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Self-rated health and indicators of SES among the ageing in three types of communities

OLLI P. NUMMELA, TOMMI T. SULANDER, HEIKKI S. HEINONEN & ANTTI K. UUTELA

Health Promotion Unit, Department of Health Promotion and Chronic Disease Prevention, National Public Health Institute (KTL), Helsinki, Finland

Abstract

Aims: This paper examines associations between self-rated health, three indicators of SES (self-reported education, disposable household income, adequacy of income) and three types of communities (urban, densely or sparsely populated rural areas) among ageing men and women in the Province of Päijät-Häme, Southern Finland. There is a lack of knowledge regarding the magnitude of community type when examining the relation between subjective health and SES. *Methods:* Cross-sectional questionnaire data gathered in the spring of 2002 for a prospective follow-up of community interventions were used. These data, together with a number of clinical and laboratory measurements, yielded the baseline for a 10-year community intervention study. A representative stratified (age, gender, area) sample of men and women living in the province and belonging to the birth cohorts 1926–1930, 1936–1940, and 1946–1950 was obtained from the National Population Registry. The target sample was 4,272, with 2,815 persons responding (66% response rate). *Results:* Positive associations between indicators of SES and self-rated health were observed in all three community types. After adjusting for other factors, adequacy of income showed the strongest (positive) association with self-rated health in urban areas in all age groups. A similar pattern of associations, with varying statistical significance, though, was found in the two rural areas. *Conclusions:* This study supports the view that while actual income is positively correlated to health, adequacy of income is an even stronger predictor of it. Thus, there was a significant link between better financial standing and good health among ageing people, especially in urban areas.

Key Words: *Adequacy of income, ageing, community intervention, self-rated health, urban–rural dimension*

Introduction

Self-rated health is an important measure of a person's health status in general [1]. A number of Western European studies have identified differences in health according to socioeconomic status (SES) [2–4]. Using education and income as indicators of SES, researchers have shown poor self-rated health to be more prevalent among older people in socially disadvantaged positions [5,6]. Overall indicators of material wealth, such as income, have also been found to mirror health in old age. The latter association may be even stronger than that found using education or occupation to indicate SES [7].

Income has been found to correlate to self-rated health [5,6]. It has been suggested that self-assessed financial position may be an even better predictor of self-rated health than income [8]. Self-rated economic welfare and income are positively correlated [9]. Financial assets, especially liquid assets, also seem to correlate with self-rated health in old age [10]. Moreover, older persons who report having enough money to meet their needs appear significantly more likely to claim good or excellent subjective health than those reporting insufficient financial resources [11]. The relation between self-rated economic condition and self-rated health amongst older people is comparable: Cheng and

Correspondence: Olli P. Nummela, Health Promotion Unit, Department of Health Promotion and Chronic Disease Prevention, National Public Health Institute (KTL), Mannerheimintie 166, FIN-00300 Helsinki, Finland. Tel: +358 9 4744 8922. Fax: +358 9 4744. E-mail: olli.nummela@ktl.fi

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colleagues [12] found poorer self-rated economic condition to be a significant predictor of inferior self-rated health.

In Finland, disposable income per household is highest among 45- to 54-year-olds, while financial assets peak among those aged 55–64 years. Among pensioners, health, housing, energy, food, and non-alcoholic beverages absorb a higher share of expenditure than in the average population [13]. Although the proportion of pensioners in Finland is at present greater than ever, the pensioners are also wealthier than ever because of better pension benefits [13,14].

Social support in terms of marriage or cohabitation is an important contributor to an individual's health. There is evidence that marital status is associated with health even at the oldest age. Rising rates of divorce and increasing numbers of persons remaining single might predict more health problems in the more distant future as younger cohorts age [15].

In health policy the urban/rural divide is an important dimension, especially among the ageing and elderly. Depopulation of rural municipalities, where income levels are lowest [16], increased in Finland during the 1990s: the steepest annual decline was about 8–9 persons per thousand of the mean population. To a lesser degree, depopulation has also taken place in semi-urban municipalities [17]. Regional economic disparity may be seen as the primary cause for migration: the industrial structure in towns or rural centres offers better chances for becoming employed and having a higher income.

Distance to health and social services is usually greater in rural areas, and public transport is often absent or at least inadequate. Some studies have indicated that the rural elderly have poorer health than the urban aged [18]. In Finland, self-rated health has been found to be poorest in sparsely populated countryside areas, especially among 51- to 60-year-olds [19]. The material standard of living is highest in the cities and towns. Semi-urban areas also enjoy a higher standard of living. In contrast, sparsely populated countryside areas expose people to a lower standard of living than elsewhere [20].

The disparities in welfare across different types of communities in the 1990s have been identified in Finland based on the urban, semi-urban, and rural division. The trichotomy of urban, semi-urban, and rural communities is based on an administrative subdivision, though, that does not adequately reflect those characteristics of regions with a health impact. The categories of urban/rural population centre and sparsely populated countryside form a more satisfactory division since they characterize the neighbourhood people are living in more exactly than a mere administrative categorization would do.

Occupation and income as measures of SES are most often used for persons of working age, whereas material wealth characterizes living conditions throughout the life-course [7]. Typically the elderly are not economically active, a sizeable proportion of them are widowed, and many of them, especially among those in the oldest age groups, tend not to live in private households [3]. Pensions, however, indicate current economic prospects and in addition correlate well to the income received while working. In any case, there are no unambiguous guidelines for choosing between several SES indicators at hand [7]. Using several indicators instead of only one this challenge may be met successfully. Furthermore, as living in the countryside offers more potential for self-sufficiency than living in towns does the urban–rural dimension would appear attractive as an additional focus of research, particularly as it has been totally neglected in research examining the relations between subjective health and SES thus far.

We are interested in uncovering the associations of self-rated health among ageing persons in three age cohorts with gender, age, marital status, education, disposable income and self-rated adequacy of income, and the impact of type of community on the relations. The research questions we formulated were as follows: Are socioeconomic differences in self-rated health similar across different regions? Which SES indicator, if any, is the best predictor of health? Do associations of SES with subjective health differ by age cohort or urban/rural residence?

Material and methods

Subjects and procedures

This study uses data from a survey conducted in 2002 in the Päijät-Häme hospital district, located 100–200 kilometres north of Helsinki, Finland. The Ethical Committee of the hospital district approved the study. The sample drawn from the National Population Registry was stratified by age, gender, and address to ensure that enough subjects were included from the small rural municipalities. The sample involved ageing men and women from three age cohorts in the 14 municipalities of the hospital district. The subjects were born in 1926–1930, 1936–1940, and 1946–1950, and the intention is to monitor their health and lifestyle every three years until 2012 for a community intervention study [21]. The Päijät-Häme hospital district is well suited to this kind of study of health promotion as, by 2015, the percentage of aged citizens there is estimated to

be higher than in the whole country, i.e. those over 65 years of age will account for 24% of the local population, compared with 21% in Finland as a whole [22].

Of the sample of 4,272, 2,815 (66%; municipal rates varying between 54% and 80%) participated in the study, i.e. answered the two questionnaires and attended for a healthcare centre visit during which a number of their risk factors for main chronic diseases were assessed. Response rates were 61%, 70%, and 58% among men and 63%, 74%, and 70% among women (born in 1926–1930, 1936–1940, and 1946–1950, respectively). However, there are no specific details available concerning the backgrounds of the non-respondents [21].

Study variables

For the analyses, the Päijät-Häme respondents were divided into three groups: the only urban centre, Lahti, in the first group, and semi-urban and rural communities in the other two groups. This division was based on the population registry [23] information making it possible to distinguish those living in Lahti from the others. The latter two groups, as mentioned above, were rural population centres (villages, suburbs, or population centres in semi-urban or rural areas), and sparsely populated areas (semi-urban or rural areas of low population density) in the countryside. This last residential classification was based on the respondents' self-evaluation (by questionnaire).

Self-rated health, assessed using one item with five fixed alternatives, was used as the indicator of subjective health. For the present study, the latter variable was dichotomized and those reporting better than average health were classified as having good self-rated health.

Based on self-reports basic education was coded into two categories, the lower one being for those with elementary education or less. Adequacy of income after necessary expenses (e.g. cost of living and repayment of a loan) was derived from reports and divided into two categories: very and rather good in the first category and average, rather poor and very poor in the second. Total household disposable monthly income was used as the basis for the income measure. It was divided by number of consumption units as suggested by OECD. The first household member was weighted as 1.0, and every additional person 14 years of age or over as 0.5. The youngest household members (0–13 years) were given the weight 0.3 [16]. Disposable income was then classified into three equal-sized groups: not more than €874 in the first group, €875–1,209 in the second, and €1,210 or more in the third group. The proportions with missing disposable income were relatively high, but there was no statistical difference between those with and without this measure in the reporting of good or fairly good self-rated health. This finding was valid in every living area, even though figures varied. The income information seems fairly reliable according to information on other sources [24].

Marital status was also dichotomized: those married or cohabiting was inserted into the first category and separated, divorced, widowed, and single into the second. The number of widowed and single people was low, so these categories were pooled for the analyses. Separated and divorced individuals were already grouped together in the questionnaire.

Statistical methods

To correct the bias caused by differential selection rate by the municipality, gender, and age as well as for varying response rates in the municipalities the data were weighted accordingly. The weighted data matched the municipality's population. Data were analysed using the SPSS 9.0 statistical program. Table I describes the unweighted population distributions; in all the following results weighted population figures are used.

Table II gives the absolute differences in the prevalence of good self-rated health between groups. Logistic regression was used to study differences in self-rated health in the areas by gender, age, marital status, and socioeconomic factors. In Tables III and IV the results are presented using weighted odds ratios, 95% confidence intervals, and variances explained (R^2 Nagelkerke). Interactions of area with gender, age group, marital status, basic education, adequacy of income, and disposable income were included separately in the adjusted models (Table III).

Results

The distribution of good self-rated health in different areas by background variables (%) is given in Table II. Women reported better self-rated health than men in urban areas only. The youngest reported the best self-rated health in all areas. Married and cohabiting persons had better self-rated health than their counterparts in urban areas and in sparsely populated countryside.

Good self-rated health among higher educated people was more prevalent in all areas. The

Table I. Description of variables (%), unweighted figures.

	Urban (n=1,193)	Rural population centre[a] (n=929)	Sparsely populated countryside[b] (n=653)
Self-rated health			
Fairly good or good	45.8	46.5	42.9
Average or less	54.2	53.5	57.1
(Missing)	(1.8)	(1.0)	(0.3)
Gender			
Male	48.3	45.9	50.5
Female	51.7	54.1	49.5
Age group			
72–76	31.4	29.2	34.3
62–66	37.6	36.5	34.6
52–56	31.0	34.3	31.1
Marital status			
Separated, divorced, widowed or single	32.4	25.7	23.7
Married or cohabiting	67.6	74.3	76.3
(Missing)	(1.8)	(0.9)	(0.6)
Basic education			
Elementary school or less	69.3	75.2	78.5
Middle school or graduate	30.7	24.8	21.5
(Missing)	(2.5)	(1.5)	(0.9)
Adequacy of income			
Average or less	36.9	38.4	48.8
Very or rather good	63.1	61.6	51.2
(Missing)	(2.5)	(1.8)	(4.3)
Disposable income per month per consumption unit			
<=€874	26.6	30.1	51.0
€875–1,209	37.2	33.4	25.8
>=€1,210	36.2	36.5	23.3
(Missing)	(13.1)	(13.0)	(19.8)

The sum is not always exactly 100 because of rounding. (Missing = missing % from total.) [a]Centre, suburb, or population centre in semi-urban or rural area. [b]Sparsely populated part of semi-urban or rural area.

Table II. Good self-rated health in different subgroups, weighted figures.

	Urban	Rural population centre[a]	Sparsely populated countryside[b]
Gender			
Male	45.3	44.2	46.0
Female	51.6	50.0	44.6
p	0.027	0.077	0.739
Age group			
72–76	35.2	32.7	28.7
62–66	44.8	49.4	44.6
52–56	57.4	52.0	56.0
p	0.000	0.000	0.000
Marital status			
Separated, divorced, widowed or single	40.0	41.6	35.9
Married or cohabiting	53.0	48.9	48.2
p	0.000	0.057	0.014
Basic education			
Elementary school or less	45.6	42.1	40.1
Middle school or graduate	54.9	61.7	61.7
p	0.002	0.000	0.000
Adequacy of income			
Average or less	28.4	35.7	33.2
Very or rather good	61.0	54.4	56.8
p	0.000	0.000	0.000
Disposable income per month per consumption unit			
<=€874	32.0	33.2	34.8
€875–1,209	46.5	44.9	43.7
>=€1,210	64.2	56.8	68.7
p	0.000	0.000	0.000

[a]Centre, suburb, or population centre in semi-urban or rural area. [b]Sparsely populated part of semi-urban or rural area.

prevalence of good self-rated health decreased with increasing financial difficulties. Rates were clearly higher among those indicating that they had good adequacy of income, and among those who belonged to the highest disposable income group.

The unadjusted odds ratios (see Table III) indicated a strong association with self-rated health of almost all the indicators used in the analyses. Statistically significant gender difference was found only in urban areas where more women than men reported good self-rated health. Understandably, the youngest of the respondents had better self-rated health than older people. In urban and sparsely populated rural areas, married or cohabiting persons had better self-rated health than non-married.

As expected, the higher educated had better self-rated health in every area. Having adequate income universally indicated better self-rated health. Higher income indicated better self-rated health, except in the sparsely populated countryside where the lowest and middle-income groups did not statistically significantly differ in self-rated health. The highest percentage of explained variance was achieved for adequacy of income (13%) in the urban areas. Disposable income (9%) was an important factor in the urban areas also. The percentage of variance explained by the financial variables was 4–5% in the rural population centre and 7–10% in the sparsely populated countryside.

The adjusted results (see Table III) showed that women had better self-rated health than men only in urban areas. The youngest had better self-rated health than others in the urban areas and in the sparsely populated countryside. Moreover, there

Table III. Odds ratios (OR), 95% confidence intervals and R^2 (Nagelkerke) of good self-rated health by gender, age group, marital status, and different measures of SES in Päijät-Häme area.

	Urban		Rural population centre[a]		Sparsely populated countryside[b]	
	Unadjusted* (n=1,034–1,172)	Adjusted** (n=1,015)	Unadjusted* (n=801–920)	Adjusted** (n=779)	Unadjusted* (n=523–651)	Adjusted** (n=510)
Gender						
Male	1	1	1	1	1	1
Female	**1.29 (1.03–1.61)**	**1.70 (1.29–2.23)**	1.26 (0.98–1.63)	1.15 (0.85–1.56)	0.94 (0.67–1.32)	0.76 (0.49–1.17)
Gender*Area p=0.0381	R^2 0.005 (n=1,172)		R^2 0.004 (n=920)		R^2 0.000 (n=651)	
Age group						
72–76	1	1	1	1	1	1
62–66	**1.49 (1.08–2.05)**	1.34 (0.92–1.94)	**2.01 (1.37–2.93)**	**1.79 (1.16–2.77)**	**1.99 (1.23–3.22)**	**2.03 (1.12–3.71)**
52–56	**2.47 (1.84–3.31)**	**2.34 (1.66–3.30)**	**2.22 (1.57–3.14)**	1.51 (1.00–2.28)	**3.16 (2.03–4.92)**	**2.58 (1.46–4.56)**
Age group*Area p=0.0300	R^2 0.043 (n=1,172)		R^2 0.031 (n=920)		R^2 0.066 (n=651)	
Marital status						
Separated, divorced, widowed or single	1	1	1	1	1	1
Married or cohabiting	**1.70 (1.34–2.16)**	1.23 (0.90–1.68)	1.34 (0.99–1.81)	1.03 (0.69–1.51)	**1.63 (1.09–2.45)**	0.90 (0.53–1.54)
Marital status*Area p=0.4773	R^2 0.020 (n=1,167)		R^2 0.005 (n=912)		R^2 0.014 (n=647)	
Basic education						
Elementary school or less	1	1	1	1	1	1
Middle school or graduate	**1.45 (1.14–1.84)**	1.05 (0.79–1.40)	**2.21 (1.65–2.97)**	**1.83 (1.30–2.57)**	**2.44 (1.62–3.67)**	**2.32 (1.37–3.94)**
Basic education*Area p=0.0743	R^2 0.010 (n=1,156)		R^2 0.040 (n=906)		R^2 0.046 (n=645)	
Adequacy of income						
Average or less	1	1	1	1	1	1
Very or rather good	**3.95 (3.08–5.07)**	**3.26 (2.41–4.42)**	**2.15 (1.64–2.83)**	**1.79 (1.29–2.49)**	**2.62 (1.84–3.75)**	**2.34 (1.49–3.66)**
Adequacy of income*Area p=0.0121	R^2 0.128 (n=1,157)		R^2 0.044 (n=903)		R^2 0.072 (n=624)	
Disposable income per month per consumption unit						
<=€874	1	1	1	1	1	1
€875–1,209	**1.85 (1.35–2.53)**	1.30 (0.90–1.86)	**1.66 (1.15–2.40)**	1.35 (0.90–2.00)	1.45 (0.91–2.31)	0.96 (0.57–1.63)
>=€1,210	**3.83 (2.80–5.23)**	**1.80 (1.20–2.70)**	**2.66 (1.88–3.77)**	1.51 (0.98–2.32)	**4.01 (2.46–6.53)**	1.74 (0.96–3.18)
Disposable income*Area p=0.2611	R^2 0.090 (n=1,034)		R^2 0.050 (n=801)		R^2 0.099 (n=523)	
R^2 by gender, age group, marital status and all SES variables (Nagelkerke)		0.199		0.101		0.202

*Crude OR includes one indicator at a time. **Adjusted for all other terms in the model. Model includes all indicators simultaneously (multiple adjusted). Significant associations ($p<0.05$) are shown in bold. [a]Centre, suburb, or population centre in semi-urban or rural area. [b]Sparsely populated part of semi-urban or rural area.

Table IV. Odds ratios (OR), 95% confidence intervals and R^2 (Nagelkerke) of good self-rated health by gender, marital status, and different measures of SES for different age groups in Päijät-Häme area.

	Urban			Rural population centre[a]			Sparsely populated countryside[b]		
	72–76 (n=318)	62–66 (n=373)	52–56 (n=324)	72–76 (n=221)	62–66 (n=288)	52–56 (n=270)	72–76 (n=161)	62–66 (n=187)	52–56 (n=162)
Gender									
Male	1	1	1	1	1	1	1	1	1
Female	1.12 (0.57–2.20)	1.57 (0.93–2.65)	**1.95 (1.34–2.84)**	0.50 (0.23–1.08)	1.20 (0.69–2.08)	1.40 (0.92–2.14)	0.54 (0.20–1.46)	1.22 (0.57–2.63)	0.58 (0.30–1.12)
Marital status									
Separated, divorced, widowed or single	1	1	1	1	1	1	1	1	1
Married or cohabiting	0.72 (0.35–1.47)	0.93 (0.51–1.70)	**1.71 (1.10–2.65)**	1.41 (0.61–3.27)	0.75 (0.39–1.46)	0.99 (0.53–1.85)	0.45 (0.15–1.37)	1.10 (0.39–3.09)	1.24 (0.57–2.71)
Basic education									
Elementary school or less	1	1	1	1	1	1	1	1	1
Middle school or graduate	0.91 (0.45–1.84)	1.39 (0.80–2.41)	0.92 (0.63–1.35)	1.25 (0.41–3.78)	1.44 (0.74–2.80)	**2.17 (1.41–3.32)**	2.50 (0.74–8.40)	1.64 (0.58–4.67)	**3.00 (1.44–6.27)**
Adequacy of income									
Average or less	1	1	1	1	1	1	1	1	1
Very or rather good	**3.05 (1.60–5.83)**	**2.87 (1.60–5.14)**	**3.54 (2.28–5.50)**	**3.61 (1.59–8.22)**	1.35 (0.77–2.39)	**1.70 (1.04–2.78)**	1.93 (0.74–5.05)	**3.31 (1.49–7.35)**	1.94 (0.99–3.83)
Disposable income per month per consumption unit									
<=€874	1	1	1	1	1	1	1	1	1
€875–1,209	1.58 (0.76–3.26)	1.31 (0.63–2.69)	1.29 (0.75–2.22)	0.84 (0.35–1.99)	1.50 (0.74–3.02)	1.42 (0.76–2.66)	1.18 (0.36–3.90)	0.80 (0.33–1.94)	0.93 (0.41–2.10)
>=€1,210	**2.93 (1.09–7.86)**	2.23 (0.98–5.09)	1.34 (0.77–2.34)	1.36 (0.43–4.32)	1.24 (0.57–2.71)	**1.87 (1.02–3.42)**	1.83 (0.42–7.96)	1.64 (0.54–4.98)	1.84 (0.78–4.35)
R^2 by gender, marital status and all SES variables (Nagelkerke)	0.150	0.154	0.193	0.166	0.029	0.121	0.117	0.170	0.186

Adjusted for all other terms in the model. Model includes all indicators simultaneously (multiple adjusted). Significant associations ($p < 0.05$) are shown in bold. [a]Centre, suburb, or population centre in semi-urban or rural area. [b]Sparsely populated part of semi-urban or rural area.

were no significant associations between self-rated health and marital status. The higher educated had better self-rated health only in both rural areas. Only in the urban area was higher disposable income associated with better self-rated health. Good adequacy of income was associated with better self-rated health in every area. The last row of Table III shows that there was clearly a higher percentage of explained variance in self-rated health by all indicators in urban areas and in the sparsely populated countryside than in the rural population centre.

Interaction tests (see Table III) performed to test whether the odds ratios differed between areas showed that significant variations between areas were found in self-rated health by gender, age, and adequacy of income. Women had better self-rated health than men only in the urban areas, and the age group 62–66 years had better self-rated health than the 52- to 56-year olds in the rural population centre. Good adequacy of income indicated clearly good self-rated health in the urban areas, but the association was weaker in the rural population centre.

Table IV demonstrates that adequacy of income has the strongest impact on self-rated health in the youngest age group in the urban area. Table IV also reveals that adequacy of income in the urban area has a greater impact on self-rated health than other variables in every age group. In the youngest age group, urban women had better self-rated health than men. In the oldest age group the highest disposable income group was associated with better self-rated health. According to marital status in the urban area, those married or cohabiting reported better self-rated health than the non-married in the youngest age group. As a consequence, the variance explained decreased slightly in the older cohorts (from 19% at 52–56 years to 15% at 72–76 years).

The results were only partly similar in the rural population centre. There were no significant associations between self-rated health and gender or marital status. In the youngest age group, the higher educated had better self-rated health than those with lower education. Better adequacy of income was associated clearly with good self-rated health in the oldest and youngest age groups. In the youngest age group the highest disposable income group was associated with better self-rated health. Variance explained by the variables ranged from 17% at the age of 72–76 to 12% at 52–56 years, but only 3% at 62–66.

In the sparsely populated countryside, good self-rated health and better adequacy of income were associated only among those aged 62–66 years. In the youngest age group, the better educated had better self-rated health than the lower educated. There were no significant associations between self-rated health and gender, marital status, or disposable income. Variance explained by the variables decreased clearly from 19% at 52–56 to 12% at 72–76 years.

Discussion

This study examined associations of different indicators of SES with self-rated health among ageing people in an urban community (Lahti), rural population centres and sparsely populated countryside of the Päijät-Häme hospital district of southern Finland. We found that unadjusted associations between better SES and good health were present for all the indicators included in this study. Adequacy of income was a significant predictor of good self-rated health among the youngest and the oldest age groups in the rural population centre and among those aged 62–66 years in the sparsely populated countryside after controlling for the remainder of background indicators. In the urban community, the most important factor associated with good health was good adequacy of income. Results were in the same direction but more complex in the other regions where education also played the role of an important correlate to self-reported health, varying by age group.

The strengths of this study include that altogether three indicators of SES, including adequacy of income, were used, and that for the first time to our knowledge the urban–rural dimension was taken into consideration at the same time. Thus the potential impact of differing needs and consumption levels could be ascertained.

The fair response rate poses a possible threat to the external validity of the results. Indeed, non-response may seriously impede prevalence figures. It is likely that the health of non-respondents is not as good as that of respondents [25]. This problem may apply in the current study too. Also the number of institutionalized elderly in this study was low, although institutionalized persons were not systematically excluded from the sample. As our purpose is to look for associations the bias potentially caused by non-response is of less significance. One could argue that the bias then only affects the magnitude of associations and not their direction. We are relying on self-reported measures of SES. Self-reports of SES are typically less accurate than those based on objective/register data. This fact will again be reflected in the results making true associations appear less strong than they really are, but keeping their direction intact. However, it was not possible to

collect register-based information on the respondents (lack of resources etc.), and in addition some information can only be collected using a questionnaire, for example perceived adequacy of income.

Some previous studies have found that elderly women assess their own health less positively than men [11,26]. In other studies, after adjustment for structural factors women have been found to be healthier than men [27]. In addition, one study reported no gender differences in self-rated health among the elderly [28]. We found no clear health inequalities between genders either. The results hint that women have better health than men in urban areas (see Table III), and after adjusting for background factors the disparities largely increased. Gender differences were only found in one age group. Overall in our study, gender did not seem to be a very discriminating variable as far as self-reported health is concerned.

Despite the finding that associations between health and age were in the expected direction, they were less pronounced in rural population centres than other areas. Adjusted results indicated the age group 62–66 years to be the healthiest in rural population centres.

We were not able to find significantly better self-rated health among married or cohabiting individuals compared with those who were separated, divorced, widowed or single, after adjusting for other background variables, excluding the age group 52–56 in urban areas. This contrasts with the findings of Lund et al. (2002), who suggest that ageing individuals living alone experience significantly increased mortality compared with those who live with someone [29]. Goldman et al. (1995) presented evidence that married persons in industrialized countries enjoy better health status and experience lower death rates than single, widowed, and divorced persons. It has also been suggested that marital status is associated with health and survival outcomes at the oldest age [15].

All in all, marital status is a complex phenomenon in health research. In industrialized countries, non-traditional family settings providing equal support, i.e. cohabitation without marriage, may often be a more relevant indicator [29]. Marital status has different consequences for women and men in later life. Moreover, gender differences by marital status vary across the life course. For example, divorced older women and men and never-married men are the most materially disadvantaged social groups [30].

Subjective financial status had a strong association with self-rated health. The correlation was even stronger than the association between self-rated health and actual income. This result is identical to earlier findings [8]. Previous studies have found that those elderly with a higher income report better health [6,26]. Better self-rated economic conditions were related to good health among the aged [12]. Our results are basically in accordance with those of Cheng et al. (2002) [12] but suggest higher external validity. The fact that the association between subjective financial situation and self-rated health is not equal in urban and rural areas may indicate that living environment affects the respondents' self-evaluation of the financial situation. Consumption need and consumption expenditure may vary between areas. Living in an urban area may be remarkably expensive because services and goods must in the main be bought and this requires more cash. Perhaps the need for essential services may be more prevalent in urban areas because of loneliness, i.e. lack of neighbourly help. Housing may be more expensive in urban than in rural areas too. All these matters may increase the prevalence of debt problems in urban areas also. Furthermore, perceived adequacy of income may not be merely an indicator of income level but it may reflect underlying wealth and varying assets according to living area. For many aged persons objective financial resources do not adequately reflect their subjective assessment of financial contentment. Financial adequacy goes beyond objective monetary conditions [12].

It is not possible to draw causal associations between adequacy of income and self-rated health because of the cross-sectional design of the study. The relation may be bi-directional. Being healthy may be a prerequisite for adequate income or people who have poor health may have inadequate income because of their illness. However, even after adjusting for depression the results were very similar. This indicates that the results are hardly skewed at all by the state of respondents' mental health (figures not given in tables).

In all, our results, based on a large and locally representative sample and including three indicators of SES, extend our knowledge of the relation of SES and subjective health bringing the notion of different living environments (urban, rural population centre, sparsely populated countryside) into the discussion for the first time as far as we know. First, our results indicate a strong link between better financial standing in older age and good health, especially in urban areas. Second, the results indicate that adequacy of income is a stronger predictor of good health than actual income. We suggest, therefore, that future studies use subjective evaluation of financial situation in their analyses. This might give

very detailed information regarding the strained circumstances of population groups. For health promoters our results suggest that they should address this underlying problem and be aware of the significance of personal expectations and living conditions when aiming to enhance the health of ageing people.

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