Aging in The Netherlands: State of the Art and Science

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The population of the Netherlands is aging, although it is still relatively young in comparison with the population of most other European countries. As Dutch society transitions from a welfare state to a society based more on individual responsibility, the increasingly well-educated and financially well-off elderly people wish to exert more control over their own lives. Research and education in the field of aging have grown rapidly over the past few decades, along with variety in research focus and methodology. In addition, funding organizations nowadays stress the importance of participation of older adults in research studies and the usability of research findings to society. Thus, academic and applied research is expected to thrive and contribute to the autonomy, health, and well-being of Dutch elders, while also providing insight into physical, mental, social, and financial aspects of aging. Thanks to these insights, public debate is focusing not only on the costs of health care and pensions but also on older generations’ autonomy and contributions to society.

Key Words: The Netherlands demography, Welfare state, Public policy, Autonomy, Gerontology research, Gerontology education

The 16.7 million Dutch inhabit a country that was once rated as number one in the world in taking care of its older adults (Edwards, 2004). Whether that is still the case today will be examined in this article describing the current state of the art in aging and science in the Netherlands. Our discussion covers key demographics, aging public policy issues, research and education, and some emerging social issues. We conclude that the Netherlands is transitioning from a welfare state...
toward a participation society, leading to major challenges for individuals and organizations in policy making, services, education, and research. Researchers have added to the public debate on aging by providing state-of-the-art information.

Demographics of Aging

The Netherlands is a small, densely populated country in one of the most economically important European deltas. As in many other European countries, the population is aging. At 16%, the proportion of people aged 65 and older in the Netherlands is lower than the European average (17%) and the German and Italian average (both 21%) (Eurostat, 2013), but higher than proportions in Australia (14%), the United States (13%), and India (5%) (Population Reference Bureau, 2013). The percentage of people aged 65+ in the Netherlands is expected to increase to 26% in 2035 (Statistics Netherlands [CBS], 2010) (Figure 1). Further, the proportion of adults over the age of 80 in the Netherlands is expected to increase from 3.9% of the total population in 2010 (Statistics Netherlands [CBS], 2012a) to 10.2% in 2050 (Statistics Netherlands [CBS], 2011). Life expectancy at birth was 78.8 years for men and 82.7 years for women in 2010 (Statistics Netherlands [CBS], 2012b), although the figures for people with low socioeconomic status (SES) are 6–7 years less than for those of high SES. In addition, people with low SES live, on average, 14 more years in poor health than those with high SES (Busch & Schrijvers, 2010) (Figure 1).

Although Dutch society is culturally diverse, the proportion of people aged 65+ among non-Western immigrants was still only 4% in 2010. This figure is expected to increase to 6% in 2020 and 22% in 2060 (Garssen, 2011). As various elderly migrant groups tend to be of low SES, their life expectancy is expected to be shorter than for Dutch society overall.

Key Public Policy and Aging Issues

A Society in Transition

The Netherlands is the fourth happiest country in the world (Helliwel & Wang, 2012), a rating that some attribute to the welfare state developed after World War II (Jager-Vreugdenhil, 2012). The Dutch welfare state assists residents in the domains

![Figure 1. Population pyramid. Age composition in the Netherlands 2013. Source: Statistics Netherlands.](image-url)
of labor, income, education, unemployment, and disability, engendering solidarity between healthy and capable people and those who are not, and resulting in general protection against extreme poverty and lack of care (Jager-Vreugdenhil, 2012). In the 1980s, political emphasis shifted to more individual responsibility, fueled by the rising costs of the welfare state. The Social Support Act (Wet Maatschappelijke Ondersteuning) that went into effect in 2007 reflects a change in the relationship between government and citizens, calling for increased autonomy at local levels and more responsibility for nongovernmental organizations and individual citizens in “civil society” (Jager-Vreugdenhil, 2012). Nevertheless, Dutch citizens are still largely protected from extreme poverty and unmet needs for care by the welfare state provisions described earlier.

**Labor Market and Income Security**

On average, Dutch elders are financially well off. This is not so much due to labor market participation as to the Dutch pension system and extensive home ownership. Net labor market participation (i.e., the share of a cohort that is employed) of older adults is relatively low in the Netherlands. In 2009, 50% of the people aged 55–65 were employed (Gelderblom, Collewet, & de Koning, 2011), an increase from 26% in 1996 (CBS, 2013), partly due to the increasing labor participation of Dutch women (Gelderblom et al., 2011).

The Dutch pension system is built on three pillars (Ministry of Social Affairs and Employment [SZW], 2008). The first is a flat rate state pension (National Old Age Pension Act) financed via payroll taxes and paid to residents aged 65 and older, although the official retirement age will gradually increase from 65 to 67 years by 2021 (Ministry of Social Affairs and Employment [SZW], 2012). In 2013, the net state pension is €816 (US$1,069) per month per person in single households and €565 (US$741) per person for couples. The second pillar consists of supplementary occupational pensions accrued during employment, which cover 95% of all employees (Ministry of Social Affairs and Employment [SZW], 2008). Due to the recent recession and increased longevity, pension benefits are currently under pressure, however. The third pillar consists of voluntary private pension provisions, either through annuity insurance or endowment insurance (providing a lump sum), incentivized by tax relief (Ministry of Social Affairs and Employment [SZW], 2008). The Dutch pension system has been classified as a B+ system, defined as a system that has a sound structure and many good features, but with some areas in need of improvement (Mercer, 2012). Denmark, by comparison, is the only country with an A-rating (a first class and robust retirement income system that delivers good benefits, is sustainable, and has a high level of integrity). Australia is the only other country in the B+ category, and the U.S. system is rated a C, which is defined as a system that has some good features but also has major risks and/or shortcomings that should be addressed. The Netherlands’ high ranking may cause fiscal challenges, though. Public pension expenditures in the Netherlands are part of the Dutch gross domestic product’s “long-term sustainability gap” of 5.9%, which is significantly above the EU average of 2.6% (European Commission, 2012). According to the Organisation for Economic Co-operation and Development (OECD), the Dutch government should focus its attention on curbing aging-related increases in expenditures, including pensions (OECD, 2012).

The net standardized income for people aged 65 and older has increased over the past few decades (Knoef, Alessie & Kalwij, 2012). Their households have the most assets of all households (Statistics Netherlands [CBS], 2012c), usually including a home without a mortgage. The proportion of poor elderly people aged 65+ was 3.5% in 2011, with little variation among different elderly age groups (The Netherlands Institute for Social Research [SCP], 2012), whereas the average income of elderly non-Western older immigrants is low (Statistics Netherlands [CBS], 2012d).

**Housing**

The total number of homes in the Netherlands in 2012 was 7.3 million; 60% are privately owned, 9% are privately rented, and 31% are social or public rental homes (Ministry of the Interior and Kingdom Relations [BZ], 2013). The latter percentage reflects the traditionally strong Dutch government influence on public housing, which began formally with the Housing Act in 1901. Nowadays, government housing policies focus on community living, in accordance with the wishes of most older adults to stay at home for as long as possible. Consequently, the percentage of elderly persons in residential care is decreasing and will continue to decrease; almost 95% of all senior citizens live
independently (Zantinge, van der Wilk, van Wieren & Schoemaker, 2011). To meet demand, however, the number of houses suitable for senior citizens and people with functional limitations will have to increase to 2.16 million in 2018 from 1.8 million in 2009 (van Galen & Willems, 2011).

Informal Care and Community Services

Three fourths of all elder care in the Netherlands is provided by partners, relatives, friends, and neighbors (Broese van Groenou, 2012). Significant support is also provided by volunteers affiliated with care and welfare organizations, charity foundations, and churches (Suanet, Broese van Groenou, & Braam, 2009). Because many volunteers are aged 65 and older, in practice many elders take care of other older adults.

Formal Care and Residential Facilities

The Dutch elderly people receive a relatively large amount of professional care. Almost 18% of people 65 and older receive home care (Allen et al., 2011), which is the highest rate among all European countries (Bettio & Verashchagina, 2010). Six percent of people aged 65 and older receive residential care, with approximately 165,000 people currently living in residential care and nursing homes (de Klerk, 2011). Traditionally, formal care is provided by nonprofit organizations that are reimbursed by the government. Over the past few decades, government policies have encouraged new care entrepreneurs, who have stimulated innovation, quality, and diversity of care arrangements. On the other hand, there are concerns that for-profit organizations may undermine the solidarity between poor and wealthy Dutch, as some services are only affordable for the latter. Thus, many Dutch citizens have mixed feelings regarding the “care market.”

Health Care System and Expenditures

All Dutch residents are required by law (Health Insurance Act) to have a private health insurance policy, at a cost of approximately €100–150 (US$130–190) per month per person; insurers are obliged to accept every applicant. In addition, a national insurance system for long-term care (e.g., nursing homes) and exceptional medical expenses (e.g., vaccinations and extended hospital stays) is in place. This insurance is mandatory and is paid for through public insurance contributions by all. Total expenditures for health care and welfare (including child, youth, and senior care) were almost €90 billion in 2012 (US$117 billion) or 14.9% of the gross national product (CBS, 2012e). As in some other western countries, for example, Canada (Sheets & Gallagher 2012), concerns are being raised about increasing health care costs. According to OECD data, the Netherlands has the second highest health care spending as a proportion of gross domestic product (12.0% in 2009) in the world, after the United States (17.4% in 2009), which is attributed to high long-term care expenditures and low out-of-pocket expenses (Rijksinstituut voor Volksgezondheid en Milieu [RIVM], 2012). The cost of care for senior citizens comprises approximately 18% of total health care expenditures in the Netherlands (The National Institute for Public Health and the Environment [RIVM], 2012).

Aging Research

In the Netherlands, research in gerontology and geriatrics is a growing and lively enterprise, concentrated among several interdisciplinary research groups and funded mostly by government entities and some private foundations. Many funding organizations nowadays stress the importance of involvement of older adults and care professionals in research and implementation of findings. Research involving an increasing number of international studies, funded by the European Union, highlights the difficulties and benefits of international collaboration. Large-scale studies and research centers with ongoing or recently completed data collections in gerontology and geriatrics are described subsequently.

Major Studies and Research Centers

The Longitudinal Aging Study Amsterdam (LASA; www.lasa-vu.nl) was specifically designed to study determinants of the autonomy and well-being of older persons. These longitudinal data have helped to facilitate the development of new policies. The first round of data collection took place in 1992 (N = 3,107; age range 55–85) and subsequent data collection has occurred every 3 years. In 2002 and 2012, new cohorts of approximately 1,000 adults aged 55–65 were included, allowing for cohort comparisons. In 2013, a new sample of older Turkish and Moroccan men and women will be added. (Turkish and Moroccan people are the two largest groups of non-Western immigrants in the Netherlands and most have
experienced relatively high levels of socioeconomic deprivation, hard manual labor, and low levels of social integration.) LASA is conducted by the Faculty of Medicine of VU Medical Center and the Faculty of Social Sciences of VU University Amsterdam, in collaboration with other faculties. Study results have provided details about intrapersonal and interindividual changes in four domains of functioning, that is, cognitive, social, emotional, and physical; common risk factors; and relationships among autonomy, well-being, and need for care (see Huisman et al., 2011, for a summary of major outcomes).

The Maastricht Aging Study (https://mhens.unimaas.nl/div1/maas/) is a 12-year longitudinal study of almost 1,900 participants aged 25–81, which began in 1992. Analyses and publications have continued since the completion of data collection in 2004. Maastricht University is conducting the study, with various partners, of age-related cognitive changes in healthy adults. In addition to detailed descriptions of changes in cognitive functioning with aging, the study has also found that cognitive decline may be aggravated by diabetic and chronic bronchitis (Van Boxtel et al., 1998) and that folic acid supplementation leads to improved cognitive functioning (Durga et al., 2007).

The Rotterdam Study (http://www.epib.nl/research/ergo.htm) is a prospective cohort study initiated in 1990 with follow-up examinations every 2–3 years; it includes 10,994 men and women aged 55 and older. The main objective of the study, conducted at the University Medical Center Rotterdam, is to investigate the prevalence and incidence of risk factors for chronic diseases in the elderly people, in hopes of enabling better prevention and treatment. Among the important findings is that having diabetes increases the risk of incidence of dementia by almost 9% (Ott et al., 1999).

The ongoing Amsterdam Longitudinal Study of Autobiographical Memory, conducted by the ERGO Foundation/Amsterdam, uses the Life-line Interview Method (LIM) to study the dynamics of memories and expectations over the life span. This method entails respondents being asked to draw their life-line and tell their own life story, both past and future. Since 1995, the LIM has been administered four times to 98 men and women aged 18–85. Life-event data are reported in terms of number, affect, and content in relation to age, gender, and time perspectives (Assink & Schroots, 2010). The focus of the study is on the reminiscence “bump” in older adults, that is, the disproportionately high number of life events recalled from late adolescence and early adulthood. The use of the LIM Life-line Interview Method has fueled many insights into psychological theories of aging (Schroots, 1996, 2012/2013) and has provided new perspectives on the dynamics of both retrospective and prospective memory. One of the major findings has been that the sum of past and future autobiographical events is constant over the life span, whereas their relation changes systematically with age (Schroots, 2003).

Elderly in Institutes, the OII (http://www.scp.nl), is a repeated cross-sectional study of the living situation, social networks, health, and financial situation of residents aged 65+ in nursing homes, residential homes, and mental health care institutes. Conducted by the Netherlands Institute for Social Research, the first wave of data collection was completed in 1996 with 1,108 residents. One of the main findings was that only 4% of all people aged 55 and older spend any length of time in a care home or institution, debunking the persistent myth that elderly persons primarily live in institutions (de Klerk, 2004).

Research on the biology of aging has been conducted at Leiden University Medical Center (LUMC, http://www.lumc.nl). It began with the Leiden 85-plus Study, a prospective, population-based survey among the very old (85 years and older). The Leiden Longevity Study is another LUMC study aiming to understand the biomolecular pathways of the aging process. It has revealed important biological mechanisms explaining diversity in the development of age-associated diseases such as cardiovascular and cerebrovascular disease (van Exel et al., 2002) and cognitive decline (e.g., Mooijaart et al., 2003).

In 2006, a large cohort study on healthy aging started at the University Medical Centre Groningen. In the LifeLines study, 165,000 children, parents, and grandparents will be interviewed and tested for 30 years, with a focus on environmental exposures, (epi)genetics, psychological and social factors, and health care use (https://www.lifelines.nl/lifelines-research/general). The first round of data collection will be completed by the end of 2013.

Also noteworthy is the National Program of Elderly Care (http://www.nationaalprogrammaout-derenzorg.nl/english/the-national-care-for-the-elderly-programme/) initiated by the Ministry of Health, Welfare, and Sports, which aims to develop a coherent long-term program tailored to the individual needs of older adults. In this program, more
than 650 organizations in health, welfare, and housing work together in eight regional networks led by academic medical centers.

The Netherlands Institute of Mental Health and Addiction (www.trimbos.org) conducts evaluation studies and implementation programs. One recent study was the Monitor Mental Health Care of the Elderly. Similar monitoring of the living arrangements of people with dementia is currently underway.

An increasing number of studies are being conducted at universities of applied sciences. These research groups are closely linked to professional education curricula (nursing, social work, and applied gerontology) and several focus on professional care issues. A noteworthy study conducted at Windesheim University addresses shared decision making in personal care networks of people with dementia, development of a theoretical model, and professional competencies. After finding that persons with dementia rarely participate meaningfully in the development of supportive information technology (IT) tools (Span, Hettinga, Vernooij-Dassen, Eefsting, & Smits, 2013), the researchers decided to facilitate the full participation of people with dementia in the design of a shared decision-making IT tool.

In summary, the tradition of longitudinal research on aging in the Netherlands, with the earliest large-scale data collection both from community-dwelling and institutionalized people dating back to 1991, has enabled researchers to provide detailed pictures of changes in social, psychological, and biological domains of functioning. Currently, a large number of studies at academic and applied universities are being conducted in close collaboration with professional organizations and with older adults themselves, facilitating the process of validating and translating the findings into practice. The scientific insights gained from these studies inform international and national colleagues, policymakers, and professionals and contribute to a better understanding of human aging.

Education on Aging

Education on aging in the Netherlands also has a long, although somewhat sporadic, history. The VU University Amsterdam and the Radboud University in Nijmegen offered undergraduate and graduate programs in gerontology and psychogerontology in the last century, but failing to attract sufficient numbers of students, and both programs ended in 2000. The VU University continued gerontology education with a European Master in Gerontology (EuMaG) in collaboration with universities from the United Kingdom (Keele), France (Paris), and Germany (Heidelberg). EuMaG started with support from the European Commission. When this support was discontinued, however, the program was no longer cost-effective (Aartsen, 2011), so it closed in 2010. Shorter courses or minors are currently offered at bachelor’s and master’s levels at the Radboud University Nijmegen, VU University Amsterdam, and Maastricht University. A complete English scientific master’s course of study, Vitality and Aging, is offered by the Leyden Academy.

Despite the discontinuation of some master’s programs, there are currently more than 60 scientific chairs with a focus on aging in various scientific disciplines, such as social sciences, economics, health and medical sciences, epidemiology, dentistry, and mechanical engineering. Professors holding these chairs have doctoral students and research team members, who produce more than 30 dissertations annually (www.narcis.info).

At the same time, new initiatives in universities of applied sciences include a wide range of courses in geriatric and gerontological nursing in cities such as Rotterdam, Utrecht, Arnhem, Nijmegen, The Hague, and Leeuwarden. Full bachelor’s degree programs in applied gerontology are currently offered at Windesheim University in Zwolle and Fontys University in Eindhoven.

Emerging Issues in Aging

Dementia

Population aging has led to an increase in the number of Dutch people with dementia. Most elderly persons with dementia live at home and are cared for by relatives, and at a later stage, by home care helpers and case managers. Whereas nursing home care has traditionally been offered in relatively large buildings with little privacy, more than a quarter of residents now live in small-scale residences offering person-centered care (Willemse, Smit, de Lange, Pot, 2012). Health care technology applications are increasingly being used, particularly to increase safety and comfort and to reduce staff demands. As some nursing staff are reluctant to use “high-tech” tools, staff involvement and training in the development and implementation of these applications deserve more attention.
As in the United States, dementia has become a national concern. Currently, a nationwide consortium is developing a Deltaplan Dementia to increase research in this area and improve the lives of people with dementia and of their caregivers (http://deltaplandementie.nl).

**Health Promotion**

Increasing numbers of older adults have unhealthy lifestyles, including alcohol abuse and lack of physical activity (Zantinge et al., 2011). These problems are particularly urgent among elderly persons with low SES and chronic diseases. Health promotion focusing on individual responsibility is offered by lifestyle professionals such as dieticians, but also by care and welfare professionals who may detect problems at an early stage and discuss them with their clients during day-to-day care activities.

Health promotion efforts should not be restricted to the second half of life, however, because earlier development of habits may have later-life consequences. Computer simulation with the Janus model, which focuses on the dynamics of the human life course in terms of *synchronic growth and decline* over the life span, shows the dynamic limits of human nature. It may thus stimulate effective policies for promoting active aging in the first half of life, as well as reveal the growth potential of older people in the second half of life (Schroots, 2012/2013).

**Social Life and Self-Management**

Although families have become smaller, the social lives of Dutch elders have not deteriorated. For example, they have more friends in 2012 than in 1992 (Stevens & van Tilburg, 2011). Social media are increasingly popular, and e-communities for adults aged 55 and older are thriving, as older adults may wish to remain autonomous and often do not want to (over)burden their relatives. These are new venues for public debate about whether family caregivers should become more involved in caregiving or whether the elderly people should take more care of themselves (i.e., self-management), as well as discussion of the costs of care, the recession, and the financial well-being of the elderly people.

**Euthanasia and “Completed Lives”**

Increasingly, as Dutch elders want to have more say about their personal lives, death is becoming a domain that is also expected to be under the control of the person involved. Euthanasia has been the subject of a broad political and public debate over the past 30 years. A sensitive issue, euthanasia is the termination of life by a physician at the patient’s request, to put an end to unbearable suffering with no prospect of improvement (Ministry of the Interior and Kingdom Relations [BZ], 2010). The voluntary nature of the patient’s request is crucial; euthanasia may only take place under those circumstances. Dutch policy aims to bring matters into the open, to apply uniform criteria in assessing every case in which a physician terminates life, and to ensure that maximum care is exercised in such exceptional cases (Ministry of the Interior and Kingdom Relations [BZ], 2010). Remarkably, after the Termination of Life on Request and Assisted Suicide Act was passed in April 2002, and it went into effect, evaluations showed a decrease in euthanasia and suicide assistance (Onwuteaka-Philipsen et al., 2007). A current public debate focuses on the sensitive issue of “completed lives.” Is it appropriate to assist older adults in ending their lives when they indicate that their lives have been completed?

**Conclusion**

Dutch society is currently in transition from a demographically young welfare state to an aging society with increasing individual responsibility. The welfare state has resulted in an affluent society with high levels of individual well-being. New generations of older adults are well educated, financially well off, and accustomed to personal choice in matters of life, care, and death. Those elderly persons with lower income, however, may have fewer options and have to rely more on relatives and the government.

Gerontological and geriatric research and education have grown rapidly and show more interdisciplinary variety than earlier, whereas researchers increasingly involve older adults in the design of their studies. Excellent research is expected to lead to further improvements in the health, autonomy, and well-being of Dutch elders. Research has also contributed to public debate on aging by providing insight into the state of the art regarding physical, mental, social, and financial issues. Thanks to these insights, discussion focuses not only on the costs of health care and pensions but also on older generations’ autonomy and contributions to society.
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