Older adults' self-rated health and differences by age and gender: A quantitative study

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Abstract

Background: The older adult population is expected to grow, presenting potential challenges for individuals and society. Maintenance of older adults’ health will be an important factor for healthy aging. It will also be a challenge for health professionals who work to promote health and care equity. To promote healthy aging and equal care, an overview of older adults’ self-rated health is needed. The aim of this study was to describe self-rated health among older adults living at home describe age group and gender-based health differences.

Methods: A descriptive and a comparative cross-sectional study. The questionnaire study was part of a Swedish national population study. Randomly selected older adults 65–84 years living in five counties in central Sweden. The response rates were 79% and 75% for those 65–79 years and 80–84 years, respectively. Participants (n = 13922) were divided into two age groups: 65–79 years (n = 5926 male, n = 5755 female) and 80–84 years (n = 1208 male, n = 1033 female).

Results: Older adults generally self-rated their health as good, especially in the age group aged 65–79 years. Females self-rated their health as poorer than males, especially among those aged 65–79 years. Gender-based health differences decreased in those aged 80–84 years.

Conclusions: It is important to address these gender-based health differences; health policies and programmes are needed that promote equitable healthy aging.

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Introduction

It is estimated that by 2050 the global population of those 60 years or older will reach 21% [1]. Sweden and Italy have Europe’s largest population proportions of older adults. In Sweden, 1.7 million (18%) of the population is 65 years or older [2]. The average lifespan in Sweden is 79 and 83 years for males and females, respectively. In 2060, the number of older adults in Sweden is expected to be 2.7 million [1]. Most forecasts predict an increased number of older adults in the Western world [3]. However, there is no accurate prediction of what proportion of adult life years will be healthy.

Average life expectancy continues to rise in Sweden, primarily as a result of the significant decrease in mortality rates for cardiovascular diseases, and more so among men than women [4]. Women live longer than men. Cancer is a relatively more common cause of death, despite mortality due to cancer decreasing over time. Stroke has decreased among women and men over the age of 65. The incidence of myocardial infarction has also declined mostly among people above retirement age. However, some health
Healthy aging is also influenced by a variety of interacting determinants, including lifestyle and living conditions, social networking, socio-economic status, educational background and living environment [5, 6, 7]. Older adults’ health is related to their ability to adapt to and compensate for their disabilities [8]. Their health experience has been described in terms of autonomy, togetherness, security and peace of mind. There are major differences in older adults’ health due to socio-economic status [6, 9]. There have also been reports of gender differences in self-rated health, with females rating their health as worse than males [5, 10].

Healthy aging is a process in which the body slows down physically and cognitively and simultaneously adapts while autonomy and self-determination are maintained [7]. The most widely recognized definition of health is by the World Health Organization [11], which describes health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. This has replaced the biomedical description of health as the absence of disease. Another accepted definition of health is its relation to whether a person experiences a sense of coherence (SOC), consisting of the components of comprehensibility, manageability and meaningfulness [7, 12]. Antonovsky [12] described the state of health on a continuum with individuals moving between two opposing poles: complete ill health and full health. Throughout life, individuals move between these states of feeling better and worse.

The expected increase in the older adult population poses a health care challenge [5]. Forecasts indicate that the cost of elderly care in Sweden may increase by 270% by the year 2040. One challenge is that older adults report more health complaints compared with health professionals’ needs assessments [13]. Health, health promotion and equal treatment are key factors promoting healthy aging [5, 13]. Therefore, this study aimed to describe self-rated health among older adults living at home along with any age and gender-based health differences.

Methods

Research design and ethics

This was a descriptive, questionnaire-based cross-sectional study [14]. It formed part of a larger population-based survey, Life & Health, in Sweden [15] that aims to study health trends across the population and older adults’ self-perception of their health, as well as life habits and living conditions.

The study followed the ethical principles for human research of the Declaration of Helsinki [16] and Swedish Research Council [17] in relation to informed consent, confidentiality and study procedures. The participants received information about the study aims and processes before giving their informed consent to participate. They had the option of withdrawing at any time without giving a reason. All data was treated as confidential, kept inaccessible to unauthorized persons and used solely for study purposes. Participants’ responses were anonymised.

Sample and data collection

Statistics Sweden, the Swedish Government Agency responsible for Swedish official statistics, developed a random sample from the population register in Sweden. In total, 13,922 older adults aged 65–84 years and living in five counties in central Sweden participated. The only exclusion criterion was if the person lived in a nursing home.

The questionnaire was developed by researchers and statisticians from the five counties where the study was performed [15]. Areas investigated included background characteristics such as age, gender, education and housing, as well as health, living conditions and need for additional care. In the present analyses, we included background and health measures. The questions were presented with response categories, the majority of which were nominal or ordinal scales with the option of providing additional comments at the end of the questionnaire [18].

The questionnaires were disseminated in sealed envelopes with a postage-paid return envelope. The
sealed envelope included an introduction explaining the study aim, that participation was voluntary, that data would be kept confidential and that participants’ identity was protected. Three reminders were sent, as needed. The response rate was 79% among those aged 65–79 years and 75% among those 80–84 years.

Data analysis
Data were analysed using the Statistical Package for the Social Sciences (SPSS) for Windows version 19.0 (SPSS Inc., Chicago, IL, USA). Nominal data are presented as absolute frequency (number = n) and relative frequency (%) [18]. Non-parametric tests included the chi-square test to examine health differences between genders and the Mann–Whitney U to examine differences between the two age groups, namely, 65–79 years and 80–84 years. The median was used to describe the central tendency and min–max was used to describe variance. To avoid type I error, only p-values < .01 were considered statistically significant. Missing data are presented because these made up less than 1% and data were neither replaced nor imputed [18].

Results
The results describe 13,922 self-rated health assessments of older adults living at home with health differences by gender and age groups 65–79 years (n = 5,926 males, n = 5,755 females) and 80–84 years (n = 1,208 males, n = 1,033 females). The characteristics and general health, long-term diseases or health problems, short-term problems or symptoms, mental health and dental health are described.

Participant characteristics
More females aged 65–79 years (35%) lived alone than did males (18%); the same was found for females aged 80–84 years (58%) compared with males (26%). The remaining participants lived with a spouse, partner or cohabitant; a few lived with a child or an adult friend. The most common form of housing was a villa (65–79 years: males 58%, females 49%; 80–84 years: males 43%, females 30%). More females aged 65–79 years (39%) lived in a multifamily home or apartment than did males (30%); this was consistent among females aged 80–84 years (55%) compared with males (42%). A low proportion lived in a townhouse (65–79 years: males 8%, females 8%; 80–84 years: males 6%, females 8%) or a serviced building or apartment (65–79 years: males 1%, females 1%; 80–84 years: males 3%, females 5%).

Most participants had completed elementary school, primary school and junior secondary school or girls’ school (65–79 years: males 51%, females 61%; 80–84 years: males 60%, females 74%). A lower proportion had graduated from a secondary or vocational school (65–79 years: males 17%, females 9%; 80–84 years: males 12%, females 5%) or from higher education (65–79 years: males 16%, females 16%; 80–84 years: males 11%, females 7%). Some participants reported that they had completed additional education (65–79 years: males 15%, females 15%; 80–84 years: males 19%, females 13%).

General health
Overall, participants aged 65–79 years rated their general health as good (Table 1); those aged 80–84 rated their health as neither good nor poor. Statistically significant gender differences were found on the health assessment with a greater proportion of males than females estimating their health as good or very good. Regardless of age group, participants could handle their daily activities well but were troubled by moderate pain. More females than males were bothered by anxiety and or depression (Table 1). These differences were statistically significant.

Long-term diseases and problems
More than a third of participants aged 65–79 years had had long-term diseases or problems for longer than six months (males: yes 38%, no 62%; females: yes 38%, no 62%). Among participants aged 80–84 years, the proportion of both males and females who had had long-term diseases or problems was greater (males: yes 43%, no 57%; females: yes 47%, no 53%).

Table 2 shows participants’ descriptions of long-term diseases or problems during the last year.
**Table 1.** Older adults’ general health across age groups and gender

| Variables                      | Older adults n = 13,392 |                      |
|--------------------------------|-------------------------|----------------------|
|                                | 65–79 years             | 80–84 years          |
|                                | Male n = 5,926          | Female n = 5,755     |
|                                | 80–84 years             | Male n = 1,033       |
|                                | Female n = 1,208        |                      |
|                                | Median (min–max)        | Median (min–max)     |
|                                | p                       | Median (min–max)     |
|                                |                         | p                    |
| General health ‡               | 2 (1–5)                 | 3 (1–5)              |
| Mobility †                     | 1 (1–3)                 | 1 (1–3)              |
| Hygiene ‡                      | 1 (1–3)                 | 1 (1–3)              |
| Daily activities ‡             | 1 (1–3)                 | 1 (1–3)              |
| Pain and or discomfort ‡       | 2 (1–3)                 | 2 (1–3)              |
| Anxiety and or depression ‡    | 1 (1–3)                 | 1 (1–3)              |

† = very good, 2 = good, 3 = neither good nor poor, 4 = poor, 5 = very poor

‡ = move without difficulty, 2 = move with some difficulty, 3 = bedridden

§ = no help, 2 = needs some help, 3 = needs constant help

‡ = can handle, 2 = some problems, 3 = cannot handle

† = none, 2 = moderate, 3 = severe

‡ = none, 2 = to a certain extent, 3 = much

**Table 2.** Older adults’ long-term diseases or problems during the last year across age groups and gender

| Variables                              | Older adults n = 13,392 |                      |
|----------------------------------------|-------------------------|----------------------|
|                                        | 65–79 years             | 80–84 years          |
|                                        | Male n = 5,926          | Female n = 5,755     |
|                                        | 80–84 years             | Male n = 1,033       |
|                                        | Female n = 1,208        |                      |
|                                        | Yes n (%)               | Yes n (%)            |
|                                        | p                       | Yes n (%)            |
|                                        |                         | p                    |
| Cardio-vascular disease                | 1,362 (23)              | 372 (36)             |
| Hypertension                           | 2,489 (42)              | 444 (43)             |
| Diabetes Type 1                        | 119 (2)                 | 21 (2)               |
| Diabetes Type 2                        | 948 (16)                | 196 (19)             |
| Thyroid disease                        | 178 (3)                 | 52 (5)               |
| Asthma                                 | 356 (6)                 | 72 (7)               |
| Allergy eye or nose                    | 770 (13)                | 176 (17)             |
| Food allergy                           | 198 (6)                 | 21 (2)               |
| Eczema                                 | 693 (10)                | 114 (11)             |
| Nickel allergy                         | 59 (1)                  | 10 (1)               |
| Depression                             | 356 (6)                 | 72 (7)               |
| Exhaustion syndrome                   | 237 (4)                 | 83 (8)               |
| Cancer                                 | 474 (8)                 | 103 (10)             |
| Chronic obstructive pulmonary disease  | 296 (5)                 | 230 (4)              |
| Stomach or intestinal disease          | 593 (10)                | 806 (14)             |
| Involuntary leakage of urine           | 711 (12)                | 1,381 (24)           |
| Rheumatoid arthritis                   | 296 (5)                 | 518 (9)              |
| Neurologic disease                     | 237 (4)                 | 230 (4)              |
| Sleep apnoea                           | 533 (9)                 | 345 (6)              |
| Tinnitus                               | 2,015 (34)              | 1,151 (20)           |
| Hearing loss                           | 3,141 (53)              | 1,842 (32)           |
| Visual impairment                      | 652 (11)                | 633 (11)             |
| Physical disabilities                  | 1,244 (21)              | 1,209 (21)           |
| Mental disabilities                    | 178 (3)                 | 173 (3)              |

Note: p values are not provided in the table.
More than half of males aged 65–79 years reported

problem with hearing loss. A large percentage of males
also had problems with high blood pressure, cardio-
vascular disease, tinnitus and physical disabilities.
Females aged 65–79 years had the most trouble with
high blood pressure, hearing and physical disabilities.
In those aged 80–84 years, both males and females
had disorders including cardio-vascular disease, high
blood pressure, hearing and physical disabilities.
Females reported more long-term illnesses or
symptoms compared with males. Most of the
differences were in the group aged 65–79 years (Table
2). These differences were statistically significant.

Short-term problems or symptoms

Both males and females reported having been
occasionally bothered by musculoskeletal pain (Table
3). Females reported being troubled more by short-
term diseases or problems compared with males. A
larger proportion of females reported more problems
than males, including sleep problems and fatigue
during the last three months. These differences were
statistically significant (Table 3).

Mental health

Females aged 65–79 years reported worse mental
health on several variables compared with males’
ratings (Table 4). Females aged 65–79 years reported
a lower sense of coherence (SOC) than did males [11].
These differences were statistically significant (Table
4).

Dental health

Almost 70% of males aged 65–79 years stated that
they had very good or good dental health (very good
18%, good 49%, neither good nor poor 23%, poor 7%,
very poor 2%), which was similar to females aged 65–
79 years (very good 18%, good 51%, neither good nor
poor 24%, poor 6%, very poor 2%).

Over half of males aged 80–84 years had very good or
good dental health (very good 12%, good 46%,
neither good nor poor 31%, poor 10%, very poor 2%).

More than half of females aged 80–84 years had very
good or good dental health (very good 14%, good
48%, neither good nor poor 29%, poor 8%, very poor 2%).

Table 3. Older adults’ short-term problems or symptoms during the last three months across age groups and gender

| Variables                        | Older adults n = 13,922 |                           |                           |                           |                           |                           |
|----------------------------------|-------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|                                  | 65-79 years             | 80-84 years               |                           |                           |                           |                           |
|                                  | Male                    | Female                    | Male                      | Female                    | Male                      | Female                    |
|                                  | n = 5,926               | n = 5,755                 | n = 1,033                 | n = 1,208                 | n = 1,033                 | n = 1,208                 |
|                                  | Median (min-max)        | Median (min-max)          | Median (min-max)          | Median (min-max)          | Median (min-max)          | Median (min-max)          |
|                                  |                         | p                         |                           |                           |                           |                           |
| Pain in shoulders and neck       | 2 (1-4)                 | 2 (1-4)                   | .000                      | 2 (1-4)                   | 2 (1-4)                   | .000                      |
| Pain in back or hips             | 2 (1-4)                 | 2 (1-4)                   | .000                      | 2 (1-4)                   | 2 (1-4)                   | .000                      |
| Pain in limbs                    | 2 (1-4)                 | 2 (1-4)                   | .000                      | 2 (1-4)                   | 2 (1-4)                   | .000                      |
| Pain in the stomach              | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 1 (1-4)                   | .000                      |
| Headaches and or migraines       | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 1 (1-4)                   | .000                      |
| Anxiety and worry                | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 2 (1-4)                   | .000                      |
| Fatigue and weakness             | 1 (1-4)                 | 2 (1-4)                   | .000                      | 2 (1-4)                   | 2 (1-4)                   | .000                      |
| Sleep problems                   | 1 (1-4)                 | 2 (1-4)                   | .000                      | 1 (1-4)                   | 2 (1-4)                   | .000                      |
| Depressed mood                   | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 2 (1-4)                   | .000                      |
| Dizziness                        | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 2 (1-4)                   | .000                      |
| Irritated mucous membranes       | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 1 (1-4)                   | .052                      |
| Stress                           | 1 (1-4)                 | 1 (1-4)                   | .000                      | 1 (1-4)                   | 1 (1-4)                   | .000                      |

1 = never, 2 = occasionally, 3 = on several occasions, 4 = almost all the time
Compared with males, females aged 65–79 years had more problems with sensitive teeth and teeth grinding (Table 5). Males in the same age group were troubled more by caries than were females. Females aged 80–84 years were bothered more than were males by sensitive teeth necks. The differences were statistically significant (Table 5).

**Discussion**

**Method discussion**

The primary strength of the study was its large and randomly selected sample, which enables generalization to the wider population [14]. Another strength was the high response rate and a low amount of missing data. According to Vuorisalmi et al. [19], self-rated health has been recognized as a valid and reliable measure of health among older adults. The World Health Organization [11] has recommended this indicator to verify health in population-based studies of older adults. However, it may have been preferable to divide the group aged 65–79 years into two groups, because factors may differ for a 65-year-old (the normal retirement age in Sweden) compared to a 79-year-old, which may have influenced the self-rated health measures. However, this study followed the age groupings used in national population surveys in Sweden, allowing comparisons between counties and various measurements over time. This study has an important value and is relevant to health care policy and clinical care. Use of questionnaires in which participants use response categories may have limitations but this applies to most questionnaires. However, participants were given an opportunity to comment with free text at the end of the questionnaire.

**General health**

The majority of participants aged 65–79 years rated their general health as good, which decreased to neither good nor poor for those aged 80–84 years. Marques et al. [20] studied older adults’ subjective health, social status and age identification across different countries. Their study demonstrated that subjective health was stronger in countries where older adults’ social status was perceived as being higher, such as Sweden, the other Nordic countries, Switzerland, Great Britain, Belgium and Germany.
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Table 5. Older adults’ dental health during the last year across age groups and gender

| Variables          | Older adults n = 13922 |                       |
|--------------------|------------------------|-----------------------|
|                    | 65-79 years            | 80-84 years           |
|                    | Male n = 5,926         | Male n = 1,033        |
|                    | Female n = 5,755       | Female n = 1,208      |
| Problems with      | Yes n (%)              | Yes n (%)             | p       |
| Caries             | 1,067 (18)             | 165 (16)              | .005    |
| Bleeding gums      | 533 (9)                | 41 (4)                | .686    |
| Loss of teeth      | 533 (9)                | 114 (11)              | .327    |
| Chewing            | 415 (7)                | 124 (12)              | .822    |
| Sensitive teeth    | 889 (15)               | 93 (9)                | .000    |
| necks              |                        | 230 (19)              | .000    |
| Teeth grinding     | 415 (7)                | 31 (3)                | .000    |

There were significant health differences, with fewer females than males rating their health as good or very good. This result agrees with several national studies reporting that women rate their health as being poorer than do men [21, 22]. Af Sillén et al. [10] indicate that males compare their health mainly to that of other males, who they often deem as having poorer health than their own. Females, in contrast, tend to rate their health based on how their whole family feels. With this in mind, it is important to individualize person-oriented care in which both men and women are considered unique and treated individually [13] with the understanding that health is a process that a person creates and experiences in daily life [12].

The majority of participants aged 65–79 years stated that they had no problems with movement, though there were significant health differences between genders in both age groups. A larger proportion of females than males stated that they had some difficulty with movement. Yong et al. [22] showed gender differences in poorer walking and position transitions among females 75 years and older. In the current study, few participants aged 65–79 years needed help with their daily hygiene but the rate increased for both males and females aged 80–84 years. Regardless of age group, a large proportion of participants reported that they could handle their daily activities. This compares favourably with the findings of Thorslund and Parker [3] who showed that regardless of methodological differences or statistical representativeness, older adults’ ability to manage activities of daily living has improved, while at the same time a greater proportion of older adults have specific health problems [3].

The majority of males and females in both age groups reported experiencing moderate pain or discomfort. There were significant gender differences, with more females than males reporting moderate to severe problems with pain. Although the definition of pain may differ according to the study [23], chronic pain has been shown to increase with age [24]. The prevalence of chronic pain among older adults has been reported to vary from 50% (25) to 83% (26). Older adults with pain are more likely to rate their health as poor (27). However, as Collies and Waterfield [23] noted, there is a distinction between having pain and having a problem with pain.

Karlsson [13] showed that compared with older adults’ self-reporting, health professionals tended to rate their patient as having less pain. According to Josefsson [28], there is a great deal of ignorance about pain among older adults. Pain may be existential, meaning it is a social or spiritual form that may manifest itself in emotions such as anxiety, fatigue or sadness. It is important that health professionals can appreciate whether their patient is experiencing existential pain, so they can determine the correct course of action.

Our results show significant health differences in anxiety and / or depression between males and females. More females than males rated that they felt anxiety or depression. These feelings may be related to females experiencing more pain and discomfort, which can lead to poorer self-rated health. According
Diseases and problems

Among participants aged 65–79 years, one in three men and women reported having long-term diseases or problems lasting longer than six months. This proportion increased with age, especially among females, among whom almost half of those aged 80–84 years reported chronic diseases or problems. Josefsson [28] reported that a person’s age is strongly associated with disease. However, although age changes are often due to normal aging, they may lead to increased sensitivity. The reduction in older adults’ reserves can mean they have a reduced resistance to diseases and environmental stresses. This may be one reason why old age leads to increased risk for diseases or problems.

The most common long-term diseases and symptoms during the past year reported by males were cardiovascular disease, hypertension, tinnitus, hearing loss and physical disabilities. Compared with males, females aged 65–79 years reported more chronic diseases. Both males and females reported hearing loss, which, according to Josefsson [28] is the most common disorder among older adults. Hearing loss is a natural aging process of the inner ear. From [7] showed that older adults’ health was related to their ability to adapt to and compensate for their disabilities. Thus, it is essential that older adults and their health professionals know the differences between natural and pathological age-related changes, to allow correct assessment and action.

There were also significant differences between males and females on short-term problems or symptoms during previous three months. More than one in three females were plagued by pain in their shoulders, neck, back or hips occasionally or almost all the time, compared with males among whom one in four had the same problems. Compared with males, females had more problems with sleep, fatigue and weakness, anxiety and worry during the previous three months. Borglin et al. [30] suggested that females who rated their health as worse had a greater problem with decrease in power and mobility, as suggested by their low physical activity. Older adults with an unaddressed decrease in power and mobility may end up in a vicious circle; they may be too tired to cope with daily life and thus move less, which leads to stiffer joints and even more immobility.

Mental health

There were significant mental health differences between males and females. A larger proportion of females than males aged 65–79 years reported that they had trouble sleeping due to anxiety, feeling tense, not managing their problems, feeling dejected and depressed, and losing faith in themselves. This is consistent with Yong et al. [22], who reported poorer mental health among older females compared with males. The prevalence of mental diseases among older adults is common and increasing rapidly [29]. Because the global population is aging rapidly [1], good geriatric care is critical, including older adults’ mental health and gender differences. However, little time is spent on mental health care for older adults [29].

More than half the participants aged 65–79 years had a very or fairly optimistic view of their own future. There was a significant gender difference in sense of coherence (SOC) with more males than females aged 65–79 years reporting a high SOC. It is positive that participants reported a high SOC, given the connection between experienced health and well-being [12]. However, females had a lower SOC than males. It is therefore particularly important to promote a sense of coherence among females by having them take advantage of their resources, strengths and abilities [7, 12].

Dental health

Seven out of 10 older adults aged 65–79 years reported good or very good dental health and six out of 10 aged 80–84 years reported having good or very good dental health. Participants’ common dental problems were caries and sensitive teeth. There were
significant gender differences in the group aged 65–79 years, with more males reporting caries and more females reporting trouble with sensitive teeth and teeth grinding. However, these older adults’ dental health was good compared with the study by Morales-Suarez-Varela et al. [31] who reported that a large proportion of their sample had trouble with dental health. Andersson et al. [6] note that there is little knowledge in primary care about how dental health affects older adults’ well-being. Dental health and well-being-associated primary care should pay greater attention to older adults’ dental health rather than leaving dental care to dentistry. Because no one agency can tackle all issues, the promotion of healthy aging requires a multi-agency response.

Conclusions

Most participants aged 65–79 years rated their general health as good, while health ratings decreased in the group aged 80–84 years. Females reported a lower sense of coherence than did males. Females rated their physical and mental health worse than did males, which was clearer in the group aged 65–79 years. Gender differences tended to level off in the group aged 80–84 years. The fact that older females perceived their health as lower than did older males is of importance. Health policies and programmes need to promote healthy aging equitably.

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