EPC extended abstract: An impending burden of disabled older adults? - Health dynamics of older populations across four continents

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Short Abstract

Nowadays, life expectancy is increasing particularly in mid and high income countries, which goes along with increased shares of older populations. Therefore the health status of those population ageing and its determinants are a broadly discussed issue especially as good health enhances quality of life. Moreover, high shares of unhealthy older adults are a risk for societal burden. Prior work has shown that health status does not only depend on biological factors such as age and sex, but also on socio-demographic factors, e.g. marital status and education. The main purpose of this study is to show and analyse the variation in several dimensions of health from an international perspective. Here, the determinants of disabilities and bad health are analysed in 26 countries across Africa, Asia, America, and Europe. The data used come from six comparable ageing surveys (HRS, JSTAR, KLOSA, SHARE, SAGE, and TILDA). In general there are remarkable differences between the health status of the investigated sample. For instance, the United States turns out to have the unhealthiest population aged 50+ with about 74% reporting at least one chronic disease.

Key words: disability, disease, self-reported health, ageing, cross-national comparison

1 Introduction

In most of the industrialised countries population is ageing. In particular, the share of elderly is growing rapidly in North America and Europe, which

motivates several researches to investigate this phenomenon and analyse the healthiness of older adults. Unhealthy older populations can result in a societal burden, in contrast to healthy and productive older adults. To this end, it is very important to analyse healthiness with respect to ageing to discover future challenges in time.

Countries such as India and China are currently not so much affected by the burden of ageing as for instance European countries and Japan. To give an example, only 5.5% of India's population is above an age of 65, which affects the government to focus on the majority of its social and industrial potential, namely the young. Whilst many older adults are suffering from mental and affective disorder also their physical abilities are not generally satisfactory. However, the share of the older adults in percentage terms is not large, but in total numbers it is huge. These are non-negligible and growing groups, which deserve a good quality of life in their advanced ages.

Reporting the quality of ageing in terms of being able to perform activities in a daily late-life is often estimated by disabilities with ADLs and IADLs. These measures are well defined, but especially doing cross-country comparisons these self-reported measures can cause bias, as for instance cultural differences have to be considered. Therefore we will investigate IADLs, ADLs as well as other body limitations, but moreover we will measure these against the more objective muscular fitness measure grip strength. In literature the simple non-invasive marker of muscle strength is often used to predict morbidity and limitations in physical functioning. So health proxied by grip strength will be analysed with proper statistical methods. We will also contrast the health of the elderly for mid and high income countries as Japan with 22% of the population above 65 with China with only 9%, controlling for age, gender and education.

Motivated by the described situation we investigate the health of older population concentrating on 26 countries across four continents. The primarily focus is on reflecting elderlies current health situation in terms of physical and mental functioning by age and sex. In addition determinants of this variation are analysed, in part to provide a possible understanding of the current problems ageing societies face.

2 Study population

The range of countries offers an overview of various world regions. In this study we use the six surveys HRS, JSTAR, KLOSA, SAGE, SHARE, and TILDA, which are designed to be comparable and nationally representative of the non-institutionalised population aged 50+. They all provide information on a large number of indicators and measures of health. The Health and Retirement Study (HRS) is a large-scale longitudinal project launched by the University of Michigan in 1992 in the USA. For our analysis we use

wave 10 with data collected in 2010 [3]. In 2007 the Japanese Study of Aging and Retirement (JSTAR) was conducted by the Research Institute of Economy, Trade, and Industry and Hitotsubashi University [2]. The panel survey was continued in 2009 with the second wave, which will be used here. In 2006 mental, affective and physical functioning of South Korean elderly are observed within the Korean Longitudinal Study of Ageing (KLoSA). The Irish Longitudinal study on Ageing (TILDA) is one of the youngest among the European ageing surveys, whose first wave was conducted in 2009. The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary and cross-national panel database of micro data on health, socioeconomic status, and social and family networks of over 34,000 individuals in 15 European countries [1]. The third wave, which we use for our study, was collected in 2010. Finally, developed by the WHO Multi-Country Studies unit as part of a Longitudinal Survey Programme, the Study on global AGEing and adult health (SAGE) compiles comprehensive longitudinal information on the health and well-being of adult populations and the aging process in six countries (including China, India, Ghana, Mexico, Russian Federation, and South Africa). Adults above the age of 18 years are interviewed, whereat we investigate in about 35,300 participants aged 50 years and higher. The survey instruments and methods were adapted from those used by surveys, like HRS and SHARE.

2.1 Measurement

A commonly used health measure is the indicator of general health status: self-reported health. The wording of the question is quite comparable, but two different five-item scales are used within the surveys. Participants of JSTAR and SAGE were asked to rate their health from very good over good and moderate to bad and finally very bad. In HRS, SHARE, and TILDA interviewees rated their health on a more positive scale (e.g. excellent, very good, good, fair, and poor). Therefore we transformed the variable into a binary representing good and bad general health status. Next to this, six further measures are investigated. To assess problems with daily living, we proxy difficulties in activities of daily living (ADL) with at least one limitation. The instrumental activities of daily living (IADL) were not asked in the Korean survey KLOSA, but however will be included in our analysis for all other countries with the two categories no problems with IADL and at least one difficulty. The limitations in physical functioning were assessed with nine questions which are clustered into upper and lower body limitations, whereat we again differentiate between as at least one and less body limitation. Moreover, all ageing surveys included a section about the presence of several chronic diseases. In this study we have selected seven diseases which influence physical functioning (e.g. arthritis, cancer, diabetes, heart disease, hypertension, lung disease, and stroke).

For all countries participants self-reported their body mass measures such as weight and height. Whereat in a few surveys weight and height were additionally measured by a trained interviewer. Here, for comparability issues only self-reported measures are included for further analysis.

3 Preliminary results

Table 1 gives descriptive statistics by country, for our health measures. There is a large international variation in all health measures. Interestingly, the United States show the highest shares of difficulties with ADLs as well as upper and lower body limitations, whereas only 8.7% of the older adults self-report bad health. Regarding the objective health measure grip strength, South Africans appear to be the strongest with 40kg on average, while Mexicans reach only about 23kg on average.

Next to pointing out the differences with descriptive statistics we will apply multivariate logistic regressions to assess the varying influences of socio-demographic indicators on health by country. Indicators such as age, education, sex, marital status and wealth will be considered in the regressions.

	sample size size	mean age	mean grip strength	percentage female	percentage ADL	percentage disease	percentage upper body	percentage lower body	percentage bad health
Austria	5188.00	65.97	34.58	57.20	10.30	51.90	27.00	37.30	6.60
Belgium	5260.00	65.65	35.02	54.60	16.00	50.40	29.90	45.10	7.10
China	13408.00	63.16	28.60	53.10	1.70	39.60	7.20	7.00	20.50
Czech Republic	6060.00	65.74	34.90	57.00	9.80	63.40	30.10	39.20	14.20
Denmark	2342.00	65.88	37.21	53.80	7.80	46.70	16.70	28.60	5.30
Estonia	6710.00	66.77	33.30	59.40	17.00	64.90	36.70	48.60	22.10
France	5766.00	66.66	33.04	55.90	12.00	50.40	30.20	38.00	12.10
Germany	1614.00	68.61	34.97	52.60	13.90	60.40	28.70	50.60	10.20
Ghana	4732.00	64.21	29.13	50.30	7.50	19.40	25.90	30.00	16.80
Hungary	3003.00	65.13	32.75	56.20	13.30	66.70	38.20	54.50	24.60
India	7150.00	61.86	24.41	49.40	11.50	27.00	25.40	40.30	20.90
Ireland	8175.00	63.53	28.02	54.20	8.60	51.30	25.30	37.50	5.10
Italy	3611.00	67.32	32.76	54.10	10.90	53.60	31.30	44.20	12.10
Japan	3861.00	63.47	29.09	51.00	5.10	64.50	7.40	13.50	18.00
Mexico	5019.00	68.39	23.11	60.50	11.20	52.20	31.10	32.60	12.50
Netherlands	2783.00	66.46	35.68	55.10	7.20	47.50	22.30	32.40	4.50
Poland	1871.00	68.35	33.56	55.10	17.80	56.80	43.70	45.80	22.90
Portugal	2022.00	65.25	30.53	55.90	17.20	58.10	38.10	49.00	19.20
Russia	4530.00	65.07	31.76	64.60	10.20	69.40	14.10	22.40	28.20
Republic of Korea	8458.00	64.81	26.00	56.40	5.50	43.80			34.60
Slovenia	2716.00	65.55	34.37	56.00	10.30	55.30	37.10	48.70	15.10
South Africa	3842.00	62.73	40.00	57.40	7.80	38.50	13.30	23.60	16.40
Spain	3626.00	68.63	29.31	54.30	14.80	55.40	38.60	44.00	16.60
Sweden	2116.00	70.98	34.80	53.70	11.40	52.20	19.70	40.80	8.70
Switzerland	3683.00	65.63	34.68	54.10	6.30	41.90	15.10	28.80	3.10
USA	36439.00	66.49	32.08	55.60	19.90	74.20	40.70	60.60	8.70

Table 1: Sample characteristics by country

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