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ORIGINAL INVESTIGATION

Comparison of self-rated health in older people of St. Petersburg, Russia, and Tampere, Finland: how sensitive is SRH to cross-cultural factors?

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Abstract The aim of this study was to examine if there are differences in self-rated health (SRH) between older people in St. Petersburg, Russia, and Tampere, Finland. Two SRH measures were examined: a global measure without any frame of reference, and an age-comparative SRH with an explicitly elicited reference of age peers. The Tampere data, consisting of 737 60–89-year-old respondents, came from the Tampere Longitudinal Study on Ageing (TamELSA) in 1989. The St. Petersburg data, consisting of 1,168 people aged 60–89 years, came from the Planning of Medical and Social Services within Elder Care in St. Petersburg project (IPSE) in 2000. In both cities the data were collected by same structured questionnaire. Self-rated health, both global and comparative, was better in Tampere than in St. Petersburg when symptoms, chronic diseases and functional ability were adjusted for. Also, the association of chronic diseases with global SRH was different in St. Petersburg and Tampere. In addition to the real differences in the prevalence and seriousness of health problems, the differences in SRH may be caused by different ways of evaluating health. Our conclusion is that self-rated health is sensitive to cultural and social factors. Direct comparisons between different countries should be made with caution, and the differences in language use must be taken into account when interpreting the results.

Keywords Global self-rated health · Comparative self-rated health · Cross-cultural comparison · Old age

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Introduction

Self-rated health is a widely used measure in aging and health research. It is found to be an independent predictor of mortality (Idler and Benyamini 1997; Benyamini and Idler 1999; Mossey and Shapiro1982; Kaplan and Kamacho 1983; Heidrich et al. 2002, Vuorisalmi et al. 2005), and it is associated with other health outcomes, like functional ability and health service use (Dening et al. 1998; Idler and Kasl 1995; Farmer and Ferraro 1997). Self-rated health is one of the recommended measures of the World Health Organization and European Union for health monitoring across different countries (de Bruin et al. 1996; Robine et al. 2003). However, little is known about the comparability of SRH between different cultures in old age. Some studies have indicated that the level of self-rated health may differ, but the correlational structure of self-rated health is similar between the cultures (Jylhä et al. 1998; Lee and Shinkai 2003; Bardage et al. 2005). However, a cultural difference in the strength of the association between SRH and mortality has been reported (Appels et al. 1996).

Several ways of measuring self-rated health by a single question are found in the research literature (Idler and

Benyamini 1997). The main difference is whether any point of reference is offered. The non-comparative question, most frequently used, is usually assessed by asking the subject to rate his or her health in general, without any frame of reference (global SRH). In some studies a point of reference is offered, which often is the health of age peers (age referential or comparative question). Recent studies suggest that different wordings in SRH questions are not entirely comparable, especially if the study population has a large age range (Baron-Epel and Kaplan 2001; Heidrich et al. 2002; Vuorisalmi et al. 2005; Vuorisalmi et al. 2006).

This study examines the self-rated health of old people in two cities: St. Petersburg in Russia and Tampere in Finland, both of which are considered to be large in their own countries. St. Petersburg and Tampere are in many ways different social and cultural environments. Finland has long been a stable society representing a Nordic welfare state whereas Russia has faced enormous economic and social problems in recent years. The transition from being a communist state into being a democratic state with a market economy seems in many ways to be have been accompanied by a dramatic deterioration of the already poor public health, demonstrated by rising mortality and falling life expectancy. At the same time a clear divide in self-rated health has been reported between Russia and Western Europe, Russians reporting more frequently less than good health (Carlson 1998). The population is decreasing, and it is ageing, too (Demographic situation in St. Petersburg 2000).

Studies focusing on the self-rated health of old people in Russia are scarce. Most studies concentrate on the self-rated health of middle-aged population (Carlson 2000; Bobak et al. 2000; Carlson 1998; Bobak et al 1998). These studies have found a strong association between socioeconomic factors and self-rated health, and the level of self-rated health was lower than that found in the Western populations. Bobak et al. (2004) compared self-rated health and physical disability among middle aged and older people in Russia and Sweden. Their results showed similar levels of self-rated health and physical functioning in the two countries up to the age 45, but after that the decline in both outcomes was much faster in Russia than in Sweden. Palosuo et al. (1998) compared self-rated health among 18–67-year-old people in Helsinki, Finland, and Moscow, Russia. The Muscovites reported poorer self-rated health compared to the people of Helsinki. In Helsinki poor self-rated health increased by age only among those with a long-standing illness whereas in Moscow self-rated health deteriorated both among the healthy and the ill with advancing age.

In this study the focus is on the comparability of self-rated health between two different cultures in old age. This study offers a rare opportunity to compare self-rated health between different social and cultural environments, using data which have been collected with the same questionnaire.

The following are the study questions: (1) Are there differences in global and comparative self-rated health between St. Petersburg and Tampere when other health indicators are adjusted for? (2) Are there differences in the associated factors with self-rated health in St. Petersburg and Tampere?

Methods

Study population and design

The Tampere data came from the TamELSA—the Tampere Longitudinal Study on Ageing research program which is a population-based study of living conditions, health and functioning, life-styles and use of services among older people. TamELSA started in 1979 as a part of The Eleven Countries Study, later known as the European Longitudinal Study on Ageing (ELSA) (Jylhä et al. 1992). The sample for this study comes from the first follow-up in 1989. The sample was provided by the National Population Register Centre, and it included 1,038 home-dwelling and institutionalized people aged 60–99 years:

1. 518 persons who were interviewed in the first wave of TamELSA in 1979 and were alive on 1 February 1989
2. 520 new respondents, aged 60–69 years

A sample was stratified by sex and 5-year age cohort.

A total of 830 persons were interviewed. The response rate was 80%. The data were collected in face-to-face interviews using a structured questionnaire. A proxy informant was used whenever the subject herself or himself, for physical or mental reasons, was unable to answer the questions (Jylhä et al. 1992). SRH was not asked if a proxy informant was involved ($n = 42$, 5% of the sample). The data of global SRH were also missing for 1 (0.1%) person. Comparative SRH was not asked if the interviewee was living in an institution ($n = 67$, 8% of the sample) and data on comparative SRH were also missing in two (0.2%) other cases. In this analysis, people aged 90 and over were excluded in order to obtain the sample equivalent with the sample of St. Petersburg. The final sample consisted of 737 60–89-year-old people; 349 (47%) were men and 388 (53%) were women.

A study was carried out in St. Petersburg as a part of the project "Improving the Planning of Medical and Social Services within Elder Care in St. Petersburg" (IPSE) in 2000. Since there were no up-to-date population registers available in St. Petersburg the sample was collected by searching for appropriate people from door to door. The original sampling frame included regional lists of possible respondents which represented the age and sex structure of the regions. Thirteen from the 19 districts were included in the sample, which consisted of 1,393 home-dwelling

persons aged 60–89 years. The number of refusals was 176. The number of interviewed persons was 1,216. SRH was not asked in cases where proxy informant was used ($n = 48$, 3.9% of the sample). The final sample consisted of 1,168 persons: 390 (33%) were men and 778 (67%) were women. The response rate as 87% (Pietilä et al. 2002).

The structured questionnaire used in this study was the original questionnaire of the ELSA studies in 1979 and 1989, with minor changes. The questionnaire was formulated first in English, and translated into Finnish for interviews conducted in Tampere, and into Russian for interviews conducted in Kiev. After that, different persons translated the questionnaires back into English (Heikkinen et al. 1983). The questionnaire used in Kiev was used in the interviews conducted in St. Petersburg in 2000.

Dependent variables

Global self-rated health was assessed by asking "In general, how would you describe your health? Is it very good, fairly good, average, fairly poor or poor?" For cross-tabulations it was categorized as good (very good and fairly good), average and poor (fairly poor and poor); this was done in order to have a sufficient number of respondents in each category. For logistic regression analyses, it was categorized as good (very good and fairly good), and not good (average, fairly poor and poor). Comparative self-rated health was assessed by asking "How would you describe your health compared to that of your age peers? Is it better, about the same, worse or cannot say". For logistic regression analyses it was categorized as better, and not better (about the same, worse and cannot say). "Cannot say" category was included into the "not better" category because earlier analyses (Vuorisalmi 2007) have shown that those who choose "cannot say" from alternative answer options have almost as many chronic diseases and functional disabilities as those who answer "worse".

Independent variables

Age was used as a continuous variable. Occupational class was categorized as non-manual, manual, farmers and others. Sex was used as a covariate in all analyses.

Functional ability was assessed with number of difficulties in basic (ADL) and instrumental activities (IADL) of daily living. The ADL activities were eating, using the lavatory, washing and bathing, dressing and undressing, getting into and out of bed and walking between rooms. The IADL activities were doing one's own cooking, doing easy housework, going out, cutting one's own toe-nails, walking at least 400 m, using stairs, and carrying a heavy load. The respondents were asked if they were able to do the tasks without difficulty, with difficulty but without help, only with help, or not at all. The variable functional ability was categorized as (1) no difficulty in ADL and IADL activities, (2) only IADL difficulties, and (3) ADL difficulties.

Comorbidity was measured as the number of chronic diseases that, according to the respondents, had been diagnosed by a physician. They were coded in the following categories: cardiovascular, musculoskeletal, nervous system, endocrine, gastrointestinal, infectious, respiratory, urinary, diseases of the skin, cancers, and others (ICD-9 classification). For analyses they were categorized as 0–1, 2–3, and 4 or more. The subjects were asked whether they had experienced the following symptoms during the previous 2 weeks: headache, stomach pain, lack of appetite, worsening of memory, sense of giddiness, tiredness or feelings of faintness, palpitation of the heart, tremor of the hands, excessive sweating without physical effort, difficulties in falling asleep, difficulties in breathing or shortness of breath without physical effort, unwillingness to do things or lack of energy, nervousness, irritability or bursts of anger, low spirits or depression, and aching or pain in the joints or back trouble. The number of symptoms experienced often or continuously was categorized as 0, 1–3, and 4 or more.

Statistical analyses

The differences between St. Petersburg and Tampere in the frequencies of categorical variables were tested by the Chi-square test. The relation of symptoms, chronic diseases and functional abilities with global and comparative SRH was examined by cross-tabulations and tested by the Chi-square test. The Chi-square test was also used to find out the trend of chronic diseases and symptoms in their association with SRH. After that, logistic regression analyses were performed to find out the independent association between self-rated health and determinants. First, the logistic regression analyses were conducted separately for St. Petersburg and Tampere. After that, the data were pooled together and the site was used as one determinant. All the logistic regression analyses were adjusted for age, sex, occupational class, symptoms, chronic diseases and functional ability. Finally, the interaction term site × health indicator was used in logistic regression analyses to find out whether site affects the association between chronic diseases, symptoms and functional ability with SRH.

Results

Sample characteristics

Table 1 shows the distribution of global and comparative SRH and other health indicators in St. Petersburg and Tampere.

Table 1 Distribution of global and comparative self-rated health and other health indicators in St. Petersburg and Tampere

	St. Petersburg		Tampere	
	N	%	*N*	%
Global SRH				
Very good	14	1	55	8
Fairly good	108	9	231	31
Average	562	48	280	38
Fairly poor	291	25	132	18
Poor	193	17	39	5
	P value < 0.001			
Comparative SRH				
Better	255	22	307	42
About the same	339	29	210	28
Worse	294	25	105	14
Cannot say	280	24	115	16
	P value < 0.000			
Chronic diseases				
0–1	470	40	456	62
2–3	497	43	232	31
4 or more	201	17	49	7
	P value < 0.000			
Symptoms				
0	190	16	220	30
1–3	393	34	365	49
4 or more	585	50	152	21
	P value $= 0.000$			
Functional ability				
No difficulty	422	36	337	46
IADL difficulty	454	39	301	41
ADL difficulty	292	25	99	13
	P value < 0.000			

Significances of differences in health indicators between St. Petersburg and Tampere tested by Chi-square test

Health was assessed as good or better, respectively, more often in Tampere than in St. Petersburg; the difference was statistically significant for both measures. In St. Petersburg the respondents reported significantly more symptoms, chronic diseases and functional disabilities than the respondents in Tampere.

Relation of self-rated health and other health indicators

The association of symptoms, chronic diseases and functional abilities with global and comparative SRH was examined by cross-tabulations and tested by the Chi-square test.

The results showed that the poorer the self-assessed health is either in global or comparative terms, the more the respondents have symptoms, chronic diseases and functional difficulties; this trend was obvious in both countries, and it was statistically significant for both SRH measures ($P < 0.001$ in all analyses, analyses not shown). Also, the Chi-square test showed statistically significant linearity ($P < 0.001$ in all analyses) between chronic diseases and SRH, and between symptoms and SRH; this considered both cities and both SRH measures.

Table 2 Associations of determinants with good global SRH

	St. Petersburg			Tampere		
	P value	OR	95% CI	*P* value	OR	95% CI
Age	*0.39*	0.98	0.95–1.02	*0.18*	1.01	0.99–1.04
Sex						
Female		1			1	
Male	***0.03***	**1.57**	**1.02–2.41**	*0.14*	0.74	0.54–1.10
Occupational class	*0.25*			***<0.001***		
Manual		1			1	
Others		1.79	0.96–3.34	***0.01***	**2.48**	**1.16–5.26**
Farmers		2.02	0.34–11.83	*0.05*	0.32	0.10–1.01
Non-manual		1.40	0.87–2.24	***0.007***	**1.70**	**1.16–2.49**
Chronic diseases	*0.30*			***<0.001***		
4 or more		1			1	
2–3		0.74	0.31–1.73	*0.13*	3.20	0.70–14.53
0–1		1.51	0.66–3.44	***0.001***	**13.52**	**3.07–59.44**
Symptoms	***<0.001***			***<0.001***		
4 or more		1			1	
1–3	***<0.001***	**4.02**	**2.07–7.79**	***<0.001***	**4.01**	**2.04–7.90**
0	***<0.001***	**9.52**	**4.69–19.30**	***<0.001***	**6.92**	**3.36–14.23**
Functional ability	*0.06*			***<0.001***		
ADL difficulty		1			1	
IADL difficulty		1.02	0.46–2.23	*0.28*	1.51	0.71–3.21
No difficulties		1.96	0.91–4.21	***0.003***	**3.28**	**1.49–7.29**

Results of logistic regression analyses adjusted for age, sex, occupational class, chronic diseases, symptoms and functional ability

Determinants of self-rated health

Tables 2 and 3 shows the results of logistic regression analyses conducted separately for St. Petersburg and Tampere. Determinants were age, sex, occupational class, symptoms, chronic diseases, and functional ability.

In both cities the likelihood of good global SRH was higher among those with a low number of symptoms. In St. Petersburg the likelihood of good global SRH was significantly higher among men compared to women. In

Table 3 Associations of determinants with comparative SRH

	St. Petersburg			Tampere		
	P value	OR	95% CI	*P* value	OR	95% CI
Age	*0.001*	1.04	1.01–1.06	*<0.001*	1.06	1.04–1.09
Sex						
Female		1			1	
Male	*0.13*	0.77	0.55–1.08	*0.18*	0.78	0.55–1.12
Occupational class	***<0.001***			***0.01***		
Manual		1			1	
Others	0.89	1.48	0.94–2.34	*0.62*	1.18	0.59–2.37
Farmers	0.60	1.45	0.35–5.97	*0.73*	0.86	0.38–1.93
Non-manual	**0.01**	**1.51**	**1.07–2.13**	***0.02***	**1.48**	**1.04–2.12**
Chronic diseases	***0.01***			*0.6*		
4 or more		1			1	
2–3	*0.72*	1.10	0.64–1.86		0.55	0.26–1.17
0–1	***0.03***	**1.77**	**1.04–3.03**		1.82	0.89–3.83
Symptoms	***<0.001***			***<0.001***		
4 or more		1			1	
1–3	***<0.001***	**2.44**	**1.68–3.54**	***0.03***	**1.70**	**1.03–2.81**
0	***<0.001***	**3.61**	**2.28–5.73**	***<0.001***	**2.89**	**1.64–5.11**
Functional ability	***<0.001***			***<0.0010***		
ADL difficulty		1			1	
IADL difficulty	*0.11*	1.49	0.91–2.45	*0.24*	1.43	0.78–5.73
No difficulty	***<0.001***	**3.97**	**2.37–6.65**	***0.002***	**2.84**	**1.45–5.56**

Results of logistic regression analyses adjusted for age, sex, occupational class, chronic diseases, symptoms and functional ability

Tampere, a low number of chronic diseases, good functional ability and occupational classes non-manual and others were associated with good global SRH.

Better comparative SRH was associated with fewer symptoms, good functional ability, non-manual occupational class and higher age in both cities, and in St. Petersburg it was also associated with a low number of chronic diseases.

Next, data were pooled together and site was included as one determinant in logistic regression analyses (Table 4). Other determinants were, again, age, sex, occupational class, chronic diseases, symptoms and functional ability.

The likelihood of good global SRH was higher among the respondents in Tampere (OR 4.31; 95% CI 3.24–5.73) compared to the respondents in St. Petersburg. Good global SRH was associated with low number of chronic diseases, a low number of symptoms, good functional ability and occupational classes non-manual and others.

When comparative SRH was used the likelihood of better SRH was, again, higher in Tampere (OR 1.81, 95% CI 1.43–2.29) than in St. Petersburg. A low number of chronic diseases, a low number of symptoms, good functional ability, higher age and non-manual occupational class were associated with better comparative SRH.

Table 4 Associations of determinants with good global and better comparative SRH

	Global SRH			Comparative SRH		
	P value	OR	95% CI	*P* value	OR	95% CI
Age	*0.59*	1.00	0.98–1.02	***0.000***	**1.05**	**1.03–1.07**
Sex						
Female		1			1	
Male	*0.87*	1.02	0.77–1.35	*0.05*	0.78	0.62–1.00
Site						
St. Petersburg		1			1	
Tampere	***<0.001***	**4.31**	**3.24–5.73**	***<0.001***	**1.81**	**1.43–2.29**
Occupational class	***<0.001***			***0.01***		
Manual		1			1	
Others	***0.001***	**2.13**	**1.35–3.37**	*0.07*	1.41	0.97–2.05
Farmers	*0.15*	0.50	0.19–1.29	*0.93*	1.02	0.51–2.05
Non-manual	***0.003***	**1.56**	**1.16–2.09**	***0.001***	**1.51**	**1.18–1.92**
Chronic diseases	***<0.001***			***<0.001***		
4 or more		1			1	
2–3	*0.77*	1.11	0.59–2.30	*0.53*	0.87	0.56–1.33
0–1	***<0.001***	**3.58**	**1.78–7.20**	***0.003***	**1.88**	**1.23–2.88**
Symptoms	***<0.001***			***<0.001***		
4 or more		1			1	
1–3	***<0.001***	**4.09**	**2.57–6.50**	***<0.001***	**2.14**	**1.59–2.89**
0	***<0.001***	**8.09**	**4.94–13.25**	***<0.001***	**3.38**	**2.38–4.79**
Functional ability	***<0.001***			***<0.001***		
ADL difficulty		1			1	
IADL difficulty	*0.41*	1.24	0.73–2.12	***0.03***	**1.51**	**1.04–2.20**
No difficulty	***0.001***	**2.53**	**1.46–4.38**	***<0.001***	**3.38**	**2.40–5.42**

Results of logistic regression analyses, adjusted for age, sex, site, occupational class, chronic diseases, symptoms and functional ability

Finally, interaction terms were used to test whether the site influenced the association between objective health and SRH. A statistically significant interaction ($P = 0.01$) was found between site and chronic diseases in their association with global SRH. Those who had only 0–1 chronic diseases were more likely to rate their health as good in Tampere than in St. Petersburg (OR 7.08; 95% CI 1.36–36.90). For symptoms and functional ability, the interaction term was not statistically significant. Also, there was not any statistically significant interaction between health indicators and site in their association with comparative SRH.

Discussion

In this study we examined differences in global and comparative self-rated health and their associated factors between St. Petersburg, Russia, and Tampere, Finland, using measures collected with identical structured questionnaires. Our main finding was that the respondents in Tampere were more likely to make positive health assessments compared to the respondents in St. Petersburg even when symptoms, chronic diseases and functional ability were adjusted for (see Table 4). This was true for both global and comparative SRH.

There are several possible explanations for the differences observed. First, they may be caused by real differences in morbidity that were not captured by our measures. Second, they may reflect social and cultural differences other than health status that, among other things, can influence the cultural ways of speaking about health and the answering styles. Third, the differences may be artifacts that are in fact caused by methodological problems. We will first discuss the possible effects of methodological fallacies.

For the two cities, the data used in this study were collected 11 years apart, in 1989 in Tampere and in 2000 in St. Petersburg. The TamELSA study includes data also from 1999, but the number of survivors at this third wave of the study was so low that it was not optimal for comparison. If self-rated health in the examined age group in Tampere was worse or the number of measured health problems was higher in 1999 than in 1989, this cohort effect could contribute to the results. The analyses (not shown) that were conducted in the Tampere data collected in 1999 showed that 70–89-year-old people rated their health better in 1999 than the people of the same age in 1989. Also, the number of chronic diseases, the number of symptoms, and functional ability implicated better health among the 70–89-year-old people in 1999 than in 1989. The association between other health factors with self-rated health were very similar in 1999 and 1989. These results implicate that the difference between the cities would still remain, or be even greater if data were used for Tampere. We can not exclude the possibility that the difference could have some influence on the results, but it is highly unlikely that it would entirely explain it. The remaining differences may be due to other factors, such as cultural differences.

Also, the sampling method was different in the two cities. In Tampere the sample was drawn from an official population register, the survivors in 1979 and the new 60–69-year-old groups 1989, and the sampling was stratified by age and sex. In St. Petersburg the data were collected by searching appropriate people from door to door, and it was not stratified. The age distribution was similar in both data, but the gender distribution differed. Because of the 4.2 times higher mortality rate for men than women (Pietilä et al. 2002) in St. Petersburg, twice as many women as men were collected, whereas in Tampere the number of men and women was almost equal, due to the stratified sampling method. In all analyses, sex was included, and we do not believe that the different sex distribution could be responsible for the main results.

The attrition of the sample may cause methodological problems in longitudinal studies. In TamELSA loss for other reasons than death among the survivors ($n = 518$) was at a relatively low level ($n = 63$, 12%). Only two persons were too sick to be interviewed. The number of refusals among survivors was 36 (7%). The reluctance to talk about one's affairs was the commonest argument for refusal. Analyses showed that the situation of those who refused to participate did not markedly differ from the situation of those who participated in the follow-up in 1989. The longitudinal comparisons have shown that the number of health problems was increasing among the survivors. The health of survivors seemed not to be better than the health of the population of Tampere in those age groups those who participated (Jylhä et al. 1992). Thus, it seems that selective attrition does not highly affect the results of this study.

All the indicators indicated poorer health status in St. Petersburg than in Tampere. Still, the possibility must be taken into account that the differences in self-rated health could be caused by real differences in the prevalence and seriousness of health problems that our measures did not sufficiently cover. In fact, it is plausible to assume that, due to better health services, older people in Tampere may have more accurate information of their medical conditions than their age peers in St. Petersburg. Therefore, it is highly likely that to some extent the difference in self-rated health, even after adjustments, can be explained by unmeasured poorer objective health status in St. Petersburg.

A major strength of this study was the identical questionnaire. Still, although the questions used in this study were asked similarly, it can not be verified that the questions are understood similarly. It is difficult to translate evaluative questions so that the meanings are the same in different languages. It can not be excluded that the translation process has influenced the formulation of the questions and, thus, changed their meaning.

However, we suggest that the most substantive explanations for the differences in self-rated health that was maintained after other health indicators were adjusted for may be found in social and cultural factors. These may include, for instance, differences in the cognitive process of evaluation, differences in the way different aspects of "objective" health status—and perhaps also aspects other than traditional health factors—are taken into account in self-ratings, differences in the willingness to report individual health conditions, and different answering styles.

Earlier studies have mentioned chronic psychosocial stress caused by the socioeconomic changes after the fall of communism as a probable cause of deteriorating health situation in Russia and other East European countries (Palosuo 2000a; Gilmore et al. 2002; Pikhart et al. 2004). Carlson (2004) found that the economic situation had a strong effect on people's self-rated health, and people in countries of the former Soviet Union tend to be worse off than in Western Europe in terms of their financial situation.

In relation to the number of reported health problems, the response scale may be used differently. Earlier research indicates that, probably depending on cultural conventions in describing normal health (Idler and Benyamini 1997), "normal" or "good" health can be understood differently in different cultures, and they may have different reference levels. Palosuo (2000b) noticed in her study among middle-aged people in Russia and Finland that "normal" Russian health tolerated more illness than the "average" Finnish health and having no long-standing illness did not automatically mean that self-rated health would be good in Russia. In our study the "average" category was more often chosen by the respondents in St. Petersburg than in Tampere, which is consistent with other studies between Russia and Western countries indicating different use of response scales between different countries (Palosuo 2000b). Further, observed differences may also be a question of cultural modes of speaking. Nancy Ries talks about a "litany of suffering", which means a larger collective way of dealing with the transformation from a communist system to a capitalist system and which helps Russian people to cope with troubles that the perestroika caused them (Ries 1997). Pietilä and Rytkönen (2008) claim that stress has become an intermediary concept articulating a shared, cultural experience of the changes in Russian society and their effects on individuals everyday life and health.

Former cross-cultural studies have reported a homogenous association of medical indicators with self-rated health in spite of differences in the level of self-rated health (Jylhä et al. 1998; Lee and Shinkai 2003; Bardage et al. 2005). In this study, incongruence in the association of chronic diseases with SRH was found. The difference existed between St. Petersburg and Tampere, and between SRH measures. These results indicate there may be differences in the site-SRH relationships depending on the number of elements of health or diseases (Bosma and Appels 1996). The results showed also different site-SRH relationship depending on which of the SRH measures was used (Vuorisalmi et al. 2006). In addition, the way diseases are reported may vary between different cultures (Börsch-Supan et al. 2005).

In conclusion, this study indicates that self-rated health is sensitive to cultural and social factors. In addition to the real differences in the prevalence and seriousness of health problems, the differences in SRH may be caused by differences in the way various aspects of "objective" health status—and perhaps also aspects other than traditional health factors—are taken into account in self-ratings, differences in the willingness to report individual health conditions, and different answering styles. Also, socioeconomic factors may influence the way health is assessed. The results indicate that direct comparisons between countries should be made with caution, and the differences in language use must be taken into account when interpreting the results.

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