Disability of Estonian adult population: evidence of Estonian FFS

Katre Altmets[1,2], Kalev Katus[3], Allan Puur[3], Astrid Saava[1], Anneli Uusküla[1] –[1]Department of Public Health, University of Tartu, [2]Health Investigation and Occupational Health Centre of Tartu University Clinics; [3]Estonian Interuniversity Population Research Centre;

Background

In consequence of the changes in population age structure, the limitations of daily activities and in social participation (disability) become rise as the largest health-related burden in demographically developed countries. The stagnation of mortality is a specific determinant of population ageing in Estonia, belonging to the group of the west and north European countries characterized by the early onset of demographic transition. If in history, the function of integration and assisting in everyday living of elderly was filled by family, nowadays the intimate environment of elderly has been changed. Measurement of the activities of daily living is critical, because they have been found to predict future disability in remaining activities. Socio-economic and demographic factors are in great importance of preventing the limitations.

Purpose

To provide an overview of the prevalence, severity and types of limitations, their differential spread in the subgroups and the assistance in Estonian population aged 20-80 to as a tool to inform health and social policy for better integration the elderly to the social life.

Material and methods

A cross-sectional study was carried out as a second round of the Estonian Family and Fertility Survey (national project of the European FFS). A random sample (n=7855, 2821 men and

5034 women) of the target population (birth cohorts 1924-1983, residents of the country) was abstracted from the Population census of 2000 database. The replacement procedure, proportionality in respect to regional, demographic and social composition of the total population and single-stage selection procedure was opted as the sampling principles. In 2004, face-to-face interviews (in respondents´ homes, in Estonian or Russian languages) were conducted by the team of trained interviewers. For data collection an instrument based on European Family and Fertility survey was used. The standard survey inquired on socioeconomic and demographic data, and was complemented by the health module based on Guidelines for the collection of data on 18 HIS items (Round 2004).

The presence and different types (N=13) of the limitations was assessed as a self-report any injury or disease limiting work, studies or coping with everyday life. In addition, the hypothetical prevalence of limitations if including non-respondents with poor health status, was calculated. The estimated need for assistance and the real assistance in Estonian adult population were evaluated. Also, the assistance rate was analyzed.

Descriptive statistics, two-sample t-test, χ^2 test (STATA 9.0) and binary logistic regression (SPSS 15.0) were used in data analysis (significant level 0,05). The different impact of socio-economic and demographic variables to the prevalence of activity limitations was determined in all levels of limitations and in the cases of severe limitations (severe limitations at least in one activity) as the dependent variable.

Main results

Of the total sampled (N= 11637) 7855, accordingly, 2821 men and 5034 women participated (response rate 70,2%). One person was excluded because the missing data on limitation status, 142 answers due to the missing data on severity of the limitation, and 5 persons were

excluded from the analysis of real assistance rate, unmet need for assistance and assistance frequency.

The prevalence of daily activity limitations was 18,5% (95% CI 17,6 – 19,4), accordingly, 1455 persons: 529 men and 926 women from all interviewed. No significant differences were found between genders (men vs. women 18,8% and 18,4%, respectively p=0.699).

Limitations increased with age, attaining the maximum prevalence in the oldest birth cohort (respectively, 47,8% in men and 51,5% in women). A moderate rise in the prevalence of limitations in the linear setting appeared in the birth cohort of 1944-1948 in men.

Of the types of limitation the prevalence was highest for studying and working (15,4%, 95% CI 13,3 – 17,4), followed in the declining order by doing housework (13,0%, 95% CI 10,9 – 15,1), moving outside of home (12,3%, 95% CI 10,2 – 14,4), dressing (12,1%, 95% CI 9,9 – 14,2), etc. In the two oldest cohorts the limitation of moving outside of home was most prevalent.

In the adjusted model, logistic regression analysis, performed for activity limitations (joint mild and severe restriction categories), showed an increase of one year of age being associated with the increase in the odds of limitations by a factor of 1,09 (95% CI 1,05 and 1,12). Women were significantly related to a little lower likelihood of the activity limitations: the odds of being limited were around 13 percentage points lower than for men – the reference category. There was a slightly (9 percentage points) lower chance in foreign born for all limitations, but even 22 percentage points higher chance for severe limitations in comparison of the native born. Urban inhabitants had 20 percentage points lesser opportunity for limitations than rural inhabitants. If primary education increased the risk of limitations 1,81 times, then higher education, in opposite, behaved as a protection factor (0,60 times). Single people turned to have 1,80 times higher risk for limitations. For having severe limitations, single people came into view as even more (2,08 times) pronounced.

The estimated need for assistance (the prevalence of severe limitations) was 10,7% (95% CI 8,6 – 12,9) among the total population. Real assistance was received by 8,7% (95% CI 6,5 – 10,9) of the total. The rate of receiving assistance was 2% in the youngest birth cohorts and reached to 33,8% in the birth cohort of 1924. Men were more likely to receive everyday assistance than women (respectively, 51,4% and 39,8%, $p < 0,05$). Of the population with severe limitations everyday assistance was received by the 43,8% (51,4% men and 39,8% women) but 18,5% did not receive any assistance.

Conclusions

This is a first study analyzing the limitations in daily activities and social participation, from a former socialist economy country.

1/5 of Estonian adult population (age of 20-80) had limitation in some daily activity.

Age, expectedly, was the strongest predictor of the limitations. The rise of limitations in the birth cohort of 1944-1948 in men can be a result from the influence of difficult social conditions after the Second World War to the health of this population or their mothers`. In respect to gender, in opposite to several studies, we found, that women did not estimate their health worse compared with men as it results from most studies. This could result from the covering of a wide range of adult age groups in our study. Urban inhabitants had a lower risk for limitations compared with rural people, but this equalized in the case of severe limitations. These implications could be explained with the little differences between urban and rural areas in Estonia. Education is often regarded as an health indicator of first choice because of being normally fixed early in life, and thus problems of reverse causation are not serious. The better health status of married or cohabiting population compared with single and divorced/separated can explain with a family being a critical part of the environment. In current study, about 1/10 from interviewed and a little more than a half from the limited

population had severe limitation in some activity of daily living. Majority (4/5) of the population with severe limitations received assistance, but there was 1/5 from unhealthy people with unmet assistance need.

The weaknesses of current study arise from the cross-sectional approach to activity limitations. Secondly, one should take into account inevitable non-response (29,8%). At the same time, from the strong side of the study, rigorously implemented probability sampling and use of trained interviewers should be emphasized.

The main conclusion to be drawn from this study is, that with population ageing, daily activity limitations is an increasing problem. Reasonable planning of resources, addressing specific risk groups to prevent limitations in daily activities, should receive increased priority.