts of functional health and activities of daily living propagated by the health sciences, the term "disability" (comparable to the concept of "care-dependent") is a category taken from social legislation. According to the 9th Book of the German Social Security Act concerning "Rehabilitation and Participation of Disabled Persons," people are designated as "disabled" when "a physical function, mental function or emotional function is highly likely to deviate from the status typical for the person's age group for a period of longer than 6 months and thus restrict their participation in social life." "Severely disabled" persons in turn have a "level of disability of at least 50%" (Para. 2 Social Security Act XI). Receiving the status of severely disabled means filing an appropriate application with the respective authorities, who provide the corresponding identification card once the application has been approved. At the end of 2011, 83% of all severe disabilities were due to diseases and nearly two thirds of the severely disabled (62%) suffered from physical disabilities (Statistisches Bundesamt 2013d, p. 5).

Because diseases and physical limitations increase with rising age, it is not surprising that the proportion of severely disabled persons also rises with increasing age (Statistisches Bundesamt 2013e, p. 121; see Figure 11). At the end of 2011, 17% of the persons 60 to 62 years of age had received the official status of severely disabled (men: 19%, women: 15%). Among the 80+-year-olds this rate was almost double at 30%. Here, too, there is a gender effect, with 35% of the very old men and 28% of the very old women being considered severely disabled. The difference may be traced back to the fact that more men than women receive the status of severely disabled for occupational reasons, which then provides them with certain

## Severely disabled persons at the end of 2011



» Fig. 11: Proportion of severely disabled persons on 31 December 2011, acc. to age and sex (Statistisches Bundesamt 2013d, p. 6)

advantages on the job market and when applying for early retirement (Statistisches Bundesamt 2013d, p. 6). Being officially recognized as a severely disabled person is not equivalent to being in need of or dependent on care: Up to a very high age in fact, the proportion of the overall population in need of or dependent on care is much less than the number of persons declared to be severely disabled (cf. Berlin-Institut 2009, p. 19). Only upon reaching a very old age does convergence occur: At the end of 2011, 32 % of the persons over 80 years were care-dependent (Statistisches Bundesamt 2013f, p. 9; own calculations).

Nowadays a large portion of people with mental and multiple disabilities reach old or very old age. Previous generations were persecuted and sometimes killed by the Nazis, and improved medical

care since has increased their life expectancy considerably. These people and their now old relatives as well as the institutional settings for the disabled are poorly prepared to deal with this new situation. Existing and new offers of help for old people, the disabled and those dependent on long-term care must be coordinated and concerted that very old persons with mental disabilities also have the opportunity to live as independently and autonomously as possible (cf. Berlin-Institut 2009, pp. 6 and 20).

## » 05.3 Physical Diseases

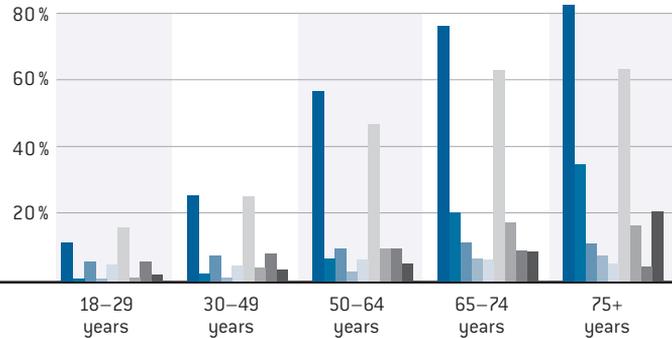
This section discusses the most important impairments and diseases faced by very old persons. Before looking at the individual types of diseases and syndromes, we want to explore the spectrum of the most common diseases.

### Spectrum of Diseases

Representative population data on the spectrum of diseases found among 80+-year-olds are very flawed, as mentioned in the introduction to this chapter as well as in the section on multimorbidity. An outline of the most common afflictions of the very old may be found in the analysis of the telephone survey GEDA 2009 (Fuchs et al. 2012). Depending on the type of disease, that survey looked only at lifetime prevalence (“Have you ever been diagnosed with this disease?”) or at prevalence in the last 12 months (“Have you had this disease in

### Prevalence of disease groups in women

Note: the columns at the right represent the data given in the table directly below

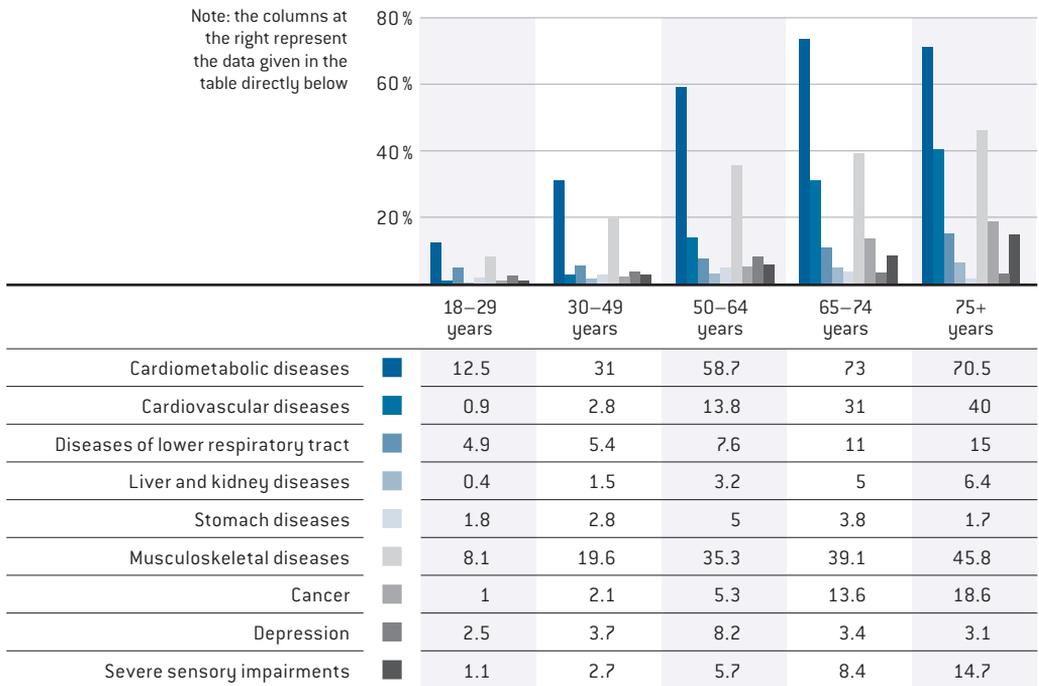


» Fig. 12: Prevalence of various disease groups in women, in %, GEDA 2009 (Fuchs et al. 2012, Table Appendix)

the past 12 months?”). Lifetime prevalence was established based on the presence of irreparable organ damage or chronically degenerative diseases (cancer, heart attack, stroke, coronary heart disease). In all other cases the 12-month or point (present-day) prevalence were used to determine existing health problems (ibid., pp. 577 f.). Note that the age group 75+ years given there reflects more the disease spectrum present at the beginning of very old age. Also, no statements can be made concerning social inequalities as well as differences in immigration background. Gender differences, on the other hand, are possible.

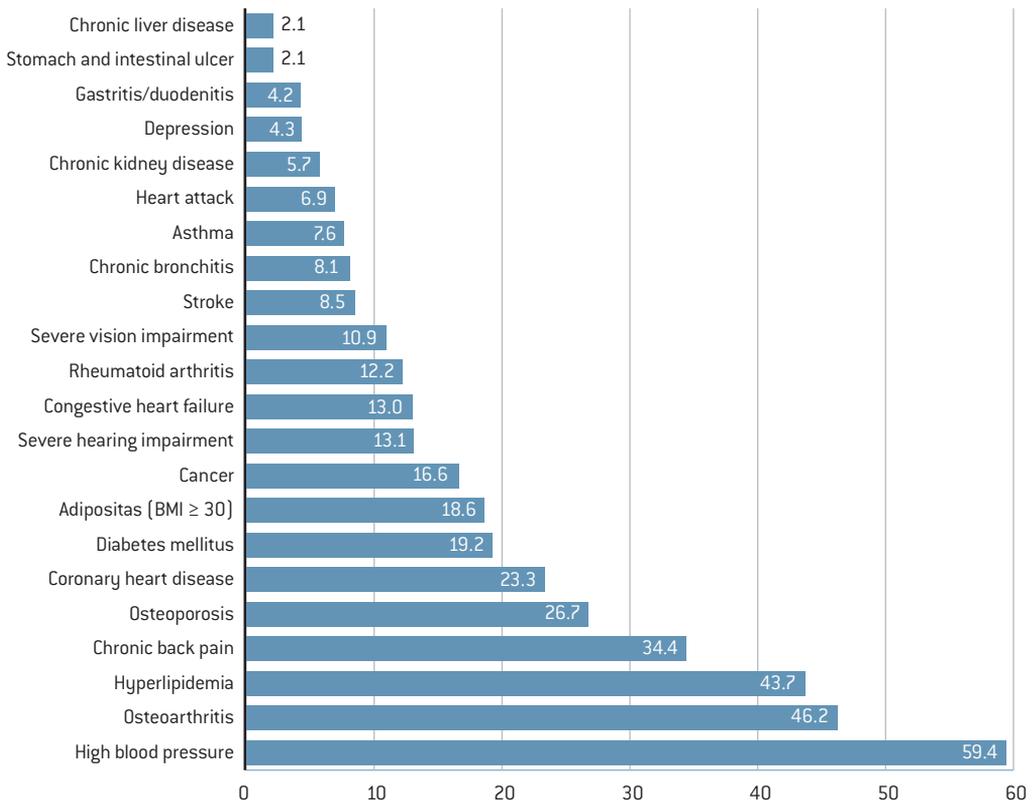
Figures 12 and 13 demonstrate the differences in the prevalence of individual types of diseases (i.e., when at least one disease from the group is present) according to sex and age. In men and women 75 years and older, cardiometabolic diseases (high blood pressure, high blood lipid levels, obesity, diabetes), musculoskeletal diseases (arthrosis, osteoarthritis, osteoporosis, chronic back pain) and cardiovascular diseases (coronary heart disease, heart attack, congestive heart failure, stroke) take places one through three. Other groups of diseases often found in men and women over 75 years, albeit in a different order, are severe sensory im-

## Prevalence of disease groups in men



» Fig. 13: Prevalence of various disease groups in men, in %, GEDA 2009 [Fuchs et al. 2012, Table Appendix]

## Prevalence of diseases/health problems in women 75+ years old

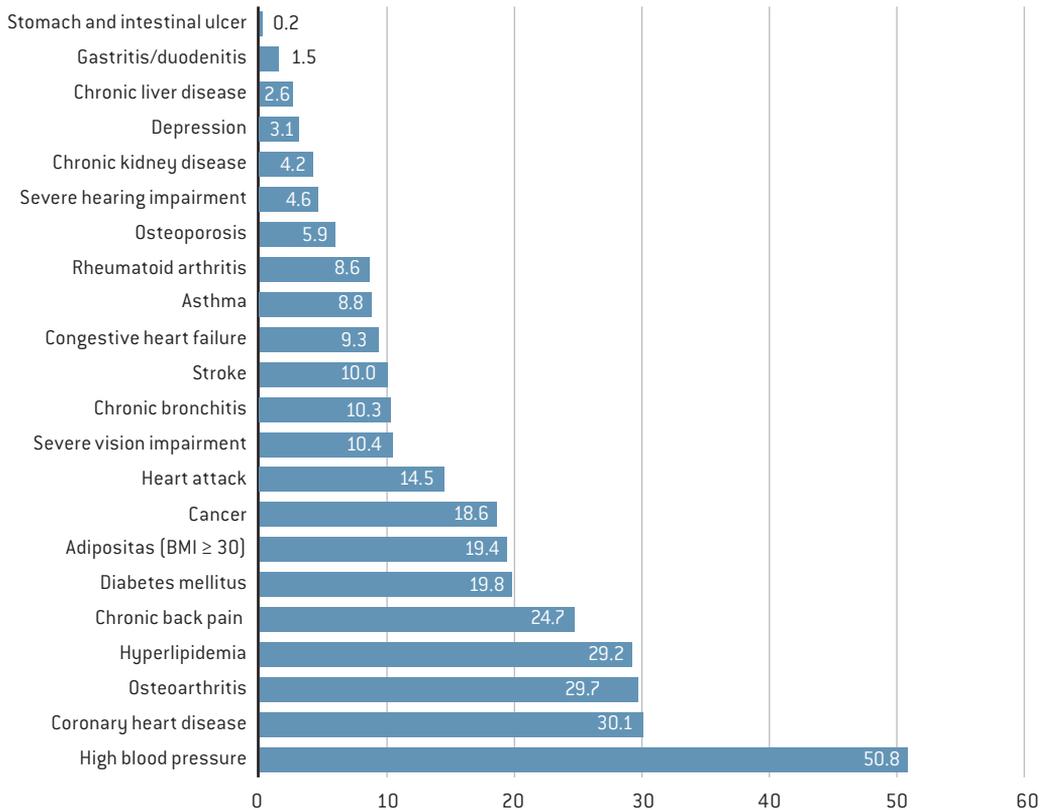


>> Fig. 14: Prevalence of diseases/health problems in women 75+ years old, in %, GEDA 2009 (Fuchs et al. 2012, Table Appendix)

pairments (severe hearing and sight impairments), cancer as well as diseases of the lower respiratory tract (asthma, chronic bronchitis). The prevalences of these six groups of diseases increase considerably with increasing age, although a stagnation sometimes occurs at the transition to age 75 and older. Whereas 75+-year-old women suffer more often from cardiometabolic and musculoskeletal diseases than men of this age group, men come down with more cardiovascular diseases and diseases of the respiratory tract.

Figures 14 and 15 show the prevalence of the 22 different chronic diseases and health problems that were queried in the GEDA 2009 study for men and women aged 75+ years (see also Tables 57 and 58 in the Appendix). High blood pressure took first place of the most common diseases in both sexes (women 59%, men 51%). Other diseases or afflictions that were very prevalent among very old women and men were arthrosis (women 46%, men 30%), hyperlipidemia (high blood lipid levels, women 44%, men 29%), chronic back pain (women

## Prevalence of diseases/health problems in men 75+ years old



» Fig. 15: Prevalence of diseases/health problems in men 75+ years old, in %, GEDA 2009 (Fuchs et al. 2012, Table Appendix)

34 %, men 25 %) and coronary heart diseases (women 23 %, men 30 %). Nearly the same number of men and women aged 75+ years had the following diseases: diabetes mellitus (women 19 %, men 20 %), obesity (women 19 %, men 19 %) and cancer (women 17 %, men 19 %). Finally, osteoporosis is a typical disease afflicting very old women, whereas men of the same age group suffer less from this problem (women 27 %, men 6 %).

## Cardiometabolic Diseases

In addition to excessive alcohol consumption and smoking, the cardiometabolic diseases (high blood pressure, obesity, high blood lipid levels and diabetes) pose the greatest risk factors for chronic development of arteriosclerosis (constriction and hardening of the arteries through deposits), which in turn is responsible for congestive heart failure, coronary heart disease, heart attack and stroke]

(Saß et al. 2010, p. 407). Cardiometabolic diseases increases with age, so that according to the GEDA 2009 study about three quarters of the 75+-year-olds studied were afflicted (women 83 %, men 71 %) (Fuchs et al. 2012, Table Appendix).

High blood pressure (hypertension) is caused by a combination of hereditary predisposition and poor dietary and lifestyle circumstances (too much salt and alcohol consumption, obesity, physical inactivity, stress), less often through other primary diseases. It can be alleviated, however, by changing one's diet and lifestyle as well as by adopting a drug therapy (RKI 2011a, p. 128). According to the age-indifferent definition of the WHO, hypertension is present when the blood pressure values permanently exceed 140 mm/Hg (systolic) or 90 mm/Hg (diastolic) (Nowossadeck und Nowossadeck 2011, p. 24). The risk of being afflicted with hypertension rises continually from mid-life onward. In the GEDA survey from 2009 (Fuchs et al. 2012, Table Appendix), 34 % of the women and 37 % of the men between the ages of 50 and 64 reported suffering from hypertension in the past 12 months. Among those 75+ years old, 60 % of the women and 51 % of the men were afflicted.

Being overweight causes a strain on both the cardiovascular system and the musculoskeletal system—and promotes the development of diabetes as well. Whether someone is considered underweight, normal weight or overweight is often ascertained by calculating the body mass index (BMI). BMI is determined by dividing body weight (in kg) by the square of one's height (in cm). According to the WHO, adult men with BMI values under 18.5 are considered underweight, from 18.5 to 25 normal weight and from 25 to 30 overweight. A BMI value over 30 is considered pathological because of the high proportion of body fat and is designated as *adipositas* (RKI 2011a, p. 100). Bodyweight increases in everyone over the course of a lifetime, so that

older people often are overweight or even obese, that is, have a BMI over 25 and 30, respectively. When they become very old, however, the average BMI tends to fall, possibly as the result of diseases, the high mortality of overweight people or because of some other change in metabolism at a high age. According to the 2009 microcensus of the Federal Statistics Office (Statistisches Bundesamt 2011c, p. 8), 21 % of the men and 22 % of the women between 70 and 74 years had a BMI of 30+; in those 75+ years of age this value fell to 16 % and 17 %, respectively. This development was also found in the GEDA survey of 2009 (Fuchs et al. 2012, Table Appendix), where the proportion of women and men who were obese (BMI 30+) rose steadily up to age 65–74 years (women 24 %, men 22 %), only to fall again substantially in those over 75 years of age (women 19 %, men 19 %).

Hyperlipidemia is lipid metabolic disorder that results in high levels of cholesterol and triglycerides in the blood. A total cholesterol level of more than 190 mg/100 ml has been deemed to pose a very high risk of cardiovascular disease according to the European Society of Cardiology. One can influence the cholesterol value by engaging in physical activity, losing weight, changing one's diet and taking appropriate drugs (RKI 2011a, p. 85). Hyperlipidemia increases over the course of a lifetime and reaches its zenith in the 65–74-year-olds: According to GEDA 2009 (Fuchs et al. 2012, Table Appendix) 44 % of the women and 38 % of the men between 65 and 74 years reported having had high blood lipid levels diagnosed in the past 12 months. Whereas this level remained constant in women over 75 years (44 %), among men in this age group it fell markedly to 29 %.

Diabetes mellitus is a metabolic disease that leads to an increased concentration of sugar in the blood. There are two distinct forms: Type 1 diabetes generally occurs up to early adulthood and is

characterized by an absolute lack of insulin; type 2 diabetes is characterized by a diminished effect and/or production of insulin and is responsible for 80 % of all diabetes cases. Type 2 diabetes usually appears from the age of 40 onward (thus the name “adult-onset diabetes”) and increases in incidence with increasing age (RKI 2011a, p. 73; Nowossadeck and Nowossadeck 2011, p. 31). According to the GEDA 2009 study, 19 % of women and 20 % of the men over 75 years reported having been afflicted with the medical diagnosis of diabetes in the course of the past 12 months (Fuchs et al. 2012, Table Appendix). Since type 2 diabetes often goes undetected, the true prevalence is likely much higher (RKI 2011a, p. 73). The main objective of therapy is to lower and stabilize the blood sugar level, which means weight control through physical activities and readjustment of diet, supported by treatment with tablets and/or insulin shots. The goal is reduce the damage to the blood vessels and peripheral nerves, which can otherwise lead to coronary heart disease, blindness, kidney failure and amputations of legs or feet (Heidemann et al. 2011, pp. 1 and 4).

## Cardiovascular Diseases

Cardiovascular diseases arise as the result of the long-term hardening and constriction of the arteries (arteriosclerosis), the risk of which is increased by the cardiometabolic risks described above. In the GEDA survey of 2009, 35 % of the women and 40 % of the men over 75 years reported suffering from one or more cardiovascular disease (Fuchs et al. 2012, Table Appendix). This includes above all the two main groups: ischemic heart diseases (circulatory disorders of the coronary vessels) and cerebrovascular diseases (circulatory disorders of the blood vessels in the brain). The ischemic

heart diseases include coronary heart disease (CHD), the main symptom being angina pectoris (pain in the chest), heart or myocardial infarct (complete occlusion of the coronary vessels) as the acute complication of CHD as well as chronic heart insufficiency (heart failure), which generally can also be traced back to CHD. The most important acute complication of cerebrovascular circulatory problems is stroke, which occurs when there is a sudden loss of blood circulation to important parts of the brain, sometimes also through a brain hemorrhage (Nowossadeck and Nowossadeck 2011, pp. 22–26; Saß et al. 2010, p. 407). Further cardiovascular diseases not discussed here include chronic rheumatic heart disease (heart valve disease), peripheral arterial occlusive disease (circulatory problems in the legs) and venous diseases (thrombosis, varicose veins). Cardiovascular diseases are responsible for about half of all deaths in the very old (Statistisches Bundesamt 2013g, p. 13): In 2012 the proportion of deaths stemming from cardiovascular diseases (ICD-10 100-199) among all deaths in 80–84-year-olds was 42 % (men) and 46 % (women); for those 85–89 years old it was 47 % (men) and 53 % (women); for those 90 and older it was 53 % (men) and 59 % (women).

The lifetime prevalences of women and men coming down with a cardiovascular disease increase greatly at older age. According to the results of the GEDA 2009 survey, the highest values occur in persons older than 75 years, with men being more susceptible to CHD than women in this age group. 14 % of the women and 24 % of the men between 65 and 74 years report having received a diagnosis of coronary heart disease; 23 % of the women and 30 % of the men over 75 years, however, had received such a diagnosis (Fuchs et al. 2012).

Among those 75 years and older, 15 % of the men (65–74-year-olds: 14 %) and 7 % of the women (65–74-year-olds: 6 %) had already had a heart

attack. Men have a higher prevalence than women, although the values among the young old and the very old do not differ (*ibid.*). This is likely due to the fact that heart attacks tend to be deadlier the older one is. Recent data from the KORA Heart Attack Registry in Augsburg (Helmholtz Zentrum München 2013), which collects the incidence of heart attacks among 25–84-year-olds in greater Augsburg, confirm this: From 2009–2011 75% of the men and 72% of the women between 80 and 84 years of age who had a heart attack died within the first 28 days. In the age group 75–79 years, the lethality was 58% (men) and 60% (women); in those 70–74 years it was 48% (men) and 50% (women). No comparisons with the past are possible since the data in Augsburg have been collected only since 2009. Still, it seems plausible to maintain that the very old also had a role in the major reduction in lethality that occurred among persons younger than 80 years observed over the past 25 years.

The most common diagnosis among men and women over 85 years being admitted to the hospital is heart failure (cf. Figures 56 and 57 in the Appendix). 13% of the women and 9% of the men 75+ years old reported on the GEDA 2009 that they were presently afflicted by heart failure; among the 65–74-year-olds the rate was 7%.

The prevalence of stroke rises exponentially with increasing age, whereby men have slightly higher rates than women: Whereas 2% of the women and 3% of the men between 50 and 64 years have already had a stroke, the rate among those 65 to 74 years is 4% of women and 6% of men. The highest rates are found among persons 75+ years old: 9% of women and 10% of men (Fuchs et al. 2012). Between 1980 and 2009, the lethality of cerebrovascular diseases among persons 65 years and older fell by about 50% and has now shifted to among the very old: In 1980 the average age at death was 76 (men) and 78 (women); in 2009 it had reached

79 (men) and 83 (women) (Nowossadeck and Nowossadeck 2011, p. 25). Rapid hospitalization and prompt subsequent rehabilitation measures are responsible for this positive development and have also further reduced the danger of permanent brain damage from stroke. In the age group 85+ years, stroke is the third-leading diagnosis upon hospital admission among both men and women; in men it is the most common, among women the second most common, reason for beginning inpatient rehabilitation (Statistisches Bundesamt 2013h and 2013i, see Chapter 05.8).

## Musculoskeletal Diseases

In the GEDA 2009, musculoskeletal diseases were present in about two thirds of the women (64%) and nearly half of the men (46%) 75 years and older (Fuchs et al. 2012). Compared to those 65 to 74 years old, this rate remained steady among women and rose by 6% in men. Musculoskeletal diseases among the old represent one of the main reasons for functional deficits and difficulties in leading an independent life (see Chapter 05.2).

The prevalence of chronic back pain increases with age, though even middle-aged adults can suffer from back pain as well and the proportion of women is higher than men in all age groups. The age group-specific prevalences of women are as follows: 20% (30–79 years), 27% (50–64 years), 35% (65–75 years) and 34% (75+ years); in men they are 14% (30–49 years), 22% (50–64 years), 23% (65–75 years) and 25% (75+ years). Thus, there is no major increase beginning with the young old: Chronic back pain is not specific to very old age (*ibid.*).

Joint diseases are dominated by arthritis (i.e., osteoarthritis), which is characterized by a progressive attrition and degradation of the articular

cartilage and tissue. The main risk factors are female sex, increasing age and genetic predisposition, which are exacerbated by external factors such as excessive or inappropriate stress to the joints, generally through obesity, deformations or injuries (RKI 2011a, p. 91). In the age group 85+ years, coxarthrosis (arthrosis of the hip joint) and gonarthrosis (arthrosis of the knee joint) are, respectively, the third and fourth most common diagnosis in women and the third and fifth most common diagnosis in men entering rehabilitation facilities (Statistisches Bundesamt 2013i, cf. Figures 58 and 59 in the Appendix). The prevalence of arthrosis is similar to that found with back pain: In the GEDA of 2009 (Fuchs et al. 2012) more women than men reported suffering from an arthrosis. Those 65 to 74 years of age (women: 46 %, men: 26 %) did not differ greatly from those 75+ years old (women: 46 %, men: 30 %).

Arthritis is a chronic recurrent inflammatory disease of the joints caused by autoimmune processes; the most common type is rheumatoid arthritis. Such inflammatory diseases often produce functional impairments, chronic pain and reduced quality of life. The main risk factors are female sex and old age (RKI 2011a, p. 94), as revealed in the results of the GEDA survey of 2009 (Fuchs et al. 2012), where 12 % of the women and 9 % of the men 75+ years old report having been afflicted during the past 12 months by rheumatoid arthritis. Among those 65–74 years old, the rate was 11 % in women and 5 % in men.

Osteoporosis is understood as the pathological brittleness of the bones caused by a rapid degradation of bone substance and changes to the microstructures of the bones. The reduced bone density increases the danger of broken bones through falls, which often then entail long and expensive stays in the hospital with subsequent rehabilitation treatment (RKI 2011a, p. 97). In persons 85+ years old,

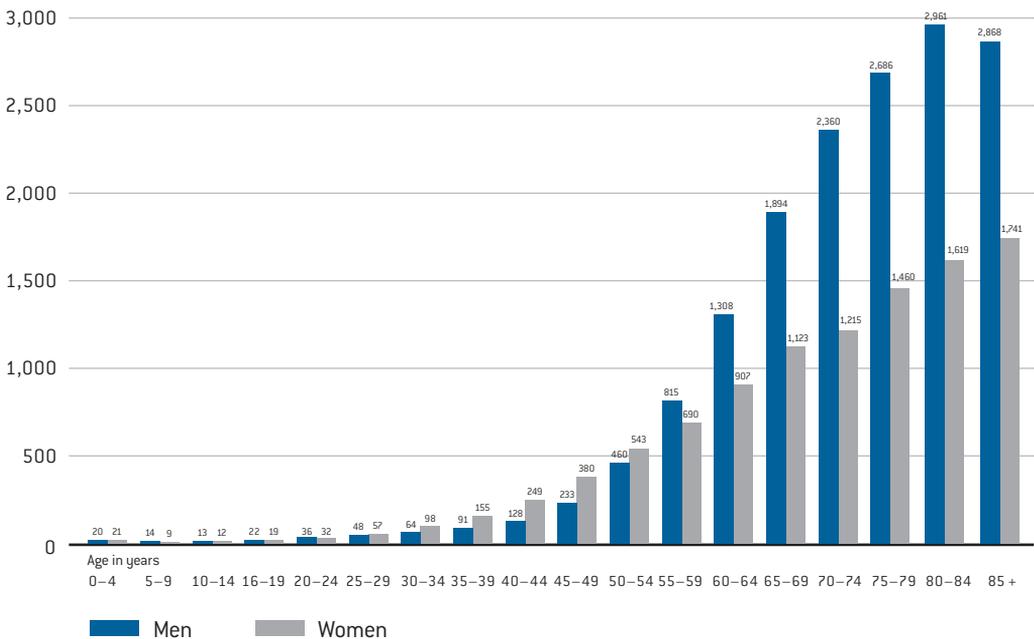
breaking the thighbone (femur) is among women the second most common and among men the fourth most common diagnosis upon admittance to a hospital. In rehabilitation facilities, this diagnosis is even the leading cause of admittance among women 85+ years and the second most common cause among men (Statistisches Bundesamt 2013h and 2013i, see Chapter 05.8). Mostly women are subject to osteoporosis, which increases with age: In the GEDA 2009 study 27 % of the women 75 years and older reported suffering from osteoporosis in the past 12 months (50–64 years: 8 %, 65–74 years: 18 %). The prevalence among men was considerably lower and rose from 4 % among those 50–64 years old to a moderate rate of 6 % among the 75+-year-olds (Fuchs et al. 2012). Besides these age- and sex-related relationships, the risk of coming down with osteoporosis also rises in the presence of a lack of exercise, improper diet, specific underlying diseases and the intake of certain medicines. These factors, however, can be positively influenced through lifestyle changes and physical training (RKI 2011a, p. 97).

## Cancer

According to the GEDA 2009 study, the risk of coming down with cancer during one's lifetime lies at 17 % for women and 19 % for men over 75 years (Fuchs et al. 2012). This lifetime prevalence has increased for both sexes in all age groups, though the rate increased only in men over 75 years compared to those 65 to 74 years (14 %) and not among women in the same age group (65–74-year-olds: 18 %). Only at a very high age did men tend to contract cancer more often than women, whereas previously it was the other way around.

Gender differences were also found in estimates of age-specific rates of new afflictions with cancer

## New cases of cancer



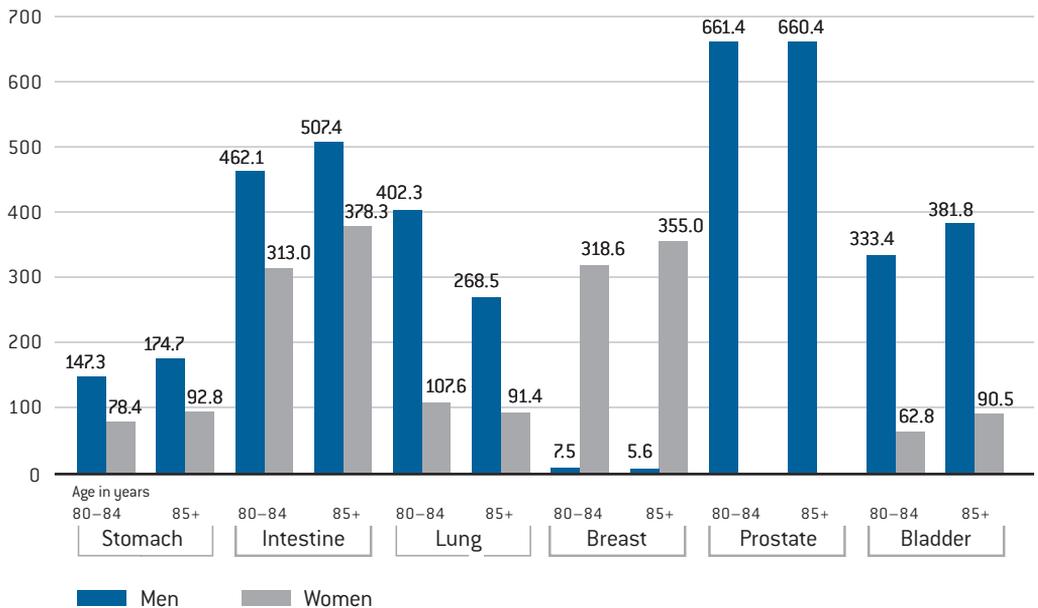
>> Fig. 16: Estimates of age-specific cancer incidence per 100,000 population, total cancer incidence (without other tumors of the skin including noninvasive bladder tumors, C00–C97 without C44 with D09.0 and D41.4) (GEKID 2014)

made by the Society for Epidemiological Cancer Registration in Germany (Gesellschaft der epidemiologischen Krebsregister in Deutschland, GEKID) for the year 2011 (GEKID 2014, cf. Figure 16). The rates of incidence increased in both sexes with increasing age, albeit at different speeds: Whereas among those 25 years up to the age group 50–54 years, women had a higher risk of contracting cancer than men (women 50–54: 543 cases/100,000 population, men 50–54: 460/100,000 population), in the age group 55–59 years things change: From then on the incidence rates for men always increase at a greater pace than for women. From

the age of 80 years onward, however, there are no longer any major differences; the slightly reduced rate among very old men may be traced back to the clear decrease in new cases of lung cancer (Figure 16).

The most commonly diagnosed tumors among very old women are breast cancer and intestinal cancer; among very old men it is cancer of the prostate, intestine, lung and bladder (cf. Figure 17). But these diseases have specific risk profiles and very different courses, survival rates and therapeutic possibilities. There are few verified data concerning the causes of cancer, and for this reason there

## Cancer cases (neoplasms): most common causes



» Fig. 17: Estimated age-specific incidence of cancer (cases per 100,000 population) for the most common types of tumor among the very old, 2011 (GEKID 2014)

are proven prevention strategies for only a few types of tumors. The most important risk factors that are amenable to direct influence are heavy smoking (which is the main cause of lung and bladder cancer), high alcohol consumption, obesity, physical inactivity, excessive consumption of red meats, low consumption of fruit and vegetables and high exposure to UV rays from sunlight. Further causes are presumed to lie in environmental toxins, radiation damage, chronic infections and genetic predispositions (RKI 2013, pp. 19 f.). Early-detection programs exist for a number of cancers, as discussed further in Chapter 05.7.

Whereas cancer is still the most common cause of death among the young old (60–75 years), in persons over 75 years of age it takes only the second position behind the increasing number of deaths due to cardiovascular diseases. The proportion of deaths due to cancer (neoplasms) gauged against all causes of death actually decreases over time (Statistisches Bundesamt 2013g, pp. 12 f.; Figures 21 and 22): In men the rates fall from 32% (75–79-year-olds) to 25% (80–84-year-olds) to 20% (85–89-year-olds) to 13% (90+-year-olds); in women the rates fall from 31% (75–79-year-olds) to 21% (80–84-year-olds) to 14% (85–89-year-olds) to 8% (90+-year-olds).

## Chronic Respiratory Ailments

Diseases of the respiratory system take third place in the list of causes of death. Their proportion among all causes of death in persons over 80 years remains nearly constant at ca. 10 % for men and ca. 7 % for women (Statistisches Bundesamt 2013g, pp. 12 f.; Figures 21 and 22). The two most important forms are bronchial asthma and chronic-obstructive bronchitis, the latter of which often turns into pneumonia. According to the GEDA survey of 2009 (Fuchs et al. 2012), the prevalence for having one of these two diseases lies at 11 % among women older than 75 years (50–64 years: 11 %, 65–74 years: 12 %) and among men older than 75 years at 15 % (50–64 years: 8 %, 65–74 years: 11 %). The prevalence for such an affliction increases in men over time up to a very old age, whereas it remains constant in women at the level of the young old.

Bronchial asthma is a chronic inflammation of the airways that leads to an irreversible constriction of the bronchial tubes and to the production of a thick mucus secretion. Asthma makes itself apparent in repeated attacks of shortness of breath and/or a chronic dry cough. There are both allergic and nonallergic causes of asthma (RKI 2011a, p. 70). The prevalence rises continuously with increasing age: In the GEDA 2009 (Fuchs et al. 2012) 8 % of the men and women aged 75+ reported having asthma, which is double the rate found in persons 18 to 29 years (4 %).

The most severe chronic affliction of the airways is chronic bronchitis, which means at least a 3-month-long cough with phlegm. It can develop further into a chronic-obstructive bronchitis if the respiratory tract is constricted (RKI 2011a, p. 88). The 12-month prevalence for chronic bronchitis increases with age considerably: According to the GEDA 2009 study, 8 % of the women and 10 % of the men over 75 were afflicted with this disease. Over

time this disease often turns into an irreversible lung emphysema (the pathological distension of the lung alveoli). Chronic-obstructive bronchitis and lung emphysema are classified together as “chronic obstructive pulmonary disease” (COPD) and is the clear major cause of death within the group of pulmonary diseases. The main risk factor for COPD is heavy smoking (“smoker’s lung”), followed by air contaminated with toxins (dust, gases). COPD cannot be healed as such, but only delayed, especially through treatment with drugs (Nowossadeck and Nowossadeck 2011, p. 33).

## Vision and Hearing Impairments

Severe sensory impairments increase particularly during the transition from old age to very old age (see also Chapter 05.2). In the GEDA survey of 2009 (Fuchs et al. 2012), 21 % of the women and 15 % of the men over 75 years of age reported suffering from severe vision and/or hearing impairments. In the age group of 65–74-year-olds, this was the case in only 9 % of the women and 8 % of the men. This difference is due above all to the different prevalence of hearing problems: 13 % of the women 75 years and older, but only 5 % of the same-aged men reported having severe hearing problems. Vision problems, however, were nearly equal in both sexes in the age group 75+ years—11 % of women and 10 % of men.

Severe vision impairments are caused, on the one hand, by eye diseases or eye anomalies such as short- or farsightedness, cataracts (opacity in the lens), macular degeneration (breakdown of the retina) or glaucoma; on the other hand, they can also result from some other basic disease such as diabetes. Many eye diseases, however, can be treated, even in very old age, through proper glasses or operations (RKI 2011a, p. 63). Severe hearing

afflictions due to old age or to damage to the inner ear from noise or infections can be treated at least partially with hearing aids (*ibid.*, p. 66).

disease among both the men concerned and the doctors who treat them (*ibid.*, p. 526).

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## » 05.4 Mental Diseases

In addition to functional limitations and physical afflictions, mental illnesses can also considerably reduce the quality of life of the very old. Depression, dementia and anxiety disorders are typical of old age and very old age, whereas schizophrenia and psychosomatic diseases occur more often in younger people (Kinzl 2013, pp. 526 and 530). Based on regional studies, Weyerer and Bickel (2007, p. 55) estimated that about a fourth of all people over 65 years in Germany suffer from a mental disease. In the Berlin Aging Study (Mayer et al. 1996, p. 610), a value of 40% was found for people 70 years and older. Often physical disabilities take priority in old age and very old age; the associated functional losses become so pressing that mental impairments go unrecognized—even though they can have great influence the course of physical diseases and affect the ability and willingness of the person to participate in rehabilitative and therapeutic measures (Kinzl 2013, p. 530). Especially in the very old, the incidence of mental illnesses and the respective necessity for therapy may then be underestimated. This is particularly true for older men: That they have lower rates of mental illness than same-aged women may be a reflection of socially prescribed masculinity ideals that lead to brushing off or ignoring the symptoms of mental

### Depression

Many risk factors can accumulate at a very old age and then lead to depression. Among them are diseases involving chronic pain and functional losses that make it difficult to cope with tasks of everyday life. In addition, experiences of social isolation and loneliness, the death of close relatives or companions become more frequent (cf. Weyerer and Bickel 2007, p. 115). Depression requires treatment when the main symptoms—despondent mood and sadness, loss of interest and joy, lack of drive and energy—last for 2 weeks or longer and are not the result of a simple mourning process, some other psychiatric or organic disease. Depending on the intensity and number of symptoms, one differentiates between light, moderately severe and severe “depressive episodes” and weaker forms of “dys-thymias” (gloomy or sad mood) (RKI 2010, pp. 9 f.).

A medically or psychotherapeutically determined depression or depressive mood was present during the past 12 months in 4% of women and 3% of the men 75 years and older (Fuchs et al. 2012). The values for men remain steady at 3–4% regardless of the age group (with the exception of the 50–64-year-olds, who had a prevalence of 8%<sup>30</sup>). In women, on the other hand, the values were steady at 8–10% between the ages of 30 and 74, only to fall at later ages (Fuchs et al. 2012). In the Berlin Aging Study, which also included residents of old-age facilities, 9% of the persons interviewed 70 years and older were considered depressed—25%

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30 The higher rate of depression diagnosed in men may be linked to the regular examinations carried out as part of the process of retiring and receiving social security benefits.

with a light, 68 % a moderately severe and 7 % a severe depression. There was no evidence of changes in the prevalence between the ages of 70 and 100 years (Mayer et al. 1996, pp. 610 f.). Depression is particularly prevalent among persons living in care facilities, where rates of depressive symptoms of up to 50 % and severe depression in up to 20 % have been registered (Weyerer and Bickel 2007, p. 120).

Because depressive symptoms such as sleep disorders or anhedonia may be misinterpreted as “normal” age-related phenomena, depression in older people often goes undiagnosed or is considered not in need of treatment. For this reason, depressive older people disproportionately fail to receive the psychotherapy or drugs they should be receiving (RKI 2010, p. 24). This state of affairs is worrisome because depression is considered to be one of the most important risk factors for suicide (see Chapter 05.5): It is estimated that about 15 % of the patients with severe depressive disorders end up killing themselves; vice versa about half of all suicides may be traced back to a depression (RKI 2011a, p. 76).

## Dementia

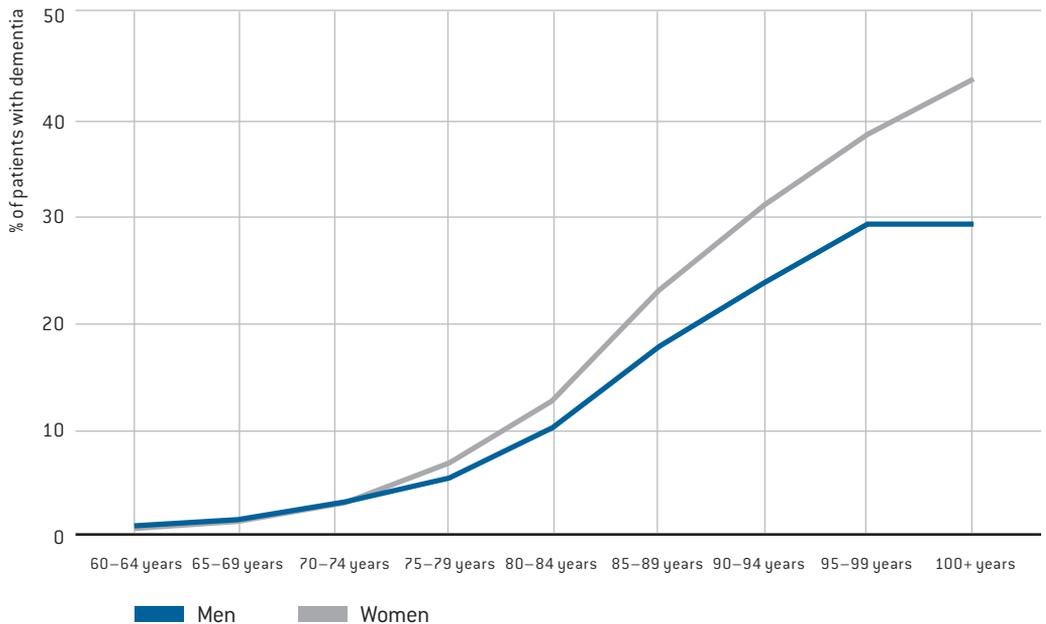
Besides depression, dementia is one of the most common psychiatric illnesses in old age. However, because dementia, unlike depressive disorders, becomes more prevalent over time, it is a typical affliction of old and very old persons. Dementia is as a rule a chronic, progressive brain disorder that leads to increasing memory loss and the degradation of higher mental abilities (cognitive, linguistic, judgment, orientation, planning and executing actions). A diagnosis of dementia demands that these deficits have been experienced for at least 6 months (Kinzl 2013, p. 527; RKI 2005a, p. 7). Because the information processing power of the

brain generally declines with increasing age and becomes both slower and more prone to lapses (especially affecting short-term memory and reactivity), diagnostically differentiating normal age-related changes from light cognitive deficits—which can indeed be precursors of a beginning dementia—is difficult. Also, dementia must be differentiated from short-term conditions of confusion (e.g., because of a lack of fluids, alcohol abuse or side effects of drugs), depressive disorders and IQ deficits (RKI 2005a, p. 8).

Some two thirds of all dementia-related afflictions are of the Alzheimer type, and further 15–20 % are vascular dementias that may be traced back to circulation disturbances in the brain or mini-strokes caused by such disturbances (multi-infarct dementia). The rest consists of mixtures of vascular and Alzheimer types as well as all other forms of dementia (ibid., pp. 8 f.).

The most important risk factor for the development of a dementia syndrome, especially of Alzheimer type, is age. Low educational level also increases the risk of later coming down with dementia, though the exact reason behind this finding is unclear. Except for a few genetically determined types, the reasons why someone contracts Alzheimer dementia are still unknown (ibid., p. 10). Presently, there are no therapeutic venues or specific preventative measures available (BMG 2012, p. 86). Various studies on whole populations do, however, point to a healthy lifestyle, sufficient intellectual stimuli and social participation as lowering the risk of this disease (BMG 2012, p. 87). The development of vascular dementia is fostered by the following risk factors (in descending order): atrial fibrillation, high blood pressure, coronary heart disease, diabetes, chronic alcohol abuse, heavy smoking and lipid metabolic disorders. As with heart attack and stroke prevention, it is important to eat a good and balanced diet, get plenty of

## Incidence of patients with dementia in Germany in the year 2002



» Fig. 18: Incidence of patients with dementia in Germany in the year 2002, acc. to age and sex [Ziegler and Doblhammer 2008, p. 4, own depiction]

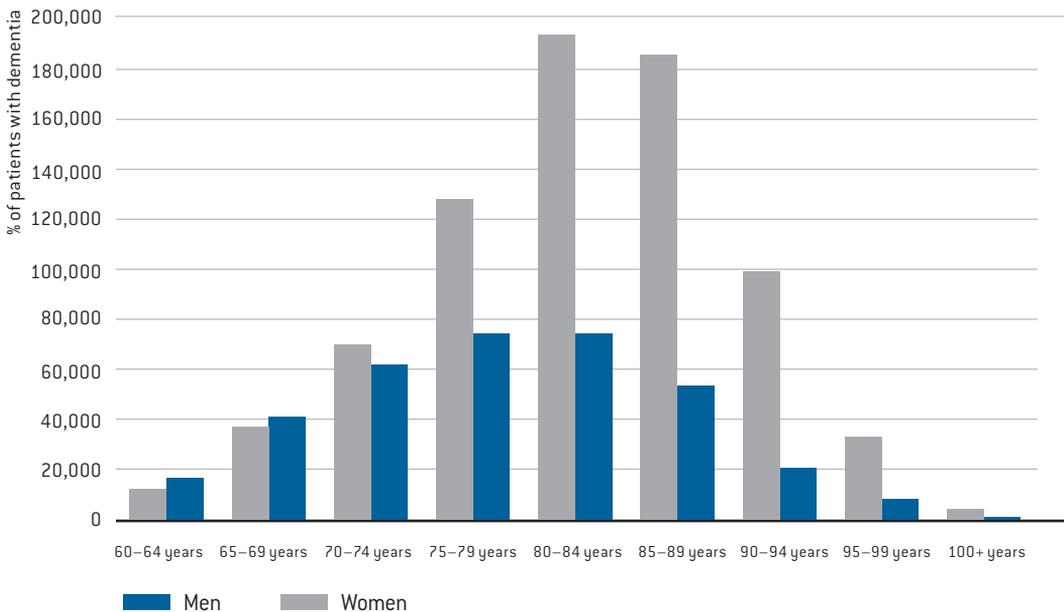
exercise, reduce alcohol and nicotine consumption to a minimum, and take blood-pressure medicine as prescribed [RKI 2005a, p. 11].

It is estimated that the number of persons suffering from dementia in Germany now lies at about 1.2 million or 1.5% of the overall population. On the assumption of no changes to the rates of age-related diseases, Rothgang et al. estimated that the expected rise in the number of older people in the overall population will lead to a large rise in the number of persons with dementia, to ca. 2.5 million or nearly 4% of the population by the year 2060 [Barmer GEK 2010, p. 12]. Ziehler and Doblhammer (2008, 2009), using the data from the statutory

health insurance companies from the year 2002, projected the prevalence of dementia according to age and sex (see Figure 18 and Table 59 in the Appendix).

The risk of being afflicted with dementia rises sharply with increasing age. Whereas less than 1% of those 60–64 years of age suffer from dementia, among the 80–84-year-olds this rate is already more than 10%—and more than one third of all persons over 100 years have dementia. From 75 years onward women have a higher risk of coming down with dementia than men and correspondingly represent a greater share of all persons with dementia, also the result of their overall higher

## Estimate of the number of persons afflicted by dementia in the overall population, 2007



» Fig. 19: Estimate of the number of persons afflicted by dementia in the overall population, 2007  
[Ziegler and Doblhammer 2008, p. 4, own depiction]

proportion in the population (ibid.). Dementia leads to considerable deficits in the ability to carry out activities of daily living, often creating the need for assistance or long-term nursing care. Using the data from 2009 of persons insured with the statutory insurance companies, Rothgang et al. noted that, even though dementia is one of the major causes of need for (long-term) care, less than 40 % of those 85–89 years old in long-term care in fact had dementia. Indeed, 40 % of the women and 54 % of the men receiving long-term care had no symptoms

of dementia up to the time of death. A diagnosis of dementia, on the other hand, nearly always eventually leads to the need for long-term care: 86 % of the men and 94 % of the women diagnosed with dementia who died in 2009 had been receiving long-term care (ibid.).

## » 05.5 Injuries

Besides physical and mental diseases, injuries and the consequences thereof can impair the health and life quality of older people. From age 80 years onward, severe injuries from accidents at home and during leisure time tend to increase. Of particular importance are injuries sustained from falls, which can often be deadly. In addition, suicide as a form of self-injury with deadly outcome also plays a major role in old age.

### Accidents

In the GEDA survey of 2009, more men than women reported having been treated during the past 12 months for an injury sustained in an accident (Saß 2010, p. 2; cf. Figure 20). Nonlethal accidents occurred most among young adults and become more infrequent up to the age of 60–69 years. Only in the age group of 70–79-year-olds were more women than men involved in accidents (likely the result of falls). Among the very old from age 80 onward, the accident rate increased slightly, with men and women showing about the same rate. Two thirds of all accidents occur at home or during leisure-time activities outside the home; there are no specific data available for persons over 80 years of age (ibid., p. 4).

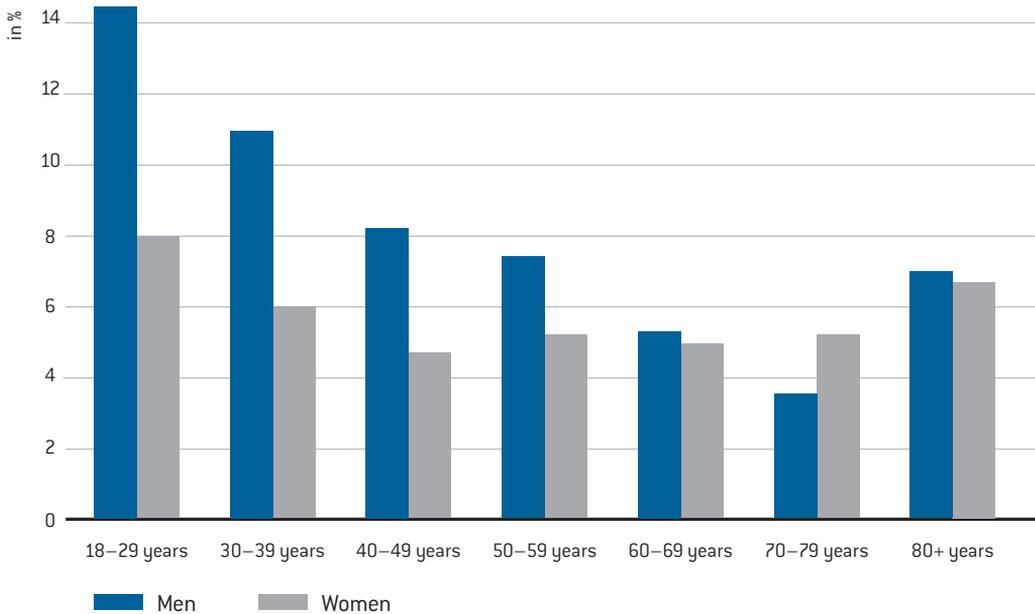
In 2011 36,214 men and 98,165 women between the ages of 80 and 84 years as well as 34,465 men and 152,949 women aged 85+ years were treated in hospitals for injuries and poisonings (not count-

ing any complications in the medical procedures).<sup>31</sup> The numbers are higher among very old women than for all other age groups (Statistisches Bundesamt 2013j, Table 14.1.2). In 2011, the risk of being treated in a hospital for an injury sustained during an accident or from a poisoning was highest for the very old: In the age group of 80–84-year-olds, 4,023 men and 6,721 women per 100,000 population of the same age and sex group were counted; for those 85+ years old there were 6,254 men and 10,614 women per 100,000 population (ibid., Table 14.3.2). Bone fractures (especially of the thigh bone), head injuries (especially to the cranium) as well as spinal injuries were the most common reasons that both men and women aged 80 years and over were treated (ibid., Table 14.1.2).

Particularly falls carry a high risk of death for very old women and men. In the statistics on causes of death for 2012, falls were the most common “external cause of morbidity and mortality” in the age groups 80–84, 85–89 and 90+ years (ICD Chapter XX). At a distant second to falls come suicide and vehicular accidents (Statistisches Bundesamt 2013g, p. 8). In 2012, the age-specific risk of dying of a fall rose from 85 cases per 100,000 population among the 80–84-year-olds to 176 cases per 100,000 population among the 85–89-year-olds, to 328 cases per 100,000 population among the 90+-year-olds. In all age groups men are at a greater risk than women (ibid., p. 11). The rates for deadly traffic accidents were considerably lower, at 10 (80–84-year-olds), 12 (85–89-year-olds) and 6 (90+-year-olds) per 100,000. Here, too, men had a higher risk (2–3 times higher than for women) (ibid.). In the year 2011, 99% of all deadly accidents in the age group 80+ years occurred at home

31 The statistics of hospital treatments comprises only cases and not individuals, so that some people may have been included more than once if they were treated more than once within a calendar year.

## Medically treated injuries from accidents



>> Fig. 20: Proportion of men and women who were treated at last once during the past 12 months for an injury sustained in an accident, acc. to age, GEDA 2009 (Saß 2010, p. 2)

or during leisure activities (Statistisches Bundesamt 2013j, comments and general overview).

### Falls

Injuries from falls in need of treatment in the hospital or with a deadly outcome increase with rising age (see above). At a very old age falls often lead to bone fractures, particularly to the femur (thigh bone; see Chapter 05.3, Musculoskeletal Diseases). Long-term functional impairments and the fear of falling again can reduce the quality of life of these

persons. Two regionally representative surveys studied the incidence of falls among older people living in private households. In 2006, Gaßmann, Rupprecht and Freiberger (2009) queried 622 persons from greater Erlangen-Nürnberg-Fürth who were 65 years and older. The results showed a continuous rise in the number of falls with increasing age: 15 % of the 65–69-year-olds, 16 % of the 70–79-year-olds, 23 % of the 80–89-year-olds and 46 % of the 90+-year-olds had experienced at least one fall within the past 6 months. Women 65 years and older (27 %) had twice the rate of same-aged men (13 %) (ibid., p. 5). Comparable values were

found in a telephone survey done by Schumacher (2013) in the year 2006, where 862 residents of the town of Herne aged 40 and older were interviewed. The rate of those who had experienced a fall within the past 12 months also increased with age: from 10 % (65–69-year-olds), to 16 % (70–74-year-olds), 20 % (75–79-year-olds), 20 % (80–84-year-olds), 31 % (85–89-year-olds), 44 % (90+-year-olds). Here, too, women outnumbered men (ibid., p. 2). Persons living in institutional care facilities also have a higher risk of falling than people of the same age who live at home due to their overall higher level of frailty (Rapp and Becker 2009).

Falls in older persons can have a number of medical causes, for example, movement pain, muscle weakness, heart conditions, sight and hearing impairments, vertigo (caused by low blood pressure, overmedication), depression or multimorbidity (cf. Gaßmann et al. 2009; Schumacher 2013; Rapp and Becker 2009). Persons who live alone generally have a higher rate of falls (Gaßmann et al. 2009). One group at particular risk is older women suffering from osteoporosis, who are at great danger of breaking bones when they fall (Schumacher 2013). The risk for falls can be influenced, for example, by ensuring that the house or apartment is properly lighted, and that stairs are secure and free of all tripping hazards (e.g., high thresholds) (Rapp and Becker 2009). According to Granacher et al. (2013), muscle weakness, balance problems and uncertain gait increase the risk of falls by three to four times. Recognizing early on that someone is at risk of falling and developing a balance and strength-training program for the specific risk profile can greatly influence mobility and quality of living in old age (ibid.).

## Suicide

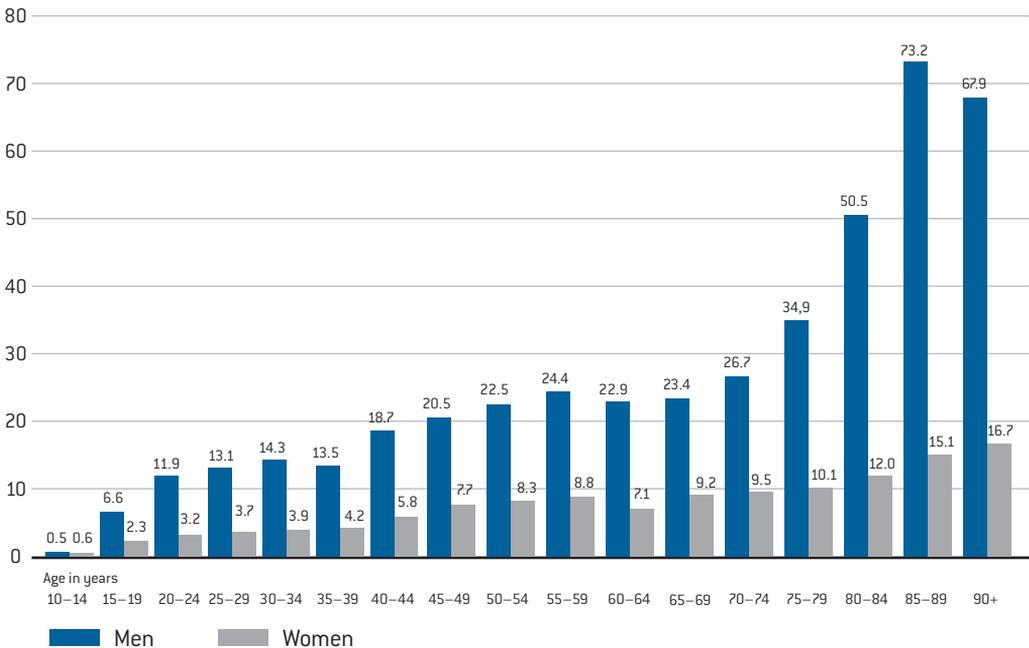
In the cause-of-death statistics collected by the Federal Statistics Office, suicide is treated in the chapter entitled “External Causes of Morbidity and Mortality” in the section on “deliberate self-injury.” The suicide rate given there (defined as suicides per 100,000 population) climbs at the beginning of old age, particularly among men: In the year 2012 four to five times as many men as women over 80 years took their own life (Statistisches Bundesamt 2013g, p. 11; cf. Figure 21). Nevertheless, compared to all other causes of death the rate of suicide is still relatively low and in fact is falling: In 2012, the rate among very old men was 0.6 % (80–84-year-olds), 0.5 % (85–89-year-olds) and 0.4 % (90+-year-olds); among very old women it was 0.2 % (80–84-year-olds), 0.1 % (85–89-year-olds) and 0.1 % (90+-year-olds). In comparison, in the age group of 20–30-year-olds, suicide was high on the list of all causes of death at 22 %. Thus, despite the overall rise in suicides with increasing age, suicide is not a typical cause of death among the very old—where other reasons prevail (see Chapter 05.5). This is true even when we consider that the actual number of suicides in old and very old persons certainly is underestimated since so-called “soft” methods (such as self-poisonings with psychopharmaceuticals) are often not registered or put in the category “unclear cause of death” (Schmidtke et al. 2008, p. 5).<sup>32</sup>

Common reasons and motives for suicide in old age are psychiatric conditions (depression), loss of partner, social isolation, fear of the repercussions of physical ailments and loss of previous scope of action (Schmidtke et al. 2008, p. 3). An assess-

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32 The statistical data on causes of death are based on death certificates as filled out by physicians who supervise inspections of the corpse and not on clinical autopsies, which are scientifically more reliable.

## Deliberate self-injury



>> Fig. 21: Deliberate self-injury per 100,000 population (suicide rate), acc. to age and sex, 2012  
 (Statistisches Bundesamt 2013g, p. 11)

ment of data from those insured by the Gmünder Ersatzkasse (GEK, part of the statutory health insurance system) from 2006 showed that the increase in the rates of suicide in old age may be explained above all by the parallel development of mental and chronic physical diseases. Especially their suffering from diseases and the repercussions thereof can drive older and very old people to take their own lives (Voges 2008, pp. 1396 f.).

## >> 05.6 Life Expectancy and Mortality

### Life Expectancy

For the period 2009–2011, average life expectancy in Germany for a newborn boy was 78 years and for a newborn girl 83 years (Statistisches Bundesamt 2013e, p. 37).<sup>33</sup> These differences are nearly reduced to zero, however, if we look at the further

## Average further life expectancy

Age in 2009/2011	Life expectancy for men	Life expectancy for women
80 years	7.8	9.1
85 years	5.5	6.3
90 years	3.8	4.2
95 years	2.7	3.0
100 years	2.0	2.1

» Tab. 29: Average further life expectancy in years acc. to mortality table from 2009/2011 (Statistics of natural changes to population, Statistisches Bundesamt, quoted from [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 11 May 2014)

life expectancy of very old people (see Table 29): 80-year-old men can on average expect to live another 8 years, 80-year-old women another 9 years. The difference grows even smaller in the higher age groups until it disappears completely among the 100-year-olds. There are no differences today in life expectancy at birth or further life expectancy between the populations of East and West Germany (cf. Statistisches Bundesamt 2013e, p. 38).

The reasons for the higher life expectancy of women, which has been observed for a long time now, are thought to lie in factors stemming from biology and lifestyle or environment: First, women have a smaller biological risk of dying from cardiovascular diseases than men; second, they tend to live healthier lives than men. They eat a better diet, they consume less alcohol and tobacco products, die less from accidents, are exposed to fewer health risks at work, and go to the doctor and to preventive examinations more often (Doblhammer and Kreft 2011, pp. 910 f.; RKI 2011b, p. 15). According to the most recent findings, especially behavioral

and environmental factors are responsible for the differences in life expectancy between the sexes. However, because the lifestyles and living conditions of men and women are growing ever more similar, one can expect that the values for the life expectancy of men and women will equal out in the future (ibid.).

This is not true of the socioeconomic inequalities in life expectancy: In Germany people with a lower disposable income, lower level of education and lower occupational status also have a lower life expectancy. Statistics even project that these differences are on the increase (Lampert and Kroll 2014, p. 9). Whether such social inequalities will also prevail at the very old age of 80+ years, that is, whether socially disadvantaged very old persons have a higher risk of early death than socially privileged persons, cannot be determined on the basis of the present database. When individuals with a socially disadvantaged background do reach a very high age, then they already represent a positive selection of their peer group, enjoying or having

33 Life expectancy means "how many years a particular age group on average can expect to live under the premise that the mortality rate remains the same. The so-called mean life expectancy or life expectancy at birth provides an indicator for newborns, the further life expectancy at age 65 years for the 65-year-olds, respectively" (RKI 2011b, pp. 7 f.). The Federal Statistics Office calculates life expectancy as the average of the last three years; the most recent data are based on the mortality table from 2009/2011.

## Deceased per 100,000 population

Age group	Mortality rate for men	Mortality rate for women
75–79 years	4,413	2,652
80–84 years	8,093	5,513
85–89 years	13,517	10,876
90+ years	18,454	21,763

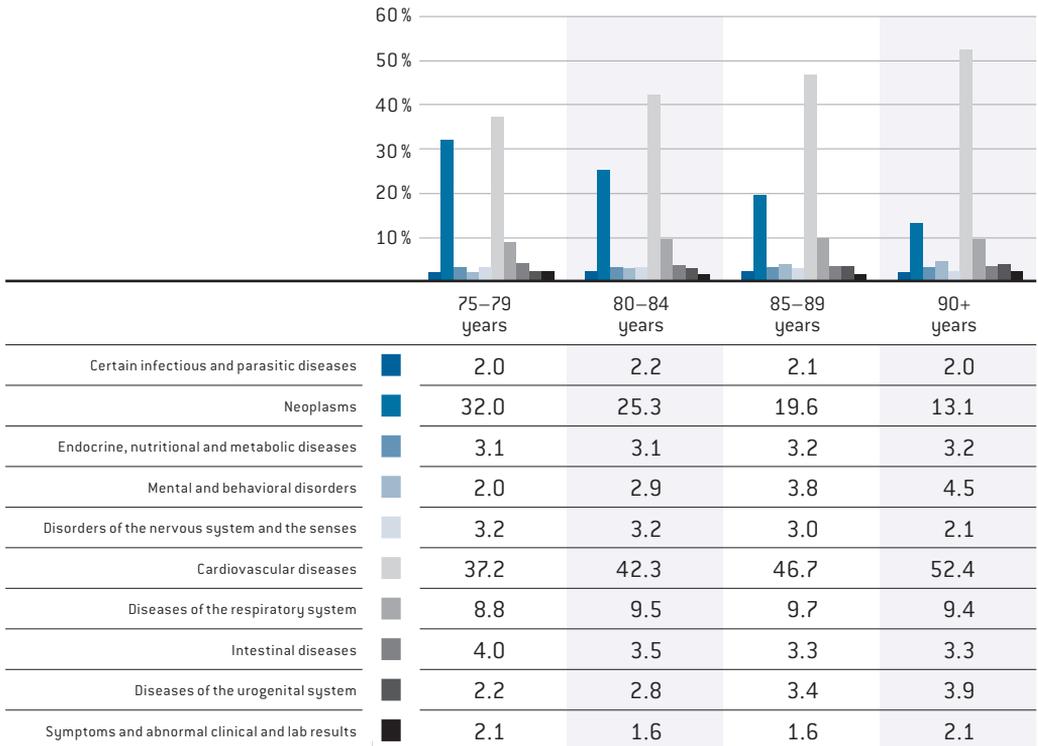
» Tab. 30: Deceased in 2012 per 100,000 population, acc. to age and sex (Causes-of-death statistics, Statistisches Bundesamt 2013g, p. 9)

enjoyed better health resources than those who are already deceased. Social inequalities with respect to life expectancy and mortality thus may tend to be smoothed out at a very high age (Motel-Klingebiel et al. 2013, p. 6).

Life expectancy at birth has been steadily climbing over the past century (to double what it was 100 years ago), and there is no natural end to this process in sight. First the death rate among newborns and children fell, then in the past few decades the mortality among the old and very old was responsible for these changes (Doblhammer and Kreft 2011, p. 907; Scholz 2013, pp. 26 f.). These tendencies are the result of ever better strategies of prevention, therapy and rehabilitation of chronic ailments, which lead to higher survival rates. In research in the health sciences the question now being discussed intensively is whether medical progress will lead to an expansion or a compression of morbidity, that is to say, whether the years “gained” will eventually be spent living with extreme health issues or in long-term care facilities—or whether they will consist of healthy, large complaint-free time. The present data are not completely clear on this matter, though there is consensus that functional impairments and limitations in activities of daily living are on the

decline despite increasing rates of multimorbidity. Depending on the study consulted, the number of healthy years or years spent without need for long-term care have remained the same or increased parallel to the increase in life expectancy, which would seem to disprove the expansion theory for Germany (Doblhammer and Kreft 2011; Kroll and Ziese 2009; Trachte et al. 2014). Yet many of these studies are based on representative surveys among people living in private households: The reduced willingness of persons with severe health limitations to be interviewed and the failure to survey those living in nursing homes or other care facilities may have led to a too positive picture of morbidity (Trachte et al. 2014, pp. 6 f.). A more recent study by the Barmer GEK (2013a) based on the data of those insured with the Gmünder GEK health insurance company did not have these limitations. It showed that the proportion of time spent from 60 years onward in long-term care actually rose slightly between the time periods 1999–2003 and 2007–2011 (ibid., p. 10).

## Most common cause of death among men



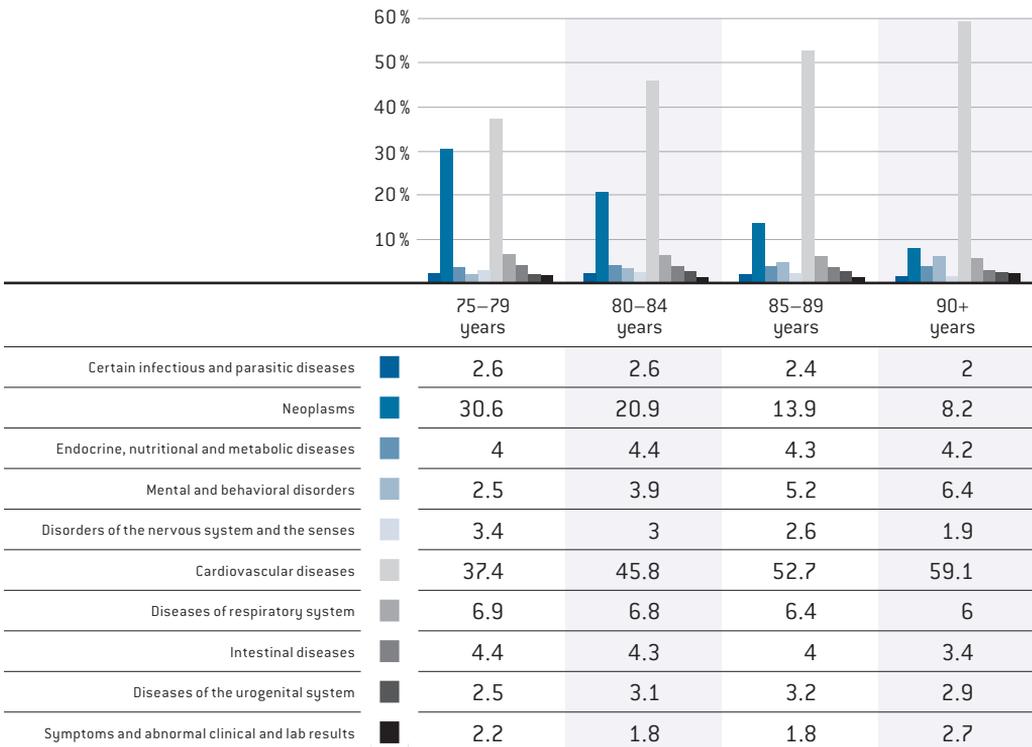
» Fig. 22: Proportions of the most common causes of death 2012 (in % of all causes of death, acc. to ICD-10 Chapter A00–T98) among men, acc. to age group [Statistisches Bundesamt 2013g, pp. 12 f.]

## Mortality

The mortality risk today is concentrated on persons of old and very old age. Over time it rises nearly exponentially, especially among women. The mortality rate (calculated as the number of deceased persons per 100,000 population) is higher among men up to the age of 90 years, where women then show a higher rate. In the year 2012, 4,413 men and 2,652 women between 75 and 79 years of age,

8,093 men and 5,513 women between 80 and 84 years, 13,517 men and 10,876 women between 85 and 89 years, and finally 18,454 men and 21,763 women aged 90+ years died [all per 100,000 population] [Statistisches Bundesamt 2013g, p. 9; cf. Table 30].

## Most common cause of death among women



>> Fig. 23: Proportions of the most common causes of death 2012 [in % of all causes of death, acc. to ICD-10 Chapter A00–T98] among women, acc. to age group (Statistisches Bundesamt 2013g, pp. 12 f.)

## Causes of Death

The statistics on the causes of death of the Federal Statistics Office provides information about the disease involved in or external cause of death. Yet these statistics can only give a rough estimate of the actual reasons for death since the only the most important or most pertinent cause of death is registered – thus ignoring any multimorbidity that may have been present (RKI 2011b, p. 27). Figures 21 and 22 illustrate which types of diseases most

commonly led to the deaths of men and women over 75 years in the year 2012 (Statistisches Bundesamt 2013g, pp. 12 f.; see also Chapters 05.3 to 05.5). The greatest number of deaths among the very old was due to diseases of the cardiovascular system, followed by cancer (neoplasms). Together, these two groups of diseases were responsible for about two thirds of all deaths in persons 80+ years old.

The proportion of cardiovascular diseases leading to death rose with increasing age from 37%

(75–79-year-olds) to 52 % (90+-year-olds) among men, and from 37 % (75–79-year-olds) to 59 % (90+-year-olds) among women. Expressed in absolute numbers, in the group of 80–84-year-olds, 31,432 men and 36,459 women died; in the group of 85–89-year-olds, 25,958 men and 55,809 women died; and in the 90+-year-olds, 17,517 men and 64,744 women died in the year 2012 as a result of cardiovascular diseases (Statistisches Bundesamt 2013g, p. 7). The proportion of cancer afflictions among all causes of death, on the other hand, fell with increasing age—from 32 % (75–79-year-olds) to 13 % (90+-year-olds) among men, and from 31 % (75–79-year-olds) to 8 % (90+-year-olds) among women. In absolute numbers, in the year 2012, 18,805 men and 16,676 women between 80 and 84 years, 10,914 men and 14,726 women between 85 and 89 years, and 4,376 men and 9,003 women aged 90+ years died of cancer (Statistisches Bundesamt 2013g, p. 6). All other causes of death lay below the 10 % mark. The group of mental and behavioral disorders among the causes of death rose considerably in this time, largely because of the increasing number of persons who died of dementia: from 2–3 % among the 75–79-year-olds to 5–6 % among the 90+-year-olds.

(Schütz and Wurm 2009, p. 162). Besides adopting a healthy lifestyle, other factors such as attending to preventative medical exams, early-detection screenings and vaccinations can help to reduce the risk of disease or treat diseases at an early stage. The proper supply of medicaments, therapies and health aids as well as the responsible handling of drugs can help the afflicted to achieve a long and independent life.

## Health Behavior

Health-relevant behavior (“health behavior”) reflects “behaviors that are considered to be possibly beneficial, risky or dangerous to health in light of medical findings” (Menning 2006, p. 17). This includes, among other things, physical exercise, diet and tobacco and alcohol consumption.

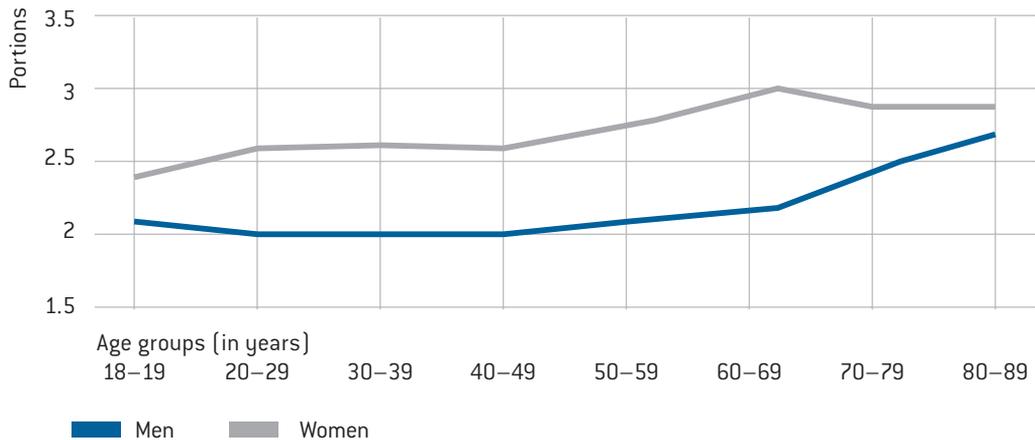
The National Health Program entitled “Growing Old Healthily” has as its main action goal under “Health Promotion and Prevention” the strengthening and maintenance of the physical activities and mobility of older people (BMG 2012, p. 44). Physical exercise and sports activities can prevent or forestall cardiovascular risk and diseases, lower the risk of falling and fracturing bones, strengthen both ligaments and joints, and have an overall positive influence on mental capacities, reducing depressive moods (ibid.). From the age of 80 years onward, the number of people increases who are unable or barely able to be physically active; women tend to become more inactive than men. The SHARE study of 2004 asked how often certain very strenuous and less strenuous activities were being carried out (Menning 2006, p. 21; cf. Figure 50 in the Appendix). In Germany 8 % of the men and 14 % of the women between 70 and 79 years answered with “hardly ever” or “never”; of those 80 years and older the proportion of physically inactive persons

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## » 05.7 Prevention

Many of the known risk factors for chronic illnesses, injuries and functional impairments can be positively influenced even in the very old through preventive measures. These should serve not just to prevent the effects of certain diseases, to delay their onset or to avoid deteriorating health status, but rather they should also contribute to securing or regaining quality of life *despite* health afflictions

## Number of portions of fruits and vegetables consumed daily



>> Fig. 24: Mean number of portions of fruit and vegetables consumed daily, acc. to age and sex, GEDA 2009 [Rabenberg and Mensink 2011, p. 5]

was more than one third of the women (34%) and a fifth of the men (20%). This age difference also appeared in the Generali Aging Study of 2013 with regard to sports activities: 34% of the 70–74-year-olds, 44% of the 75–79-year-olds and 60% of the 80–85-year-olds reported not participating in any sports at all [Generali Zukunftsfonds 2012, p. 272].

Like physical activity, eating a good diet helps to avoid becoming overweight and helps to prevent many chronic diseases. In particular, the consumption of fruit and vegetables has a protective effect against high blood pressure, coronary heart disease and stroke. A preventive effect is also likely with a number of cancers (e.g., mouth, esophagus, stomach and intestinal) [Rabenberg and Mensink 2011, pp. 1 f.]. Figure 24 shows that, according to the data from the GEDA 2009 study, older and old people tend to eat more fruit and vegetables than younger people. The largest increase is among mid-

dle-aged men; very old men 80 to 89 years old have the highest consumption (2.5 portions) within their gender group.

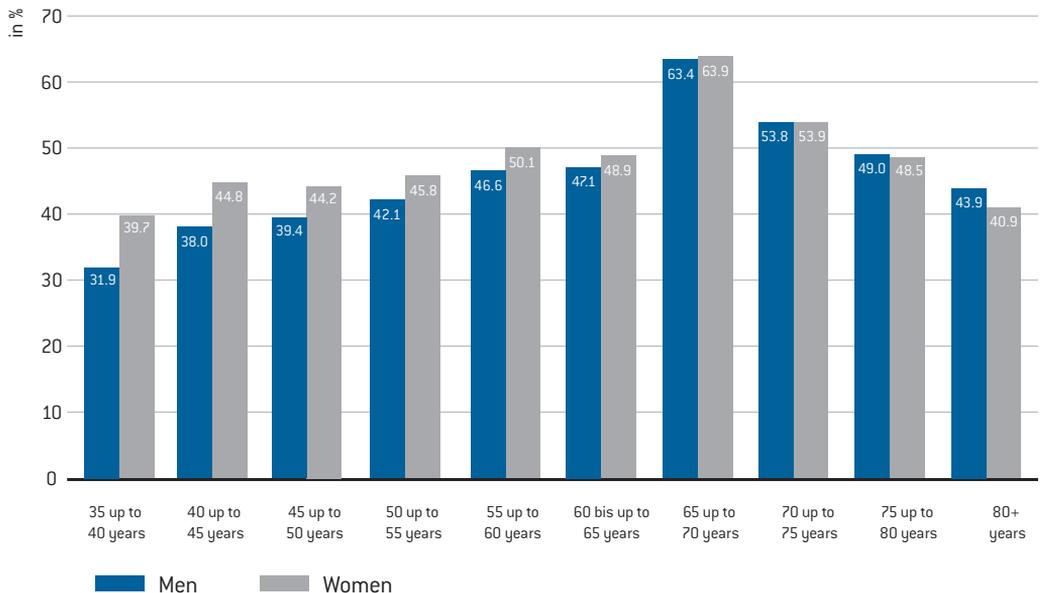
Smoking is the main risk factor for a number of cardiovascular, respiratory and cancer ailments (see Chapter 05.3). Here, the very old show much more health consciousness than middle-aged people. The number of regular smokers falls from the age of 50–55 years continually, so that only 7% of the men and 3% of the women 75+ years old still smoke regularly [Statistisches Bundesamt 2011d, p. 8, own calculations; cf. Figure 51 in the Appendix]. The likely motivation to quit smoking are chronic diseases caused by smoking. Also, smokers tend to die younger than nonsmokers and thus never reach a very old age [DHS 2011, p. 60].

Also detrimental to the health of the old and very old is alcohol abuse – which too can cause or exacerbate a number of degenerative chronic diseases,

among others, cirrhosis of the liver, myocardial disease, organic brain disease and several different types of cancer. Further, alcohol abuse often leads to falls and accidents, and can be a great burden on personal relationships as well (RKI 2011a, p. 121; DHS 2011, pp. 22 f.). Representative data on the incidence and social distribution of alcohol consumption among the very-old population in Germany are very rare. The exception is the SHARE Study of 2004, which asked how often the respondents had consumed “more than two glasses or cans of beer/wine/cocktails/spirits” during one day’s time (Menning 2006, p. 24; cf. Figure 52 in the Appen-

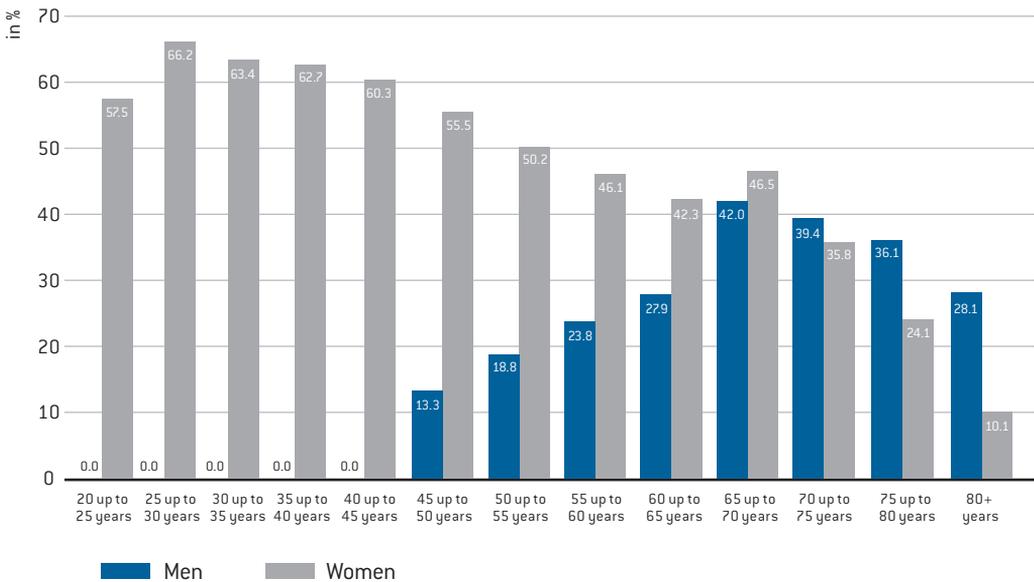
dix). Risky consumption of alcoholic beverages (= answers of “almost daily” and “on 5 or 6 days of the week”) was found in 10 % of the men and 3 % of the women at age 80+ years. For women, this value stays the same from age 60 years on, whereas for men it falls considerably with increasing age: In the age group of 60–69-year-olds the value for men was still at 18 %. On the one hand, this decline may be traced back to the fact that older people do not tolerate alcohol as well, making the sacrifice easier to accept; on the other hand lies the sharp increase in mortality of people who abuse alcohol and thus never reach old or very old age (DHS 2011, p. 23).

## Participation in early-detection examinations



» Fig. 25: Participation in foreseen health checkup of those eligible insured persons, acc. to age and sex, in %, 2010–2011 [Zentralinstitut für die kassenärztliche Versorgung in der Bundesrepublik Deutschland 2013; quoted acc. to [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 29 April 2014]

## Participation in early-detection examinations for cancer



» Fig. 26: Participation in foreseen early-detection examinations for cancer, in % of eligible insured persons, acc. to age and sex, 2011 [Zentralinstitut für die kassenärztliche Versorgung in der Bundesrepublik Deutschland 2013; quoted acc. to [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 29 April 2014]

## Preventive Examinations and Cancer Screening

Anyone over the age of 35 who is insured in the statutory health insurance program is entitled to take part “every other year in a medical health examination for the early detection of diseases, in particular the early detection of cardiovascular and kidney diseases as well as diabetes” (Para. 25 Social Security Act V, Section 1). This health checkup comprises an examination of the entire body and registration of blood pressure, blood sugar level, and cholesterol and urine values.

Among persons younger than 65 years, women tend to adhere to this schedule more than men do, whereas in persons over 80 years men are more diligent. During the 2-year period 2010–2011, the age group of 65–69-year-olds had the highest rate of participation at nearly two-thirds of all insured persons. The rate then falls with increasing age: Among persons 80+ years old, only 44 % of the insured men and 41 % of the insured women took part in such a health checkup [Zentralinstitut für die kassenärztliche Versorgung in der Bundesrepublik Deutschland 2013; see Figure 25].

From the age of 18 years onward, persons insured in the statutory health insurance program

also are entitled to exams for the early detection of cancer (Para. 25 Social Security Act V, Section 2). The present guideline for cancer screening of the Federal Joint Committee (2010) may be found in Para. 92 Social Security Act V. According to Para. 1 Section 2 these examinations for cancer screening have the purpose of

- “among women the early detection of cancer of the genitals from age 20 years onward as well as the breast from age 30 years onward and the early detection of cancer of the breast (mammography screening) from the age of 50 years onward up to the age of 70 years;
- “among men the early detection of cancer of the prostate gland and the external genitals from the age of 45 years onward;
- “among woman and men the early detection of cancer of the skin from the age of 35 years onward as well as the rectum and the large intestine from the age of 50 years onward.”

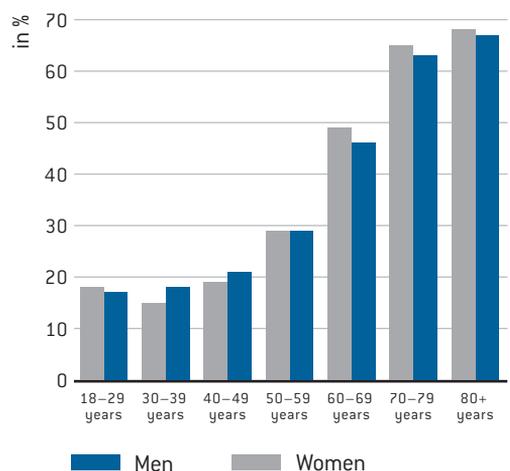
These different entitlements to men and women are also reflected in the diverging participation in early-detection examinations (Zentralinstitut für die kassenärztliche Versorgung in der Bundesrepublik Deutschland 2013; see Figure 26). The higher rates for women from age 20 years onward may be traced back to their legal entitlement from that age onward to exams for breast cancer, cervical cancer, endometrial cancer and ovarian cancer. The exams for intestinal and skin cancer are added at a later point in life. The rates among men climb continuously from mid-life to the age of 65–69 years, whereby besides the exam for the early detection of skin cancer, screening for prostate and intestinal cancer lie at the forefront. From age 70 years onward, however, participation sinks considerably, particularly among women: In 2011, in the age group 80+ years, 28 % of the men and only 10 % of the women took part in these early-detection

programs, whereby the risk of new cases actually rises with increasing age (cf. Figure 16 and 17).

## Influenza Vaccination

The German Permanent Vaccination Commission of the Robert Koch Institute (STIKO) recommends that older people aged 60 years and more get a yearly vaccination against influenza (“flu shot”). The goal is to prevent severe and especially deadly disease courses that pose a higher risk to older people (Böhmer and Walter 2011, pp. 1 f.), particularly when combined with existing underlying disease(s) (ibid., p. 4). The proportion of the population that gets this vaccination increases

### Influenza vaccinations



» Fig. 27: Influenza vaccinations during the flu season 2007/2008, acc. to age and sex, GEDA 2009 (Böhmer and Walter 2011, p. 2)

dramatically from mid-life on, so that during the flu season 2007/2008 nearly two thirds of all men and women 80+ years old got their “shot” (GEDA 2009, Böhmer and Walter 2011, p. 2). This almost agrees with the WHO’s goal of 75 %. In East Germany, the vaccination quota of persons over 60 years was much higher than in West Germany (ibid., p. 2); there were no separate numbers available for persons over 80 years.

## Therapies and Health Aids

Therapies and health aids help those afflicted to live an independent life and master the tasks of daily living. They also contribute to their participation in social life and thus help them to regain at least part of any lost functional health (see Chapter 05.2). Therapies reduce or attenuate impairments resulting from diseases, allow an affliction to heal or stem the development of a disease. They comprise above all measures such as physiotherapy/massage, occupational therapy (training of actions and behaviors), speech therapy, and podiatry (medical care of the feet). Health aids serve to compensate for functional limitations arising from diseases, injuries and their aftermaths. They include orthopedic products such as wheelchairs, walkers, prosthesis limbs, orthotics, bandages and orthopedic shoes as well as inhalation machines, incontinence aids, hearing aids and glasses.

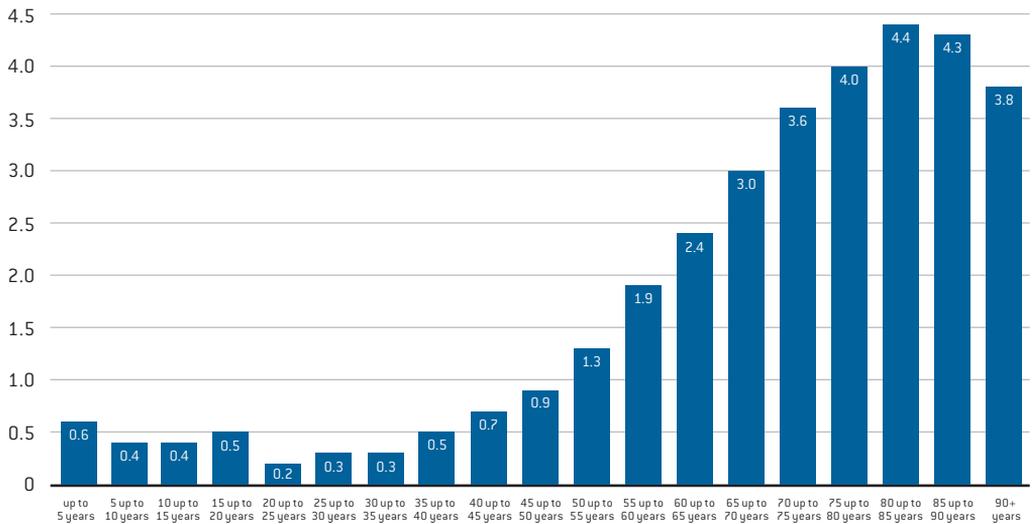
Because no representative data for the entire population are available, the number of prescriptions for therapies and health aids according to age and sex must be estimated from the routine data collected by the individual health-insurance companies (even if such data are not representative for all insured persons because of the specific structure of the respective companies). Below we look at the results from the reports on therapies

and health aids issued by the Barmer GEK (2013b). In 2012, the proportion of insured persons receiving prescriptions for health aids was greatest among the very old: Slightly more than half (52 %) of the 80–89-year-olds and over two thirds (70 %) of the 90+-year-olds were prescribed such means. In 2012, the proportion of insured persons prescribed therapies increased with age, but only among the 70–79-year-olds, where the rate was about one third (34 %) and remained constant among the 80–89-year-olds, only to fall somewhat among the 90+-year-olds (28 %) (Barmer GEK 2013b, p. 23; cf. Figure 54 in the Appendix). Women were prescribed more health aids than men, at 55 % among the 80–89-year-olds (men: 46 %) and up to 72 % among the 90+-year-olds (men: 61 %) (ibid., p. 57). This is also true for therapies, though the differences were not quite so high (ibid., p. 178). The list of therapies was headed by physiotherapy, which about one fourth of all 80+-year-olds received, whereas prescriptions for occupational therapy, speech therapy and podiatry lay around 1–3 % for the 80+-year-olds.

## Prescription Medicaments

The use of medicaments rises with increasing age. In 2012, the 80–84-year-olds who were insured at one of the statutory health insurance companies received the most medicaments, on average 4.4 daily doses (DDD)<sup>34</sup> (equaling 1,609 doses per year). In comparison, those in the age group 20–24 years were taking only 0.3 DDD. Among the 85–89-year-olds the rate sank to 4.3 DDD per day and to 3.8 DDD per day among the 95+-year-olds (GKV-Arzneimittelindex, Wissenschaftliches Institut der AOK 2013; cf. Figure 28). Women receive more than 50 % more psychotropic and pain medications than men, whereas men receive 20 % more

## Use of prescription medicaments in defined daily doses



» Fig. 28: Use of prescription medicaments in defined daily doses (DDD), per day per insured person in statutory health insurance program 2012, acc. to age (GKV-Arzneimittelindex, Wissenschaftliches Institut der AOK 2013, quoted acc. to [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 29 April 2014, own calculation)

antithrombotic drugs and lipid-lowering agents (Schauffer and Telschow 2013, p. 967). Persons living in institutional care settings tend to receive much more medication than persons living in private households (DHS 2011, pp. 38 f.). The high use of drugs in old age, however, carries with it a number of risks: The more medicaments one takes (polypharmacy), the higher the risk of medication errors (improper drugs, incorrect dosage, false ingestion) and undesired side effects. Also, the

willingness of older people to take their medicines regularly can suffer considerably (“noncompliance”). People 65+ years old are rarely included in studies of medicaments, so that it can be very difficult to make proper therapeutic recommendations for them (Eckardt et al. 2013, p. 1).

Schiemann and Hoffmann (2013) used the data from insured persons in the Barmer GEK from the second quarter of 2012 to adjudge how widespread polypharmacy is among older persons 65+ years

34 “The defined daily dose (DDD) is used to measure the amount of drugs prescribed. The DDD is based on the amount of the respective active agent or drug typically prescribed to an adult as a daily dosage” ([www.gbe-bund.de/glossar/DDD\\_Tagesdosen.html](http://www.gbe-bund.de/glossar/DDD_Tagesdosen.html); retrieved on 13 May 2014).

old. They defined polypharmacy as taking at least five different prescribed drugs within a period of 3 months. The proportion of insured persons with polypharmaceutical prescriptions doubled from 24 % of the men and 22 % of the women 65 to 69 years old to 47 %, respectively, among those 85 to 89 years old. Only when people turn 95 do these values fall again. Up to the age of 84 years, the proportion of men was always higher than that of women; in 85+-year-olds the relationship flipped (*ibid.*, p. 78).

In 2012, a representative survey of 1,000 insured persons in the statutory health insurance program aged 65 and older studied how often inappropriate medication according to the Priscus list<sup>35</sup> was being prescribed [Zok 2012]. The result for the 3 months preceding the survey showed that many more women (10 %) than men (5 %) were taking inappropriate drugs for persons 65 years and older. Among women the main drugs being ingested were certain sedatives and sleeping pills, among men they were certain heart, circulation and vein drugs (*ibid.*, p. 3). The same survey also asked about compliance: 20 % of those questioned who were 85 years and older admitted that they sometimes forgot to take their medicines, and 19 % of the 85+-year-olds admitted to sometimes being very lax about taking their medicines (*ibid.*, p. 3).

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## >> 05.8 Healthcare Provision

### Visits to the Doctor's Office

Besides tending to their therapy, taking care of their healthcare issues and directing patients to the proper specialists, general practitioners (GPs) have the important role of conducting examinations for the early detection of cancer and other diseases (see Chapter 05.7). And they are responsible for counseling older persons about preventive measures they can take to ensure healthy aging (BMG 2012, p. 18). To this end, since 2005 they can offer a basic geriatric assessment that is paid for by the statutory health insurance system. This assessment comprises the systematic registration of the patient's disorders of function, faculties and brain capacity as well as danger of falls. Based on the results of this exam, the GP can then suggest proper measures for treatment, counseling and support. However, the goals, target groups and services involved in this assessment have not been specified (*ibid.*).

How often do very old people visit their GPs or a specialist? Since no representative data are available for persons 80 years and older, here too we must revert to evaluating the data of insured persons in the Barmer GEK (Barmer GEK 2014). In the men and women 80+ years old who were insured with the Barmer GEK in 2012, nearly without exception they all were treated by a physician at some time during the year (visits to the

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35 Experts developed the Priscus list in order to describe those drugs "that are not appropriate for persons in age groups 65 and older because they have a poor efficacy, an increased risk of undesired side effects or because there are alternatives that are better suited and safer" [Zok 2012, p. 2]. This list may be found on the website of the PRISCUS

dentist and orthodontist were not included in this statistic]. In women 80+ years old, the value was 98 %, in 80–89-year-old men also 98 %, and in men 90+ years old it was 95 %. But other age groups also show high values, with at least 92 % of the women and at least 82 % of the men seeing a doctor at some point (ibid., p. 233). There was a clear increase in the average number of doctor's visits per year: The highest numbers were found among men in the age group 80–84 years, old who paid 14.2 visits to the doctor (men overall on average: 6.7), and in women in the age group 75–79 years, who paid 13.7 visits to the doctor (women overall on average: 9.6) (ibid., p. 234). In 2012, among the very old insured persons in the Barmer GEK (80+ years), nearly all were afflicted with chronic diseases: Essential hypertension (high blood pressure) was diagnosed in three quarters of the women and men treated. The most common other diagnoses were ischemic heart disease (men: 43 %, women: 27 %) and congestive heart failure (men: 22 %, women: 23 %). Some 45 % of the very old men had an enlarged prostate gland, and 29 % of the very old women suffered from osteoporosis. A cataract was diagnosed among one fourth of the men and women 80+ years old, respectively (ibid., pp. 114 f.).

Visits to the dentist were also registered according to age and sex in the data collected by the Barmer GEK (2013c). For the year 2011, 78 % of the men and 81 % of the women among the 70–74-year-olds had the highest rate of visits to the dentist's office. These values, however, decrease considerably among the very old: Of the 85–89-year-olds only about half (men: 54 %, women: 48 %) and among the 90+-year-olds only about a third (men: 42 %,

women: 34 %) visited a dentist in the year 2011 (Barmer GEK 2013c, p. 183).

## Hospital Treatment

Today, older people still receive their standard care primarily in hospitals and not in geriatric departments or clinics that are specialized in the care of long-term illnesses and varying reactions to medicaments, as shown in Figure 29<sup>36</sup>. Even among men and women 85+ years old, care in geriatric departments only takes third place—behind that given in departments for internal medicine and surgery. Particularly very old patients and/or multimorbid patients are in need of emergency medical treatment that is coordinated to rehabilitative measures. If such long-term rehabilitative goals fail to be incorporated from the very beginning, the result is “revolving door” patients who are admitted to the hospital again and again (BMG 2012, p. 62).

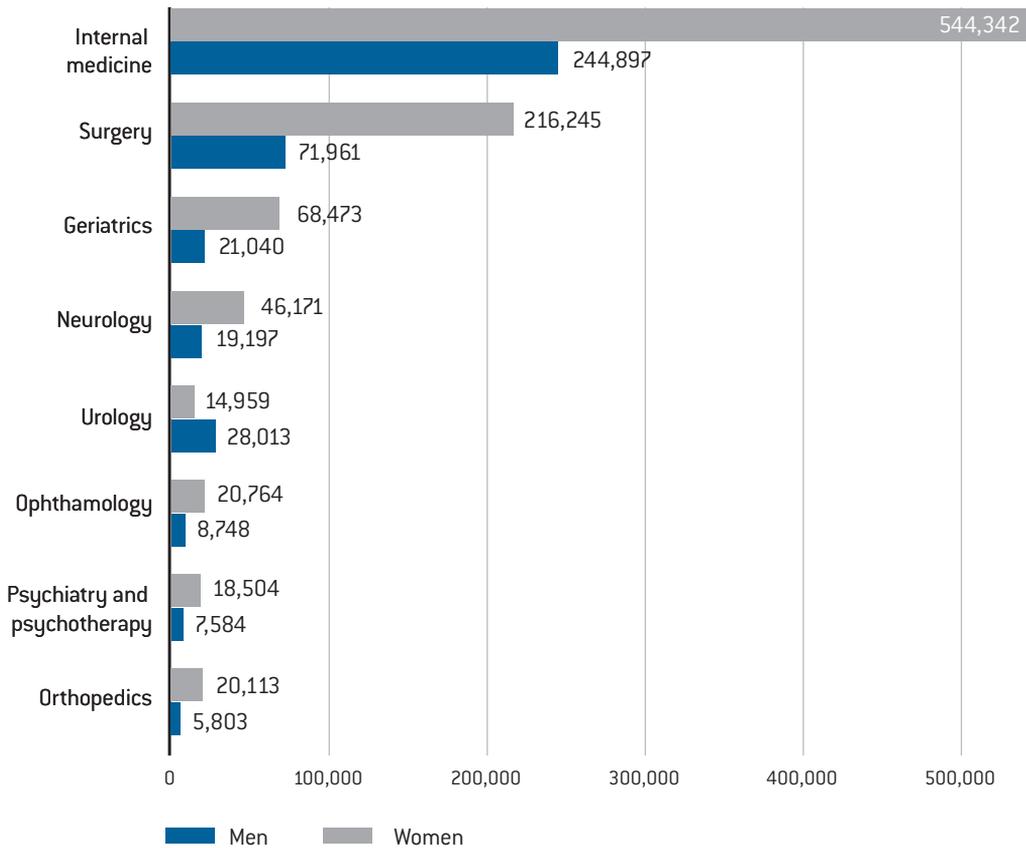
In 2012, a total of 19 million separate cases were treated in hospitals in Germany, 1,482,162 of them were 80–84-year-olds, 974,433 were 85–89-year-olds, 379,179 were 90–94-year-olds and 71,836 were 95+-year-olds (Statistisches Bundesamt 2013h, p. 11). The risk of landing in the hospital increases continually from mid-life on and, with the exception of newborns, is greatest among the very old (80+ years). In 2012, the highest rate of cases occurred among the age group of 85–89-year-olds with 70,000 cases per 100,000 population (ibid., p. 6; cf. Figure 55 in the Appendix).

Among the 85+-year-old men and women treated, the most frequent causes for a hospital stay were

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36 It should be noted that the diagnosis data contained in the hospital statistics do not reflect treatment preceding or following hospital stays or outpatient visits to the hospital (thus also not time spent in geriatric departments).

## Cases treated in the hospital



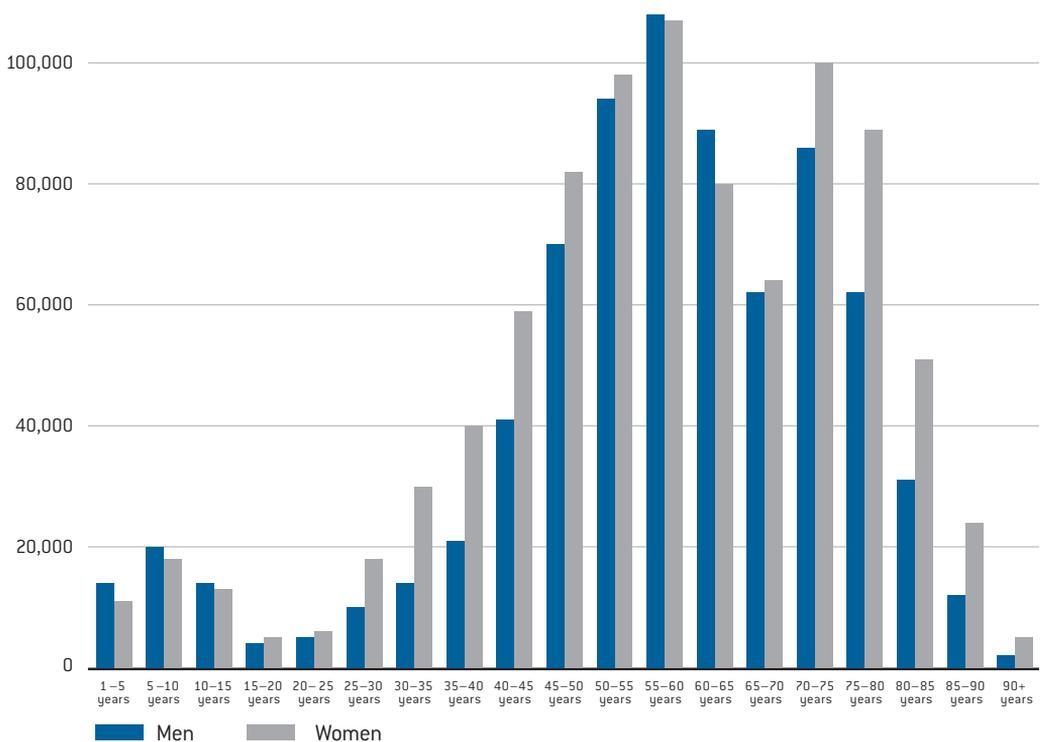
» Fig. 29: Cases treated in the hospital, 2012, acc. to department, women and men 85+ years old [Statistisches Bundesamt 2013h, Krankenhausstatistik – Diagnosedaten der Patienten und Patientinnen in Krankenhäusern, quoted acc. to [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014]

cardiovascular diseases, musculoskeletal problems and broken bones stemming from falls. The most common individual diagnoses for men and women were congestive heart failure, broken femur and stroke (cf. Figures 56 and 57 in the Appendix; see Chapter 05.3 for a discussion of the individual afflictions).

## Rehabilitation

Besides emergency geriatric care or early rehabilitation measures carried out directly in a hospital, inpatient geriatric rehabilitation is generally done in separate rehabilitation facilities in accordance with Para. 111 German Social Security Act V (Schulz

## Patients treated in preventive and rehabilitative facilities



» Fig. 30: Patients treated in preventive and rehabilitative facilities with more than 100 beds, acc. to age and sex per 100,000 population, 2012 (Statistisches Bundesamt 2013i, p. 7)

et al. 2009, p. 194). If inpatient care is not or no longer necessary, rehabilitation can then be done on a semiresidential or outpatient basis (ibid., pp. 212 f.). Geriatric rehabilitation is foreseen for older patients who are in need of care for their chronic multimorbidity (stroke, congestive heart failure, diabetes, etc.) and the sequelae (ibid., p. 195; cf. Chapter 05.1). Geriatric rehabilitation by a team of specialist from different fields has the goal of providing patients with the ability to live an independ-

ent life once again, so that they can remain in their familiar surroundings for a long time to come (ibid., p. 203). At the end of 2012, there were 1,212 preventive and rehabilitative facilities in Germany with a total of 148 specialist departments with 7,429 beds; a total of 106,658 patients were treated there in 2012, the majority of whom (85,782) had been referred from hospitals (Statistisches Bundesamt 2013k, p. 15).

The statistics gathered on the diagnoses of patients in preventive and rehabilitative facilities (Statistisches Bundesamt 2013i) include the number of inpatient cases in facilities with more than 100 beds. Of the 1,648,952 patients treated in the year 2012, 83,923 were aged 80–84 years, 34,596 were 85–89 years, 7,310 were 90–94 years and 667 were 95 years and older (ibid., p. 10). Figure 30 shows that people 80 years and older are not admitted to rehabilitative facilities as often as those 70–80 years old—although very old women are treated in part twice as often on an inpatient basis as very old men. Among those 85+ years old who are treated in inpatient preventive and rehabilitative facilities, we often find the same diagnoses known from hospital stays: Fractures to the femur and stroke are the most common individual problems treated in rehabilitation facilities. This seems reasonable since most cases result from rehabilitative needs following a hospital stay. Other common reasons for inpatient rehabilitation among men and women 85+ years old are arthritis in the hip and knee joints (Statistisches Bundesamt 2013i; cf. Figures 58 and 59 in the Appendix).

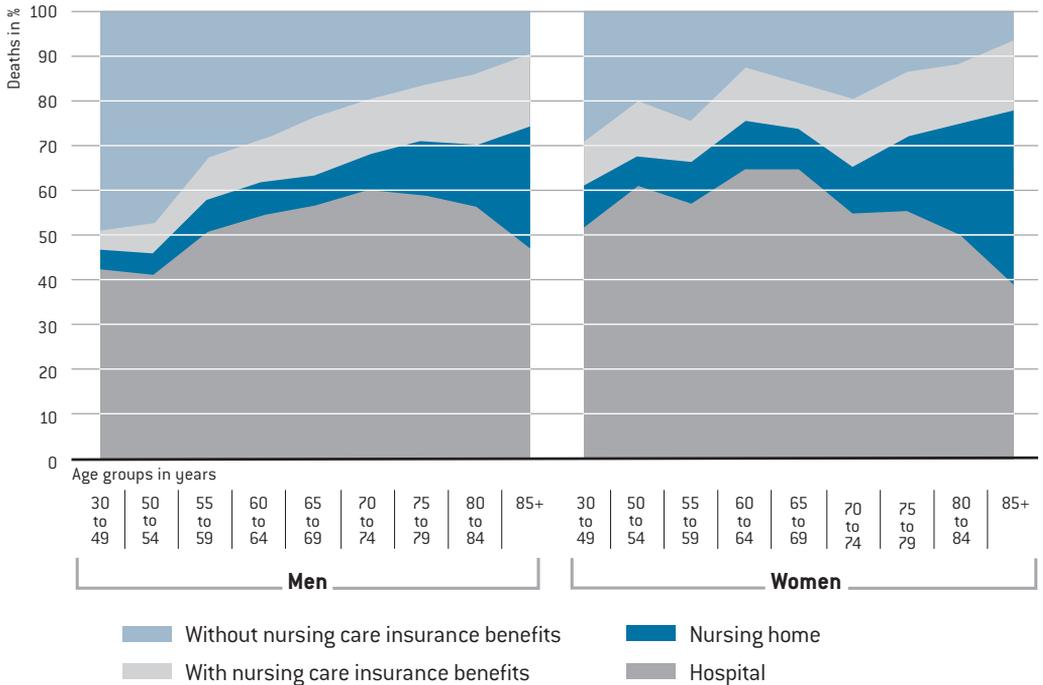
## Care of the Dying

440,813 of the overall 852,328 persons who died in the year 2011 were 80 years and older. Very old people thus comprised 52 % of all deaths in that year (Statistisches Bundesamt 2013e, p. 38; own calculations). For this age group, the questions of where they will spend the final period of their life and what care they will enjoy are very important. A recent study based on the data from persons insured with the Gmünder Ersatzkasse (GEK, part of the statutory health insurance system) provides the first good estimate of how many people die in nursing homes, hospitals or at home, and what the

differences are according to age and sex (Sauer et al. 2013). From the data it can also be determined which insurance payments were paid out on the day of death (benefits from the national nursing care insurance, hospital treatments, medical preventive and rehabilitative care), which provides at least a hint at the probable place of their death. Hospice care and thus hospice facilities as the place of death, however, are not registered separately; the authors presume that about 1–2 % of all persons die in Germany in hospice care (ibid., p. 2). According to their calculations for the year 2009, 29 % of the death occurred at home and 71 % in institutions of some sort (ibid., p. 3). With increasing age, people tend to die more in institutions, although today dying patients are generally being transferred in due time to nursing homes. Figure 31 shows the increase in age of persons dying in institutions for both men and women (place of death “at home” consists of the subcategories “at home with care provided by national nursing care insurance” and “at home without care provided by national nursing care insurance”). Thus, among the very old (85+ years) about three fourths (men: 74 %, women: 78 %) die in institutions. The proportion of nursing homes among the institutions in question lies at 40 % for women and ca. 25 % for men (ibid., pp. 4 f.).

These statistics show that proper palliative care is becoming ever more important in both hospitals and nursing homes as well as in outpatient care (though no numbers exist to support this). The goal of palliative care is to accompany incurably ill and dying people and provide them with social and spiritual support so that even their final days may be spent in a dignified and autonomous atmosphere (Au and Sowarka 2011; Weihrauch 2011).

## Places of death according to sex and age



» Fig. 31: Places of death of all deaths in persons over 30 years in Germany, 2009, acc. to sex and age, in %. Death statistics taken from insured members of GEK acc. to age and sex, extrapolated to all deaths in Germany (Sauer et al. 2013, p. 5)

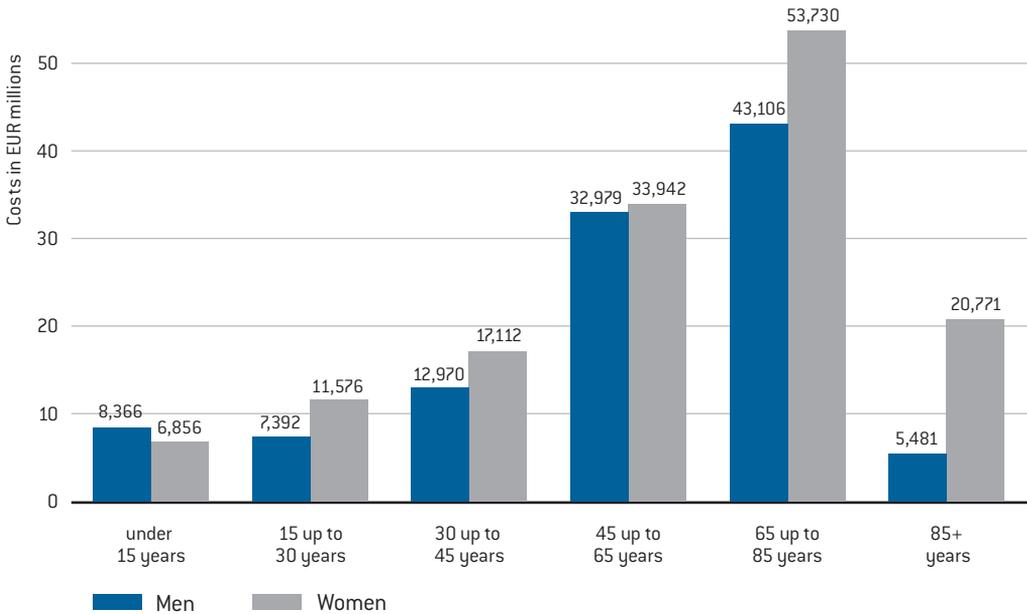
## » 05.9 Healthcare Costs

In the year 2008 (no newer data are available) the healthcare costs<sup>37</sup> of persons 85 years and older came to a total of over EUR 26 billion (Statistisches

Bundesamt 2014b; cf. Figure 32). EUR 5.5 billion thereof can be attributed to the care of very old men and EUR 21 billion to the care of very old women. Much higher costs, namely, EUR 97 billion, were spent for the healthcare of persons in the age group 65–84 years, a much larger group. If we look at the

<sup>37</sup> "Health costs" are defined as the direct costs involved with a medical treatment, a prevention, rehabilitation or care measure in terms of the monetary resources spent within the healthcare system. This includes administrative costs of the providers as well as all public and private institutions that finance the provision of healthcare in Germany (cf. Statistisches Bundesamt 2014b).

## Healthcare costs



» Fig. 32: Healthcare costs in EUR millions, acc. to age group and sex, 2008 [calculation of healthcare costs by the Statistisches Bundesamt, quoted acc. to [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014]

per capita costs, however, we get a different picture: The 85+-year-olds have the highest per capita cost of all age groups at EUR 14,840, followed by the 65–84-year-olds with an average of EUR 6,520 per person (Nöthen 2011, p. 666; cf. Figure 60 in the Appendix). The greatest chunk of costs went for the healthcare of mental and behavioral disorders among very old women aged 85+ years (EUR 4.8 billion; this includes the costs involved with dementia); there follows EUR 3.8 billion for cardiovascular diseases and EUR 2.2 billion for diseases of the musculoskeletal system and the connective tissue.

Some EUR 3.7 billion were spent on “symptoms and abnormal clinical and laboratory results

not otherwise classified,” which likely refers to symptoms and diagnostic findings that, in the presence of multimorbidity, could not be assigned with certainty to any one affliction. Men 85+ years old produce the highest costs of EUR 1.2 billion for diseases of the circulatory system, followed by mental and behavioral disorders (EUR 815 million), neoplasms (EUR 416 million) and diseases of the musculoskeletal system and the connective tissue (EUR 366 million). Here, too, the category of “symptoms and abnormal clinical and laboratory results not otherwise classified” caused relatively high costs of EUR 774 million (Statistisches Bundesamt 2014b; cf. Table 61 in the Appendix).

Even if the per capita healthcare costs do rise with increasing age, according to experts in the field this is not primarily the result of advanced age and increasing life expectancy and the accompanying chronic diseases. Rather, the reason lies in the higher risk of death with increasing age. The highest healthcare costs are incurred in the final months preceding death—regardless of the age of the person in question. Age itself is not the expensive factor—the process of dying is (Nöthen and Böhm 2009, p. 228; Nöthen 2011, p. 665). In this sense, on the basis of data from healthcare cost statistics, hospital statistics and diagnoses statistics Nöthen (2011, p. 771) could show that treatment costs are twice as high when the patient subsequently dies than when the patient leaves the hospital following treatment. In addition, according to Nöthen's calculations, the costs for treating an older person who subsequently dies are much less than the costs that incur when treating a younger person who then dies (*ibid.*).

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## » 05.10 Conclusion

The probability of being afflicted with a multiple of chronic diseases rises with increasing age: Approximately three fourths of all very old persons suffer simultaneously from two or more illnesses, women slightly more than men. This multimorbidity also results in reduced functionality, which in old age leads to difficulties in carrying out activities of everyday living. But one's subjective health also suffers considerably upon reaching very old age. From the age of 80 years onward functional health is reduced at a higher rate than physical or subjective health, and from a certain point on it cannot easily be compensated. Very old persons

with a high level of education—who thus generally have more social and economic resources at their disposal—are better positioned to retain their mobility and independence. Their functional health is on average better, even if their physical health does not differ from that of other same-aged persons.

There are some indications that the subjective, functional and physical-mental health status of very old men and women has improved over time. Many health scientists are of the well-founded opinion that the long-term increase in life expectancy and the shifting of death to a very old age does not necessarily lead to an increase in the number of years spent afflicted by disease. Rather, it would appear that about half of the years added to life consists of “healthy” time. Also, the dreaded economic effects for healthcare as a result of demographic changes to the age structure and the overall increase in the number of very old persons seem to have been exaggerated, at least in part. There are good reasons to believe that living to a very old age does not necessarily drive up healthcare costs, but rather that the treatment costs occurring in the final months of life are extremely high independent of the age of the dying person.

From age 75 years onward women and men suffer most from cardiometabolic diseases (high blood pressure, high blood lipid values, being overweight, diabetes), musculoskeletal diseases (arthrosis, arthritis, osteoporosis, chronic back pain) and cardiovascular diseases (coronary heart disease, heart attack, congestive heart failure, stroke). Very old women in particular are more likely to fall victim to cardiometabolic and musculoskeletal diseases than men of the same age, whereas men are afflicted more by cardiovascular and respiratory diseases. Dementias rise with increasing age in both sexes almost exponentially, whereas very old people do not suffer more than younger ones from depression. Fractures from falls (in particular of

the femur), cardiovascular diseases (congestive heart failure, stroke) and diseases of the musculoskeletal system (above all arthritis of the hip and knee joints) are the most common causes for hospital stays and rehabilitation treatment among the very old. About two thirds of all deaths may be traced back to cardiovascular diseases and cancer. Very old people die more often than not in hospitals and nursing homes, only about a fourth of them at home.

From the vantage point of health prevention, the very old represent an ambivalent age group: On the one hand, they are less physically active and less fit than younger age groups, they tend to go to preventive checkups and cancer-screening exams less, they pay the dentist fewer visits and they take too many medicines not appropriate for them. On the other hand, in many respects they live a healthier life than younger people: They smoke less and drink less alcohol, they eat more fruit and

vegetables, and they watch their weight more—and of all age groups they get the most flu shots in the winter.

The available data on the health situation of the very old are unsatisfactory. In many health surveys this age group is either ignored altogether or the number queried is so small that no representative conclusions and relationships to other social categories can be calculated. Except for some inferences concerning gender inequality, further statements on social inequalities concerning social status, education, income and migration status are hardly possible. Further, when very old age begins is not properly defined and is often determined rather randomly, even in the official databases and publications of the Federal Statistics Office. That is the reason why in this chapter the lower age limit for the very old was not always set at 80 years, but sometimes as high as 85 years or as low as 75 years.

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# 06

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## » Care and Care Relationships

From the age of 80 years onward, chronic diseases and functional restrictions increasingly limit the ability of those afflicted to live an independent life. This explains why the number of persons in need of assistance for activities of daily living increases in this age group (cf. Chapter 05.2). At the end of 2011, more than half (56 %) of all persons receiving care with an allocation from the statutory nursing care insurance program were older than 80 years—1.39 million persons in total (1,059,020 women and 329,710 men). The proportion of the very old among care-dependents lies at ca. two thirds (65 %) for women and 38 % for men (Statistisches Bundesamt 2014c; own calculations). Care dependency has thus become a typical phenomenon among the very old, especially very old females.

In this chapter, we first present the legal conditions and basic statistical data available on long-term care in Germany. Then we look at the specific situation of very old care-dependent persons in private households and in nursing facilities. Here, the literature also allows us to tap information on the situation of care-dependent persons with an immigration background. Next, we discuss three specific problem areas of major importance from the perspective of health promotion and prevention: Who in the family is providing care? What pressures are they under? What experiences of abuse/violence do the very old have in private households and in care facilities? What types of rehabilitative services are they receiving and with what success? Finally, we regard the costs involved in providing long-term care.

## » 06.1 The Need for Assistance and Care: An Overview

### Nursing Care Insurance and the Concept of Care-Dependency

In 1995, the statutory program for social nursing care insurance was instituted as the fifth leg of the German social security system, in addition to unemployment insurance, health insurance, pension insurance and accident insurance. According to the Nursing Care Insurance Act someone is classified as being in need of care when “their physical, mental or emotional illness or disability proves to be a continuous hindrance to carrying out the normal and regular activities of daily living for at least 6 months, such that they are in need of assistance to a considerable or greater extent” (Para. 14 Social Security Act XI). This legal definition also serves as the basis for the official care statistics gathered by the Federal Statistics Office, which collects information on all persons declared to be care-dependent based on the legal criteria, which must be substantiated by a positive decision in an expertise

by the Medical Services of the statutory health insurance system or by an independent expert. Such persons are entitled to receive benefits from their statutory or private nursing care insurance company. Persons with less distinct or no need for assistance in accordance with this definition are not considered care-dependent.<sup>38</sup> The benefits granted are staggered according to the level of care-dependency determined, depending on the amount and length of assistance necessary in the areas of personal care, feeding, mobility and household support. There are three levels: level I (substantial need for care), level II (extensive need for care), level III (comprehensive need for care). The extension of the Nursing Care Insurance Act passed in 2008 also included benefits for persons whose ability to tend to their everyday affairs is limited, that is, for persons with dementia, mental disabilities and mental illnesses (Para. 45a Social Security Act XI).<sup>39</sup> Persons in need of care can be taken care of either by their relatives or by a home-care service at home, or in a nursing care facility. For care being given at home, an allowance is paid to cover the expenses of the relative(s) or nonrelatives or the home-care service providing the care. The two types of home care can also be combined. For inpatient care, a monthly amount is paid to cover the nursing care services, whereas the costs of food and lodging (so-called “hotel costs”) must

38 Data on care-dependency are gathered by the Statutory Nursing Care Insurance and the Private Nursing Care Insurance companies. The official statistics on care-dependency for 2011 shows 2 % more care-dependent persons than those counted in the combined statistics of the Statutory Nursing Care Insurance and the Private Nursing Care Insurance companies. The discrepancy is presumed to lie in the different methods used to calculate this group, which result from the different way cases are reported (Statistisches Bundesamt 2013f, p. 26).

39 The legal situation described here (Summer 2014) represents an intermediate step on the path to a new definition of care-dependency that is scheduled to eventually replace the present definition, which regards only physical limitations. The new definition puts physically, mentally and emotionally disabled persons on the same level. The previous three level of care-dependency (see BMG 2014) are to be replaced by five different grades that reflect eight areas of life in which limitations to independence can occur. These areas are mobility, cognitive and communication capabilities, behavioral and mental abilities, self-sufficiency, dealing with the necessities and stresses of disease and therapeutic measures, organization of daily life and social contacts, activities outside the home and homemaking abilities (BMG 2013, pp. 3 and 20 f.). An expert commission headed by the Federal Ministry of Health has developed a new evaluation system that is presently being tested. The new definition of care-dependency is scheduled to be put into law during the present legislative period of parliament.

be borne by the patient. The rule is that home care is preferable to institutional care (and, analogously, that semiresidential and short-term care is preferable to inpatient care), the goal being that those in need of care can remain in their normal surroundings for as long as possible (Para. 3 Social Security Act XI). Also, benefits stemming from Para. 5 Social Security Act XI for health prevention, outpatient treatment and medical rehabilitation are preferable in order to prevent care-dependency from occurring altogether or to assist in overcoming or mitigating the need for long-term care or a worsening of the condition (cf. Chapters 05.5, 05.07 and 05.8).

## Basic Care Statistics

At the end of 2011 there were some 2.5 million care-dependent persons in Germany according to the definition given in the Social Security Act XI. 1.76 million thereof (70 %) were living at home and 743,000 (30 %) were living full-time in nursing care facilities.<sup>40</sup> Of the care-dependent persons living at home, 1.18 million (67 %) were being cared for solely by relatives, and 576,000 (33 %) by home-care services with or without the participation of relatives (Statistisches Bundesamt 2013f, p. 5; cf. Figure 61 in the Appendix). This means that nearly half of all care-dependents (47 %) are in the care of relatives (Pflegerstatistik 2011, see Table 31). In 2011, two thirds (66 %) of all care-dependents were women; the proportion of women being cared for at home was somewhat less than that (62 %), in

institutional care somewhat greater (74 %) (Statistisches Bundesamt 2013f; cf. Table 31). Care-dependent persons in nursing care facilities were generally older than those being cared for at home: In 2011, 50 % of the those care-dependents living in care facilities and 30 % of those being cared for at home were 85+-year-olds. The proportion of persons classified as in need of comprehensive care (level 3) in institutional care was 20 % and at home 9 % (Statistisches Bundesamt 2013f, pp. 8 f.; cf. Table 31). In a study carried out by the Federal Ministry for Migration and Refugees in 2009, the total number of foreigners who were care-dependent was estimated to be 56,607 women and 45,256 men, from a total of 117,646 women and 83,153 men with an immigration background who were care-dependent. There are no figures available for persons 80 years and older (BAMF 2012b, p. 77).

From 1999 to 2011, the overall number of care-dependent persons rose steadily from 2.0 million to 2.5 million (Statistisches Bundesamt 2013f, p. 23). This increase is due solely to the demographic changes in the population, i.e., to the increasing numbers of old and very old persons in the population (Barmer GEK 2013a, p. 10). If the probability of becoming in need of care remains relatively unchanged (status-quo scenario), then, according to the calculations of the Federal and State Statistics Offices (2010, p. 30), the number of persons in need of care will rise to 2.9 million by 2020, to 3.4 million by 2030 and to 4.5 million by 2050.

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40 Since 2009 the number of persons being cared for by institutions on a semiresidential basis is no longer listed separately since it is assumed that they are also receiving benefits from the Nursing Care Insurance Program and/or other benefits in kind and are thus subsumed in the number of persons listed as care-dependent (Statistisches Bundesamt 2011e, p. 27). For 2011 the increase in persons in need of care who are being cared for solely by relatives turned out to be too high on average; the reason is presumed to lie in the modified method used by the insurance companies to calculate their number (Statistisches Bundesamt 2013f, p. 25). Together, the anomalies in these statistics mean that the number of care-dependent persons today can be compared to earlier surveys only with some reservations.

## Care-dependent persons according to type of care

Care-dependent persons			Care level			Previously w/o allocation	Proportion of overall care-dependents	Respective proportion of level III	
Total	Change from 2009	thereof females	I	II	III <sup>1</sup>				
Number	%		Number			%			
Care takes place at home	1,758,321	8.5	61.9	1,086,751	518,786	152,784	–	70.3	8.7
Thereof:									
Solely by relative(s) <sup>2</sup>	1,182,057	10.9	59.0	762,366	329,912	89,779	–	47.3	7.6
Together with/by home-care service	576,264	3.8	67.9	324,385	188,874	63,005	–	23.0	10.9
Inpatient institutional care	743,120	3.6	74.0	283,266	299,404	151,952	8,498	29.7	20.4
Total	2,501,441	7.0	65.5	1,370,017	818,190	304,736	8,498	100.0	12.2
Selected changes from 2009 (%)				9.8	4.0	4.0	–19.6		

1 Including hardship cases.

2 Corresponds to the number of persons receiving only benefits acc. to Para. 37 Social Security Act XI. Recipients acc. to Para. 38 Social Security Act XI, on the other hand, are subsumed in the statistics on home-care services.

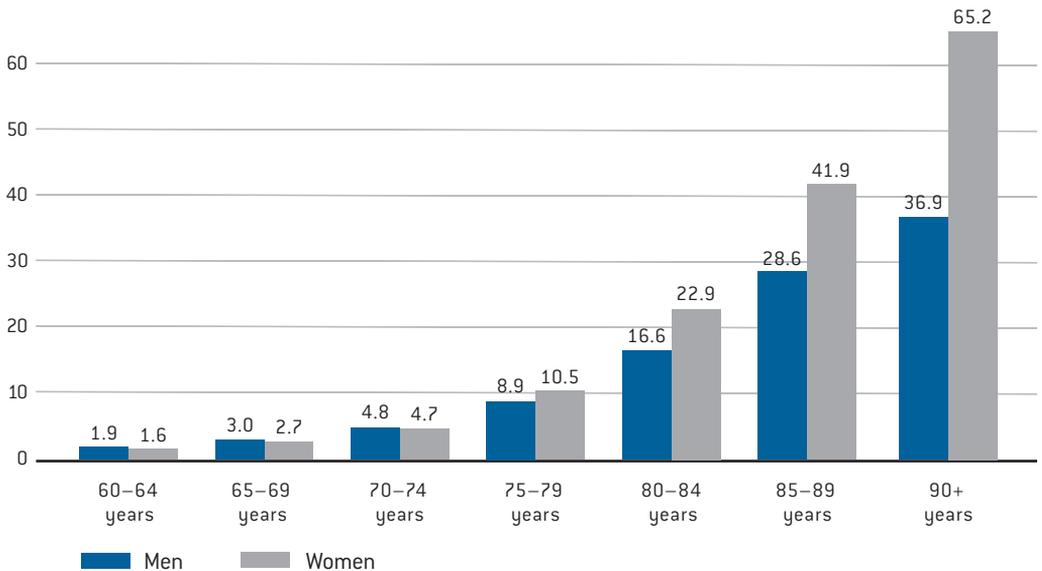
>> Tab. 31: Care-dependent persons acc. to type of care, end of 2011 (Pflegestatistik 2011, Statistisches Bundesamt 2013f, p. 9)

## Need for Assistance

The statistics available on care-dependency address only persons with an officially sanctioned need for nursing care. Many older people, however, need only practical help in their everyday lives without being in need of actual nursing care. The number of persons in need of such assistance in private households in the German population was last calculated in 2002 in the study entitled "Possibilities and Limits of Independent Living in Private Households" (MuG III) (Schneekloth and Wahl 2005). The definition of someone in need of

assistance is that they are limited in their ability to carry out activities of daily living and require above all support in their household without being in need of nursing care in the sense of the Social Security Act XI (ibid., p. 11). In addition to the ca. 1.4 million care-dependent persons, in 2002 further 3 million persons were counted as being in need of assistance. We may assume that the overall relationship of one care-dependent person to two in need of assistance has remained unchanged over the years. In 2002, 18% of those 75 to 84 years old were in need of assistance and 9% were care-dependent, whereas among the 85+-year-olds 35%

## Number of care-dependent persons in the various age groups



» Fig. 33: Number of care-dependent persons in the various age groups, 2011, acc. to age and sex, in % (Pflegerstatistik 2011, Statistisches Bundesamt 2013f, p. 9)

needed assistance and 29% needed nursing care (Schneekloth 2005, pp. 61 f.).

### Distribution According to Age and Sex

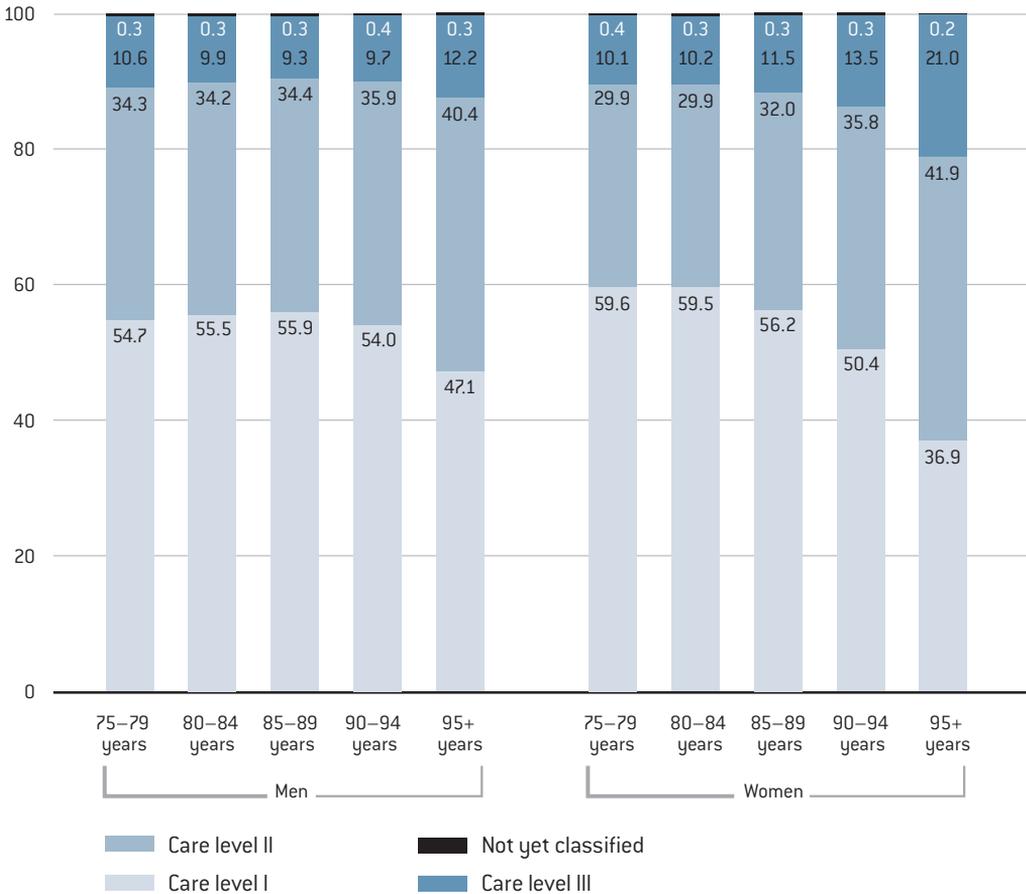
The proportion of persons in need of care rises almost exponentially with increasing age: According to the statistics on care-dependency from 2011 (cf. Figure 33 and Table 62 in the Appendix), 17% of the men and 23% of the women between 80 and

84 years of age, 29% of the men and 42% of the women between 85 and 89 years as well as 37% of the men and 65% of the women 90 years and older were care-dependent.<sup>41</sup> The care quotas have remained steady since the first calculation in the year 1999, that is, the probability of becoming care-dependent at any particular age has neither risen nor fallen since that time (Barmer GEK 2013a, p. 10).

The higher care quotas among women aged 80 years and more may be traced back to differences in health status (very old women tend to suffer

<sup>41</sup> The difference between the sexes among the 90+-year-olds should not be as high as that given in the statistics on care-dependency in 2011. According to the newest results of the census of 2011 (Statistisches Bundesamt 2014d, p. 17), at the end of 2011 there were 123,019 men 90+ years old (preliminary data from the 2011 census) and not 173,100 (old extrapolation population data). Thus, on this new basis the care quota for men 90+ years old would be 52%. The extrapolation error for women 90+ years old, however, was not quite as high, so that the newly calculated value for their care quota for 2011 would be 69%.

### Care-dependents according to care level



>> Fig. 34: Care-dependent men and women, 2011, acc. to level of care and age, in % of all care levels (Pflegestatistik 2011, Statistisches Bundesamt 2014c, www.gbe-bund.de)

more from chronic diseases and have a higher risk of coming down with dementia than men of the same age; cf. Chapter 05) and probably also to differences in the way applications for official care status are handled. Women in this age group tend to live alone, so that when care-dependency arises

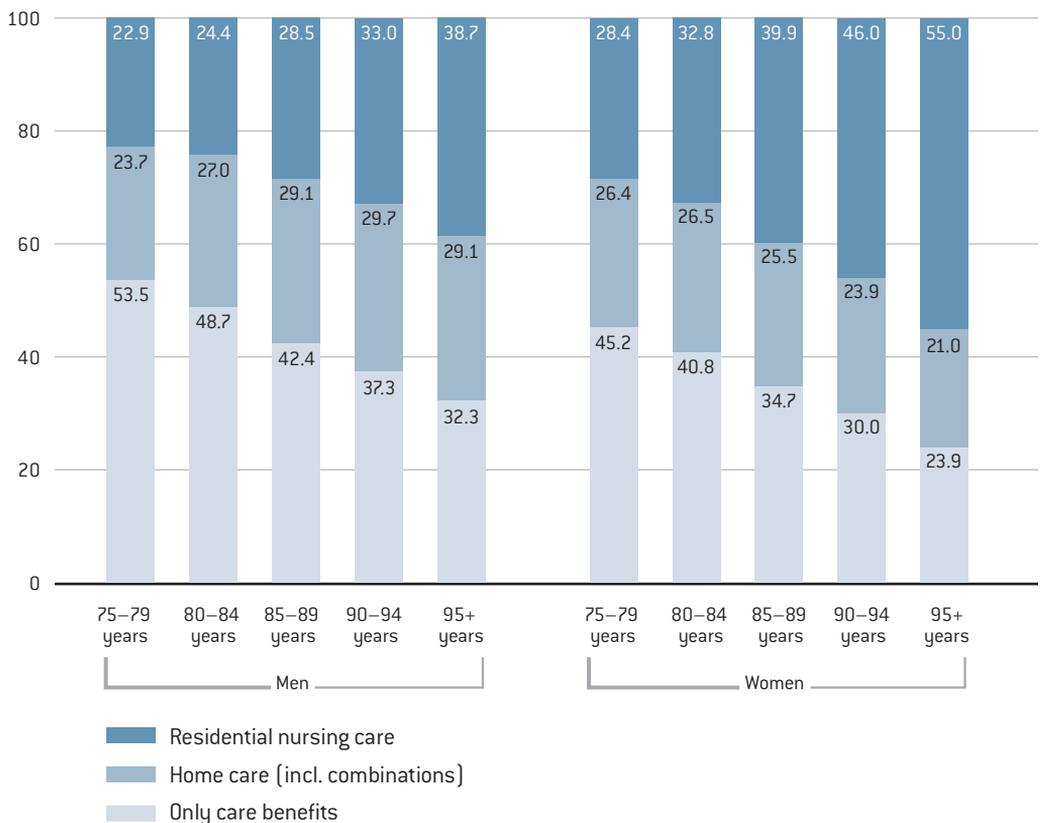
they immediately require assistance, whereas care-dependent men are more likely to be tended to by their spouse and thus apply later for outside assistance (Statistisches Bundesamt 2013f, p. 8).

More than half of all care-dependent persons (55%) are classified as care level I (ibid.; see Table

31, own calculations). To be classified in this care level, one has to be in need of substantial care in the form of 90 minutes of daily care, half of which must be devoted to basic care (especially personal care, feeding). Up to and including the age group of 90–94-year-olds, the majority of men tend to be classified in care level I. Only in the age group of 95+-year-olds does this proportion fall to 47% and

in women to 37%. The relative proportions of men in need of comprehensive care (level III) lie between 9% and 12% in the age groups of 75+ years. Women up to the age group 85–89 years have similar values (10–12%), whereupon the proportion of women in need of comprehensive care (level III) rises considerably—to 14% among the 90–94-year-olds and 21% among those 95+ years old (ibid.; cf.

### Care-dependents according to type of benefit and age



» Fig. 35: Care of care-dependent men and women, 2011, acc. to type of benefit and age, in % of all types of benefits (Pflegestatistik 2011, Statistisches Bundesamt 2014c)

Figure 34). The reasons lie presumably in the high number of women who are afflicted with dementia at that very old age.

The number of care-dependent men and women who only receive benefits from the nursing care insurance program falls after the age of 75 years, and vice versa the number of men and women who live in nursing care facilities rises. In all age groups, however, women require a consistently higher level of full-time nursing care than men. The proportion goes from 33 % among the 80–84-year-olds to over half (55 %) of the 95+-year-old care-dependent women, whereas among the care-dependent men 80–84 years old only about a fourth (24 %) and among the 95+-year-olds about a third (39 %) need full-time institutional care (Statistisches Bundesamt 2013f; cf. Figure 35). Because very old women tend to be widowed and live alone more than men of the same age, they receive less care by a partner (Barmer GEK 2013a, p. 72). Care arrangements in the private household through home-care services quickly reach limits of feasibility, making full-time residential care more probable.

## Morbidity and Care-Dependency

Chronic afflictions and their sequelae can considerably limit the ability to live an independent life and indeed often lead to the need for long-term care. Van den Bussche et al. (2013) as well as Heinen et al. (2013) used the data from older care-dependent insured persons in the Gmünder health insurance company from the year 2006 to study which chronic diseases increase the risk of care-dependency and what the differences were between the various types of care needed and the official levels of care. It turned out that, for all age groups and in both sexes (i.e., also among both very old women and very old men), the most important problems

pertained to dementia, urinary incontinence, the repercussions of a stroke and heart failure. These afflictions were found relatively often among persons in need of care (rate at least 20 %) and were simultaneously relatively seldom to be found among persons not in need of care. Parkinson's disease also increased the risk of care-dependency, but is a rarer disease (van den Bussche 2013, pp. 3 and 5). Dementia, urinary incontinence and heart failure also occurred more often in inpatient situations than in home-care situations; dementia, however, bears its own special risk of becoming in need of institutional care. Based on these results, this research group concluded that, with the exception of dementia, the diseases that increase the risk of having to be cared for could be treated to the extent that long-term care in a nursing care facility can be avoided or at least postponed (Heinen et al. 2013, p. 3).

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## >> 06.2 Care-Dependents in Private Households

Although the outpatient care of care-dependent persons factually (70 %) and normatively (“outpatient care is preferable to inpatient care”) dominates the situation, for reasons of data privacy no official statistics are gathered on private care. Despite the legal basis to do so (Para. 109 Social Security Act XI Section 2), the official statistics on nursing care gathered every other year say nothing about the social situation of the care-dependents and their volunteer caretakers (cf. Backes et al. 2008, pp. 13 f.). The last official special survey on the life circumstances of persons being cared for at home and in institutions was done in 2003 as

part of the microcensus (Statistisches Bundesamt 2004), where data were collected on caretaking, on the household and family situation, on means of subsistence as well as on assistance offered for activities of daily living—but not on immigration background.

More recent data may be found only in representative surveys carried out as part of social-scientific research and in the data of persons insured in the individual health insurance companies. Both sources, however, provide only limited insights: Whereas voluntary representative surveys are prone to refusals to participate and often have a meager database that provides little true breakdown of cases, data gleaned from insured persons are representative only for the respective insurance company and not for the overall population. The most important, unofficial data sources on nursing care in Germany are the TNS-Infratest studies carried out at irregular intervals on behalf of the German Federal Health Ministry concerning care offered in private households (cf. BMG 2011 as well as Schneekloth and Wahl 2005) and in care facilities (cf. BMG 2011; Schneekloth and Törne 2008). Other studies of this nature are the yearly surveys by the Socio-Economic Panel of the German Institute for Economic Research (DIW) and the yearly reports on care issued by the Barmer GEK (a health insurance company).

## Sociodemographic Features

In 2011, 62 % of all persons being cared for at home were women. This number increases continually in the older age groups: from 66 % (80–84-year-olds), to 75 % (85–89-year-olds), to 79 % (90–94-year-olds), to 82 % (95+-year-olds). This reflects the well-known fact that there an increasing number of women are living to a very old age. 50 % of all care-dependents being cared for at home were 80 years and older; the proportion of very old persons among the women being cared for at home was 58 %, that among men 36 % (Statistisches Bundesamt 2014c, own calculations).

The most recent data on the family and household situation of care-dependent persons in private households may be found in the TNS-Infratest survey carried out in 2010 (BMG 2011). To this end, 1,500 care-dependent persons or persons acquainted with the care situation in the household were interviewed over the telephone. The data gleaned were subsequently weighted to correspond to the distribution found in the care statistics of 2007 for age, sex and care level (BMG 2011, pp. 5 f.).<sup>42</sup> Accordingly, about two thirds (64 %) of the very old care-dependent persons 80+ years old were widowed, and 39 % were living alone (BMG 2011, p. 17; cf. Table 63 in the Appendix). Thus, the very old have less potential to receive support in the household than do persons in younger age groups. Unfortunately, the results of this survey did not divide the data according to sex, so that we have to resort to the microcensus data from 2003 published in a special report on the situation of care-dependent persons (Statistisches Bundes-

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<sup>42</sup> In this study, care-dependency was determined by asking whether "someone was living in the household who was continually in need of care because of a disease or disability." Of the 1,500 care-dependent persons queried, 1136 were receiving benefits from the statutory nursing-care insurance; the applications of the others had either been rejected, were still under consideration or had yet to be turned in (BMG 2011, p. 5).

amt 2004). There we read that care-dependent women who were being cared for at home (regardless of their age) were more often widowed than care-dependent men of the same age: Among the 80–84-year-olds, 25% of the men and 70% of the women were widowed. Only from age 90+ years onward was the majority of men (61%) being cared for at home also widowed—compared to the very high rate of 87% of the women in this age group (ibid., p. 9; cf. Table 64 in the Appendix). From the age group 75–79 years onward (in 2003) the majority (53%) of the care-dependent women being cared for at home lived alone, and in the age group 90+ years two thirds (65%) lived alone. In contrast, care-dependent men were more likely to live in a household with two or more other persons: In the age group 75–79 years, only 20% of the men were living alone, and in the age group 90+ years the rate was slightly less than half (49%) (ibid., p. 10; cf. Table 65 in the Appendix). In summary, in the group of very old persons women generally have little access to support at home when they become care-dependent.

## Caretaking Arrangements in Home Care

The TNS-Infratest study of 2010 asked who was actively involved in home care.<sup>43</sup> The vast majority of the care-dependent persons living at home were being cared for by at least one private person—and in nearly two thirds (63%) of the cases, two or more persons were concerned with the care, which was being given almost exclusively either by relatives or acquaintances or with the help of home-care

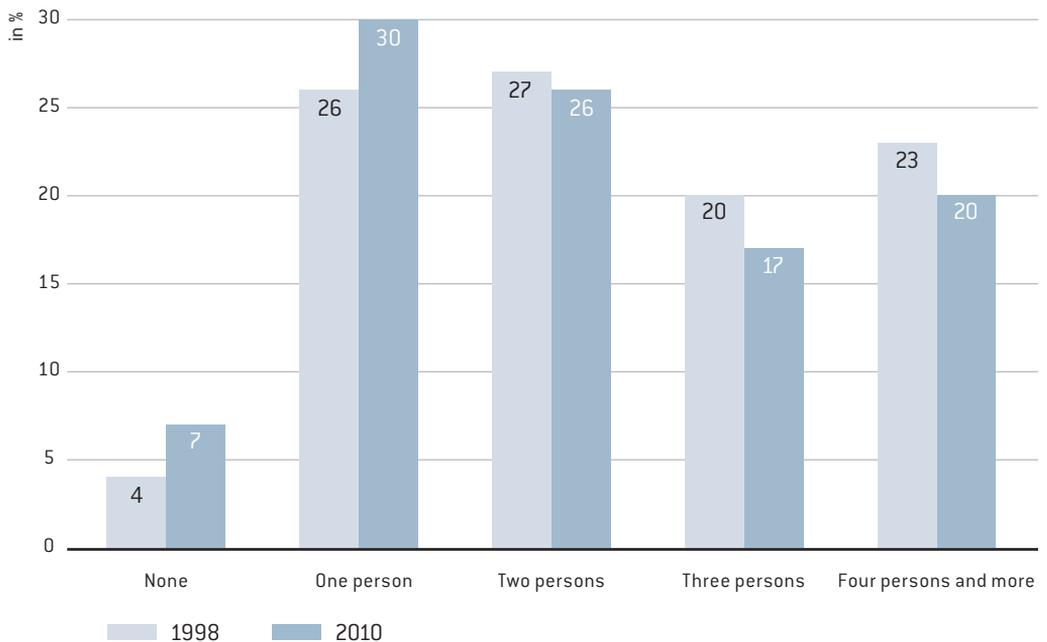
services. In 2010, only 7% of those being cared for at home were exclusively in the care of home-care services, and among those with the official status of level III care-dependency, this rate was only 1% (BMG 2011, p. 26; cf. Figure 36). From the statistics on care-dependency of 2011 we can also conclude that, regardless of age and sex, complete care through relatives or acquaintances (i.e., receiving only the nursing care allowance) by far outweighed that of a home-care service (i.e., home care incl. combination of relatives and home-care service) (cf. Figure 35). Home care in Germany is thus largely a family affair that receives some assistance from professional services. This corresponds to the family-oriented principle of the statutory nursing care insurance, viz. that the “benefits should serve primarily to support home care and the willingness of relatives and neighbors to perform care” (Para. 3 Social Security Act XI).

Thus, in the year 2010, it was especially family members who were shouldering the main task of home care, that is, 34% were (marriage) partners and 36% were the care-dependent’s child(ren). It is remarkable that the number of sons involved in home care doubled from 5% in 1998 to 10% in 2010 (BMG 2011, p. 27, cf. Table 32). In married couples, the partner is generally responsible for home care, whereas among the very old, widowed care-dependents, primarily children assume this role (Schneekloth 2005, p. 76).

To date, care-dependents 80+ years old were preponderantly being cared for by family members, men more often than women (cf. Figure 35). It is, however, questionable whether this conservative family care model, which foresees the care of a family member largely as a private matter, will survive in the present form. The main demands of

43 The following results reflect all care-dependents since the data were not differentiated according to age group.

## Number of private persons involved in home care



» Fig. 36: Number of private persons involved in home care, 1998 und 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 26)

caring for someone are mostly put on middle-aged to older women and often lead to their having to reduce their workload or quit working altogether (see Chapter 06.4). Even though the revision of the Nursing Care Act of 2008 served to reduce these demands somewhat and to allow a greater compatibility between employment and care, the preference for family-based (and thus effectively female) responsibility for caretaking remained unchanged (cf. the overview of Backes, Amrhein and Wolfinger 2008, pp. 55 f.). This principle, however, directly contradicts the continually declining ability of families to fulfill this responsibility. The reasons

lie in the decreasing number of births (leading to fewer possible caretakers in the future), the increasing number of divorces and singles in German society (leaving fewer partners and fewer children to deliver care), the still increasing number of women working fulltime (the present economic conditions do not always allow fulfillment of caretaking duties) and the higher professional mobility being demanded of upcoming generations, who will rarely end up living near their parents (Barmer GEK 2013a, p. 101). This entire process is exacerbated by the reduction of the caretaking potential in families, who are affected by the long-term loss of

## Relationship of main caretaker

	1998	2010
<b>Relationship</b>		
(Marriage) partner (female)	20	19
(Marriage) partner (male)	12	15
Daughter	23	26
Son	5	10
Daughter-in-law	10	8
Son-in-law	0	1
Mother	11	10
Father	2	1
Other relative(s)	10	4
Neighbors, acquaintances	7	6
<b>Household</b>		
Same household	73	66
Different household	27	34

>> Tab. 32: Relationship of main caretaker to care-dependent person, 1998 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 27)

traditionally oriented social settings that provided a high willingness to care for relatives (Blinkert and Klie 2008; cf. Chapter 06.4 and Figure 41).

One sign that there is an increasing need for professional caretaking services may be found in the slowly sinking number of persons receiving only the nursing care allowance for caretaking relatives: The proportion of this group fell from 51 % at the end of 1999 to 47 % at the end of 2011 (Pflegestatistik 1999–2011; quoted acc. to Barmer GEK 2013a, p. 71). Since the introduction of the

statutory nursing care insurance, the proportion of care-dependent persons receiving benefits for home-care services or for care provided in nursing care facilities has risen. Originally, the proportion of persons in institutional care rose, but since 2007 the number of persons receiving combination care has been on the rise. The trend toward inpatient care has thus stopped, whereas the number of arrangements that include support through home-care services continues to increase (Barmer GEK 2013a, pp. 71 f.).<sup>44</sup> Correspondingly, the capacities

<sup>44</sup> Table 33 shows a slight increase in the years 2009 to 2011, but this does not mean we are dealing with a reversal of the basic trend. The number of care-dependents receiving only the nursing care allowance was likely underestimated in 2011 (see the comments on the methods used precipitating the limited comparability of the numbers from 2011 in the scope of the statistics on care-dependency of 2013 in Statistisches Bundesamt 2013f, p. 25).

## Care-dependent persons in private households with and without immigration background

	Care-dependents with immigrant background	Care-dependents without immigration background
<b>Age</b>		
Under 60 years	29	17
60 to 80 years	42	34
80+ years	29	49
<b>Living situation</b>		
Single	21	35
Married couple	29	28
Married couple with relatives	14	6
Widowed with relatives	15	18
Other single with relatives	10	9
Children under 16, parent household	11	4
<b>Care level</b>		
Level I	54	59
Level II	31	32
Level III	15	9

» Tab. 33: Care-dependents in private households, 2010, with and without immigration background, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 60)

available in home-care services have grown faster than those available in inpatient care: Compared to 1999, in 2011 two thirds more people (64 %) were employed in home-care (fulltime equivalent jobs), whereas the number of beds available in long-term nursing care facilities rose only by about one third (36 %) over the same timespan (ibid., p. 11).

## Immigration Background and Home Care

The TNS-Infratest study of 2010 also differentiated the social situation of care-dependents in private households according to whether or not there was an immigration background.<sup>45</sup> Care-dependents with an immigration background are generally younger than those without an immigration background: The proportion of very old among all care-dependents with an immigration background was 29 % compared to 49 % among those without

an immigration background. Also, only 21 % of them were living alone compared to 35 % among those without an immigration background. Care-dependents with an immigration background were on average 62 years old, whereas care-dependents without an immigration background were on average 73 years old (BMG 2011, p. 60; cf. Table 33). These differences are likely due primarily to the different age structure of these two groups.

Of those persons with an immigration background who live in private households and claim to be in need of care, 17 % receive no benefits from nursing care insurance (ibid., p. 62). They also have a higher rate of receiving only the nursing care allowance, and they tend to use home-care services to a lesser degree (ibid., p. 61).

among persons between 75 and 94 years within such facilities, however, remains relatively constant over time: At the end of 2011, ca. 40 % of all care-dependents living in nursing care facilities were classified as level I, another 40 % as level II, and ca. 20 % as level III. From the age of 95 onward, there are fewer and fewer residents in level I and thus more in levels II and III (Statistisches Bundesamt 2013f; see Figure 37).

According to the most recent TNS-Infratest survey (BMG 2011, p. 121, Table 34)<sup>46</sup>, in 2010 about three times more women (76 %) than men (24 %) were living in long-term care facilities. 80 % of the residents were 75 years and older; the average age of women was 84 years, of men 76 years (ibid., p. 121). These values remain virtually unchanged from those gathered in the survey of 1999 (the differences amount to no more than statistical error figures).

A further differentiation according to sex and age may be found in an analysis of the microcensus of 2003, which offers a good data basis. Although the data are relatively old, they can still provide a good overview of the basic age and sex structures that continue to be valid even today. Two thirds (66 %) of all care-dependents in care facilities were widowed, with about three fourths of the women (73 %) being widows and 38 % of the men widowers. Of those aged 80 to 89 years, more than half of the men were widowed (54 %). 29 % of the men and 16 % of the women were single (Statistisches Bundes-

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## >> 06.3 Care-Dependents in Nursing Care Facilities

### Sociodemographic Features

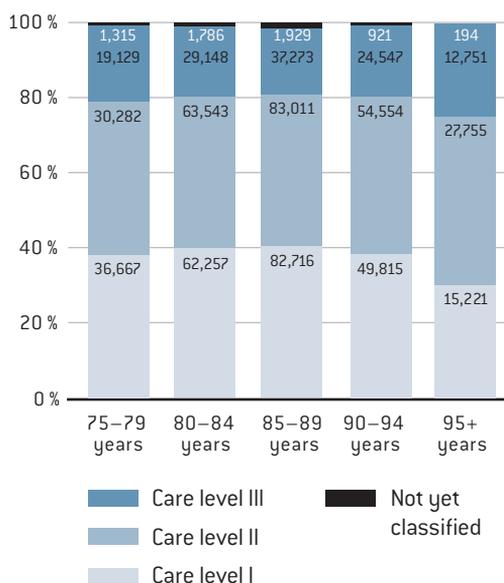
The number of male and female care-dependents who live in care institutions increases with age (see Figure 35). The breakdown of care levels

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45 Unfortunately, the report on this study does not contain information on the methods used to determine how many of the care-dependents had an immigration background and whether a command of German was a stipulation for taking part in the survey. That 68 % of the care-dependents with an immigration background reported their mother tongue being German (BMG 2011, p. 61) would seem to be indicative of a high selectivity. This may mean that the group of (repatriated) ethnic Germans are highly overrepresented in this sample. There are thus justifiable doubts that this survey is representative of care-dependents with an immigration background.

46 The available information on the representative group of 2,470 care-dependents from long-term care institutions was taken from interviews with their main caretakers. In addition, 422 interviews were carried out with the managers of such facilities. Then, as with the survey on households, the data were weighted according to regional aspects based on the statistics for care-dependency from 2007 and extrapolated to all care-dependents in Germany (BMG 2011, p. 5).

## Care-dependents in nursing care institutions



» Fig. 37: Care-dependents in nursing care institutions, acc. to care level and age (Pflegestatistik 2011, Statistisches Bundesamt 2014c, www.gbe-bund.de)

amt 2004, p. 13; cf. Table 66 in the Appendix). More than two thirds of all care-dependent persons living in care institutions were 80 years or older. The rate of very old women (74%) was considerably higher than that of very old men (43%), who were in the minority (ibid., own calculations).

The Barmer GEK report of 2013 tested the claim that nursing homes were becoming “infirmaries,” that is, that the care-dependent persons admitted to the homes today are older and sicker than previously—and thus die more quickly. This study analyzed the data of the older insured persons

in the Gmünder health insurance company and the statistics on care-dependency since 1999. The authors concluded that the age of entry into long-term care homes had risen only slightly from 2000–2002 and from 2009–2011: among men by 0.3 years to 78.9 years and among women by 0.1 years to 82.5 years. The average age of all nursing home residents—an effect of the overall rise in life expectancy—rose among women from 84.3 to 84.9 years and in men from 78.7 to 79.4 years. Entry into a residential home begins more and more with care level I, i.e., with relatively good health status (compared to levels II and III). Also, the length of stay in a nursing care facility has not gotten any shorter in the meantime, indeed among men it’s grown longer. From these data the authors conclude that long-term care institutions have not become “institutions of death” (Barmer GEK 2013a, pp. 11 f.).

## Residents of long-term care facilities

	1999	2010
Sex		
Men	21	24
Women	79	76
Age groups		
Under 60 years	6	5
60 to 75 years	16	14
75 to 90 years	58	57
90+ years	20	23
Average age	81	82

» Tab. 34: Structural features of the residents of long-term care facilities, 1999 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 121)

## Living and Support Situation in Inpatient Facilities

The TNS-Infratest survey studied whether the living situation of residents of care facilities had improved since the previous survey of 1998. As indicator they used the number of individual living spaces (single-occupancy rooms or apartments). Figure 38 shows just how much the situation improved over this time period: In 1998 about half of all living spaces was reserved for just one person, whereas in 2010 this rate had risen to more than two thirds (69%). In this sense, the facilities in East Germany, where the proportion of single-occupancy rooms and apartments rose to 75%, have not only caught up but surpassed those in West Germany. This is considered to be a consequence of the modernization campaign launched in institutional homes in East Germany from 1995 to 2002 (BMG 2011, pp. 126 f.).

Table 35 illustrates the support and care services family members, friends and acquaintances were providing, not just in home care, but also within residential care arrangements. In 2010, exactly half of all care-dependents living in nursing care institutions were visited by family members at least once a week; over a third of them (37%) were even being directly cared for and supported in household matters (BMG 2011, p. 131). On the other hand, however, it should not be ignored that many residents of homes must do without such assistance, either because they have no relatives or because their relatives cannot or do not provide such support. In the TNS-Infratest survey of 2010, some 25% of all care-dependents were never visited by relatives, and about half of them were never visited by friends, acquaintances, other home residents or volunteer agencies. If we add to these values those on the lack of social care, then we can

### Living situation in long-term care facilities



>> Fig. 38: Proportion of residents of long-term care facilities living in single-occupancy rooms and apartments, 1998 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 127)

conclude that a large number of care-dependent persons living in long-term care facilities are clearly in danger of social isolation and loneliness.

## Immigration Background and Residential Care

According to the TNS-Infratest study, about 9% of all care-dependents living in institutional homes had an immigration background—among the caregivers the rate was even higher (15%). The rates are considerably lower in East Germany than in West Germany. About two thirds of all care-depend-

## Support in long-term care facilities

	Every day	A few times a week	Rarely	Never/not the case
<b>Help with care and household matters</b>				
Family members	8	29	21	40
Friends or acquaintances from outside the facility	1	11	19	65
Other residents from inside the facility	11	8	11	66
Volunteer helpers from organizations	4	16	16	60
<b>Assistance in social care</b>				
Family members	10	40	24	25
Friends or acquaintances from outside the facility	1	14	25	56
Other residents from inside the facility	16	11	15	52
Volunteer helpers from organizations	5	22	19	49

» Tab. 35: Support of care-dependent persons in long-term care facilities through other persons, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 131)

ents with an immigration background were living in facilities where at least one professional caregiver had the same cultural or religious background as their own (BMG 2011, pp. 132 f.). Yet there were also care-dependents with an immigration background who do not have a sufficient mastery of German and have no contact to caregivers who speak their language (ibid., pp. 162 f.).

## » 06.4 Relatives as Caregivers

### Sociodemographic Features

According to the TNS-Infratest study, in 2010 the main responsibility for private home care lay with the women in the household: Women comprised about three fourths (72 %) of all main caretakers. On the other hand, compared to the study carried out 12 years previously, the number of caretaking men rose from 20 % (1998) to 28 % (BMG 2011, p. 27; cf. Table 36). In this study, the reason given for this increase was said to lie in the statutory

nursing care insurance, which by providing assistance through home-care services made it easier for men to assume the role of caretaker (*ibid.*, p. 27). Over the 12-year period, the number of very old persons doing the caretaking nearly doubled from 5 % [1998] to 9 % [2010] (*ibid.*), which means that persons 80+ years old are not just recipients, but also to a considerable extent the givers of care. A major part of the private caretakers, however, were themselves already “old”—about half of the main caretakers were between 55 and 79 years of age (*ibid.*).

The Barmer GEK Care Report of 2013 also compared the extent of private caretaking with data taken from the Socio-Economic Panel (SOEP) of 2011.<sup>47</sup> A caretaking person was defined as someone who devoted at least 1 hour per day to the care of a care-dependent person (Barmer GEK 2013a, p. 107). Thus, in 2011, there were over 3.5 million caretakers in Germany, meaning each care-dependent persons had two caretakers (*ibid.*, p. 108). Nearly two thirds (65 %) of the private caretakers were women. This ratio of two caretaking women to every caretaking man remained nearly constant from 2001 to 2011. This result seemingly contradicts the TNS-Infratest study (see above), but the SOEP counted not only the main caretakers, but indeed all persons concerned with the caretaking (*ibid.*).

It is interesting to note the proportions of male and female caretakers in the respective age groups: Men have the highest rate (10 %) of participation in home caretaking when they are very old (more than women!), whereas women do the most caretaking between the ages of 50 and 69 years

### Characteristics of main caretakers 1998 and 2010

	1998	2010
<b>Sex</b>		
Men	20	28
Women	80	72
<b>Age</b>		
Under 20 years	0 <sup>1</sup>	–
20–39 years	15	8
40–54 years	28	33
55–64 years	25	26
65–79 years	27	24
80+ years	5	9

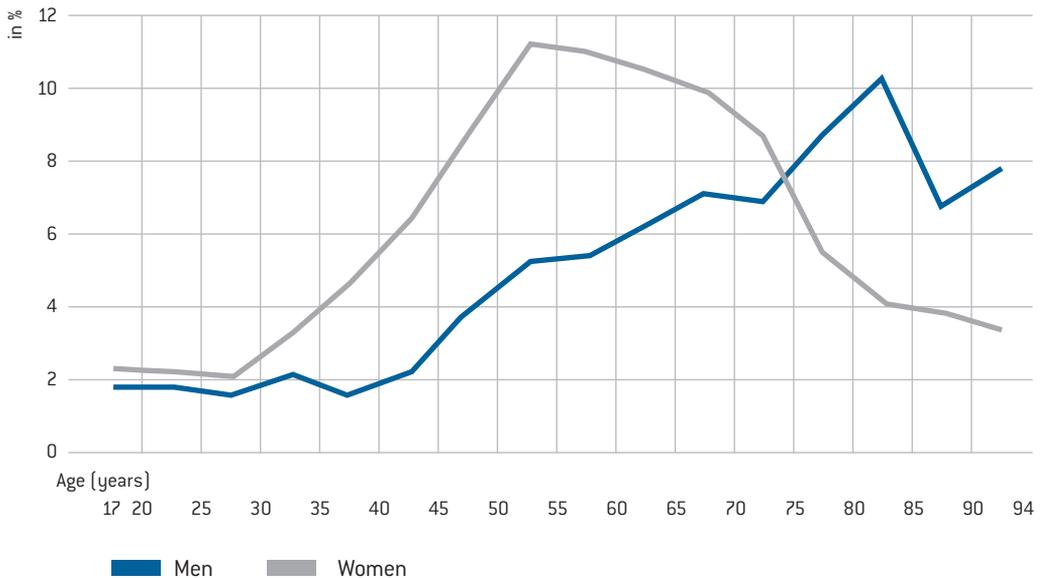
>> Tab. 36: Sociodemographic characteristics of the main caretakers, 1998 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 27)

1 = 0 – < 0.5 %

[12 %] (*ibid.*, p. 109, see Figure 39). Thus, women are most often caretakers in the “third” stage of life, whereas men are caretakers in the “fourth” stage of life. Because most very old women are widows, they are likely to be taken care of by their children (and here again probably by their daughters). Very old men, on the other hand, are less likely to be widowers and thus can take care of their wives or partners—this would explain the high level of caretaking among very old men (*ibid.*, p. 109).

<sup>47</sup> The Socio-Economic Panel is a survey that has been done every year since 1984 among the entire population in Germany. In 2011, the sample comprised more than 11,000 households with over 25,000 individuals including foreigners and persons with an immigration background. The question posed concerning private caretaking was as follows: “How many hours a day do you devote exclusively to the following tasks—caring for and assisting care-dependent persons?” (Barmer GEK 2013a, pp. 60 and 107).

## Caretakers according to age and sex



Source: SOEP v28, weighted

» Fig. 39: Caretakers acc. to age and sex, 2011, SOEP v28 (Barmer GEK 2013a, p. 109)

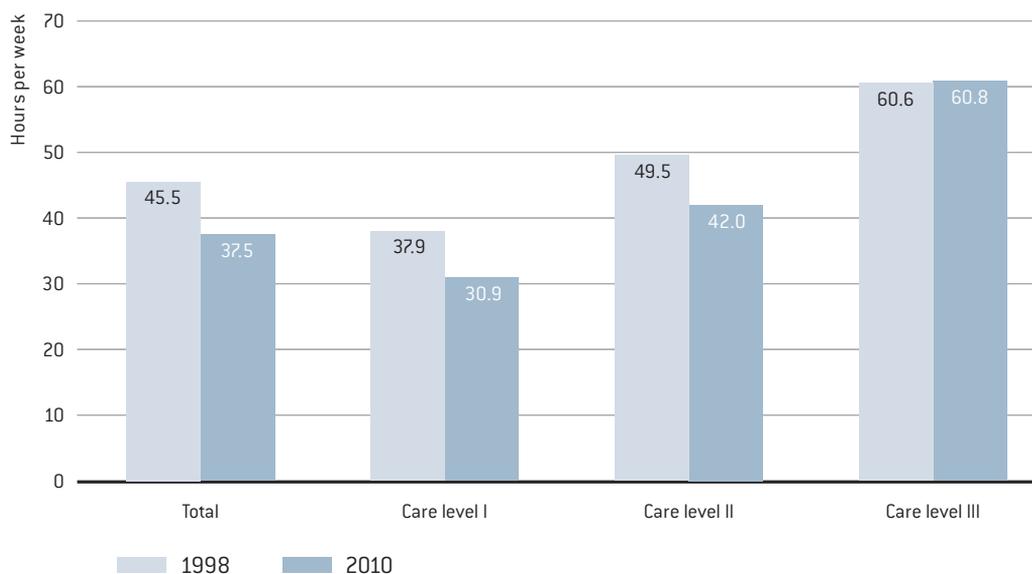
## Burdens on the Caretaking Relatives

Taking care of one's relatives can be a rewarding and satisfying experience, but often it is associated with considerable burdens that can lead to health and social problems. In the care-dependents in question here aged 80+ years, it is mostly women aged 50 to 70 who are taking care of their relatives (above all their own parents). Yet some very old persons—especially men—do participate in home care, generally of their own partner (see above). Unfortunately, the data available do not differentiate according to age and sex, so that we are not in the position to make statements about the burdens caused by home caretaking for very old men and

women either being cared for or extending care to others.

A comparison of the TNS-Infratest studies of 1998 and 2010 shows that the average time spent by the main caretaker on caretaking tasks fell considerably from 46 hours per week in 1998 to 38 hours per week in 2010—but this still corresponds to a fulltime job (BMG 2011, p. 29, see Figure 40). The decrease in the average number of hours spent caring for a relative, however, refers only to persons with official care levels I and II, whereas the time demands on main caretakers for caring for level-III care-dependents remained the same at the high level of 61 hours a week. The burdens to caretakers apparently have not become lighter over time; they

## Time spent on caretaking by the main caretaker



>> Fig. 40: Time spent on caretaking by the main caretaker (hours per week), 1998 and 2010, from TNS-Infratest Social Research 2010 (BMG 2011, p. 29)

remain a high-risk group for adverse health and social effects.

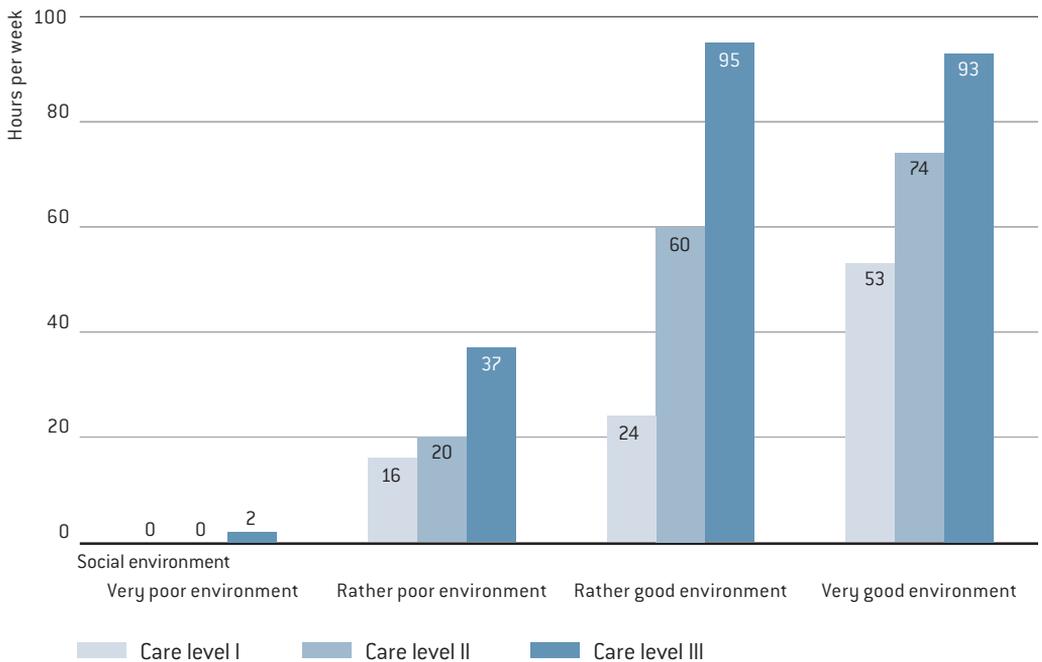
In a study on home-care arrangements, Blinkert and Klie (2008) studied which social factors are responsible for the time demands put on relatives in taking care of their care-dependent loved ones at home. They report that traditional arrangements are the most intensive ones when caring for relatives: The amount of time the main caretakers invest is highest when their own social status is low, when they live in a rural area, follow a more traditional lifestyle and have a stable support network (ibid., p. 29; cf. Figure 41).

Parallel to the decrease in the time spent on the care of relatives there was a decrease in the overall

number of caretakers who complained of extreme demands—from 40 % in 1998 to 29 % in 2010. On the other hand, the values for level of stress were generally still very high, with over three fourths (77 %) of the main caretakers reporting being under “rather intense” or “very intense” stress (BMG 2011, p. 29; cf. Figure 42).

Of course, the intensity of the demands increases with the amount of time required for caretaking. In 2010, those main caretakers who reported having “none” or “rather little” demands put on them were working 35 hours a weeks on average taking care of a relative. Those who reported “rather intense” demands were working 38 hours a week, and those reporting “very intense” demands

## Social environment and time invested in caretaking



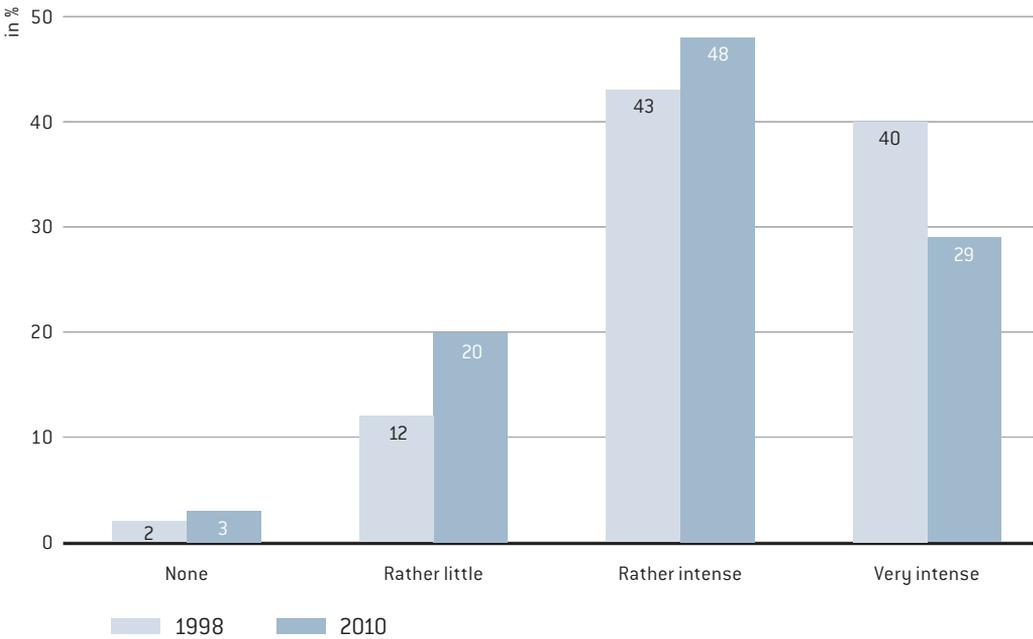
» Fig. 41: Social environment, care-dependency and time invested by relatives in caretaking (hours per week) (Blinkert and Klie 2008, p. 29)

were on average putting in a very high number of hours (60) (BMG 2011, p. 64). The amount of time spent by persons who reported “very intense” demands is thus just as high as that of persons taking care of relatives with an official care level III.

Using the data from the TNS-Infratest survey of 2002, Schneekloth (2005, p. 87) calculated which conditions had the strongest influence on the subjective feeling of stress among caretakers. Statistically speaking, only the care situation was relevant: Taking care of persons with dementia and persons with care level III—having to be available

around the clock 24/7, deficits in the availability of aids and the parallel necessity of tending to one’s own professional life—were felt by caretakers to be the most stressful. In light of these factors, neither age and sex (both of the main caretaker and of the care-dependent person) nor status features (household income, social status, educational level) and regional factors (urban or rural setting, East vs. West) had a major influence on the stress level (ibid.). However, many of these factors had already been factored into the respective caretaking situation. Especially socially

## Demands put on main caretakers



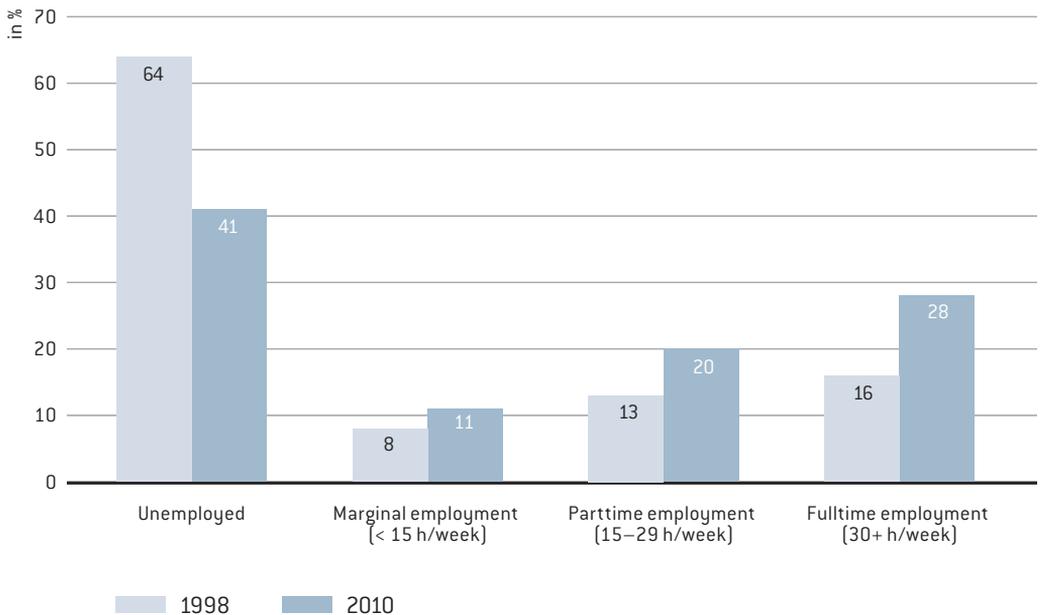
» Fig. 42: Demands put on main caretakers, 1998 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 29)

disadvantaged relatives who live in regions with poor infrastructure will likely have fewer financial resources and practical help at their disposal. For these reasons (and for financial reasons), they will tend to offer their relatives 24/7 care that is solely financed through benefits from the statutory nursing care insurance system (and with little help from home-care services) (cf. Heusinger 2006). That, in any case, is the conclusion drawn from the results of the study quoted above by Blinkert and Klie (2008). This conclusion is also supported indirectly by the TNS-Infratest study of 2010, where 83 % of all persons queried confirmed that the most

common reason for receiving only the nursing care allowance was that the money was needed to cover the expenses of caretaking (BMG 2011, p. 40).

Persons caring for their very old relatives who themselves are still of a working age (< 65 years), especially the women who are most likely to be such caretakers, are often confronted with the problem of combining their caretaking activities with their vocational life. And this problem is growing: The number of caretakers who are still employed—independent of the length of their weekly work schedule—is on the rise. In 1998, a total of only one third (36 %) of all main caretakers

## Employment situation of main caretakers



» Fig. 43: Employment situation of main caretakers of working age from 16 to 64 years, 1998 and 2010, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 31)

of a working age were still employed; in 2010 this number had risen to 59 %, meaning a majority of all main caretakers were still employed (BMG 2011, p. 31; cf. Figure 43). This increase is also the result of the increase in the number of men who were caretakers during the time period in question, as they are statistically more likely to be employed than women: 72 % still work fulltime (30+ hours/week) (women: 40 %) (ibid., p. 30). How difficult it is to combine caretaking and vocation becomes clear when we recall that more than half (51 %) of all main caretakers were able to continue working, whereas a third (34 %) had to reduce their workload, and nearly one seventh (15 %) gave up

working completely. The willingness to reduce one's workload or stop working altogether was greater in West Germany than in East Germany: In East Germany work was continued more often (59 %) than in West Germany (49 %) (ibid., p. 32).

### Offers of Support as Part of the Nursing Care Insurance System

The Nursing Care Insurance Act of 2008 had the goal of relieving caretakers of some demands by providing them with up to 10 days of additional

vacation time from work to tend to acute situations and to organize care. In firms with more than 15 employees, it also became possible for caretakers to take a leave of absence for up to 6 months. Wages continued to be paid for the short-term absence according to the existing scale, though for the long-term absence no wage compensation is foreseen (cf. Barmer GEK 2013a, pp. 20 f.). The Family Caretaking Law of 2011 created the additional possibility of shifting part of the income losses to the future, in order to dampen income shortfalls. However, this feature has not been implemented very often (ibid., pp. 22 f.). The TNS-Infratest study of 2010 makes clear that the ways of relieving the demands on caretakers foreseen in the 2008 act have been adopted only hesitantly: Only 6 % of the employed main caretakers interviewed who fulfilled the prerequisites for a short-term leave from work for 10 days actually utilized this feature. The most common reasons given for not using it was that its existence was unknown (64 % of those queried) and that such a leave was not necessary (53 %) (BMG 2011, pp. 31 and 33). The 6-month leave for caretaking purposes was utilized by only 4 % of those eligible for this benefit (ibid., p. 32). Here, too, the main reasons reported was a lack of knowledge (51 %) and lack of necessity (51 %). In addition, financial reasons (37 %) as well as the occupational disadvantages of taking such a leave were cited (32 %) (ibid., p. 33).

Only 10 % of the caretaking households took advantage of the individual care counseling service that was implemented in 2009 (Para. 7a Social Security Act XI). The goal of that service was to provide individual, comprehensive and specific information on how best to organize the caretaking situation and how the main caretaker can receive the support needed for the task. Those who took advantage of this service were generally pleased with it (85 %), and in half the cases it was possible

to improve the caretaking situation. The most important reason for not using this service was once again the lack of knowledge of one's legal eligibility (ibid., pp. 56 and 67). Further support for caretaking relatives is available in caretaking courses offered according to Para. 45 Social Security Act XI, which provides for free courses offered by the health insurance companies, where the main caretakers can learn practical techniques and exchange experiences with others in the same position. In 2010, however, only 12 % of the main caretakers reported participating in such courses, although the goal of relieving the burden of caretaking was reached in 88 % of the persons taking the courses (ibid., pp. 29 f.). As with other support venues foreseen by law, the existence and/or value of such offers appear not to be well known. Such counseling and support offers should be expanded and their existence and proven value better propagated. An important point lies in overcoming the personal threshold that hinders caretakers from voicing their problems and addressing the excessive demands being made on them toward persons outside the family (cf. BMG 2011, p. 66).

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## >> 06.5 Violence and Abuse in Care

Both caretaking relatives and professional caretakers are often confronted with very high physical and mental demands that sometimes fail to be properly addressed. In some cases, this can lead to psychological or physical neglect or abuse of the person entrusted to their care. Persons with dementia and those with severe or extremely severe care needs are especially at risk in this respect since

they are vulnerable and largely helpless in warding off physical and psychological abuse and attacks on their personal integrity. On the other hand, at times they can become violent themselves toward their relatives and toward others taking care of them. In practice, it is not always easy to determine what part their basic disease(s) play in this situation. In the following, we look at the type and extent as well as the risk factors involved with abuse/violence in both outpatient and inpatient settings. The most important source of information on these themes stems from a number of individual studies done by G6rgen and others on experiences of crime and violence in the lives of old and care-dependent people [BMFSFJ 2009b; G6rgen et al. 2009]. Further, we present the results of a survey by Amrhein (2002, 2005) on power and conflict situations in inpatient geriatric care.

## Violence and Abuse in Home-Care Settings

G6rgen et al. (2009) gathered data on experiences of violence in home care between 2005 and 2009. They carried out qualitative interviews in three regions of Germany with a total of 201 caretaking relatives, care-dependents themselves, caretakers working in home-care services and other persons involved as well. Their goal was to talk to all persons actively concerned with a particular home-care situation, so that in the end a total of 90 different care arrangements were surveyed, half of which involved cognitively impaired persons (mostly with dementia) [ibid., p. 22]. Four basic forms of abuse and neglect of older care-dependents were identified, which can be differentiated by the intention and the extent of the violence rendered. Often the problematic behavior did not intend to

actually harm the care-dependent person, but was an expression of the particular situation (type 1) or some broader problem (type 2) involving excessive demands, ignorance and helplessness on the part of the caretaker. This included the use of violence to break the resistance of a care-dependent person against foreseen care actions or to restrict the person's mobility in order to protect them from self- or other-injury [ibid., pp. 24 f.]. In the other two forms, the care-dependent person was intentionally harmed or harm was consciously allowed to occur [ibid., p. 25]: On the one hand, this intention was specific to the situation inasmuch as the desire to harm, humiliate or even kill the care-dependent person arose under exceptional emotional circumstances (type 3); on the other hand, it was indicative of a broader problem inasmuch as it was the result of a long-term relationship conflict where no opportunity was left out to harm the victim (type 4). This is where an effective intervention can come in, for example, in comprehensive care counseling the question of motivation is sorted out and stressful familial circumstances are discussed.

G6rgen et al. (2009) also studied the extent of violence experiences in home care using two written questionnaires filled out by caretaking relatives and employees of home-care services. This (nonrepresentative) inquiry of 254 caretaking relatives showed that nearly half of them had exerted psychological violence and a fifth physical violence toward the care-dependent person within the past 12 months. The most common forms of psychological abuse were "shouting at" and "berating"; the most common form of physical abuse was "rough handling." On the other hand, a third of the caretaking relatives had experienced psychological abuse and one sixth physical abuse at the hand of the care-dependent person [ibid., pp. 31 f.]. Care-dependents were especially endangered when the relative doing the caretaking had a poor

relationship to them and when alcohol was being consumed to assist in coping with the stress. The situation was also aggravated when the care-dependent person was in need of very intensive care or when the care-dependent person was psychologically and physically aggressive toward the caretaker (ibid., p. 33).

In 2005, a total of 503 caretakers living within the city limits of Hanover and working for home-care services were queried about their experiences (ibid.). Over half of them had experienced psychological abuse in the previous 12 months, two thirds physical abuse, and a sixth of them sexual harassment on the part of the care-dependents they were tending to. Vice versa, 40 % of these caregivers reported having exhibited problematic behavior of their own in the previous 12 months. This included above all psychological abuse and verbal aggression, neglect (both care and psychosocial), physical abuse and confining or fixating a care-dependent person (ibid., p. 28). According to these caretakers, the provocations of such abuse were aggressive behavior on the part of the care-dependent person, the large number of persons with dementia, alcohol consumption as a coping mechanism and a poor opinion of the quality of one's own home-care service. Effective interventional strategies should proceed from these risk factors (ibid., p. 30).

## Violence and Abuse in Institutional Settings

Life in nursing care facilities is characterized by the very different worlds of the care-dependents and the caretakers. For the caretakers the institution is where they work, a place they leave when their shift is over. For the residents who are living long-

term in the facility, it is their home and the place where all activities of daily living take place. If nursing homes have severe quality problems and fail to provide good care and social support, then the life quality of the residents is endangered because of their fragility and their lack of alternative means of compensating. Particularly grave in this context are violent attacks precipitated by the caretakers. Görden (2009) reports on such events in a study on abuse and neglect in nursing care facilities done in 2000 and 2001 in the state of Hesse.

To this end, qualitative interviews were carried out with various groups of persons as well as a quantitative survey of 361 caretakers employed in nursing care facilities. Even though such institutions are not per se "places of suffering," this report did discover many forms of violence and coercion toward the care-dependents. Massive physical abuse was rare, though the care-dependents were exposed to psychosocial and verbal abuse as well as care neglect. Some of the caretakers were prone to patronize the residents and limit their autonomy, often from a false concept of security (ibid., p. 491). The risk factors for abuse toward care-dependents in institutional settings are similar to those found in outpatient care: aggression on the part of the (often demented) care-dependents, excessive alcohol consumption to relieve stress, and the assumption that care-dependents are purposefully behaving strangely (ibid., p. 492).

In 2000, Amrhein (2002, 2005) sent questionnaires to 116 students from three different schools for geriatric care in Upper Franconia. The standardized questionnaire used queried them about the power and conflict situations they had observed during their last stint of practical training in a nursing care institution. 94 students reported on their experiences. The answers they gave were comparable to those gathered by Görden, namely, that especially very subtle and low-level forms of violence,

coercion and aggressive behavior belong to the daily routine in care facilities. Thus, about half of those interviewed said that “some caretakers treated the residents very roughly” and “sometimes scolded them severely.” Their comments make clear that critically thinking care-dependents are not in high demand. According to the observations of these students, the caretakers preferred undemanding and low-maintenance residents. Physically rough and verbally aggressive behavior on the part of the caretakers was connected to unresolved feelings of stress and frustration resulting from a high workload and negative work atmosphere. Preventing violence and abuse is thus not a matter of addressing individual caretakers, but rather attacking the structural parameters of geriatric caretaking.

## » 06.6 Therapy and Rehabilitation

According to Para. 5 Social Security Act XI, medical rehabilitation serves to ensure that care-dependency does not occur—or that it can be overcome or at least not worsen. The Medical Service of the Health Insurance Industry (MDK) checks whether benefits of medical rehabilitation are necessary and appropriate for the care-dependent person. If need is declared, then the health insurance company responsible for the care prompts the next steps. Rehabilitation measures should preferably be done on an outpatient basis, and only when these are not successful or insufficient do the insurance companies assume the costs for

### Therapeutic measures recommended by the MDK or a physician

	Total	Level I	Level II	Level III
Physical therapy or exercise therapy	35	32	39	35
Massages, therapeutic baths, infrared light, electrotherapy	4	5	3	3
Strength and balance training (fall prevention)	17	18	18	12
Speech therapy (voice therapy)	4	2	5	6
Ergotherapy (occupational therapy)	14	10	14	18
Music or dance therapy (especially for persons with dementia)	7	4	8	9
Contenance and toilet training	22	19	28	18
Memory or orientation training	25	22	30	22
Basal stimulation, validation or similar therapy for persons with dementia	14	6	15	25

» Tab. 37: Therapeutic measures recommended by the MDK or a physician in the past 12 months, acc. to care level, in %. Basis: care-dependents in inpatient nursing care facilities, from TNS Infratest Social Research 2010 (BMG 2011, p. 135)

rehabilitation on an inpatient basis (cf. BMG 2011, pp. 48 f.). Besides such rehabilitation measures, the employment of therapeutic measures according to Para. 32 Social Security Act V also serves to avoid or attenuate care-dependency (ibid., p. 49; cf. also Chapter 05.8).

On the TNS-Infratest study of 2010 respondents were asked whether therapeutic and rehabilitative means, and if so which ones, had been recommended following an inspection by the MDK, and whether they had availed themselves of these means. Among the care-dependents in private households, the MDK recommended outpatient rehabilitative measures in 4% of the cases and inpatients measures in 5% of the cases, though the differences between the care levels were only minor. Some 22% of the care-dependents receiving home care received recommendations of therapeutic means, in most cases physical therapy or exercise therapy. The vast majority of those being cared for at home actually took advantage of these recommendations (BMG 2011, pp. 50 and 68).

Care-dependents in care facilities, on the other hand, rarely received recommendations for rehabilitative measures from the MDK or directly from a physician in the previous 12 months: 1% for outpatient and 2% for inpatient measures. In fact, however, regardless of whether or not such a recommendation had been issued, 2% of the inpatient and 5% of the outpatient care-dependents received such rehabilitative measures in the previous 12 months. On the other hand, about half (55%) of the care-dependents living in nursing care facilities received recommendations for therapeutic measures, especially physical therapy and exercise therapy as well as memory training, continence training, strength and balance training, ergotherapy, and special training for persons with dementia (ibid., pp. 134 f.; cf. Table 37).

Compared to 2005, in 2010 more than three times as many care-dependents living in nursing homes received strength and balance training, but also the employment of memory and orientation training as well as basal stimulation, validation and other measures for persons with dementia increased considerably during that time period (ibid., p. 137).

Seger et al. (2013) used the data of persons insured with the Deutsche BKK (a statutory health insurance company) to show that rehabilitation measures both for persons being cared for at home and in institutional settings, regardless of the care level and age group (and thus also valid for 80+-year-olds), have a positive influence on the extent of their care-dependency. According to their calculations, after rehabilitation care-dependents have a higher life expectancy than care-dependents without rehabilitation, even in light of the continued need for care (ibid., p. 758). The data of the Barmer GEK, on the other hand, revealed only limited positive effects of rehabilitation (Barmer GEK 2013a, pp. 15 f.). The authors see the reason for this result, among other things, in the methodological limits of research done with routine data.

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## >> 06.7 The Costs of Care

The financial costs incurred because of inpatient and outpatient care are covered in part by the health insurance program and in part by the nursing care insurance program. In addition to the limited benefits from the nursing care insurance program, every person insured in the statutory health insurance system has to make a financial contribution in the form of a co-payment. Care-de-

## Public and private expenditures for care-dependency

Source	In EUR billions	As % of the public/ private expenditures	As % of all expenditures
Public expenditures	25.95	100	61.9
Statutory nursing care insurance	21.92	84.5	52.3
Private nursing care insurance	0.72	2.8	1.7
Welfare	3.10	11.9	7.4
War victims insurance <sup>2</sup>	0.21	0.8	0.5
Private expenditures*	15.97	100	38.1
Nursing home <sup>1</sup>	10.76	67.4	25.7
Home care	5.21	32.6	12.4
Total	41.92	–	100

\* Estimates

1 The sums employed were taken from the caretaking statistics of 2011.

2 Average values of the years 2010 and 2012.

» Tab. 38: Public and private expenditures for caretaking (Barmer GEK 2013a, p. 141)

pendents and their dependents who are cannot afford this co-payment may apply for benefits from the welfare system; in some cases the war victims fund may also pay out benefits (Barmer GEK 2013a, p. 125).

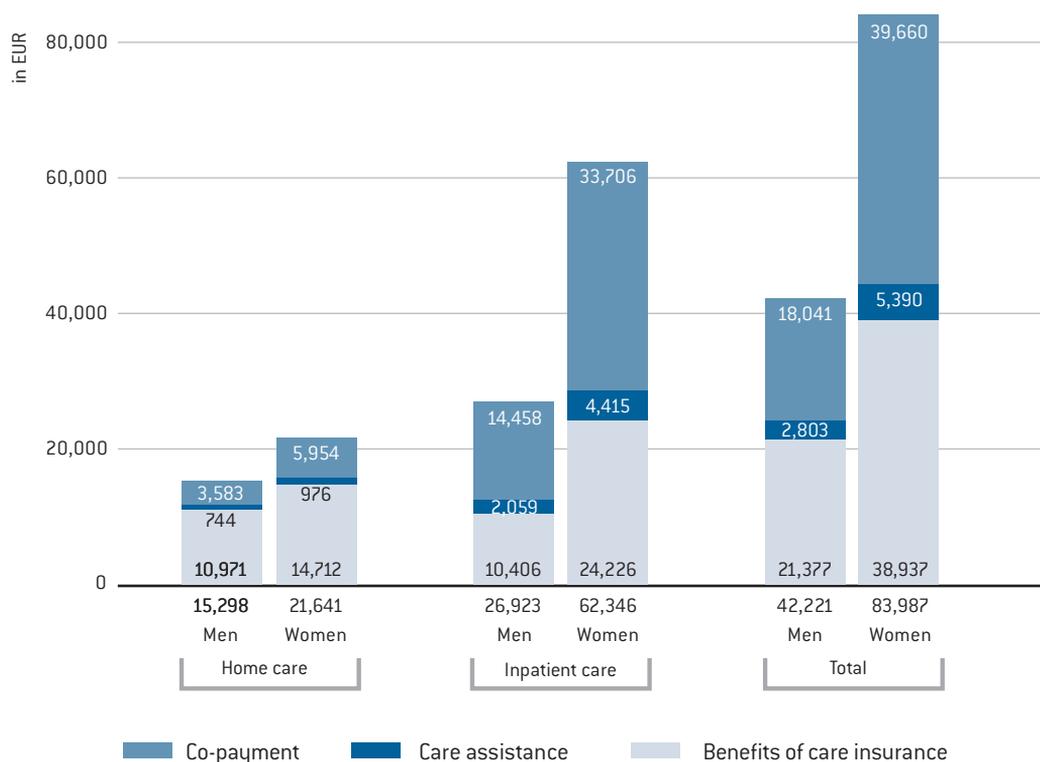
According to the TNS-Infratest study of 2010, care-dependents in private households spent EUR 247 monthly extra for care-related costs. The higher the care level, the greater the financial contribution was (BMG 2011, p. 46). 17 % of all care-dependents contributed money to pay for additional professional care services—over half of which (56 %) went for basic caretaking services, nearly one third each for household assistance (29 %) and support (28 %) (BMG 2011, pp. 48 f.). Care-dependent persons liv-

ing in nursing care facilities must pay the so-called “hotel costs,” i.e., food and lodging, themselves. According to Rothgang and others, however, in 2011 co-payments were also required to supplement the caretaking costs—EUR 346 monthly for care level I, EUR 532 for care level II and 760 for care level II (Barmer BEK 2013a, p. 12).

If we add up all the private (i.e., co-payments) and public costs incurred for caretaking activities, then for the year 2011 we reach a sum of nearly EUR 42 billion (cf. Table 38).<sup>48</sup> Both parts of the nursing care insurance program cover only about half (54 %) of all caretaking costs, which illustrates quite well the only partial performance of the nursing care insurance. Private co-payments

48 This sum does not include the total economic cost represented by the care given by relatives, which, according to the calculations of Schneider (2006), were EUR 44 billion for the year 1997. Also not included are all costs paid for by health insurance on behalf of the care-dependent.

## Total costs of care-dependency



>> Fig. 44: Total costs for care-dependency, from commencement of care to death, acc. to provider, type of care and sex (Barmer GEK 2012b, Infografiken, www.barmergek.de)

made up slightly more than one third (38%) of all costs, of which two thirds were spent for inpatient care and one third for home care (Barmer GEK 2013a, pp. 140 f.). Rothgang et al. (Barmer GEK 2012b, pp. 18–20) also calculated the total per capita costs arising through care-dependency up to the death of the person in question for persons insured with the former Gmünder health insurance company; this was done for the year 2000, though the subsequent patterns up to 2011 were also

considered. The total value for care-dependent women was nearly EUR 84,000, that for care-dependent men was slightly more than EUR 42,000 or just about half. The higher expenditures for women result from their greater life expectancy and the overall longer time they spend in inpatient care. Figure 44 shows that the average financial co-payments for inpatient care were much higher than those incurred for home care.

## » 06.8 Conclusion

Care-dependency is primarily a phenomenon of old age: More than half of all care-dependents are over 80 years of age, and three fourths of them are women. Nevertheless, up to the age of 90 years the majority of very old people are not in need of continuous care in the sense of the Nursing Care Insurance Act. In the group of 80–84-year-olds, only 20 % need care, and in the group of 85–89-year-olds, the rate is still less than 40 %. Only when people live to be 90 and more does care-dependency become an issue for the majority of them – though the large majority thereof are still classified only in care level I. Among the very old there is a large number—estimates say about one third—who need no care as such, but do require regular support.

Very old women are especially affected by care-dependency. Not only because of their large proportion in this age group do they represent the vast majority of care-dependents as well; they also have a higher risk of needing long-term care. The reason lies above all in the fact that very old women have more chronic diseases as well as a higher life expectancy than men. In addition, they are widowed more often than men and live alone more often than men, creating a greater need for benefits from the nursing care insurance program. The increased social isolation of very old women also precipitates their being in greater need of inpatient care than men.

The majority of very old care-dependents aged 80+ years are cared for at home. Here, too, the situation of men and women differs greatly: Whereas care-dependent men 80+ years old largely are cared for by someone else living in the same

household, very old care-dependent women generally live alone. Men are taken care of by their wives or partners, whereas women are very dependent on their own child(ren), who as a rule do not live in the same household. Especially those care-dependent women who live in nursing care institutions are in danger of social isolation and receiving poor support. Many are visited by relatives, friends and acquaintances and receive help with care and household matters, but about half have few or virtually no social contacts with loved ones.

The home care of relatives is largely the domain of women—nearly three fourths of all main caretakers are women. If we include the other private support being provided, then there are two women for every man extending assistance. The larger proportion of women is not just the result of a traditional image of women being deemed responsible for caretaking, but also the consequence of the existing age and gender structures in the caretaking households. Men tend to need care at a younger age than women and are cared for by their own partner, whereas care-dependent women are generally already widowed. When men do reach a very old age, then even more often than women they become responsible for the caretaking. Whereas women caretakers are usually between 50 and 70 years old, the probability of a man becoming a caretaker is highest from age 80 years onward. About 9 % of all main caretakers are over 80.

Detailed information on the care-dependency and state of caretaking of foreigners and persons with an immigration background is limited because of the poor database available (this is also true for other categories related to inequality). Their share of the care-dependents corresponds approximately to that found in the overall population. Care-dependents with an immigration background being tended to at home tend to be younger and to live

less in single households, the result of the divergent population structure. In addition, they employ fewer home-care services.

The physical, psychological and social demands of caretaking are enormous, particularly the time-consuming care of persons with dementia and severely care-dependent persons. Often the main caretakers—especially the female ones—are forced to reduce their workload or stop working altogether. But since fulltime employment among women is still in the increase, the ability to work at a job and care for a relative at home remains one of the cornerstones to assuming the responsibility for caring for a loved one. On the one hand, this can be furthered with the support of home-care services; on the other hand, the Nursing Care Act of 2008 provides for caretakers to be released from work for up to 10 days a year with pay or up to 6 months as unpaid leave to care for someone at home. Yet these offers are not being used very widely, whether because of a lack of knowledge of their existence or because disadvantages are feared from taking such a long leave from work.

Such means of easing the burdens of caretaking are important in order to prevent overload from turning into violent behavior toward the care-dependent person. Verbal aggression, physical roughness, care or psychosocial neglect as well as

restrictions to freedom among caretaking relatives or professional caretakers alike are danger signals that the burdens and demands created by caretaking are not adequately being coped with. Successful prevention of violence and abuse should not be oriented toward the personality problems of the individual caretakers, but rather the solution lies in improving the institutional framework, especially with respect to violent acts of persons working in inpatient care.

Institutional care can be avoided or delayed in many cases by first exhausting all possible rehabilitation venues. Except for dementia, the course of most diseases and conditions with a high risk of long-term care can be positively influenced by rehabilitation. This is especially true for urinary incontinence, the repercussions of a stroke, congestive heart failure and Parkinson's disease. Such measures can thus also reduce the overall economic costs precipitated by nursing care—which are twice as high in inpatient care as in outpatient (home) care. Because care-dependents have to shoulder a considerable part of the costs involved, which in institutional facilities can lead to very high sums, the positive course of a rehabilitation measure can also reduce the necessity to claim welfare support. Yet only a small minority of care-dependents ever enjoy rehabilitation measures.

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# 07

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## » Leisure Time

In this chapter, we look at the everyday life of very old people. How do they spend their leisure time, that is, time not needed to take care of errands and household work? Do they remain active, for example, in clubs? Do they travel much? Are they involved in volunteer work? What role do culture and media play at this high age? How physically active are they? How mobile are the 80+-year-olds? Mobility, social and cultural participation are important building blocks in a self-determined and autonomous life at very old age. In Chapter 05 we looked at the how functional health is reduced in old age and how increasing age makes the performance of everyday activities more difficult. There it became clear that education and better social and economic resources have a positive effect on functional health. Against this background it is especially interesting to discover how socially disadvantaged persons can participate in activities and offers.

Regardless of one's social status, longevity always represents the last stage in life. The very old necessarily see themselves confronted with their own dying and death as an inescapable event in the near future. Often they have already mourned the loss of their partner and have had to cope with becoming widowed. What role does religion and faith play in their lives? Do they look back at their long life and glorify the past or do they concentrate more on the present and even make plans for the future? What determines a high quality of life in old age? What becomes easier and what makes life pleasant?

The database for the themes discussed in this chapter is extremely limited. Most existing studies are concerned only with persons in the age groups 65+ years or 70+ years—even those, like the Generali Aging Study of the Very Old (Generali Zukunftsfonds 2014), that are explicitly concerned with the very old are in fact not representative of the entire

age group. The overrepresentation of mid-level and high-level education, for example, in the Study of the Very Old, and the broad absence of interviews with old people living in institutional settings (an example is the Generali Aging Study of 2013), severely limit the value of these data (Generali Zukunftsfonds 2012). Nevertheless, in the following we want to try to produce a picture of the everyday life of persons over 80 years and thereby point out exactly where data are missing.

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## » 07.1 Life Satisfaction in Old Age

Society today is shaped according to the motto “active aging” (Denninger et al. 2014). The third—and active—age in life is delimited from the fourth age, which is characterized more by deficits and debilitations. But how do the very old themselves see daily life? How do they judge the quality of their life? Are they pleased with their own life situation? In their studies on the subjective well-being of the very old, the German Aging Survey fails to differentiate between the third and the fourth age in life and instead publishes data on the entire age group of 70–85-year-olds (Tesch-Römer et al. 2010). Statements such as “I am happy with my life” or “The circumstances of my life are excellent” were sentiments that, at the time of the survey (2008), could be agreed to by the overwhelming majority of persons in this age group (62 %) (ibid., pp. 271 f.). Yet there were considerable differences depending on the level of education, sex and region: Women, older persons from East Germany and persons with lower levels of education tended to be less happy with their life. Low economic resources, a poorer re-

gional infrastructure, loneliness as a result of widowhood and poor access to support are all factors that must be regarded here. In addition, we may assume that experiences of vocational and social degradation following the reunification of East and West Germany negatively affected the satisfaction and self-perception of many members of the age group under consideration here in East Germany. It would be desirable to have more detailed and more regionally differentiated data available since the level and distribution of life quality in old age is “one criterion that can be used to judge the success and failure of social welfare strivings and socio-political interventions” (Motel-Klingebiel et al. 2010, p. 20). The Generali Aging Study of 2013 described the life satisfaction of older people between 65 and 85 years living in private households (Generali Zukunftsfonds 2012, pp. 53 f.). Satisfaction is generally deduced for various areas of life by using a scale running from 0 (not at all satisfied) to 10 (completely satisfied).

If we compare the various age groups, we notice a slight but successive decrease in the rates of satisfaction, to an average value of 7.2 for those 80–85 years old. Compared to younger cohorts they report a slightly lower level of life satisfaction in all parts of life; especially all values having to do with health fall with increasing age. On the other hand, satisfaction with one’s financial situation is highest at the age of 80–85 years and is drastically lower in younger years. This course reflects the fact that the material situation of the younger old people is worse than that of the very old, who can look back on a life of continual employment. Satisfaction with their living arrangements and surroundings remains about the same in all age groups—which is surprising in light of the many health restrictions, which also increase over time and are seen as problematic because of the many barriers in the physical world.

## Life satisfaction in various areas of life according to age group

Area of life	65–69 years	70–74 years	75–79 years	80–85 years
Life satisfaction total	7.5	7.5	7.3	7.2
Financial situation	6.8	7.0	7.0	7.2
State of health	6.6	6.2	6.0	5.6
Living situation (apartment, house)	8.4	8.4	8.4	8.3
Living circumstances (city, neighborhood)	8.1	8.1	8.1	8.2
Social contacts	8.1	8.0	8.0	7.7

» Tab. 39: Life satisfaction in various area, acc. to age group, scale from 0 (not at all satisfied) to 10 (completely satisfied) (Generali Aging Study 2013, p. 61)

We can get an impression of the life satisfaction of very old people in the Second Heidelberg Study of 100-Year-Olds (Jopp et al. 2013, pp. 39 f.). Whereas a third of the 100-year-olds queried in that study said they were more or less satisfied with their life, nearly half (46%) said they were “very satisfied” with their life. That study identified above all psychological indicators (“mental strengths”) as factors relevant to one’s state of satisfaction: self-effectiveness, an optimistic outlook (“the glass is half full, not half empty”), a meaning in life (i.e., life is considered to be something meaningful and purposeful) and a will to live. Those queried who lived together with their relatives expressed a higher level of life satisfaction. Residents of institutional facilities, on the other hand, considered their life quality to be lower than average, again a signal of the influence of the living situation, social integration, autonomy and health on life satisfaction. Although the study of the 100-year-olds did not find a correlation between life quality and education or between life quality and income, Kruse (2012, p. 70) notes that the Generali Aging Study of 2013 showed that “educational level, net household income and family relations were

important predictors of life satisfaction.” It remains unclear, however, whether the absence of factors related to social disadvantages in the Heidelberg Study of 100-Year-Olds is due to the small sample of that study, the early onset of morbidity of socially disadvantaged older persons or longevity alone.

Yet the subjective evaluation of life quality in old age is influenced not only by social and material circumstances. Comparisons with one’s peers, the look back at one’s own life, and the perception of one’s role and position in society also play an important role. Other aspects, such as living a long life vs. outliving peers and relatives, old-age wisdom vs. debilitating diseases and senile stubbornness as well as any number of existing stereotypes of certain social concepts of old age, also influence how we see ourselves, how we perceive the esteem of others and how pleased we are with what we have accomplished in life.

Does the approaching end of life lead old people to become more religious or spiritual? A representative study on the religiousness of old people carried out by Albani et al. (2004) in the year 2001 showed that, among the group of 75+-year-olds at least, religiousness was only slightly higher

than among the next younger group of 60+-year-olds. This study, however, was done solely with German-speaking respondents living in private households. Whether or not the religious stance or the development of religiosity among persons living in institutional facilities or among persons with little or no command of German and a foreign cultural background differs remains unknown.

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## >> 07.2 Leisure and Lifestyle Activities

The vast majority of persons over 80 years of age have already been retired for 15 or more years; their experience of employment thus lies far in the past, and only a small number of them are still actively employed (cf. Chapter 03). So how do old people spend their work-free time? Do they enjoy many leisure activities, do they travel or go on outings? The data on these questions for our age group are very limited. The Generali Aging Study of 2013 (with all of the above-mentioned methodological limitations) and the Data Report of 2013 of the Federal Statistics Office provide some data, and we can also draw on data from the 1996 Berlin Aging Study, which are old but can still complement the newer data.

Leisure activities are largely age-correlated, that is, the number and variety of activities falls sharply and steadily with increasing age (Kolland 2010, p. 357). This statement is supported by the Generali Aging Study of 2013: Surpassing the 80-year mark is for many types of activity an “important watershed [...] after which many things are practiced less intensively than in the previous years” (Generali Zukunftsfonds 2012, p. 137). At the same

time, however, any reduction in the level of activity with increasing age correlates much more with decreasing state of health and lower socioeconomic status (ibid., p. 151). In his article, Kolland refers to studies from the 1990s concerning the effect of self- and other-awareness on the choice and practice of certain leisure activities, in particular the gender-related differences found among the leisure behavior of older persons. Typical gender role stereotypes cause “women to have the feeling that they are not entitled to leisure time” (Kolland 2010, p. 358). The limited range in the stereotypical images and concepts of what the proper behavior is for someone of a particular sex and age strongly influences leisure behavior, particularly in more traditional sectors of society.

What activities fill the everyday life of older people? According to the Generali Aging Study, the vast majority of the 80–85-year-olds report watching TV (78%) to be an “often practiced everyday activity.” About two thirds in this age group read newspapers or magazines, and one third reads books. Besides household activities such as cooking and shopping, 37% of those over 80 years of age tend to their balcony plants or their garden—an activity that, besides providing the joy of gardening, is indeed an important and healthy pursuit. About 41% of those queried spend time with their family, another one fourth likes to get together with friends and acquaintances. But just relaxing, resting, doing nothing particular is, for 42% of the very old between 80 and 85 years, an “often practiced everyday activity”—a rate higher than the proportion found among the 75–79-year-olds.

The description given above of the everyday activities of this age group shows that the 80+-year-olds pursue fewer activities that include exercise and mobility than the next younger age group of 75–79-year-olds. The two age groups differ only minimally, however, regarding quieter and

## Often-practiced everyday activities

	75–79-year-olds	80–85-year-olds
Watching TV	77 %	78 %
Reading newspaper/magazine	68 %	67 %
Going shopping	57 %	44 %
Cooking	55 %	52 %
Tending to balcony/garden plants	50 %	37 %
Spending time with the family	47 %	41 %
Meeting with friends and acquaintances	33 %	24 %
Reading books	29 %	27 %
Relaxing, doing nothing particular	28 %	42 %
Working out, exercising	19 %	12 %
Being active in clubs, politics, church, etc.	21 %	12 %
Handicrafts, DIY projects	21 %	14 %

» Tab. 40: Often-practiced everyday activities, according to age, in % (Generali Aging Study 2013, p. 140)

also more individual (= lonelier) activities such as watching TV or reading (cf. Table 40). Nevertheless, about a fourth of the 80–84-year-olds (24 %) reported having undertaken a vacation trip within the past 12 months of at least 5 days' length (Generali Zukunftsfonds 2012, p. 149).

A look at the rather dated Berlin Aging Study reveals a similar, age-correlated reduction in the everyday activities among old people in Berlin: The proportion of persons who exercise goes from 43 % of the 70–84-year-olds to 12 % of the 85+-year-olds. 60 % of the 70–84-year-olds go on outings, but only 33 % of the 85+-year-olds do. 56 % of the 70–84-year-olds participate in cultural activities, whereas only 25 % of the 85+-year-olds do (Baltes et al. 1996, p. 532). The activity quotas of those 85+ years old in the Berlin Aging Study resemble those found among the younger age group of 80–85-year-olds in the Generali Aging Study. This

is a surprising result, inasmuch as one might assume that the younger age group would enjoy a better health status and the Berlin Aging Study also included persons living in nursing care institutions. The greater level of activity found among the old people in Berlin may be due to the fact that there are many more offers of nearby activities in Berlin than in other German (rural) regions.

In Chapter 05 we already addressed the matter of exercise and sports activities as central elements of health behavior. Not surprisingly, among the very old, sports activities play a smaller role in their lifestyle, even though 12 % of the 80–85-year-olds are still active in exercise/sports ("frequent everyday activity") according to the Generali Aging Study (cf. Table 40). Asked directly whether they "regularly or every once in a while participated in sports," some 22 % of the 80–85-year-olds reported such activity at least 1–2 times a week, whereas 60 % reported

not being physically active at all (Generali Zukunftsfonds 2012, p. 272). According to the Federal Health Report of 2003, ca. 16% of men and 18% of women aged 80+ years were physically active for 2 and more hours a week (RKI 2005b).

These very different numbers reflect the difficulties involved in gathering data on leisure-time activities. How activities are classified is often left to the respondents. For example, some studies classify taking walks as a form of leisure activity, others as a form of everyday activity, and still others as physical exercise. Reporting that an activity is carried out “often” can only reflect an estimate and not a statistically reliable statement.

Although most 80–85-year-olds (92%) regard their daily routine as “largely regular” (Generali Zukunftsfonds 2012, pp. 136 f.), most old people still consider their everyday life to be diverse and varied. Again, this statement correlates with state of health: Whereas older people who judge their health status to “good or very good” experience their everyday life on average as 7.8 on a scale from 0 (very monotonous) to 10 (very diverse), old people with poor or modest health give their everyday life an average 4.9 value.

The decline in leisure activities in old age also means that the expenditures for leisure activities, entertainment and cultural events drop: The 80+-year-olds spend the least among of all age groups from 18 years onward for this area: EUR 163 on average or 9.6% of their monthly average disposable household income (Statistisches Bundesamt et al. 2013, pp. 344 f.).

Participation in leisure activities is an important element in strengthening psychological and physical health. Kolland (2010) notes a Swedish longitudinal study among very old persons, the results of which suggest “that strengthening leisure activities can be seen as an adaptive strategy for compensating social and physical deficits” (ibid., p.

357). Accessible, target group-specific and locally available offers directed toward old people thus represent a central dimension of health promotion in old age. Here, too, the nursing home facility as a place combining preventive and health-promoting offers plays an important role (Horn et al., 2013).

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## » 07.3 Personal Involvement and Volunteer Work

Personal involvement, volunteer activities and life-long learning are expectations that are increasingly being directed toward old people. Being personally involved and remaining educated are now seen as prerequisites for successful aging: “The honor involved in assuming such a position gives way to the shame involved in not being active, and participating in educational activities is becoming an almost compulsory task of the elderly” (Simonson et al. 2013, p. 410). On the other hand, volunteer work, involvement and life-long learning are presently still considered to be located in the third stage of life.

Data from the German Volunteer Survey show that personal involvement declines at a very high age (BMFSFJ 2011b, 2010a). These surveys define involvement as individual, voluntary and nonprofit-oriented behavior in civil organizations or in informal contexts. A comparison of the “involvement quotas,” that is, the proportion of involved persons from a specific age group, shows that involvement falls with increasing age. In 2009, the group of very old persons (in the surveys in question defined as persons over 75 years of age) had the lowest rate of all age groups at 20% (men: 24%, women: 18%; cf. BMFSFJ 2010b, pp. 37 and 39).

The survey concluded that the reason for this decrease in involvement among the very old lay in health restrictions that increasingly limit both the willingness and ability to become involved (BMFSFJ 2011b, p. 7). Nevertheless, from 1999 to 2004 to 2009 there was a continual increase in involvement among this age group (cf. Figure 45)—a trend that points to further potential for involvement. In 2009, on the other hand, the involvement of the young old was less than reported in the year 2004. So the question remains whether the decrease will continue to be found among future very old cohorts or to what extent the increase in involvement was simply a cohort effect.

In its surveys the Generali Aging Study also asked about personal involvement, in the sense of becoming engaged in social affairs—in clubs, political parties, initiatives or other organizations. According to the results of these surveys, too, involvement falls steadily with increasing age: Whereas 50 % of the 65–79-year-olds report being socially involved, the rate among the 80–85-year-olds falls to 29 % (Generali Zukunftsfonds 2012, pp. 341 f.). The overall higher rate of involvement compared to the figures found in the Volunteer Survey likely results from the different areas of involvement that were queried in the two studies. The definition of involvement is a general problem in studies on this theme.

Like the Volunteer Survey, the results of the Aging Study confirm the strong correlation between involvement and health. 80–85-year-olds with restricted health had an involvement rate of 14 %, whereas those with a good or very good health status had an involvement rate of 43 %. Thus, the healthy 80–85-year-olds were socially more involved than the unhealthy 65–69-year-olds. At this point, the study concludes: “... health constitution is a key factor for an active life and social participation” (Generali Zukunftsfonds 2012, p. 350).

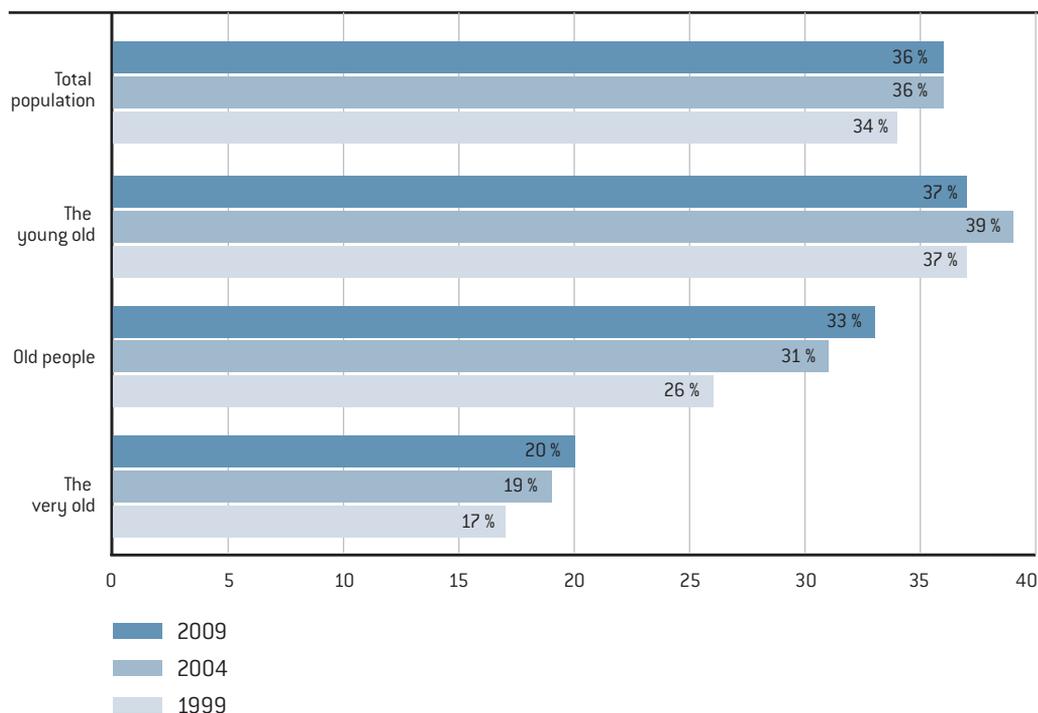
Nevertheless, the question remains how to create opportunities for people to become involved—even old people with limitations.

In what areas do old people become involved? Among the 75–85-year-olds who are socially involved, the largest number (39 %) are engaged in church or religious activities. Another 36 % are involved in the area of “leisure and social affairs,” 26 % in “music and culture,” 23 % in “sports” and 22 % in the “social or health sector.” 6 % of the age group of 80–85-year-olds would be willing to invest more time in additional involvement. Thus, the willingness to become more involved was less than the average of 19 % among all 65–85-year-olds (ibid., p. 365).

The German Aging Survey of 2008 (Naumann and Romeu-Gordo 2010, pp. 118 f.) describes how volunteer work and further education (pooled in the term “nonprofessional participation”) depend on both individual and local resources. In the age group of 70–85-year-olds studied in the Aging Survey, 41 % had higher education, 20 % mid-level education and only 8 % of those with little education were involved in volunteer work (ibid., p. 137). The likelihood of someone becoming involved in volunteer work sank continually with poorer health, as found in other similar studies. Also, involvement was clearly lower in the former East Germany than in the former West Germany. An analysis of the results of the German Aging Survey of 2008 by Simonson et al. (2013) also revealed the relationship between sociospatially negative conditions and participation in educational or volunteer activities. For example, older people with few individual resources living in regions with poor economic conditions participated much more seldom in educational activities or volunteer work than those from economically better situated regions.

Against this background it is interesting to note the extent to which the involvement of older people

## Involvement quotas 1999, 2004 and 2009



>> Fig. 45: Involvement quotas 1999, 2004 and 2009, acc. to age group, in % (BMFSFJ 2011b, p. 8) The respondents were asked about their assumption of “voluntary tasks” in certain areas (sports, exercise, school, kindergarten etc.), “which were done without pay or for only an expense allowance.” Source: Volunteer Surveys 1999, 2004 and 2009

is actively promoted. In the Generali Aging Study on the Very Old 85+ (Generali Zukunftsfonds 2014, pp. 28 f.), both private and public social institutions were asked concerning their fostering of the involvement of persons over 85 years of age. 77 % of these institutions reported not having any special plans to support this age group in becoming involved, whereas 14 % do promote the involvement of older persons and include those over 85 years in their efforts. Only 6 % of these facilities had concrete projects for promoting the involvement of the very old. People 85 years and older were already involved in about one third of these institutions,

for example, in visiting services and in social and church projects. 12 % of the institutions interviewed reported having received inquiries from persons 85+ years about becoming involved, particularly with other old persons. When asked about the major hindrances to involvement in old age, 52 % presumed the health of old people, followed by their age as such (40 %) and their ability to reach the premises of the institution in question (32 %). Half of those queried were of the opinion that the overall conditions in the institutions would have to change in order to motivate old people more toward living a “responsible life” (Generali Zukunftsfonds 2014, p. 39).

## » 07.4 Media Usage

How much and what media do old people use? How do they stay informed about what is going on in the world and where do they seek out everyday information? A study of the media and information behavior (part of the Allensbach Market and Advertising Analysis of 2012 quoted in the Aging Study, Generali Zukunftsfonds 2012, p. 159) revealed that the majority of the 65–85-year-olds (66 %) think it important to be informed about current events. 91 % of those interviewed from that age group had informed themselves on the previous day about the news—a value higher than that of all other age groups from age 14 onward. The primary source of information is television (82 %), following by newspapers (67 %) and radio (37 %). The internet played only a minor role as information source (6 %) for this age group. Asked generally about their internet use, 27 % of the 65–85-year-olds in the Generali Aging Study reported using the internet—a relatively low number compared to the 70 % of users in the 50–65-year-olds (Generali Zukunftsfonds 2012, p. 162). In light of the steadily falling use of the internet with increasing age, we may assume that it is the 80–85-year-olds among the age group 65–85 years who tend to have little use for the internet.

At the beginning of this chapter we noted that, according to the Generali Aging Study, watching television was the most common form of everyday activity among the 80–85-year-olds, followed by reading newspapers and magazines. The results of the yearly, representative survey on media usage done on behalf of the ARD (one of the major public-service broadcasters in Germany) confirm these findings (ARD Medien Basisdaten 2013). However, this survey collected data only the entire age group 70+ years, so that more differentiated

deviations within this large age group cannot be determined. In the year 2013 it was found that 95 % of all 70+-year-olds watched television several times a week, 88 % read newspapers and 82 % listened to the radio (cf. Table 41). Compared to the data from 2011, radio usage had increased slightly, whereas television viewing had fallen slightly. The clearly higher overall use of radio compared to the use of radio as a source of information suggests that radio is primarily being used as a source of entertainment. The use of computers rose in the period 2011 to 2013 from 18 % to 21 %.

A comparison of media usage in the age group 70+ years and the younger age group of 60–69-year-olds shows that the time spent watching TV increases with age, whereas listening to the radio decreases with age. This fact may be attributed to the increasing problems older people have with their hearing, whereby television has the advantage of appealing to two senses (hearing and seeing) and can thus be enjoyed longer. The use of the computer/laptop is considerably more widespread among the younger age groups. One may expect that future generations of old people and very old people will be more intensely concerned with the new media and the internet.

The situation with the use of cellphones is similar. The Allensbach Market and Advertising Analysis of 2012 inquired about the spread of cellphones/smartphones among the older generations (acc. to Generali Zukunftsfonds 2012, p. 166). Whereas half of those in the age group 75–79 years had a cellphone, the rate was 36 % among the 80–85-year-olds, and it was only 22 % among those 85+ years old. However, possessing a cellphone does not automatically mean that it is in use. The statements provided on the use of cellphones in the study seem to imply that a cellphone is often in one's pocket but is turned on only "as needed" and thus is not always available.

## Media usage and leisure activities 70+ years

Several times a week	2011	2013
Watch TV	96 %	95 %
Read a newspaper	87 %	88 %
Listen to the radio	80 %	82 %
Use a computer/laptop	18 %	21 %

» Tab. 41: Media usage and leisure activities of age group 70+, between 2011 and 2013, in % (ARD Medien Basisdaten 2013)

## Media usage and leisure activities 60–69 years and 70+ years

Several times a week	60–69	70+
Watch TV	92 %	95 %
Read a newspaper	87 %	88 %
Listen to the radio	86 %	82 %
Use a computer/laptop	48 %	21 %

» Tab. 42: Media usage and leisure activities of age group 60–69 years and 70+ years, 2013, in % (ARD Medien Basisdaten 2013)

## » 07.5 Mobility

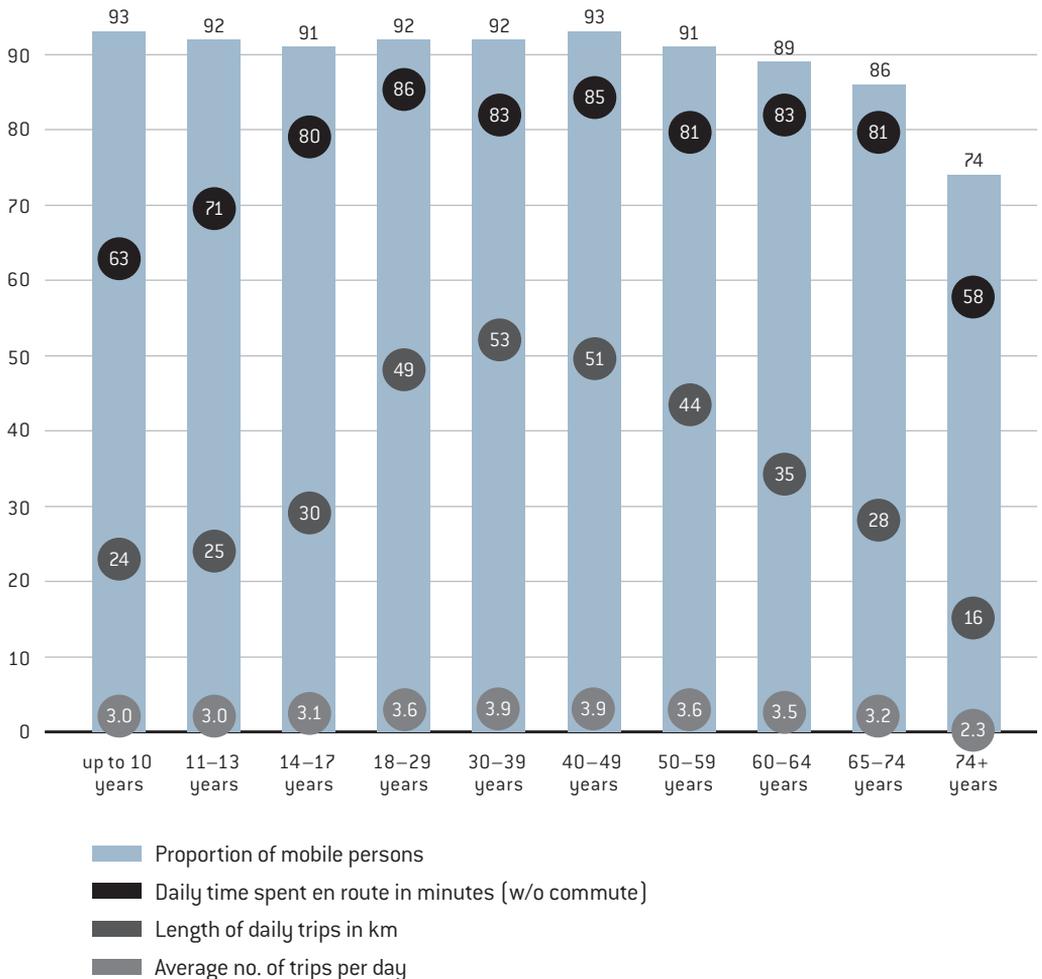
Today, mobility is one of the basic prerequisites for autonomy and social participation in old age. Any number of health as well as economic and/or social factors may limit the individual mobility of old people. Physical illnesses such as those of the musculoskeletal or cardiovascular system and afflictions such as incontinence or cognitive limitations, but also limited financial means, poor language skills and the absence of social contacts can all negatively affect mobility, resulting in loneliness and isolation. Poor mobility also serves to reinforce such negative factors. Getting around and tending to situations outside the home must be trained regularly, and social contacts must be

continually refreshed in order to avoid fostering a decline in mobility.

But just how mobile are the very old? In Chapters 05.7 and 07.2 we looked at exercise and sport activities as well as at diseases that tend to limit mobility. In this section, we are interested in discovering how and with what means older people can remain active in everyday life. To this end, the study “Mobility in Germany 2008” (MiD) provides a valuable data basis (DLR and infas 2010).

One of the central results of the mobility study is that older people (in this case: the age group 60+ years) were much more mobile in 2008 than in the year 2002 (the reference year of the study) (ibid., p. 168). This study classifies mobility parameters according to age group. The depiction of the main parameters—average duration, number and length of paths, with respect to age—shows a successive

## Basic mobility parameters according to age



» Fig. 46: Length of daily trips, time spent en route and number of trips per day, acc. to age, 2008 (DLR and infas 2010, p. 75)

decline in mobility from the age group 50–59 years onward, with a particularly sharp fall occurring from age 75 onward (cf. Figure 46). At the time of the survey, 74 % of those 74+ years old were mobile, the average time spent en route being 58

minutes; per day they took a medium of 2.3 trips with a total length of 16 km.

A special analysis of the mobility parameters of the MiD 2008 with a different categorization of the age groups revealed that the largest decline in mo-

### Number of mobile persons

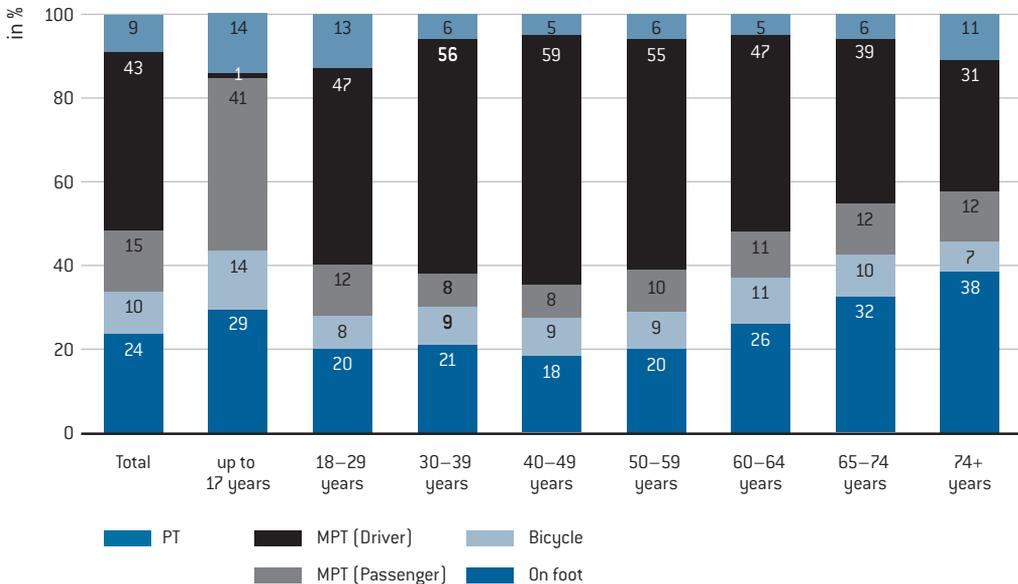
Mobility at the time point of the survey	60–69	70–79	80+
Not mobile	12 %	18 %	29 %
Mobile	88 %	83 %	71 %

>> Tab. 43: Proportion of mobile persons at the timepoint of the survey, acc. to age, in % [DLR and infas 2010; own calculations]

bility occurs in old age. Whereas at the time point of the survey 83 % of the 70–79-year-olds were mobile, among the 80+-year-olds the rate had fallen to only 71 %—and some one third of this age group spent the whole day at home [cf. Table 43].

The MiD study of 2008 also addressed the choice of transportation. The “modal split” describes the distribution of the traffic volume for the various different means of transportation. Figure 47 shows that the use of motorized private transport (MPT)

### Traffic volume in % according to age



>> Fig. 47: Traffic volume by means of transport, in %, acc. to age, 2008, from study “Mobility in Germany 2008” [DLR and infas 2010, p. 77]

## Usage of various means of transport

Means of transport	Automobile	Bicycle*	PT
Daily or nearly daily	19 %	7 %	7 %
On 1–3 days /week	39 %	7 %	21 %
On 1–3 days/month	16 %	3 %	16 %
Less than once a month	8 %	3 %	13 %
Never or almost never	17 %	30 %	43 %

\* 50 % of those queried reported not possessing a bicycle. The sum of persons using a bicycle thus does not equal 100 %, but only 50 %.

» Tab. 44: Rate of usage of various means of transport among age group 80+ years, in % [DLR and infas; own calculations].

decreases steadily from the age group 50–59-year-olds onward, whereas walking and the use of public transportation (PT) increases. The lowest level of automobile usage of persons over 18 years was 31 % for those 74+ years old, 38 % of whom were now doing everything on foot (cf. Figure 47).

Here, too, we can resort to the special analysis of the MiD 2008 to depict the use of transport means among 80+-year-olds. A comparison of automobile, bicycle and public transportation reveals that the automobile remains the most common means of transportation, though it is remarkable that nearly half (43 %) of the persons in this age group never use public transportation (i.e., bus and train). There is a need for a more in-depth study on the reasons behind this behavior, especially since once older people stop using the automobile, bicycle and public transportation would be a meaningful alternative to breaching longer distances.

A look at mobility along gender lines shows that the use of the automobile in this age group is an especially male phenomenon. According to the Generali Aging Study, 43 % of the 80+-year-olds still have an automobile at their disposal. Whereas 56 % of the men in this age group have—and still drive—their own automobile, the rate among women lies at only 15 % (Generali Zukunftsfonds 2012, pp. 146 f.).

Another interesting depiction of everyday mobility may be found in the German Mobility Panel, which is sponsored by the Federal Ministry for Transport and Digital Infrastructure (BMVI) and has regularly carried out studies on mobility behavior since 1994. The Karlsruhe Institute for Technology and the Institute for Transport Studies analyzed data from these studies, in particular the trip diaries of the 65+-year-olds from 2008 to 2012. They were especially interested in the choice of transport means among the 75+-year-olds with respect to routine and leisure mobility as well as the effect of region. The MiD study revealed that mobility changes considerably at a high age, making it interesting to break down the age group of 75+-year-olds a little more. Nevertheless, the analysis gives us a good impression of how dependent the choice of transport is on the regional circumstances.

Especially the proportion of persons using public transportation differs greatly depending on the region, since public transportation is used much more in the centers of large cities than in the suburbs and in smaller cities. Older people living in smaller cities and in the suburbs of large cities tend not to use public transportation. Whether the reason lies in the poor availability or in other factors cannot be determined from this database. But we should

## Choice of transport means in the age group 75+

	At least 100,000 residents, city center	At least 100,000 residents, suburbs	20,000 to less than 100,000 residents	Less than 20,000 residents
Routine mobility: shopping, errands, service trips				
On foot	32 %	22 %	24 %	31 %
Bicycle	9 %	13 %	11 %	6 %
Automobile driver	32 %	50 %	37 %	47 %
Automobile passenger	11 %	11 %	21 %	13 %
Public transportation	16 %	4 %	8 %	2 %
Leisure mobility: leisure time, trips				
On foot	40 %	37 %	40 %	42 %
Bicycle	7 %	10 %	7 %	3 %
Automobile driver	24 %	33 %	27 %	35 %
Automobile passenger	15 %	15 %	18 %	17 %
Public transportation	14 %	5 %	7 %	2 %

» Tab. 45: Choice of transport means of the age group 75+, acc. to objective and region (2008–2012), in %  
[Karlsruher Institut für Technologie und Institut für Verkehrswesen 2013, p. 88]

critically scrutinize the question of whether better connections for public transportation would serve the needs of and provide greater mobility to older people who live in smaller cities or the suburbs of large cities and who do not have their own automobile (thus especially older women).

The results of the Mobility Panel Study also show that older people get around a lot on foot—especially during their leisure trips, less so their routine trips. Walking serves, first, as a means of carrying out everyday tasks and, second, as a form of leisure activity (and as a form of social participation as well). According to the Generali Aging Study, 62 % of the 80–85-year-olds take a walk at least 1–2 times a week, and only 9 % report never taking a walk (Generali Zukunftsfonds 2012, p. 271). There

is surely further potential here for health promotion. Taking a walk is an uncomplicated form of exercise that can be done (almost) everywhere—and one that can be done together with others and thus provides an important contribution to social participation.

## » 07.6 Conclusion

Most old people are relatively happy with their life, especially with their living conditions and their financial situation. There are, however, some differences related to social status: Women, old people from East

Germany and people with a lower level of formal education tend to be less content than the average of their age group. Fewer economic resources, poorer regional infrastructure, loneliness and insufficient accessibility to support are all influential factors that must be taken into account. The Second Heidelberg Study on 100-Year-Olds showed that very old people who live in institutional settings are less pleased with their lives than people who live in private settings.

One's choice of leisure activities changes with increasing age. Activities that demand mobility and agility, such as sports, club activities, working in the garden or around the house, tend to become neglected. Quiet activities that often take place at home and alone, such as watching TV or reading, come to dominate everyday life—and relaxing becomes an important part of life. Participating in leisure activities strengthens both psychological and physical well-being, so that offers with a low threshold that are specific to a target group and that take place where the people in question live should thus become a central part of health promotion among the older age groups.

With increasing age the volunteer or social involvement of old people sags. To be sure, since 1999 more and more older people have become engaged in these activities, but their overall level of involvement still lags behind that of younger cohorts. This fact may be explained by the very clear correlation between health status and involvement. In addition, according to the assessment of those responsible at the facilities queried in the study of very old persons, the institutional conditions are not in place to provide the very old with ways to become involved. Developing the appropriate conditions for their involvement and cooperation as well as encouraging them to become more involved in social processes—even in light of limited personal resources—remain important goals of future health-promoting activities.

Being informed of events taking place near and far is of major importance to this age group of very old people. The most important media are television, newspapers and radio. Usage of the new media is presently not very widespread among the very old, and the internet plays only a minor role in persons over 80 years. However, one may assume that this pattern of media usage will fundamentally change in the coming generations.

Mobility generally declines with increasing age, as do the number of activities carried out outside the home. The majority of trips are done on foot. Though driving an automobile is still widespread among the 80+-year-olds, in light of the increasing limitations put on one's senses in old age, this circumstance deserves a critical look. Use of an automobile is mainly a male occupation, and only a small number of very old women today have their own automobile – the result of a cohort effect that is no longer present in the younger generations. Public transportation is put to too little use, particularly in less densely populated areas, where for many very old people it seems to be no real alternative to one's own automobile.

For many people reduced mobility goes hand in hand with a simultaneous withdrawal from social life. This has a great effect on the life satisfaction, number of activities, civic involvement and social participation of old people. According to Kunemund and Kaiser, this phase generally commences with the beginning of retirement and stretches into very old age, at which point people may rarely even leave their living quarters because of limited mobility (Kunemund and Kaiser 2011). Against this background, it is a central demand to better promote mobility in its central importance for all areas of life, including coping with everyday activities and spending leisure time.

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# 08

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## » Living Arrangements

This chapter is concerned with the living arrangements of the very old. We look at how they live, how their apartments and houses are furnished, what types of living situations they call home and how large their living mobility is. In Chapter 07 we showed how the daily life of the very old gradually means staying at home and how most activities eventually are carried out within one's own four walls. The living environment is one of the important aspects that determine how independent a life older people can live, whether they are able to maintain their own household despite physical or cognitive deficits, and how much the living arrangements contribute to exacerbating or relieving the burdens of old age. Problems arising through a

poor living situation generally tend to be a greater burden for older people than younger people, who are more mobile and less dependent on the home environment.

Chapter 05.2 revealed the extent to which functional health changes in the course of very old age. The ability to deal with activities of daily living (ADL and IADL)<sup>49</sup> on one's own also depends on the environmental circumstances in which these take place. A barrier-free and accessible living arrangement conducive to old age can contribute greatly to success. Against this background, we want to prepare a careful and critical analysis of the living arrangements of old people in Germany which can be used for future planning purposes. We are concerned

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<sup>49</sup> The ADL (activities of daily living) refer to the basal activities of caring for one's own well-being (e.g., eating, drinking, getting dressed and undressed, personal hygiene), whereas the IADL (instrumental activities of daily living) measure the extent to which someone can take care of his or her household alone (e.g., shopping, cooking, washing clothes, taking care of finances).

not only with the living quarters, but also with the neighborhood in which the very old are situated.

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## » 08.1 Regional Distribution of the Age Group: Where Do the Very Old Live?

A spatial survey by the Federal Institute for Building, City and Spatial Research (BBSR) is published every other year and depicts the spatial distribution of the German population according to age group and sex (INKAR 2013). The data on the population are displayed against the various different spatial levels, from the national and state level to that of counties and individual communities, also according to type of settlement. Here we will limit our discussion to depicting the population distribution in the individual federal states as well as looking at the situation in the various types of settlements, differentiated according to East and West Germany. It will become clear that the population structure at the lowest spatial level differs considerably from that at the state level.

In the year 2011, according to the INKAR data, 9.6 % of the overall population of Germany were 75 years and older, and 2.5 % were older than 85 years.<sup>50</sup> A look at the individual federal states reveals many differences: Whereas in Saxony (11.5 %) and Saxony-Anhalt (11 %) about a tenth of the population is over 75 years, in the city-states of

Hamburg and Berlin the rates are lower, at 8.6 % and 8.0 %, respectively. The regional differences among the age group of 84+-year-olds are much smaller. The largest proportion of persons from this age group is found once again in Saxony and Bremen (2.9 % each); the lowest proportion of persons over 85 years of age (2.1 %) is found in Brandenburg, Mecklenburg-Western Pomerania and Berlin. The higher proportion of persons over 74 years found in Saxony, Saxony-Anhalt and Saarland suggests that the proportion of very old people in these states will remain at a high level. Also, the gender distribution in the various age groups reveals clear regional differences: All federal states have more older females than older males. For example, in Hesse about 70 % of the 84+-year-olds are women, whereas in Mecklenburg the rate is about 77 %.

The Federal Institute for Building, City and Spatial Research (BBSR) looked at the overall population distribution according to age with respect to both administrative spatial units as well as to the type of settlement. They differentiated between four types of settlements:

- Independent cities with a population of more than 100,000 residents,
- Municipal counties in which more than 50 % of the residents live in independent cities and the population density is greater than 150 residents/km<sup>2</sup>,
- Rural counties with population concentrations in which also more than 50 % of the residents live in independent cities, but where the population density lies below 150 residents/km<sup>2</sup>,
- Sparsely populated rural areas in which less than 50 % of the residents live in independent

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50 These data do not reflect the present extrapolation of the data from the 2011 census. According to the preliminary results of the population extrapolation (as of 10 April 2014), the relative quotas and absolute numbers of the age group in question (80+ years, or rather 75+ and 85+ years) change only slightly. The proportion of those 75+ years old in the overall German population is thus 9.5 %, that of the 85+-year-olds 2.4 % (Statistisches Bundesamt 2014d). However, we do not have information about how the situation looks at the regional level for the individual age groups from 80 years onward, for the proportion of men and women in these age groups, and for the very old both with and without an immigration background.

## Residents according to the federal states

Region	Residents Proportion of the respective total population (in%)	
	75+ years	85+ years
Total	9.6	2.5
East Germany	10.1	2.4
West Germany	9.4	2.5
Saxony	11.5	2.9
Saxony-Anhalt	11.0	2.5
Saarland	10.7	2.7
Thuringia	10.4	2.5
Bremen	10.0	2.9
Rheinland-Palatinate	10.0	2.7
Mecklenburg-Western Pomerania	10.0	2.1
Brandenburg	9.9	2.1
Lower Saxony	9.7	2.6
North Rhine-Westfalia	9.6	2.4
Schleswig-Holstein	9.6	2.6
Hesse	9.4	2.6
Baden-Wuerttemberg	9.2	2.5
Bavaria	9.1	2.4
Hamburg	8.6	2.5
Berlin	8.0	2.1

>> Tab. 46: Proportion of residents aged 75+ years and 85+ years, acc. to federal state, in % of the respective overall population, 2011 (INKAR 2013)

cities and the population density lies below 100 residents/km<sup>2</sup>.

The numbers given in Table 47 show that the proportion of old people in the overall population is lowest in large cities. Yet it does not increase steadily with a decrease in the overall population density, but rather is highest in the municipal counties of

East Germany<sup>51</sup>—for whatever reasons. One reason may lie in the fact that the poor infrastructure in the thinly populated rural counties of East Germany causes old people to move to the next largest city, whereas in West Germany it is still possible to grow old in a rural area. There are, however, no reliable data available on this matter.

## Residents according to type of settlement

Spatial unit	Residents Proportion of the respective total population (in%)	
	75+ years	85+ years
Municipal counties, East Germany	11.9	2.9
Rural counties with concentrated population, East Germany	11.1	2.7
Thinly populated rural counties, East Germany	10.5	2.3
Thinly populated rural counties, West Germany	9.8	2.6
Rural counties with concentrated population, West Germany	9.5	2.5
Municipal counties, West Germany	9.4	2.4
Independent cities, West Germany	9.2	2.5
Independent cities, East Germany	8.8	2.2

» Tab. 47: Proportion of residents 75+ year and 85+ years, acc. to type of settlement and region (East Germany/West Germany, in % of the respective overall regional population, 2011 (INKAR 2013))

Yet the data from the German Aging Survey of 2008 show that a large part of those over 80 years of age (ca. 25 %) live in communities with less than 5,000 residents (cf. Chapter 02.4). Depending on the spatial scale level, this paints a different picture of the distribution of this age group and demands more fine-tuned planning of the infrastructure and healthcare network to ensure a social-spatial-oriented approach that includes the respective community and county.

The proportion of 80+-year-olds in the respective total population is already very high in the states, counties and communities of East Germany, not the least because of the high level of emigration of their young people to the West. And East Germany is also where the (relative) increase in older persons will be felt the most in the years to come. The prognosis is that in the year 2030 about 8.1 % of the overall population in Germany will be 80 years and older, the result of increasing life expectancy as

51 Examples of municipal counties in East Germany are Weimar City, Zwickau, Dessau-Roßlau and the county that includes the Erz Mountains.

well as of lower birthrates. Southern and northwestern Germany, however, because of overall higher birthrates and the influx of many young people, will experience a smaller increase in the proportion of older people—with the exception of a few select regions (cf. Figure 62 in the Appendix). The population prognosis of the Federal Statistics Office (2014a) for the year 2030 (based on an extrapolation of the data from 2009) says that the number of 80–85-year-olds will rise from 2,311,800 in 2009 to 3,012,600 in 2030 (an increase of 30.3%). The group of 84+-year-olds will increase in the same timeframe from 1,868,900 to 3,419,600 persons—an increase of about 83%. According to the same calculations, in 2030 the group of 80+-year-olds will include some 6,432,200 persons.<sup>52</sup> From today's perspective, one can expect an even further rise in the proportion of 80+-year-olds after 2030, when the baby boomers of the 1950s and 1960s reach very old age.

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## » 08.2 Ownership Structure, Provision of Living Space and Living Costs

How do old people live today? Do they own their apartments and houses? How many 80+-year-olds live in a private household and how are these households equipped?

The vast majority of old people in Germany live an autonomous life, whether alone or with a partner, in normal apartments and houses they rented or bought many years ago. For 77% of those over

60 years of age, the last move lies over 10 years in the past, and more than 10% of them have been living in the same apartment or house for the past 50 years (BMVBS 2011, p. 33). According to the figures of the Federal Association of Independent Real Estate and Housing Providers (BFW) from 2008, 93% of those over 65 years of age live in “normal housing,” that is, in apartments or houses that have no special care or service arrangements or that are operated by social institutions of any kind (*ibid.*, p. 27). The age group in question here (80+-year-olds) also live largely in normal housing, and even those care-dependents among them for the most part live in their own dwellings, as the following section shows.

Of the 80+-year-olds who in 2009 were not living in any special forms of housing, over one third (36.4%) were living in their self-owned condo or single-family home; about 60% were living in rented accommodations, half of them in housing associations, the other half under private ownership (*ibid.*, p. 29). These numbers differ from those reported for the next younger age group of 65–79-year-olds, over 50% of whom live in their own property. The reasons for this difference lies in the fact that, because of World War II and its aftermath, today's older generations had fewer opportunities to build up assets than the subsequent generation(s) (Voges and Zinke 2010, p. 302).

According to the Federal Statistics Office, on 1 January 2013, about 48% of all private households were situated in an apartment building and had a main income earner who was 80 years or older; ca. 35% were in single-family homes and ca. 14% in duplexes. About every fifth private household with an older main income earner was situated in a house built before 1949—22.3% of them were owners and

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52 These prognoses, too, are subject to revision based on the results of the ongoing population extrapolation

19.8 % were renters. Statistically speaking, each household from this age group had an average of 3.4 living rooms/bedrooms at their disposal with a total of 90 m<sup>2</sup> (ca. 968 square feet) of living space, a number that grows ever larger in the following generation(s) [Statistisches Bundesamt 2013I, pp. 25 f.]. The size of the living space is especially important when care-dependency must be addressed within one's own four walls and caretaking relatives have to be housed or additions made to the existing structure.

There are, however, considerable differences in living status, size, standards and configurations depending on the region and the socioeconomic status of the old people in question. Older people from East Germany, for example, as well as older people with an immigration background tend not to own their own accommodations, in contrast to those from West Germany without an immigration background. According to the German Aging Survey of 2008, 67.8 % of the West Germans 70 to 85 years old report possessing real estate, whereas East Germans in this age group have a much lower quota of 48.2 % [GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT; Beetz et al. 2009, pp. 47 f.; see also Chapter 03.4].

The living situation among the older migrants differs sharply depending on their immigration status. Especially those migrants who originally came from the early recruitment countries of Turkey and the former Yugoslavia as well as (repatriated) ethnic Germans rarely (less than 30 %) live in their own dwellings [BAMF 2012a, pp. 176 f.]. Older people with an immigration background also tend to have less space available to them and live in closer quarters. These statements, however, taken from the Research Report of the Federal Ministry for Migration and Refugees, pertain to all migrants, with no specific statements possible about very old persons with an immigration background.

The questions of ownership, duration of occupancy and size of living space are important factors in determining the overall costs of living accommodations which older people must foot. Beetz et al. used the data from the Socioeconomic Panel (SOEP) of 2006 to calculate the differences in housing costs for self-owned and rental properties [Beetz et al. 2009, p. 48]. Whereas self-owned property is generally paid off by the time one reaches old age and thus has little effect on the household budget, (rising) rental costs can sometimes exert great financial pressure. In the year 2006, a rental apartment consumed on average 26 % of the disposable household income of persons 75+ years old, whereas a self-owned dwelling produced costs of only 5.5 %. The living costs are especially of concern for low-income households of the very old, as depicted in Chapter 03, which tend to be single (widowed) women.

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## » 08.3 Age-Appropriate Living Arrangements, Special Forms, Adaptations

### Age-Appropriate Living Arrangements

As mentioned above, in 2009 about 93 % of the 65+-year-olds lived in "normal" housing, and some 7 % in supervised, institutional or collective forms of housing. Even among the care-dependents 80+ years old, ca. 63 % (data from 2011) did not live in a nursing-care facility, but in their own home [Statistisches Bundesamt 2013f, p. 9]. The Second Heidelberg Study of 100-Year-Olds noted that 59 %

of those over 100 years of age were still living in a private household—30 % alone and 20 % alone in an apartment adjacent to that of a family member [Jopp et al. 2013, p. 29].

Against this background, the important question arises how age-appropriate the housing stock in Germany really is. In a study of the Federal Ministry for Transport and Digital Infrastructure (BMVI) entitled “Living Arrangements in Old Age” (2011) the term “age-appropriate apartment” is defined as follows: “[...] an ‘age-appropriate apartment’ comprises not only the more or less complete absence/reduction of barriers, but also barrier-free/-reduced surroundings, the local availability of essential infrastructure as well as of suitable offers of social and caretaking support” (BMVBS 2011, p. 25). The official demands made of a barrier-free apartment buildings are set down in the DIN specification 18040-2, which describes the structural measures required to guarantee independent mobility within an apartment for persons with physical limitations (using, if necessary, aids such as wheelchairs and walkers) and/or diminished hearing and sight. However, the final decision whether these stipulations actually become part of the building code lies with the authorities at the state level. Private persons have no legal entitlement to a barrier-free living space. The building code requirements for nursing and retirement homes, however, are regulated nationally in special building regulations for institutions and are thus, like other public buildings, subject to special demands.

## Adaptation of Living Arrangements

The proportion of age-appropriate and barrier-free accommodations in Germany is, to the best of our knowledge, extremely limited. Wahl and Oswald

point out that the database on the subject of “adaptation of living arrangements in Germany” is unsatisfactory (Wahl and Oswald 2012, p. 497). Thus, we resort once again to the study “Living Arrangements in Old Age,” which queried old people concerning the existing barriers in their homes (BMVBS 2011, pp. 34 f.). About 48 % of the old-age households (with at least one person 65+ years old) are apartments in which stairs lead to the front door; in 27.5 % of these households there are stairs or steps within the apartment; 14.6 % have a floor-level shower; in 25 % of the households the door to the bathroom is considered to be too narrow for a walker to get through. Only 5 % of the old people queried in this study reported living in a barrier-free or barrier-reduced apartment (ibid., p. 40). The same study revealed that in about 20 % of all senior households at least one person 80+ years old lives who is dependent on a walker (or rollator). In 38.7 % of these households some sort of walking aid is used (ibid., pp. 49 f.).

Thus, it might be assumed that old people with mobility issues are confronted with enormous problems when coping with everyday life in a non-adapted living situation. In the Generali Aging Study of 2013, however, only 14 % of the 80–85-year-olds reported having problems with their nonadapted or only partially adapted apartment (Generali Zukunftsfonds 2012, p. 304). Having gotten used to the potential tripping hazards in one’s familiar surroundings, on the one hand, and the fear of having to renovate or move out of the apartment altogether, on the other hand, are the likely reasons why the matter of barrier-free living does not play a larger role in the lives of old people. At the same time, however, as the data quoted in Chapter 05.5 on risk of falls show, these dangers pose a high risk to old people, especially older women and all the more with increasing age. Preventing falls in private households means above all promoting an

environment inside and outside the dwelling which is not conducive to falls.

Wahl and Oswald (2012, pp. 493 f.), using the results of a study entitled ENABLE-AGE, describe the weaknesses present in and around the dwellings of 80+-year-olds. Many things can affect the mobility of older people and endanger their health and well-being, such as slippery items like flooring, high-access bathtubs or poorly designed furniture (too high, too low); on the other hand, the surroundings (staircase, street, environment) often do not have proper handholds and handrails. Also, they may be confronted with dangerous steps (too high, too low, irregular, sloped), doors that close too quickly, uneven sidewalks and missing benches in public places. The authors note the importance of establishing positive living conditions to promote life quality and health, and point out the influence of accessibility and usability in an apartment for autonomously coping with everyday life and avoiding high levels of depression (*ibid.*, p. 496).

Against this background, how high is the level of willingness among the very old to renovate their accommodations to be age-appropriate? In households with persons over 80 years of age, according to the study “Living Arrangements in Old Age,” only 6.3 % said they would be willing to renovate their apartment, whereas among the households queried with 65–79-year-olds, 16.9 % were willing to do so (BMVBS 2011, p. 57). These data do not tell us much about the reasons for the large number of persons unwilling to adapt their dwelling. For example, we do not know whether the apartment had already been renovated, whether there was some fear of being burdened with the stress of renovation work or whether they believed it just wouldn’t be “worth it.” Perhaps knowledge of one’s eligibility to receive support and technical assistance was missing in this age group.

## Collective and Supervised Living Arrangements

At the beginning of this chapter we remarked that the study entitled “Living Arrangements in Old Age” had discovered that only a small fraction of the older generations live in supervised or institutional settings. Under the heading “collective living arrangements” that study looked at various forms of living in which old people or a mixture of older and younger people can live together under one roof, organize their life together and support each other via neighborly assistance. Such projects are often initiated by the future residents.

In “supervised senior residences” old people live in their own, generally barrier-free rooms or apartments. In this case, living as a group is not the focus of attention (as with the collective forms mentioned above), but rather the possibility of receiving support in household matters and caretaking as an additional service to be paid for if needed. In supervised living arrangements for care-dependents, we are dealing with living or house communities of persons who live in their own household but who are tended to by professional caretakers. Such projects generally lie in the responsibility of the provider, who organizes the common life and household arrangements. Finally, a nursing home offers someone who is unable to live independently recourse to 24-hour care and attention in single- and double-occupancy rooms or small apartments.

The Generali Aging Study of 2013 asked 65–85-year-olds what type of life they could imagine themselves living when they reach the point that they could no longer live alone (multiple answers were possible): The primary choice among the 80–85-year-olds (60 %) was to remain within one’s own home with the assistance of a home-care service. A fourth of those queried in this age

## Care-dependents at home and in full-care institutions

Age	No. persons in age group	No. care-dependents	Proportion of care-dependents in age group	Home care (no.)	Institutional care (no.)
80 to less than 85	2,367,684	484,818	20.5 %	338,705	146,113
85 to less than 90	1,372,711	522,001	38.0 %	326,791	195,201
90+	660,929	381,911	57.8 %	206,318	175,593
Sum	4,401,324	1,388,730	28.2 %	871,814	516,916

>> Tab. 48: Care-dependents in absolute numbers and in % of age group (Pflegerstatistik 2011, Statistisches Bundesamt 2013f, Tab. 1.2, p. 9)

group could imagine living in an apartment in a supervised senior residence, and 21 % / 23 % could conceive of living in a room of their own in such a residence or with their children/grandchildren, respectively. Only 9 % and 8 % of the 80+-year-olds, respectively, would prefer living in a multigenerational house or a collective living arrangement together with other old people. The higher the available income and the educational status of those answering this survey were, the more attractive were the alternative forms of residence (Generali Zukunftsfonds 2012, p. 310).

There are no representative and reliable data available on the number, furnishing and quality of collective and supervised living arrangements in Germany. The data from the study "Living Arrangements in Old Age" from 2008 by the Federal Association of Independent Real Estate and Housing Providers reveal only that less than 1 % of the older generations (65+-year-olds) actually live in such arrangements (BMVBS 2011, p. 27). Why this number is so small, what the advantages and disadvantages of such innovative programs are and how many very old people actually live under such circumstances is unknown and has yet to be systematically studied. Oswald points to a

publication by Saup from 2001 which reports that ca. 96 % of those persons moving into supervised living residences assumed that would be their last move—whereas 3 years later only 79 % were of this opinion (Oswald 2012, p. 572). The question is: What happened in the intervening 3 years? Why did 20 % of those queried come to view supervised living so negatively and worry about having to move again? What could supervised, innovative or collective forms of living provide (and what not)? Which expectations are realistic? There is much to be done in this area if older people are to be properly counseled before moving into a new accommodation or if new concepts of supervised living are to be established to correspond to the actual needs of older people.

According to the Care Statistics for 2011, ca. 32 % of those over 80 years of age are care-dependent, and ca. 37 % of the care-dependents in this age group live in a nursing home (Statistisches Bundesamt 2013f, p. 9; cf. Table 48). In 2011, Germany had a total of 12,354 nursing homes with a total of 875,549 beds. Since we know that some 517,000 persons 80 years and older are living in full-care nursing home, we can calculate that about two thirds of all available spots in nursing homes are

being occupied by this age group. 60 % of the beds are in single-occupancy rooms, and 40 % in multiple-occupancy rooms. About 20 % of the nursing homes serve as supervised living arrangements or are attached to a full-care nursing home. The nursing homes are run by nonprofit (54 %) or private (40 %) providers; only 5 % are run by the public sector (ibid., pp. 18 f.; cf. also Chapter 06).

The proportion of available beds in nursing homes to the overall population greatly differs regionally. In the state of Hesse, for example, 92.4 beds are available per 10,000 residents (care quota of 3.3 %), whereas in Schleswig-Holstein there are 142.7 beds per 10,000 residents—or over 50 % more, even though the care quota in that state is lower at 2.8 %. At the same time, the proportion of care-dependents who receive care at home varies only marginally: 20.8 % in Hesse, 19.9 % in Schleswig-Holstein (INKAR 2013; Statistisches Bundesamt 2013f. acc. to [www.gbe-bund.de](http://www.gbe-bund.de)).

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## » 08.4 Social Living Environment

In light of the fact that the vast majority of older people live in “normal” surroundings and are able to organize their daily life themselves, it is important to look at the environment and the neighborhood in which they live. We know that in old age more and more is done on foot, and that the overall distances covered grow ever shorter. Thus, the most important everyday living circumstances for old people should lie in their immediate surroundings. People of a very old age need different offers in their environment than young people do, especially easily reachable therapeutic and medical facilities

such as doctors and dentists, physiotherapists and podiatrists/pedicurists, pharmacies and medical suppliers.

The ability to shop locally for everyday needs, to grab a noon-day meal, to go to the bank or the post office all belong to the necessary infrastructure in a neighborhood that supports independent living among the very old. The Study of 100-Year-Olds points out that established meeting places in the neighborhood, visiting services and a network of professional assistance and neighborhood aid can reduce loneliness in old age (Jopp et al. 2013, pp. 29 f.).

In order to support the mobility and health of people in advanced age, public spaces must conform to the needs of such persons. The streets, open spaces and parks must be barrier-free, safe and properly designed to avoid all danger of falls as well as ensuring a pleasant and comfortable visit. At the very least, the neighborhood must have sidewalks that are plane, sufficient crossways across streets, and enough benches and restrooms. The buildings, street furniture and signage should be well differentiated and readable to ensure orientation, even among persons with mild cognitive impairments.

How do old people assess their social living environment? According to the Generali Aging Study of 2013, on a scale of 1 (not satisfied at all) to 10 (completely satisfied), the 80–85-year-olds replied with an average value of 8.2—and thus somewhat higher than the group of young old, who responded with an 8.1 (Generali Zukunftsfonds 2012, pp. 61 and 115 f.). This study theorized that the high level of satisfaction among the majority of older people is the result of an extensive infrastructure in the immediate surroundings of their dwellings: Over 80 % of those queried report having a pharmacy, a general practitioner and a supermarket in their immediate vicinity. On the other hand, deficits were

## Evaluation of the social living environment

	"Not the case/rather not the case"	
	West Germany (with West Berlin)	East Germany (with East Berlin)
"Shopping facilities available"	18.7 %	33.8 %
"Doctors and pharmacies available"	16.2 %	35.7 %
"Public transportation available"	21.9 %	24.6 %
"I feel safe walking in the dark"	38.5 % (females: 51.7 %)	54.4 % (females: 65.7 %)

>> Tab. 49: Evaluation of the social living environment, 70–85-year-olds, in East Germany/West Germany, proportion of answers "Not the case/rather not the case," in % (German Aging Survey 2008) (Motel-Klingebiel 2010, Table A 61f. in Appendix)

reported for medical specialists and cultural offers: 60 % of the older people living in smaller communities report an insufficient number of such offers in their direct surroundings.

The data emerging from the German Aging Survey of 2010 demonstrate that about one third of the 70–85-year-olds consider the availability of doctors and shopping facilities in East Germany (relative to the year 2008) to be insufficient, whereas in West Germany only 16 % and 19 % of those interviewed, respectively, reported such deficits (Motel-Klingebiel et al. 2010, Table in Appendix A6-1f.; cf. Table 49). About a fourth of those interviewed in both East and West Germany thought public transportation was poor. Largely negative were the assessments, particularly in East Germany, on the matter of safety in the public arena: Over half (54.4 %) of the 70–85-year-olds in East Germany and nearly two thirds of the women living there (65.7 %) did not feel safe in the dark.

Yet, despite these results, as mentioned above, with increasing age we find a slightly higher level of subjective satisfaction with one's social living environment. Even if there are barriers and a poor infrastructure in the neighborhood, older people

seem to be less vulnerable to "suffering" from such circumstances (Wahl and Oswald 2012). On the other hand, this fact should not deceive us into thinking that the objective dangers that project from an insufficient living environment (such as poor shopping facilities, few opportunities for social participation, little fostering of mobility, etc.) have somehow disappeared and no longer endanger the health of older people (through poor nutrition, loneliness, lack of exercise, etc.). They are there regardless of whether the old people can see them or point them out. People with few economic resources tend to live in disadvantaged neighborhoods and are dependent on their immediate surroundings to cope with everyday life—especially when they are exposed to the poor infrastructure that causes the burdens and deficits mentioned (Falk et al. 2011).

The results of the Frankfurt Study BEWOHNT on the living conditions of the very old, which queried 595 and 463 persons 70–89 years old in two separate stages, respectively, are not geographically representative, but nevertheless provide some additional insights into the importance of the social living environment and neighborhood in old age (Oswald et al. 2013). The positive effects of neigh-

borly solidarity and neighborhood attachment were clearly found among the 80–89-year-olds. This study deemed these effects “interaction effects,” that is, they reduce the negative effects of poor health on well-being. This finding implies that the neighborhood is important for health and well-being not just because of its role as one’s immediate surroundings or as part of one’s “service landscape,” but also as one’s social environment and home.

The results of the Generali Aging Study and the Aging Survey show that it is worth taking a differentiated and detailed look at the living conditions. The smaller the community in which old people live, the more limited and unsatisfactory the local infrastructure generally is. But because people over 80 years of age tend to live in smaller communities, as the INKAR data reveal, we must devote more effort to the service landscape in these types of settlements.

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## » 08.5 Living Mobility and Relocations

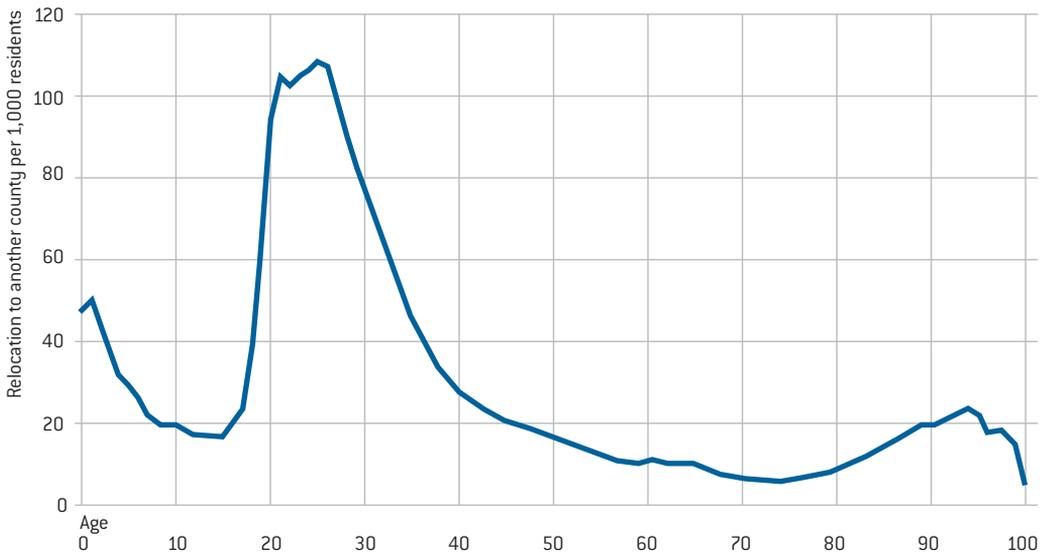
At the beginning of this chapter, we saw that a large part of the older population does not live in age-appropriate dwellings. Does this fact lead to more 80+-year-olds considering moving? The study “Living Arrangements in Old Age” looked at the willingness of old people to relocate to dwellings more appropriate to their needs. 81.4 % of those over 80 years of age were not willing to move, and only 14.7 % could imagine moving (BMVBS 2011, p. 56). Thus, the willingness to move is lower in this age group than in the next younger group of 65–79-year-olds, where 29.6 % were willing to relocate.

The study does not present any reasons for the low readiness to move, so that it remains unclear whether old people have simply gotten used to their living situation such that a move is not (or no longer) considered necessary—or whether they do not want to burden themselves with the demands of moving, whether the costs of moving are too high, or whether they simply have no alternative to their present situation, i.e., have nowhere to go. According to Voges and Zinke, the willingness to move in old age depends on how long one has lived in the present surroundings and one’s residential status: Living for a long time especially in self-owned real estate lowers the readiness to move considerably (Voges and Zinke 2010, p. 302).

How often old people actually move, however, is not statistically collected. Figure 48 depicts the age-specific living mobility from 2009, albeit only for those moves that took place to another county. Still, it is possible to recognize an increase in mobility between the ages of 75 and 95 years (BMI 2011). In light of the average age of 78.9 years (men) and 82.5 years (women) for entry into institutional care facilities (Barmer GEK 2013a), we may assume that a large portion of these relocations were due to being admitted into long-term care.

Relocating in old age is often associated with dwindling individual resources or radical biographical upheavals, such as the loss of a partner, retirement, acute illnesses or other major life events. Particularly an involuntary move from a self-owned dwelling to an institutional setting with high vulnerability has a negative effect on health and well-being (Oswald 2012, p. 570). Yet any type of relocation in old age carries the risk of failing to build new neighborly relations, to becoming socially integrated and finally to being subject to isolation and loneliness (Oswald 2012, p. 570, with reference to Krout and Wethington 2003).

## Age-specific living mobility in Germany



>> Fig. 48: Age-specific living mobility in Germany, 2009, per 1,000 residents (BMI 2011, p. 41)

The provision of early information, appropriate means of influencing how such a transition takes place and active support when settling into a new environment should all be part of the moving experience as they help to mitigate any effects to health and experiences of self-efficacy.

## >> 08.6 Conclusion

This chapter has described the regional distribution, the living situation and the social living mobility of very old people. We showed how important it

is to keep any eye on the regional differences when looking at the demographic developments: Both the region and the type of settlement are important. Since the proportion of very old persons varies widely depending on the region, the infrastructure necessary to service this age group must be created or adapted to fit the needs of the region. Concentrating local or transregional resources would appear to be a necessary and meaningful strategy especially in structurally weak areas. Communities and counties should receive enough latitude to be able to plan and control these processes.

Most people 80 and more years old, whether in need of care or not, live in a “normal” apartment or house, two thirds of which are self-owned. Only a

small percentage of old people live under circumstances that can be described as age-appropriate. Social living mobility rises from age 75 years onward, even though in the age group we looked at the willingness to move is low, as is the willingness to do the respective renovations to one's dwelling. Living arrangements that are conducive to old age and barrier-free, however, are a major premise if older people are to live independently despite reduced resources and avoid health risks such as falls.

Regardless of the region, about one third of the old people studied did not have the necessary facilities of daily living at their disposal directly in their living environment. Nevertheless, they viewed their dwellings and their neighborhoods largely positively and did not perceive the existing barriers as wholly restrictive. Yet this finding deserves closer examination: It ignores and thus cannot remove objective dangers to the physical and psychological health of this age group.

An analysis of the existing data reveals that there is apparently an urgent need for strategic action to adapt living spaces and whole neighborhoods to an age-appropriate scheme. The high number of people who move at high ages, coupled with a rather low willingness to relocate, suggests that these moves are being made involuntarily. Early counseling, adequate ways of influencing how such a relocation takes place, and assistance in adapting to the new circumstances should all be part of every move in old age, in order to reduce the negative effects for health and self-efficacy. In addition, social living mobility could be initiated at an earlier age, though that would make adequate and affordable alternatives for age-appropriate living arrangements necessary.

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## » Conclusion

The insights collected in this expert report on the situation of persons 80 years and older (the “very old”) reveal a multifaceted picture. Behind the statistics on the 4.4 million members (2011) of this still growing age group, there are considerable distinctions to be made. Even though there are few studies available on nearly all themes considered here which systematically and representatively cover this age group, taken together we can identify many of the resources as well as the risks relevant to health promotion—and the research that needs to be done in this area.

The overview of this age group reveals nearly twice as many women as men, two thirds of whom are widows, whereas nearly two thirds of the men are still married. This finding in turn is related to another important finding, namely, that most women live alone in their own household, whereas that is true of only one third of all men in this age group. Widowhood, living alone, dwindling social

networks—those are all risk factors for loneliness, poor social participation and, as a result, poor social and practical support. Social relations are very important to the very old, and over time close relations to a few trusted persons become even more important than maintaining contact to a large group of people. The highest number of contacts are with close relatives, who also play a major role in providing support of all kind and are the most important persons in their life. Four fifths of the very old (still) have one living child, and more than 90 % have grandchildren. The single and childless members of this age group have a smaller support potential, but tend to have established a dependable nonfamilial network. Overall 10 % of the 65–85-year-olds, however, report having no one available they could rely on in an emergency. In light of the generally ever-smaller social networks during old age, this proportion is likely to be even greater among the very old. Dissatisfaction with one’s own social rela-

tionships and the increasing feeling of loneliness correlate broadly with poor self-assessed health status and lower socioeconomic status as well as with lower self-evaluation of one's own living environment. This shows just how important it is to have local, low-threshold offers of participation at one's disposal.

The overall good material situation of most people in the 80+-year age group should not distract from the fact that there are still many inequalities: Very old people with an immigration background and old women from West Germany who have accrued only few retirement entitlements of their own often must make do with very little income. Especially those 80+-year-olds who live alone in their own household are exposed to great risk of poverty: More than 400,000 of them—92 % thereof women—must live off no more than EUR 900 per month—and some even less. Although the poverty level lies at EUR 848, rising rents and energy costs, copayments to health insurance or the costs of necessary help in the household reduce the financial latitude of the very old quickly and considerably. Little remains for such important things as social participation, mobility and other everyday wishes.

Chronic diseases and multimorbidity are characteristic of the health status in this age group, whereby women are generally less better off than men. More and more people are afflicted with dementia in very old age—both men and women—whereas rates of depression do not increase over those of younger years. Especially broken bones (often from falls) are major reasons for hospital stays, as are cardiovascular events such as congestive heart failure and strokes as well as musculoskeletal problems. The subjective assessment of one's own health decreases in most people when they reach the age of 80 years; apparently at that age many surpass a threshold at which the

repercussions of health problems can no longer be much compensated for—at which the functional deficits become so grave that even activities of daily living turn into major hurdles. For very old persons with a better stand in life it is easier to meet these challenges, and they judge their functional health to be better.

Overall, the health data at our disposal provide only few statements differentiated according to social categories. Much research will have to be done in this respect if we are to study all of the correlations discovered and unearth the concrete risks and potentials for prevention. Although it may be considered a given that rehabilitation measures serve to preserve functional abilities and skills among old people, only a small minority of them actually enjoy such measures.

Assistance- and care-dependency increase among the 80+-year-olds with increasing age, although the proportion of care-dependents in each age group has remained the same now for many years. And—contrary to popular opinion—only a minority of those over 90 years of age are in need of care (i.e., receive care insurance benefits). How many of them are in fact in need of assistance to cope with activities of daily living without being officially considered care-dependent is unknown as there are no up-to-date and reliable data available. Estimates range up to 2:1 for persons in need of assistance to persons officially in need of caretaking, whereby women are generally more often and more severely in need of care than men. The reason probably lies in women's higher overall level of affliction, their greater life expectancy and not the least the fact that they tend to live alone and thus need to organize assistance from others.

The large majority of very old persons are being cared for by relatives within their own household, often with the help of home-care services. But many very old persons are also caretakers

themselves, particularly of their own partners. Whereas most women over 80 years are already widowed and thus no longer care for either their parents or their spouses, about 10% of the very old men are caretakers, as a rule for their partners. Like all caretakers, they too are subject to the extreme demands and health risks of caretaking. The alternative to home care is long-term nursing care in a care facility. The average age of admittance to institutional care lies at around 80 years. Overproportionately more women and widowed persons (both men and women) live in nursing homes. There are no data, however, on the influence of socioeconomic factors on the incidence of institutional care. About half of the very old residents of nursing homes have no or only few social contacts with trusted persons and thus run the risk of loneliness; the present work conditions in inpatient care facilities provide only little chance of overcoming such risks. The demands made through caretaking affect not just relatives caring for their loved ones at home, they also affect the nursing staff in institutional facilities. They contribute to violence and abuse in both places. The theme of violence and abuse in caretaking situations requires greater research endeavors.

The daily life of the very old is marked by quiet activities that generally take place at home and increasingly also alone, such as watching TV or reading. Their interest in current events remains strong and is satisfied by media consumption, albeit less so by the internet. Activities that demand physical input and mobility, such as sports, working in the garden or volunteer work (e.g., in a club), however, decline, particular if their health is frail. Yet there are no studies on whether such a retreat is actually desired on the part of this age group or rather whether the proper conditions are missing in civic society which would allow or at least facilitate the continued participation of frail persons.

The participation of the very old depends greatly on their living environment and on the opportunities at their disposal there. This is even truer if their socioeconomic status is low, their mobility limited and their health fragile. Most old people view their surroundings positively—regardless of the objective barriers or missing infrastructure. About one third complain about the absence of facilities in the vicinity servicing daily needs. The large majority of the very old live in accommodations that are not age-appropriate or barrier-free. Nevertheless, their willingness to relocate or to renovate their existing accommodations remains low. In light of this general attitude, the increasing number of relocations from age 75 years onward are likely forced upon them or at least involuntary. Taken together, these results point to the necessity of local and regional analyses of housing stock and living environments as well as actions at the local and county level to alleviate these infrastructure problems.

This expert report has provided a broad overview of the circumstances under which the oldest residents of Germany live—despite the sometimes rather large gaps in the data. Optimal health, social and civic participation as well as an autonomous daily life are the most important components for good life quality—not only in this age group. The challenge lies in creating the basic helpful conditions outlined in the various chapters.



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» Appendix

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» 10.1 Tables

## Households of persons 80+ years, according to age, sex and family status

Age group	Sex	Family status	Size of household	
			Population of all households	In single households
80 – less than 85 years	Total	Total	2,271	1,051
		Single	97	81
		Widowed	1,033	886
	Men	Total	902	217
		Single	22	18
		Widowed	205	173
	Women	Total	1,369	835
		Single	75	63
		Widowed	828	713
85 – less than 90 years	Total	Total	1,172	715
		Single	66	54
		Widowed	720	620
	Men	Total	361	123
		Single	6	5
		Widowed	122	107
	Women	Total	811	593
		Single	60	50
		Widowed	599	514
90+ years	Total	Total	401	280
		Single	20	16
		Widowed	303	250
	Men	Total	102	47
		Single	/	/
		Widowed	50	43
	Women	Total	299	234
		Single	18	15
		Widowed	253	207

» Tab. 50: Households of persons 80+ years, acc. to age, sex, family status, 2011, in 1,000s (GeroStat –Deutsches Zentrum für Altersfragen, Berlin, DOI 10,5156/GEROSTAT)

## Widowed persons 80+ years

Sex	Family status	Size of household						
		Population of all households	In single households	All multiperson households	In 2-person households	In 3-person households	In 4-person households	In 5-person households
Total	Total	3,842	2,045	1,797	1,581	139	40	38
	Widowed	2,055	1,755	301	174	73	29	26
Men	Total	1,365	385	980	912	48	10	11
	Widowed	377	322	55	38	9	/	/
Women	Total	2,478	1,661	818	669	91	30	28
	Widowed	1,679	1,433	246	136	64	25	22

>> Tab. 51: Widowed persons 80+ years, acc. to size of household, sex and family status, 2011, in 1000s (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

## Population 80+ according to number of generations in household

Region	Sex	Family status	Population according to number of generations			
			Population of all households	In household with 1 generation	In household with 2 generations	In household with 3+ generations
Germany	Total	Total	3,842	1,371	276	68
		Widowed	2,055	/	194	54
	Men	Total	1,365	862	69	14
		Widowed	377	/	25	8
	Women	Total	2,478	510	207	54
		Widowed	1,679	/	169	47
West*	Total	Total	3,067	1,093	227	60
		Widowed	1,650	/	159	48
	Men	Total	1,103	691	59	12
		Widowed	305	–	20	7
	Women	Total	1,965	402	169	48
		Widowed	1,346	/	139	41
East**	Total	Total	776	279	49	8
		Widowed	405	/	35	6
	Men	Total	262	171	11	/
		Widowed	72	–	5	/
	Women	Total	514	108	38	6
		Widowed	333	/	31	6

\* Up to 2004 w/West Berlin, after 2005 w/o Berlin, \*\* Up to 2004 w/East Berlin, after 2005 w/Berlin

» Tab. 52: Population 80+, acc. to number of generations in private household, acc. to region, sex, family status, 2011, in 1000s  
(GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

## Subjective evaluation of living standard

Region	Sex	Evaluation of living standard				
		Very good	Good	Average	Poor	Very poor
Germany	Men	9.7	58.0	28.5	3.1	0.8
	Women	8.4	51.8	33.9	4.3	1.7
	Total	8.9	54.4	31.6	3.8	1.3
West*	Men	10.6	58.1	26.9	3.5	0.9
	Women	9.7	51.8	32.5	4.0	2.1
	Total	10.1	54.5	30.1	3.8	1.6
East**	Men	5.4	57.3	35.8	1.4	0.0
	Women	3.0	51.5	39.5	5.7	0.3
	Total	4.0	53.9	38.0	4.0	0.2

\* West Germany + West Berlin; \*\* East Germany + East Berlin

>> Tab. 53: Subjective evaluation of living standard, 70–85-year-olds, acc. to region, sex, 2008, in % (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

## Net income according to region and sex

Region	Sex	Individual monthly net income			
		Population total	Less than EUR 900	Less than EUR 1,300	Less than EUR 1,700
Germany	Total	4,273	1,065	2,247	3,040
	Men	1,448	151	535	914
	Women	2,825	914	1,712	2,126
West Germany <sup>1</sup>	Total	3,403	854	1,705	2,306
	Men	1,169	119	388	683
	Women	2,234	736	1,318	1,624
East Germany <sup>2</sup>	Total	870	211	543	733
	Men	279	33	148	231
	Women	591	179	395	502

1 Up to 2004 w/West Berlin, from 2005 w/o Berlin, 2 Up to 2004 w/East Berlin, from 2005 w/Berlin

» Tab. 54: Individual net income and employment status, age group 80+, acc. to region, sex, 2011, in 1000s (GeroStat –Deutsches Zentrum für Altersfragen, Berlin, DOI 10,5156/GEROSTAT)

## Net income and size of household according to age groups

Age group	Household size of population	Individual monthly net income	
		Population of all households <sup>1</sup>	Less than EUR 900
80+ years	Population of all households	3,842	1,018
	Population in 1-person households	2,045	409
	Population in multiperson households	1,797	609
80 – less than 85 years	Population of all households	2,271	643
	Population 1-person households	1,051	218
	Population in multiperson households	1,220	426
85 – less than 90 years	Population of all households	1,172	288
	Population in 1-person households	715	139
	Population in multiperson households	457	149
90+ years	Population of all households	401	87
	Population in 1-person households	280	52
	Population in multiperson households	121	35

1 Up to 2004 members of household living at main and secondary domicile, from 2005 only members of household living at main domicile

>> Tab, 55: Individual net income and size of household, Germany, 2011, acc, to age group, in 1000s (GeroStat–Deutsches Zentrum für Altersfragen, Berlin, DOI 10,5156/GEROSTAT)

## Recipients of public funds and other income

Region	Sex	Recipients of						
		Population Total	Recipients of public funds total	Living-allowance	Welfare acc. to SGB XII (from 2007 on)	Care benefits	Other public funds	Recipients of other income
Germany	Total	4,273	842	42	118	701	53	1,016
	Men	1,448	206	8	27 = 1.9%	169 = 12%	12	470
	Women	2,825	636	34	92 = 3.3%	532 = 19%	41	546
West <sup>1</sup>	Total	3,403	634	31	103 = 3%	518	43	953
	Men	1,169	160	7	23 = 2%	128	11	447
	Women	2,234	474	24	80 = 3.6%	390	32	506
East <sup>2</sup>	Total	870	208	11	15	182	11	64
	Men	279	46	–	–	41	–	24
	Women	591	162	10	12 = 2%	141	9	40

1 Up to 2004 w/West Berlin, from 2005 w/o Berlin.

2 Up to 2004 w/East Berlin, from 2005 w/Berlin.

– not specified

» Tab. 56: Recipients of public funds and other income, acc. to region and sex, 2011, 80+ years, in 1000s (GeroStat – Deutsches Zentrum für Altersfragen, Berlin, DOI 10.5156/GEROSTAT)

## Prevalence of diseases and health problems among women

	18–29	30–49	50–64	65–74	75+	Total
High blood pressure	2.5	9.9	34.3	52.2	59.4	26.3
High blood lipid levels	4.1	8.2	29.2	44.3	43.7	21.8
Adipositas (BMI ≥ 30)	5.4	12.3	20.9	23.9	18.6	15.7
Diabetes mellitus	1.1	2.0	8.5	16.3	19.2	7.5
Coronary heart disease	0.5	0.8	3.9	13.7	23.3	5.9
Heart attack	0.0	0.3	1.3	5.7	6.9	2.1
Congestive heart failure	0.1	0.8	2.0	6.5	13.0	3.1
Stroke	0.1	0.6	1.8	4.1	8.5	2.2
Asthma	4.5	5.1	6.2	7.2	7.6	5.9
Chronic bronchitis	2.1	4.3	6.3	9.4	8.1	5.7
Chronic kidney disease	0.5	0.6	1.1	3.7	5.7	1.8
Chronic liver disease	0.4	0.7	2.0	3.5	2.1	1.5
Gastritis/duodenitis	4.8	4.6	6.0	6.0	4.2	5.2
Stomach/duodenal ulcer	0.3	0.3	0.9	1.0	2.1	0.7
Osteoarthritis	1.9	9.1	32.6	46.3	46.2	23.1
Rheumatoid arthritis	0.6	2.5	9.0	11.0	12.2	6.0
Osteoporosis*	–	–	7.7	17.9	26.7	15.1
Chronic back pain	14.5	19.6	27.0	34.7	34.4	24.5
Cancer	1.2	4.1	9.8	17.5	16.6	8.4
Depression	5.8	8.4	9.8	9.1	4.3	8.0
Severe hearing impairment	1.6	2.5	3.5	4.9	13.1	4.0
Severe sight impairment	0.6	1.3	2.5	4.2	10.9	2.9

\* 18–49-year-old women were not queried on this affliction.

>> Tab. 57: Prevalence of diseases and health problems among women, acc. to age group, in %, GEDA 2009 (Fuchs u. a. 2012, Table Appendix, own translation)

## Prevalence of diseases and health problems among men

	18–29	30–49	50–64	65–74	75+	Total
High blood pressure	4.9	13.3	36.9	54.9	50.8	25.6
High blood lipid levels	2.1	13.6	29.9	38.1	29.2	19.8
Adipositas (BMI ≥ 30)	7.1	13.7	23.4	21.9	19.4	16.3
Diabetes mellitus	0.7	2.5	9.6	18.2	19.8	7.2
Coronary heart disease	0.5	1.4	9.4	23.4	30.1	8.0
Heart attack	0.0	1.1	5.1	13.9	14.5	4.5
Congestive heart failure	0.0	0.4	3.4	7.5	9.3	2.6
Stroke	0.4	0.9	2.6	5.8	10.0	2.5
Asthma	4.0	4.1	4.7	6.0	8.8	4.8
Chronic bronchitis	1.3	2.3	5.5	8.6	10.3	4.3
Chronic kidney disease	0.1	0.5	1.3	2.8	4.2	1.2
Chronic liver disease	0.3	1.0	1.9	2.3	2.6	1.3
Gastritis/duodenitis	1.6	2.7	4.8	3.2	1.5	3.0
Stomach/duodenal ulcer	0.2	0.3	0.6	0.7	0.2	0.4
Osteoarthritis	0.9	7.6	22.0	25.8	29.7	13.7
Rheumatoid arthritis	0.1	1.3	5.1	5.3	8.6	3.1
Osteoporosis*	–	–	4.1	4.3	5.9	4.4
Chronic back pain	7.7	14.2	21.6	22.8	24.7	16.6
Cancer	1.0	2.1	5.3	13.6	18.6	5.3
Depression	2.5	3.7	8.2	3.4	3.1	4.5
Severe hearing impairment	1.0	1.7	2.3	1.7	4.6	1.9
Severe sight impairment	0.2	1.2	3.9	6.9	10.4	3.0

\* 18–49-year-old men were not queried on this affliction.

» Tab. 58: Prevalence of diseases and health problems among men, acc. to age group, in %, GEDA 2009 (Fuchs u. a. 2012, Table Appendix, own translation)

### Prevalence of dementia according to age, sex and region

Age	West Germany		East Germany		Total Germany	
	Women	Men	Women	Men	Women	Men
60–64 years	0.6	0.8	0.6	0.8	0.6	0.8
65–69 years	1.3	1.5	1.4	1.6	1.3	1.5
70–74 years	3.0	3.2	3.1	3.0	3.1	3.2
75–79 years	6.9	5.6	6.8	5.5	6.8	5.6
80–84 years	12.6	10.3	13.2	10.4	12.8	10.3
85–89 years	22.9	18.0	23.9	17.3	23.1	17.9
90–94 years	30.7	24.0	34.1	25.0	31.3	24.2
95+ years	37.7	28.3	42.6	35.3	38.0	29.7

>> Tab. 59: Prevalence of dementia acc. to age, sex and region, in % [Ziegler and Doblhammer 2009]

## Prevalence of falls

Age years	Total	At least one fall		Two or more falls	
	N	N	%	N	%
40–44	35	1	2.9	1	2.9
45–49	64	5	7.8	2	3.1
50–54	84	7	8.3	2	2.4
55–59	87	8	9.2	3	3.4
60–64	110	11	10.0	5	4.5
65–69	127	13	10.2	4	3.1
70–74	128	20	15.6	6	4.7
75–79	112	22	19.6	9	8.0
80–84	70	14	20.0	4	5.7
85–89	36	11	30.6	4	11.1
> 90	9	4	44.4	2	22.2
Total	862	116	13.5	42	4.9

» Tab. 60: Prevalence of falls among adults aged 40+ years in German city population; results of telephone interview [Schumacher 2013, p. 2]

## Health costs in the age group 85+ according to diagnosis groups

		Men	Women	Total
	All diagnoses	5,481	20,771	26,252
A00-T98	All diseases and results of external causes	5,393	20,571	25,963
A00-B99	Certain infectious and parasitic diseases	66	174	240
C00-D48	Neoplasms	416	723	1,139
D50-D90	Diseases of the blood and blood-building organs and certain disorders involving the immune mechanism	32	87	118
E00-E90	Endocrine, nutritional and metabolic diseases	201	675	876
F00-F99	Mental, behavioral and nEURdevelopmental disorders	815	4,817	5,632
G00-G99	Diseases of the nervous system	291	903	1,195
H00-H59	Diseases of the eye and the adnexa	112	369	481
H60-H95	Diseases of the ear and mastoid process	41	101	142
I00-I99	Diseases of the circulatory system	1,183	3,757	4,940
J00-J99	Diseases of the respiratory system	261	448	708
K00-K93	Diseases of the digestive system	310	830	1,140
L00-L99	Diseases of the skin and subcutaneous tissue	46	149	196
M00-M99	Diseases of the musculoskeletal system and connective tissue	366	2,165	2,531
N00-N99	Diseases of the genitourinary system	189	295	484
Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	8	17	26
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	774	3,686	4,460
S00-T98	Injury, poisoning and certain other consequences of external causes	282	1,375	1,656
Z00-Z99	Factors influencing health status and contact with health services	89	200	288

>> Tab. 61: Health costs of the age group 85+ acc. to diagnosis groups in millions of EUR, acc. to Federal Statistics Office [quoted from [www.gbebund.de](http://www.gbebund.de)]

## Care-dependents according to age and care quota

Age groups in years	Care-dependents							Care quota			Population		
	Total	Change from 2009	Thereof		Thereof women	Total	Men	Women	Total	Men	Women		
			Home care	Inpatient care									
	No.	%	No.	No.	%	No.							
Less than 15	67,734	1.9	67,594	140	26,926	0.6	0.7	0.5	10,832,088	5,555,569	5,276,519		
15-60	268,672	4.8	234,444	34,228	125,351	0.5	0.6	0.5	49,232,864	24,999,993	24,232,871		
60-65	85,761	20.2	66,984	18,777	40,949	1.8	1.9	1.6	4,898,241	2,403,404	2,494,837		
65-70	114,504	- 11.7	88,192	26,312	55,856	2.8	3.0	2.7	4,039,543	1,943,797	2,095,746		
70-75	238,982	6.3	180,531	58,451	126,417	4.8	4.8	4.7	5,001,255	2,322,171	2,679,084		
75-80	337,058	9.8	248,762	88,296	203,759	9.8	8.9	10.5	3,438,528	1,497,504	1,941,024		
80-85	484,818	5.4	338,705	146,113	332,860	20.5	16.6	22.9	2,367,684	913,112	1,454,572		
85-90	522,001	2.5	326,791	195,210	408,045	36.0	28.6	41.9	1,372,711	398,013	974,698		
90+ years	381,911	22.0	206,318	175,593	318,115	57.8	36.9	65.2	660,829	173,100	487,729		
<b>Total</b>	<b>2,501,441</b>	<b>7.0</b>	<b>1,758,321</b>	<b>743,120</b>	<b>1,638,278</b>	<b>3.1</b>	<b>2.1</b>	<b>3.9</b>	<b>81,843,743</b>	<b>40,206,663</b>	<b>41,637,080</b>		

» Tab. 62: Care-dependents acc. to age and care quota at end of 2011 [Pflegestatistik 2011, Statistisches Bundesamt 2013f, p. 9]

## Care-dependents in private households

	Total	Up to 59 years	60–79 years	80+ years
Men	36	52	45	24
Women	64	48	55	76
Married <sup>1</sup>	36	26	54	27
Widowed	41	3	30	64
Divorced	7	8	10	5
Single	16	63	6	4
Childless	21	68	14	8
1 child	22	15	18	29
2 children	29	10	35	32
3+ children	28	7	33	31
Living alone	34	15	36	39
2-person household	39	27	51	35
3-person household	13	26	6	14
4+-person household	14	32	7	12

<sup>1</sup> Includes registered partnerships

>> Tab. 63: Care-dependents in private households, 2010, acc. to age, in %, from TNS Infratest Social Research 2010 (BMG 2011, p. 17)

## Care-dependents cared for at home according to age, family status and sex

Age from ... to less than ... years	Total		Family status			
	1,000s		Single	Married	Widowed	Divorced
			%			
<b>Total</b>						
Less than 25 years	103	100	100	–	–	–
25–60 years	172	100	50.4	37.9	/	9.4
60–70 years	165	100	11.0	67.3	14.6	7.1
70–75 years	140	100	6.6	59.9	27.4	6.2
75–80 years	205	100	6.5	46.6	43.2	3.7
80–85 years	229	100	3.9	34.2	58.2	3.7
85–90 years	240	100	5.0	17.8	74.5	/
90+ years	181	100	/	11.1	82.4	/
<b>Total</b>	<b>1,435</b>	<b>100</b>	<b>18.0</b>	<b>34.6</b>	<b>43.0</b>	<b>4.5</b>
<b>Thereof: men</b>						
Less than 25 years	57	100	100	–	–	–
25–60 years	91	100	55.3	34.2	/	9.4
60–70 years	85	100	9.7	78.9	/	/
70–75 years	64	100	/	79.7	11.5	/
75–80 years	68	100	/	74.3	18.4	/
80–85 years	61	100	/	71.4	25.1	/
85–90 years	52	100	/	48.9	45.4	/
90+ years	34	100	/	38.1	60.6	–
<b>Total</b>	<b>513</b>	<b>100</b>	<b>24.7</b>	<b>55.0</b>	<b>16.6</b>	<b>3.6</b>
<b>Thereof: women</b>						
Less than 25 years	46	100	100	–	–	–
25–60 years	80	100	44.9	42.0	/	9.4
60–70 years	80	100	12.5	54.9	24.0	/
70–75 years	76	100	/	43.2	40.7	/
75–80 years	137	100	7.5	32.9	55.5	/
80–85 years	168	100	4.6	20.7	70.2	4.5
85–90 years	188	100	5.0	9.1	82.6	/
90+ years	147	100	/	5.0	87.4	/
<b>Total</b>	<b>922</b>	<b>100</b>	<b>14.2</b>	<b>23.3</b>	<b>57.6</b>	<b>4.9</b>

– = not available; / = not specified, since data were not reliable enough (here less than 7,000 care-dependents)

» Tab. 64: Care-dependents being cared for at home acc. to age, family status and sex, from microcensus 2003  
(Statistisches Bundesamt 2004, p. 9)

## Care-dependents cared for at home according to age, size of households and sex

Age from ... to less than ... years	Total		Thereof living in a household with ... person(s)		
	1,000s		1	2	3+
			%		
<b>Total</b>					
Less than 25 years	103	100	/	7.8	91.7
25–60 years	172	100	19.5	35.3	45.2
60–70 years	165	100	24.1	61.1	14.9
70–75 years	140	100	31.5	60.1	8.4
75–80 years	205	100	41.7	48.3	10.0
80–85 years	229	100	51.4	37.3	11.4
85–90 years	240	100	60.8	22.0	17.3
90+ years	181	100	62.2	17.0	20.9
<b>Total</b>	<b>1,435</b>	<b>100</b>	<b>40.4</b>	<b>36.3</b>	<b>23.3</b>
<b>Thereof</b>					
Care level I	764	100	46.3	34.2	19.5
Care level II	500	100	36.7	38.5	24.8
Care level III	172	100	24.6	39.7	35.7
<b>Thereof: men</b>					
Less than 25 years	57	100	/	/	90.3
25–60 years	91	100	22.4	31.6	46.0
60–70 years	85	100	16.4	67.6	16.0
70–75 years	64	100	15.7	76.4	/
75–80 years	68	100	19.8	71.8	/
80–85 years	61	100	23.7	67.1	/
85–90 years	52	100	34.6	50.9	14.5
90+ years	34	100	49.0	40.1	/
<b>Total</b>	<b>513</b>	<b>100</b>	<b>21.0</b>	<b>52.7</b>	<b>26.3</b>
<b>Thereof</b>					
Care level I	250	100	24.3	52.1	23.6
Care level II	190	100	18.6	54.6	26.8
Care level III	73	100	15.8	50.2	34.0

Continued on next page

## Care-dependents cared for at home according to age, size of households and sex

Continuation of Table p. 192

Age from ... to less than... years	Total		Thereof living in a household with ... person(s)		
			1	2	3+
	1,000s		%		
Thereof: women					
Less than 25 years	46	100	–	/	93.6
25–60 years	80	100	16.2	39.5	44.3
60–70 years	80	100	32.3	54.1	13.6
70–75 years	76	100	44.8	46.4	/
75–80 years	137	100	52.5	36.6	10.8
80–85 years	168	100	61.4	26.4	12.2
85–90 years	188	100	68.1	13.9	18.0
90+ years	147	100	65.2	11.7	23.1
Total	922	100	51.2	27.2	21.6
Thereof					
Care level I	515	100	57.0	25.5	17.4
Care level II	309	100	47.8	28.6	23.6
Care level III	98	100	31.2	31.8	37.0

– = not available; / = not specified, since data were not reliable enough

» Tab. 65: Care-dependents being cared for at home acc. to age, size of household and sex, from microcensus 2003  
(Statistisches Bundesamt 2004, p. 10)

## Care-dependents cared for in nursing home

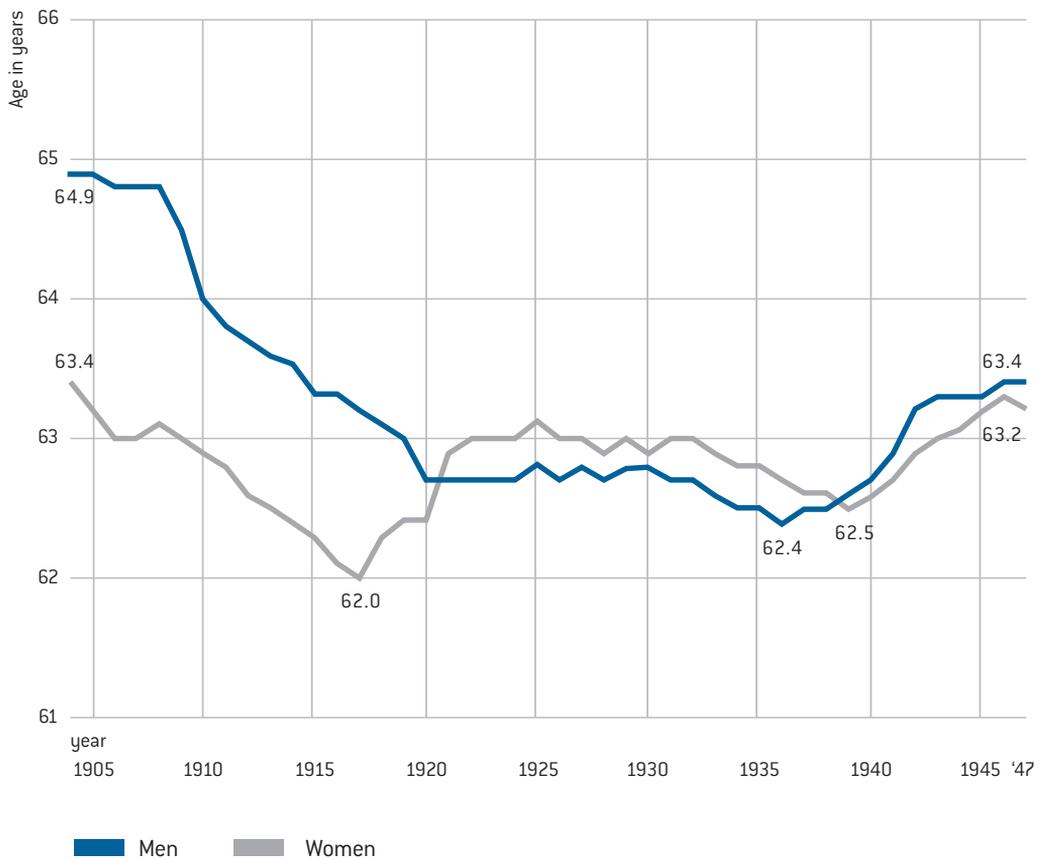
Age from ... to less than ... years	Total		Family status			
	1,000s		Single	Married	Widowed	Divorced
			%			
<b>Total</b>						
Less than 25 years	/	100	/	–	–	–
25–60 years	26	100	69.3	/	/	/
60–70 years	45	100	40.0	/	29.0	23.2
70–80 years	119	100	21.0	16.2	56.1	6.7
80–90 years	256	100	12.2	8.0	75.3	4.5
90+ years	147	100	12.5	/	79.8	/
<b>Total</b>	<b>594</b>	<b>100</b>	<b>18.9</b>	<b>8.7</b>	<b>65.7</b>	<b>6.6</b>
<b>Thereof: men</b>						
Unter 25 years	/	100	/	–	–	–
25–60 years	15	100	81.2	/	/	/
60–70 years	24	100	41.3	/	/	30.8
70–80 years	32	100	26.4	29.3	36.1	/
80–90 years	37	100	/	31.5	54.1	/
90+ years	17	100	/	/	62.0	–
<b>Total</b>	<b>126</b>	<b>100</b>	<b>28.9</b>	<b>22.1</b>	<b>37.8</b>	<b>11.2</b>
<b>Thereof: women</b>						
Less than 25 years	/	100	/	–	–	–
25–60 years	11	100	/	/	/	/
60–70 years	22	100	38.5	/	38.8	/
70–80 years	86	100	19.0	11.3	63.5	/
80–90 years	219	100	13.1	4.1	78.9	4.0
90+ years	130	100	12.4	/	82.1	/
<b>Total</b>	<b>469</b>	<b>100</b>	<b>16.2</b>	<b>5.1</b>	<b>73.2</b>	<b>5.4</b>

– = not available; / = not specified, since data were not reliable enough

>> Tab. 66: Care-dependents cared for in nursing home (inpatient) acc. to family status, age and sex, from microcensus 2003 (Statistisches Bundesamt 2004, p. 13)

## » 10.2 Figures

### Average age upon receiving first retirement benefits

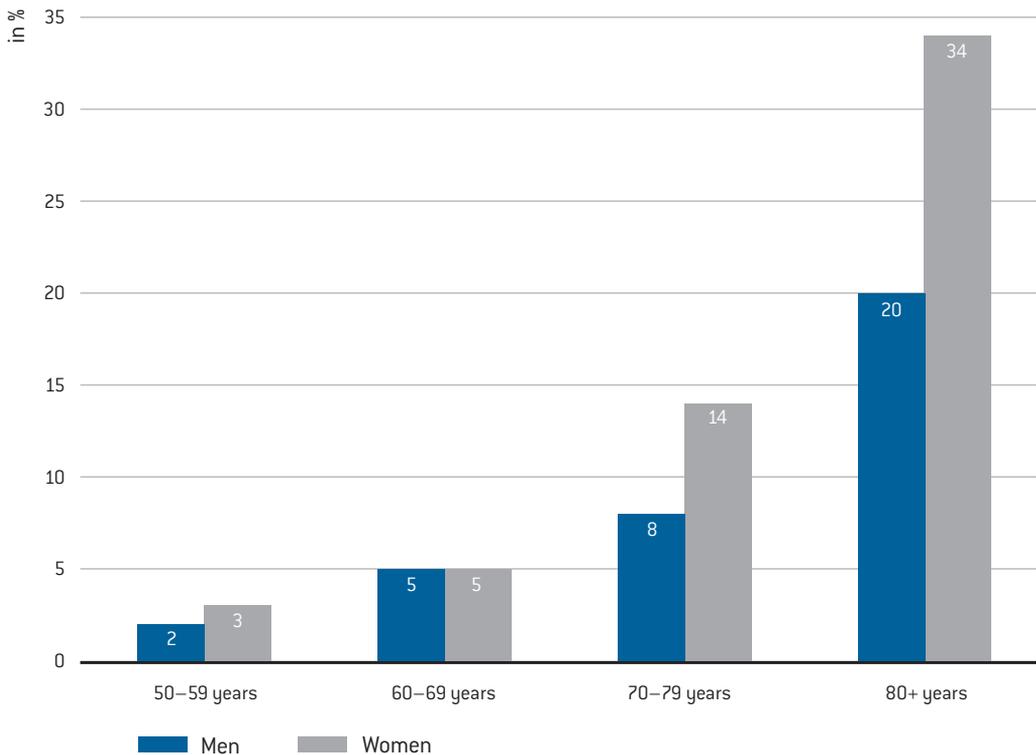


» Fig. 49: Average age upon receiving first retirement benefits, comparison of cohort birth years 1904–1947, acc. to sex, West Germany (Deutsche Rentenversicherung Bund 2013)

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## Proportion of persons queried who were physically inactive

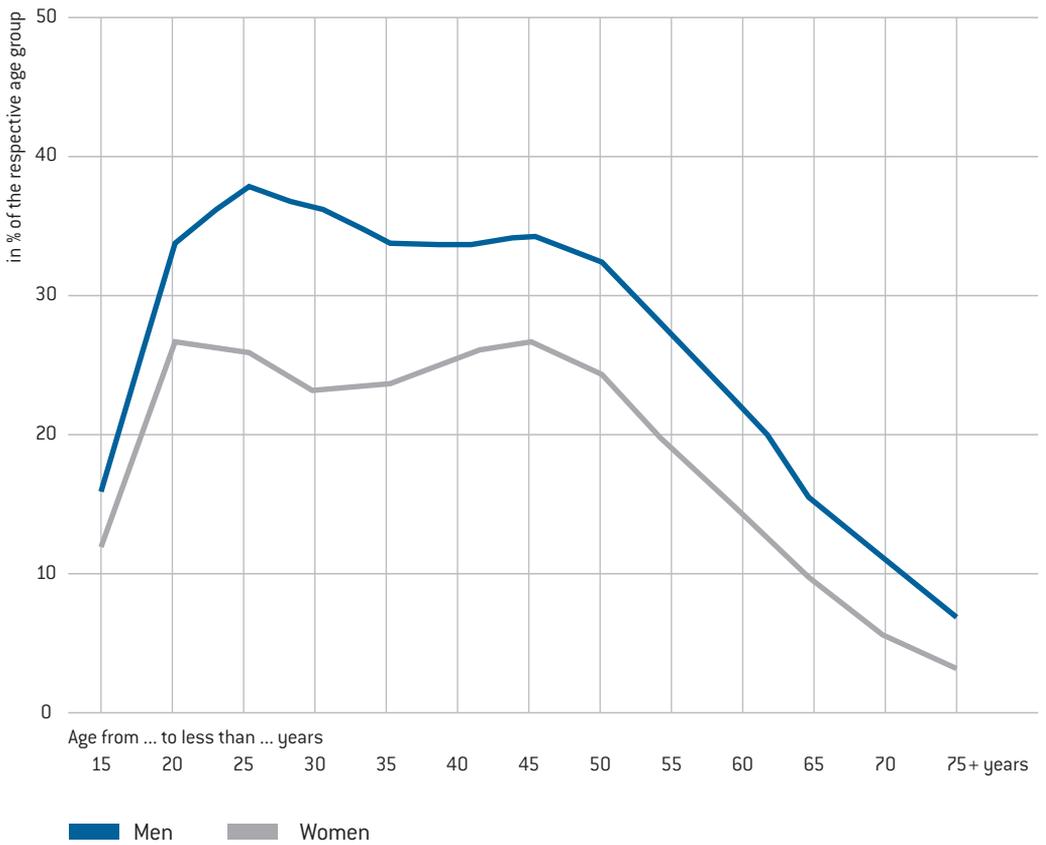
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>> Fig. 50: Proportion of persons queried who were physically inactive, SHARE 2004 (Menning 2006, p. 21) Questions posed: "How often do you perform physically exerting activities, such as sports, hard work around the house or at work?"- "How often do you do things that are slightly or average strenuous, such as working in the garden, washing the car or taking a walk?" (Proportion of those queried who answered both questions with "Almost never or never")

## Regular smokers

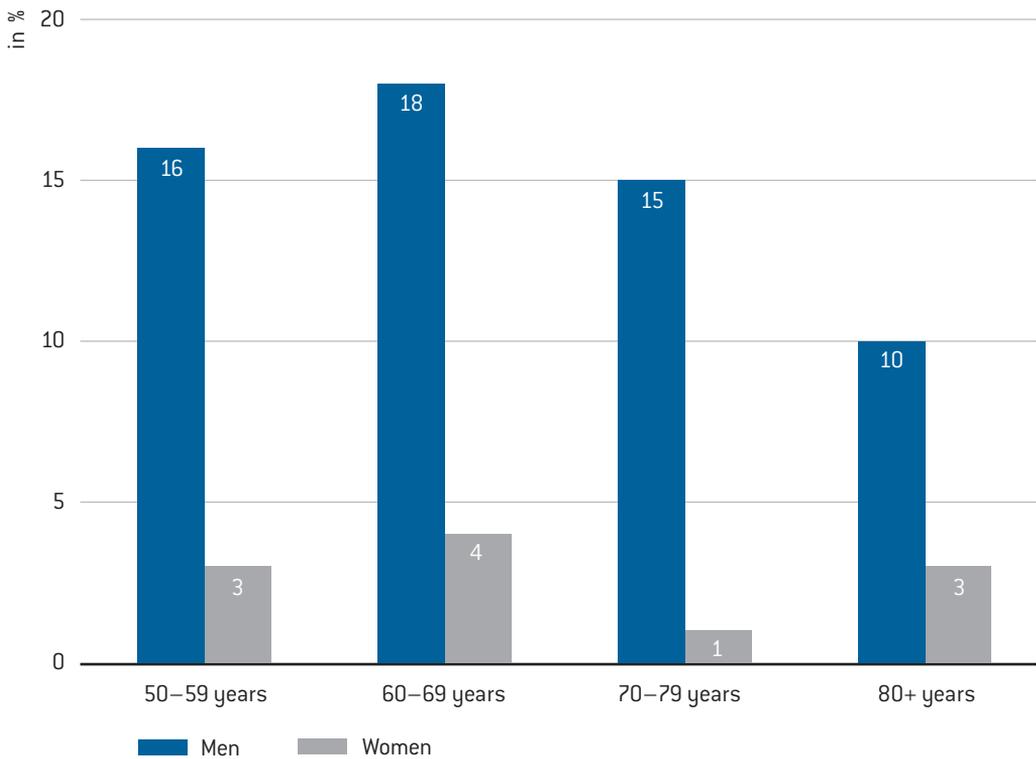


» Fig. 51: Regular smokers acc. to age and sex, in %, from microcensus 2009 (Statistisches Bundesamt 2012, p. 2)

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## Excess consumption of alcohol

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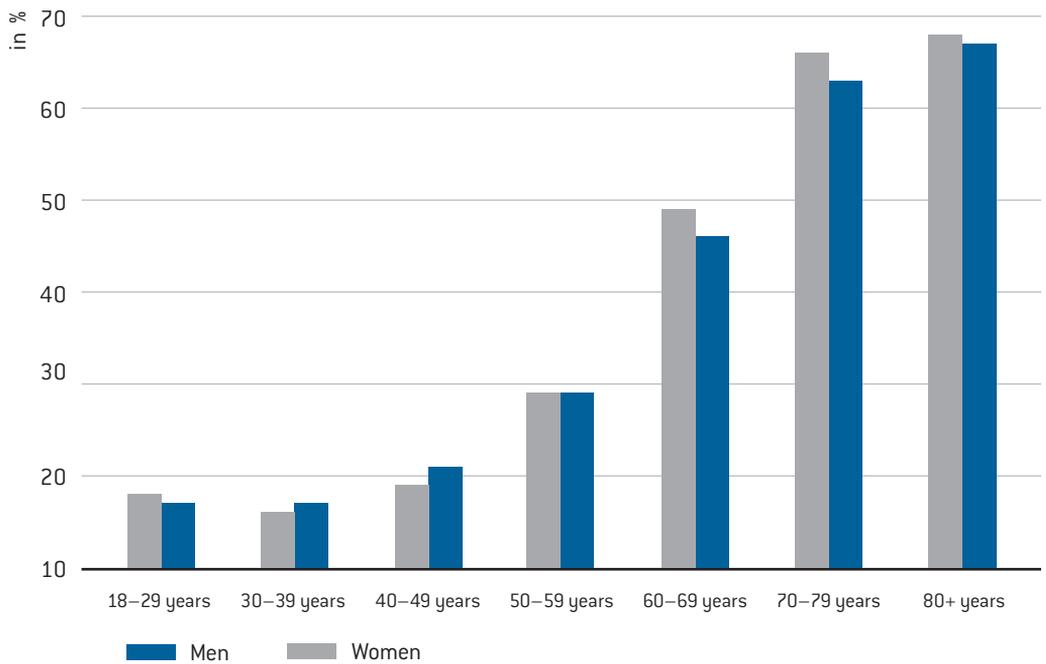
>> Fig. 52: Excess consumption of alcohol acc. to age and sex, SHARE 2004 (Menning 2006, p. 24)

Question posed: "During the last 6 months – how often have you had more than two drinks or cans of beer/wine/cocktails/high-proof alcohol on one day?" (Proportion of the answers: "almost daily" and "on 5 or 6 days of the week")

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## Influenza vaccinations (“flu shots”)

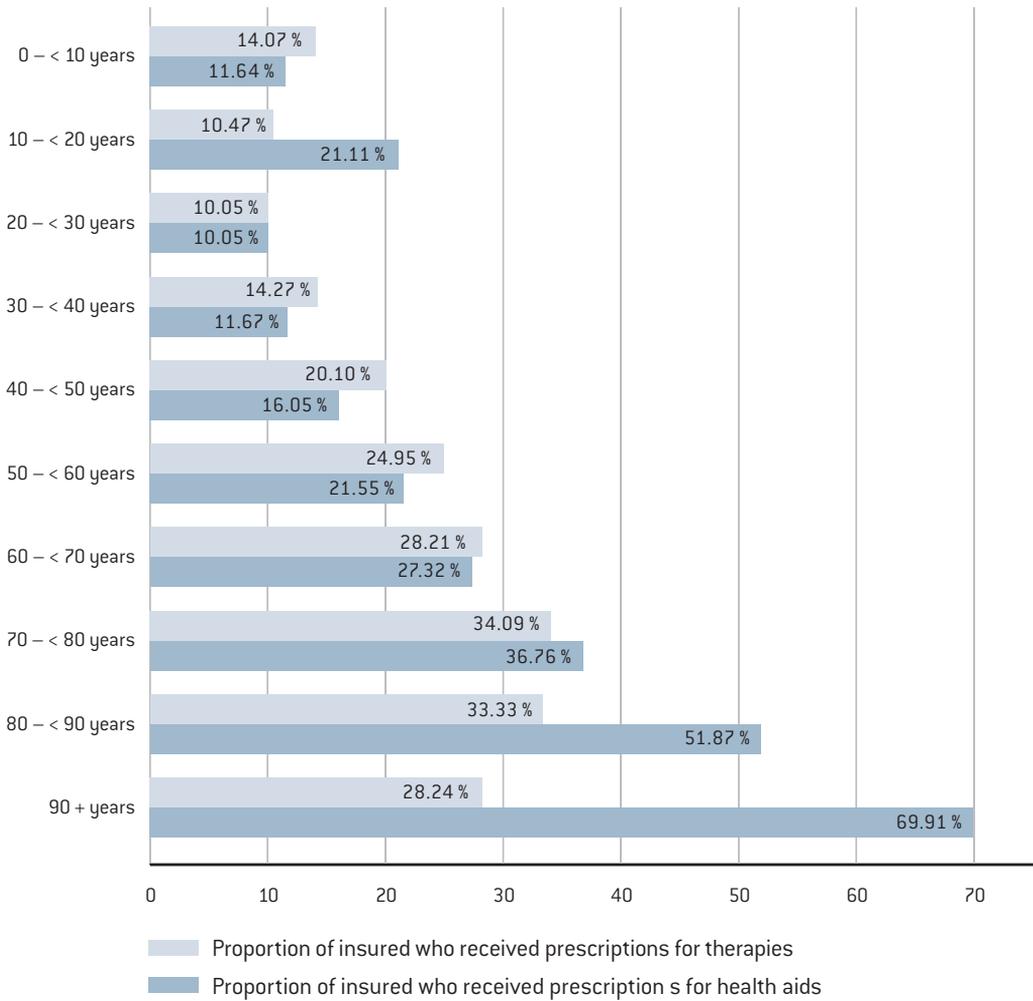
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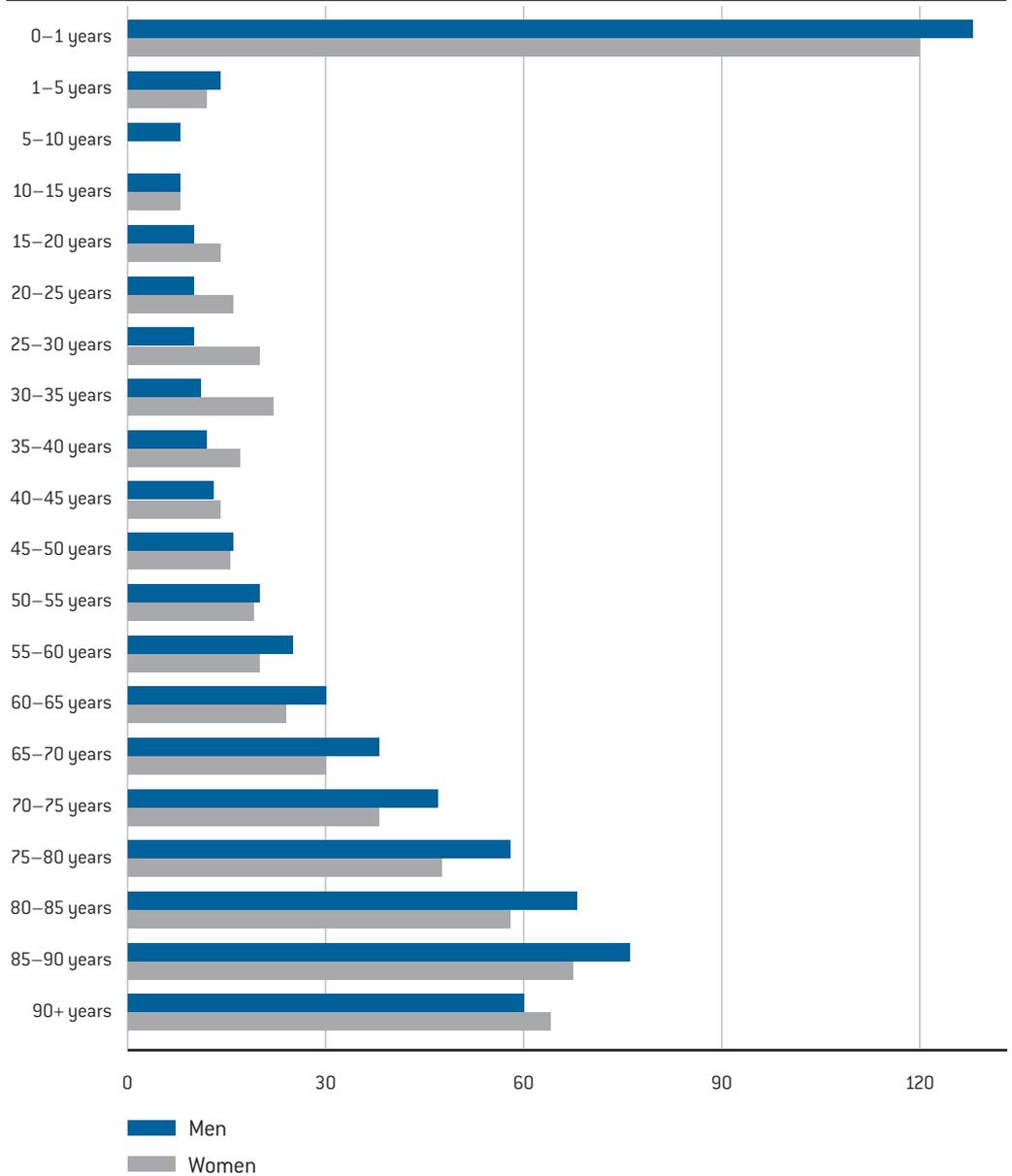
>> Fig. 53: Influenza vaccinations (“flu shots”) in the 2007/2008 season, acc. to age and sex, GEDA 2009  
(Böhmer and Walter 2011, p. 2)

### Insured who received prescriptions for therapies and health aids



>> Fig. 54: Proportion of insured of the BARMER GEK with prescriptions for therapies and health aids, 2012, acc. to age [Barmer GEK 2013b, p. 23]

## Patients admitted to the hospital

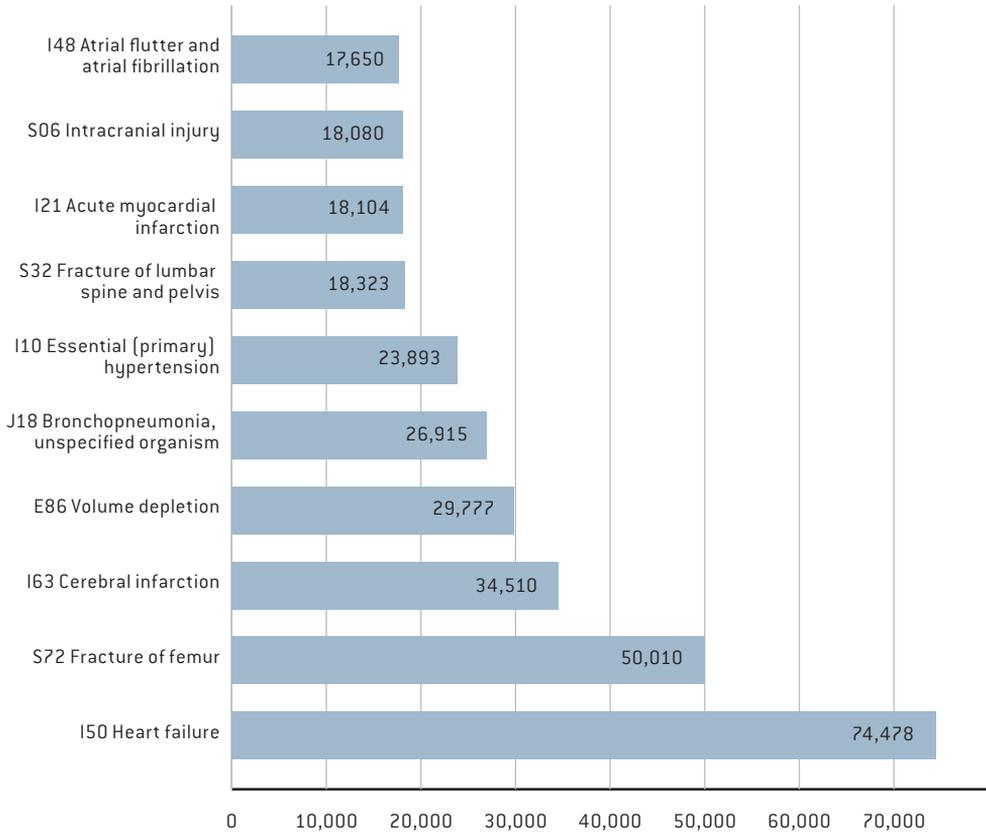


>> Fig. 55: Patients admitted to the hospital, acc. to age and sex, per 100,000 residents, 2012 (Statistisches Bundesamt 2013h, p. 6)

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## Common diagnoses for women at hospital admission

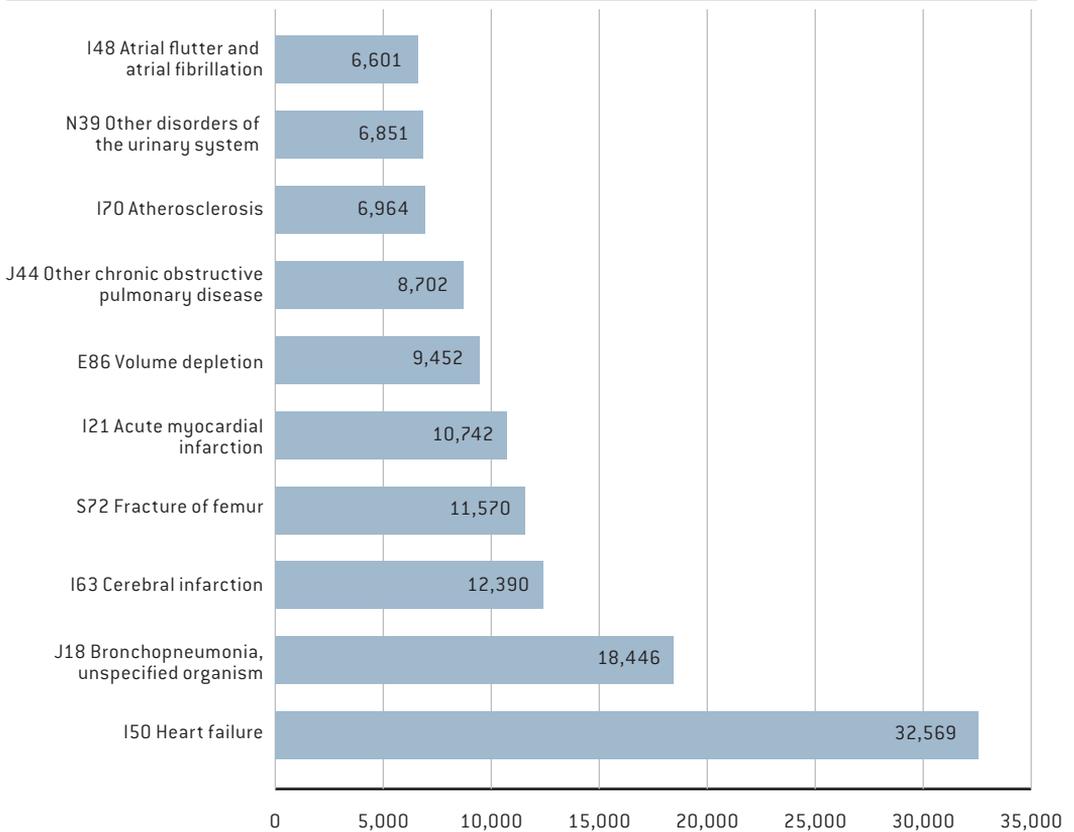
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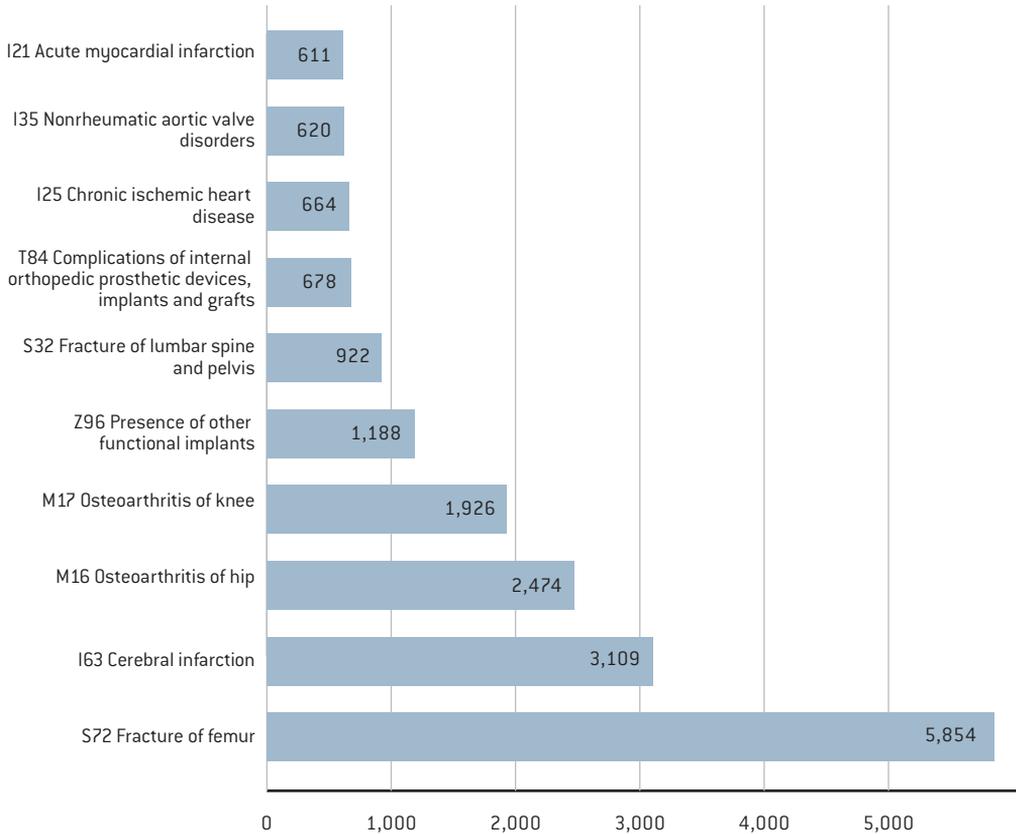
>> Fig. 56: The 10 most common diagnoses for women 85+ years at hospital admission, 2012, number of cases acc. to ICD-10 [Statistisches Bundesamt 2013i, Hospital Statistics, quoted from [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014]

## Common diagnoses for men at hospital admission



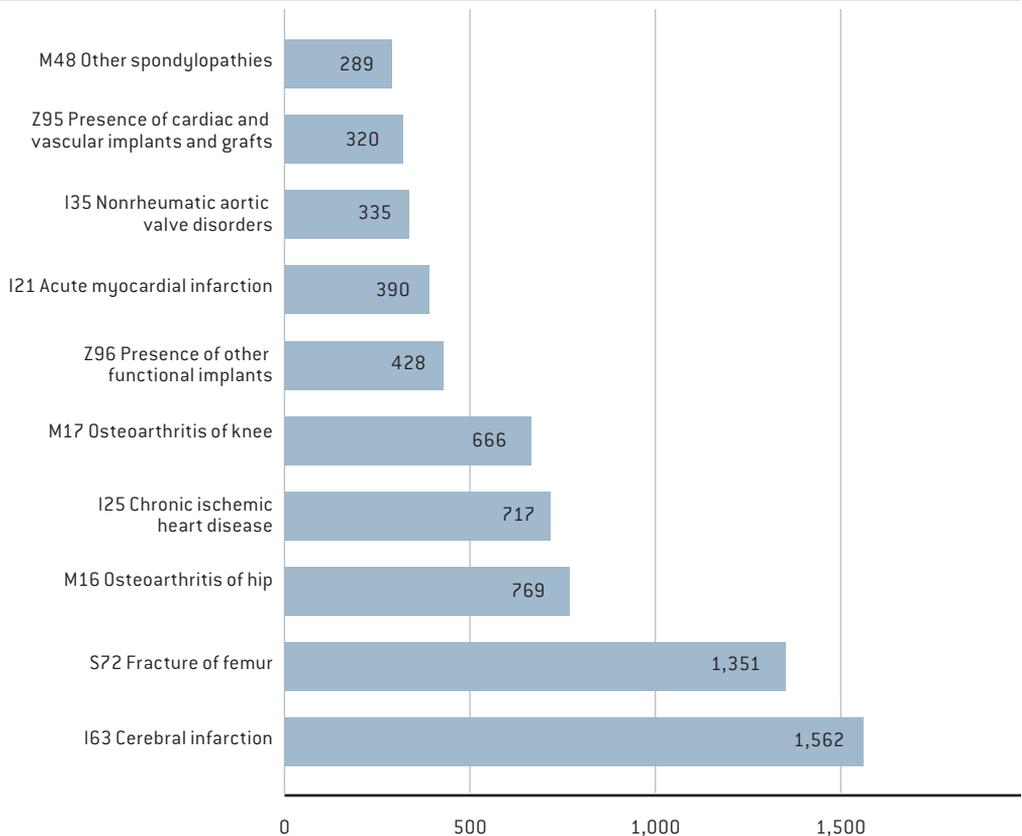
» Fig. 57: The 10 most common diagnoses for men 85+ years at hospital admission, 2012, number of cases acc. to ICD-10 (Statistisches Bundesamt 2013i, Hospital Statistics, quoted from [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014)

## Diagnoses for women in preventive and rehabilitative facilities



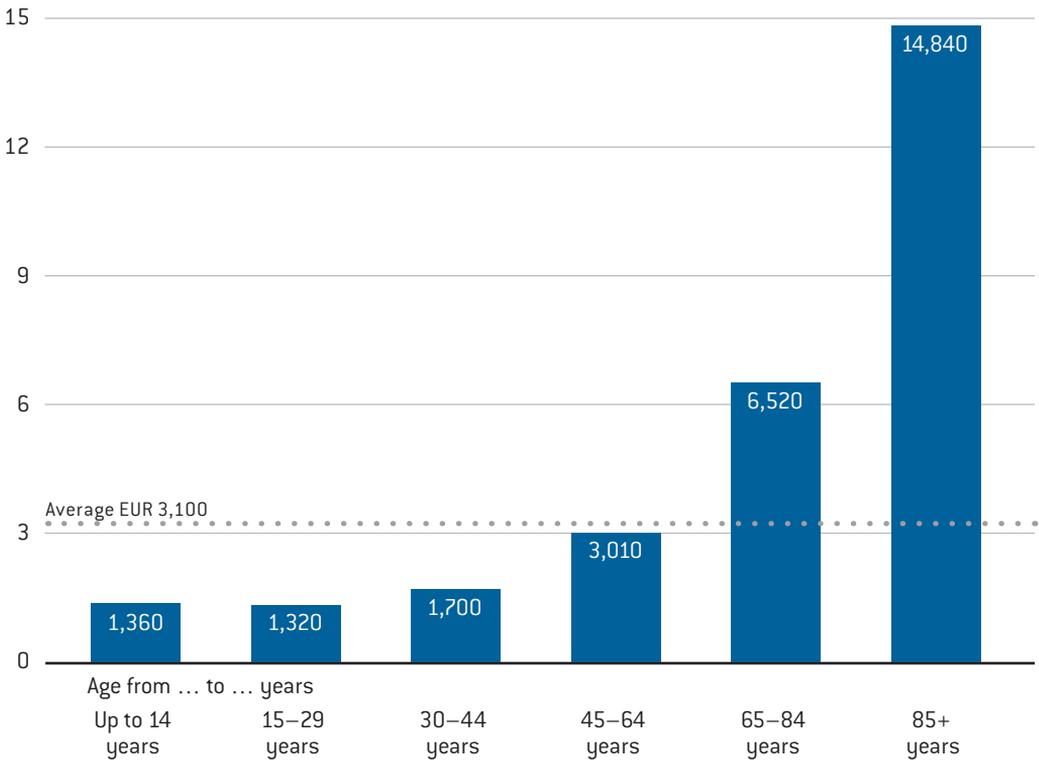
>> Fig. 58: The 10 most common diagnoses for women 85+ years in preventive and rehabilitative facilities with more than 100 beds, 2012, number of cases acc. to ICD-10 (Statistisches Bundesamt 2013i, Hospital Statistics, quoted from [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014)

## Diagnoses for men in preventive and rehabilitative facilities



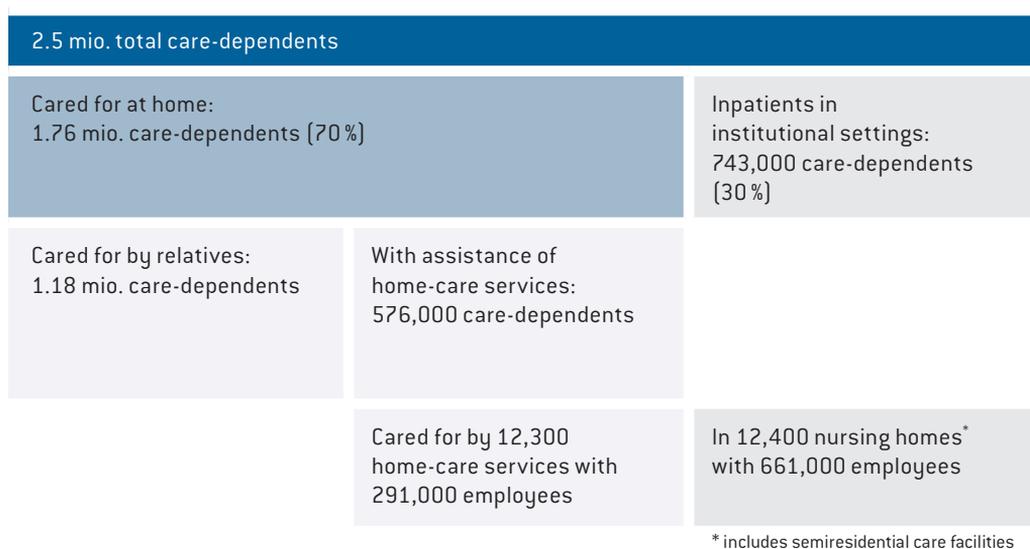
» Fig. 59: The 10 most common diagnoses for men 85+ years in preventive and rehabilitative facilities with more than 100 beds, 2012, number of cases acc. to ICD-10 [Statistisches Bundesamt 2013i, Hospital Statistics, quoted from [www.gbe-bund.de](http://www.gbe-bund.de), retrieved on 30 April 2014]

## Health costs in EUR per resident



>> Fig. 60: Health costs 2008 in EUR per resident, health cost calculation of the Federal Statistics Office (Nöthen 2011, p. 666)

## Key data from care statistics

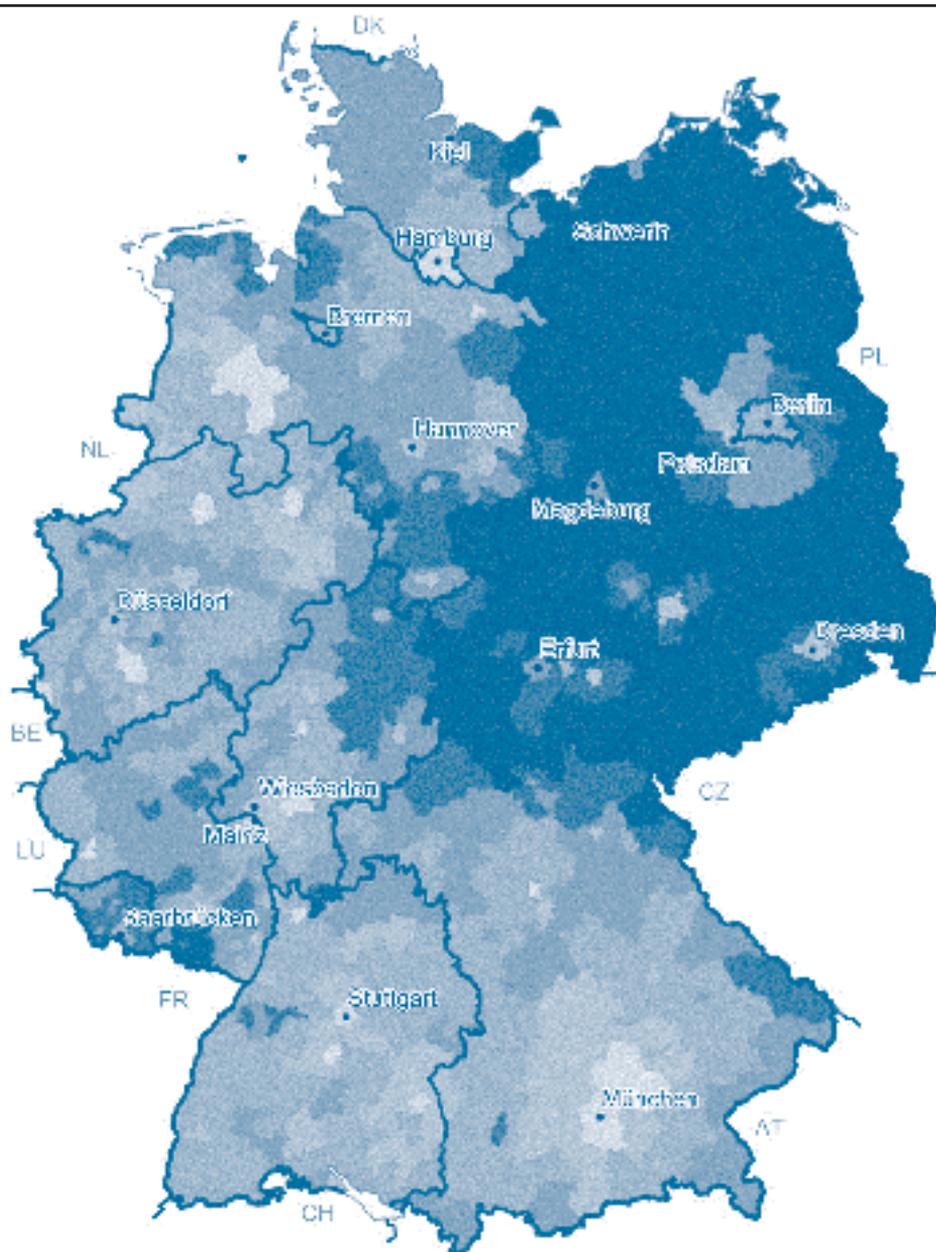


» Fig. 61: Key data from care statistics—care-dependents 2011 acc. to type of care  
(Pflegestatistik 2011, Statistisches Bundesamt 2013f, p. 5)

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 Prognosis for population distribution by age in 2030
 

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 >> Fig. 62: Prognosis for population distribution in 2030, population aged 80+ years, acc. to county (BBSR 2014)

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Average age 2030 (proportion in %)

-  up to 44.5
-  44.5 up to 46.0
-  46.0 up to 47.5
-  47,5 up to 49.0
-  49,0 up to 50.5
-  50.5+

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**BZgA**

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für  
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Aufklärung**

This expert report builds on the publication “Older People: An Expert Report on the Situation of People Between 65 and 80 Years of Age” (Volume 44 of the Series “Research and Practice of Health Promotion,” BZgA 2013). It provides an overview of the life situation of men and women in Germany aged 80 years and older.

The German Federal Centre for Health Education (BZgA) commissioned the Institute for Gerontological Research in Berlin to do a targeted analysis of the publicly accessible data and other information available on various pertinent themes, the goal being to examine the varied life models and living situations of persons over 80 years of age. This included looking at their socioeconomic situation, the extent of their social relations and their health behavior. In addition, this publication highlights the areas of leisure activities, volunteer work, living arrangements and care-dependency in very old age.