Archives of Gerontology and Geriatrics 79 (2018) 13–20

Contents lists available at ScienceDirect

Archives of Gerontology and Geriatrics

journal homepage: www.elsevier.com/locate/archger

Self-rated health and its association with all-cause mortality of older adults in Poland: The PolSenior project

Aleksandra Szybalska[a,*], Katarzyna Broczek[b], Monika Puzianowska-Kuznicka[c,d], Przemyslaw Slusarczyk[a], Jerzy Chudek[e], Anna Skalska[f], Malgorzata Mossakowska[a]

[a] International Institute of Molecular and Cell Biology in Warsaw, Warsaw, Poland
[b] Department of Geriatrics, Medical University of Warsaw, Warsaw, Poland
[c] Department of Human Epigenetics, Mossakowski Medical Research Centre, Polish Academy of Sciences, Warsaw, Poland
[d] Department of Geriatrics and Gerontology, Medical Centre of Postgraduate Education, Warsaw, Poland
[e] Department of Internal Medicine and Oncological Chemotherapy, Medical Faculty in Katowice, Medical University of Silesia, Katowice, Poland
[f] Department of Internal Medicine and Gerontology, Jagiellonian University Medical College, Cracow, Poland

ARTICLE INFO

Keywords:
Self-rated health
All-cause mortality
Socio-economic status
Health status
Population-based study
PolSenior project

ABSTRACT

Objectives: Predictive effect of self-rated health (SRH) on mortality in older adults has been observed. The purpose of the study was to analyze this association in Poles aged 65+.

Methods: Data were obtained from the nationwide, multidisciplinary PolSenior project, conducted in a representative sample of older population. The study group comprised 4049 respondents (48.0% women) without significant cognitive deficit. SRH was measured using Visual Analog Scale. The analysis included selected socio-economic, health status and life-style factors. Mortality data were retrieved from the state registry.

Results: During 5-year period, 414 women (21.4%) and 672 men (31.8%) have died, including 17.5% of women and 26.6% of men with good, 21.6% and 32.9% with fair, 36.2% and 55.3% with poor SRH, respectively. Kaplan-Meier survival curves for SRH revealed significant differences for both genders. Univariate Cox regression analysis revealed significant hazard ratios (HRs) for mortality among women and men with poor compared to good SRH [2.48 (1.83–3.37); 2.62 (2.04–3.36), respectively] and those with fair compared to good SRH [1.29 (1.03–1.60); 1.29 (1.10–1.52), respectively]. Age-adjusted HRs for mortality were significant between groups with poor and good SRH [women: 1.98 (1.46–2.68), men: 2.06 (1.60–2.64)]. Multivariate Cox proportional hazard regression model including revealed significant HRs for mortality between women with poor and good SRH [1.67 (1.06–2.64)].

Conclusions: SRH was associated with mortality in both genders. After adjustment for age, this relationship was maintained in respondents with poor compared to good SRH. Inclusion of potential confounders demonstrated that SRH was an independent predictor of mortality only in women.

1. Introduction

Self-rated health (SRH), also known as self-reported, self-assessed or self-perceived health, is a simple method for evaluating individual's health status. According to the World Health Organization (WHO), SRH is recommended to be used in health interview surveys and considered as a very useful indicator in the field of public health (WHO, 1996).

The measurement of SRH is not time consuming, not burdensome for the respondents and easily applicable to large populations (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006). SRH is commonly used in psychosocial, epidemiological and gerontological studies (Kaplan & Baron-Epel, 2003) and clinical trials (Jylhä, 2009).

The relationship between SRH and mortality in older people has been well documented (Benyamini & Idler, 1999; DeSalvo et al., 2006; Idler & Benyamini, 1997; Moreno, Huerta, & Albala, 2014). Moreover, data collected within repeated cross-sectional survey from 1980 to 2002 in USA, indicated growing predictive value of SRH for mortality (Schnittker & Bacak, 2014). Researchers emphasized that nowadays societies are characterized by increased health awareness related to educational attainment growth, medicalization, development of medical technology and, most of all, access to health information. These indicators have an impact on SRH and, consequently, on its association with mortality.

The assessment of SRH of middle-aged population in Central and Eastern Europe (CEE) and former Soviet Union countries was in the

* Corresponding author at: International Institute of Molecular and Cell Biology in Warsaw, 4 Ks. Trojdena Street, 02-109 Warsaw, Poland.
E-mail address: a.szybalska@iimcb.gov.pl (A. Szybalska).

https://doi.org/10.1016/j.archger.2018.07.016
Received 12 December 2017; Received in revised form 29 June 2018; Accepted 23 July 2018
Available online 24 July 2018

scope of research, especially in the context of profound social and economic transformation at the end of 20th century (Bobak, Pikhart, Rose, Hertzman, & Marmot, 2000; Bobak, Murphy, Rose, & Marmot, 2007; Pikhart et al., 2001). The divide between Eastern and Western Europe in SRH, as well as in mortality has been also described (Bobak & Marmot, 1996; Carlson, 1998, 2004).

The relationship between SRH and mortality in older populations has been recently demonstrated for Western European countries and USA (Assari, 2016; Verropoulou, 2014), however, to our best knowledge, there is scarce evidence of such correlation in CEE countries (Bamia et al., 2017; Pac, Tobiasz-Adamczyk, Brzyska, & Florek, 2013; Tobiasz-Adamczyk, Brzyski, & Kopacz, 2008).

The demographic trends in rapidly ageing societies justify scientific efforts to fill this gap and contribute to understanding determinants of survival on the public health level.

The objective of the present study was to evaluate the association of SRH with all-cause mortality among older adults in Poland, participants of a cross-sectional PolSenior project. Specific aim was to assess the relationship between SRH and mortality in terms of gender, socio-economic factors, objective health measures, functional performance and life-style factors.

2. Material and methods

2.1. Study design

The present study is based on data obtained from the PolSenior project, an epidemiologic, multicenter, state-funded research conducted in Poland from 2007 to 2012 in a representative sample of the Polish elderly population. The PolSenior study group consisted of 4979 respondents (48.4% women) aged 65 years and over divided into equally sized five-year age cohorts. Detailed description of the study protocol has been described previously (Bledowski et al., 2011).

Respondents were interviewed face-to-face in their place of residence by trained nurses, who used structured questionnaires addressing medical and socio-economic aspects. Both questionnaires are available online (http://polsenior.iimcb.gov.pl/en/questionnaire). Additionally, blood pressure and anthropometric measurements were performed, blood and urine samples were collected. Ethical approval (No. KNW-6501-38/I//08) was obtained from the Bioethics Commission of the Medical University of Silesia in Katowice. All study participants or their proxies signed informed consent forms.

2.2. Definition of outcome variables

Self-rated health was measured using Visual Analog Scale (VAS), with score range from 0 to 10 points, where 0 meant the worst imaginable health status and 10 the best (Bledowski et al., 2011). SRH evaluation was based on respondents' own judgement and was dedicated to those without moderate or severe dementia (Klich-Raczka et al., 2014) assessed with the Mini Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975). For the purpose of this study, SRH score was arbitrary divided into three categories: 0–3 points – poor, 4–6 points – fair, 7–10 – good health.

In the current study, the 5-year all-cause mortality was taken into account, calculated as the time from the date of the interview to the date of respondent's death (if occurred) or censored to 5 years for respondents who had survived the observation period. The information about dates of deaths was drawn from the Universal Electronic System for Registration of the Population.

The present analyses were performed separately for women and men, because preliminary results revealed gender differences in terms of SRH (Bledowski et al., 2011).

2.2.1. Participants

For the purpose of this study, 885 of 4979 respondents of the PolSenior project were excluded due to problems with completing MMSE or suspicion of at least moderate dementia. Additionally, 45 eligible subjects did not evaluate SRH and thus, the analysed group comprised 4049 respondents (48.0% women). During 5-year period, 1086 respondents (27.0%) died: 414 women (21.4%) and 672 men (31.8%). Details of the study flow are presented in Fig. 1.

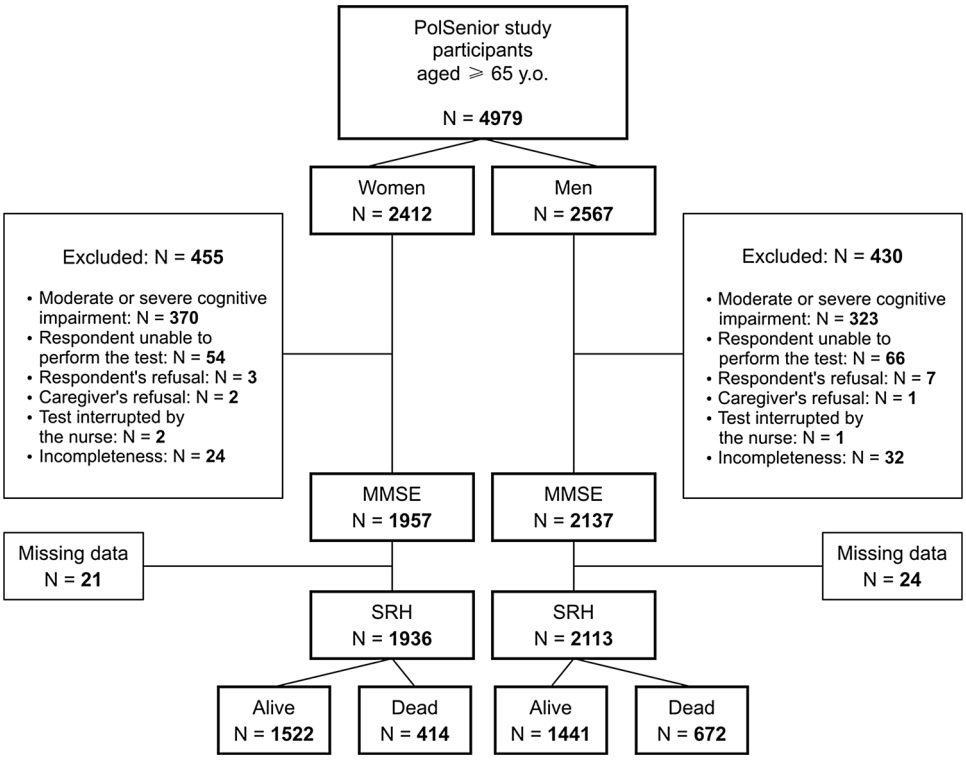

Fig. 1. Study flow.