The Journal of the Economics of Ageing 7 (2016) 43–52

Contents lists available at ScienceDirect

The Journal of the Economics of Ageing

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

Full length article

Association between wealth and health among older adults in rural China and India

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ARTICLE INFO

Article history:
Available online 28 February 2016

Keywords:
Older adult
Wealth
Active disease
Physical impairment
Functional limitation
Disability
India
China
WHO SAGE

ABSTRACT

Declining mortality and fertility has resulted in an increase in the size of older adult (60+) populations worldwide, often characterized by limited economic resources, poor health status and challenges with accessing health facilities, thereby increasing their vulnerability to various poor health outcomes. Using data from the World Health Organization's Study on global AGEing and adult health (WHO SAGE), economic differentials in health-related ailments were examined among rural dwelling older adults in China and India. Employing a disability framework, the associations between wealth status and four health outcomes, active disease, physical impairment, functional limitation and disability, were tested. Older adults from the three wealthiest quintiles (richest, richer and middle) were less likely to report the four health outcomes than the poorest one. Economic inequalities were largest for functional impairment and disability. Age advancement had a significant impact on each of the health outcomes. Equitable old age security schemes providing physical, social and economic support to this population, particularly to the economically disadvantageous groups in rural areas, are needed to ensure healthy aging in rural China and India.

Introduction

The global population of older persons is increasing at an unprecedented pace, with the Asia–Pacific region currently home to over half of the world's population aged 60 years and above. Estimates suggest that the number of older persons in the Asia–Pacific region will increase from 438 million in 2010 to more than 1.26 billion by 2050 (United Nations, 2013). This rise in the older adult population is the result of declining fertility and mortality rates. India and China, being the two most populous countries in this region and the world, will be home to the majority of older adult population. Currently India and China together constitute 31% of the world's population and 37% of the 60+ aged older adults' population (United Nations, 2013; Bloom and Eggleston, 2014). According to the United Nations (UN), in 1950 total 60+ aged population was 41 million in China (7%) which is likely to reach 454 million (33%) by 2050 (United Nations, 2013; Bloom and Eggleston, 2014). With declining levels of fertility and mortality, India is also undergoing demographic transition, albeit at a slower pace than China. Older adults aged 60+ years constituted 20 million (5%) in 1950, which is expected to increase to 323 million (20%) by 2050 (United Nations, 2013; United Nations Population Fund and HelpAge International, 2012).

The growing number of older people is both an opportunity and a challenge for individuals, families, and societies (Dey et al., 2012; Steptoe et al., 2014; Beckett et al., 1996; Shrira et al., 2014; Bloom et al., 2015; Clouston et al., 2013). Advancements in health care and medicines have helped people to live longer and healthier. However, significant proportions of older adults face difficulties. In economic terms, mandatory retirement ages, rural-to-urban migration and changing family structures pose considerable adversities for older persons (Agrawal and Arokiasamy, 2010; Husain and Ghosh, 2011; Dey et al., 2012). Increasing older populations may also mean a drop in the proportion of the productive labor force, and more demands on health care and social security systems and infrastructure. The challenges to systems posed by aging population are more serious for low and middle income countries, given the smaller economic foundations. It may also be that, unlike developed nations, poverty is more prevalent among older adults in developing nations (Marmot, 2006) and particularly pervasive in rural areas.

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http://dx.doi.org/10.1016/j.jeoa.2016.02.002
2212-828X/

Ample evidence exists in the literature showing the association between health and wealth. Studies have demonstrated a clear link between socioeconomic background, income, education and occupation, and health (Marmot, 2010; Acheson, 1998; Banerjee et al., 2004b). Relative economic conditions, measured in terms of economic inequality, are prime determinants of population health. Many studies in high income countries have also established associations between individual economic conditions and health (Huisman et al., 2003; Kahn et al., 2000; Torre and Myrskylä, 2014; Hildebrand and Kerm, 2009; Knesebeck et al., 2003). The mechanism by which economic inequality affects health is considered as a potential means of responding to the health-related challenges of increasing economic inequality (Rowlingson, 2011; Subramanian and Kawachi, 2004; Kawachi et al., 1999).

A few studies from China have also established the association between wealth and health in the older adult population. One such study found that nearly one-quarter of older adults were living below the poverty line, more than one in three struggled with activities of daily living (ADLs), and about 40% reported symptoms of depression (Zhao et al., 2013). The results were worse for older persons living in rural areas, compounded by lower education levels and lower annual income (Zhao et al., 2013). In addition, rural dwelling older adults had low rates of medical treatment and use of preventive healthcare services (Du Benfeng and Xuan, 2013; Dai, 2015). Surprisingly, we could not come across any study that has examined the relationship between wealth and health in rural older adults in India.

The present study examines the association between wealth and health among rural older adults in China and India. Our study tests the hypothesis that economic gradients do exist in health in rural older adults in China and India.

Data and method

Ethics statement

The study is based on a secondary data with no identifiable personal information. As such no formal approval from an institutional review board was required for this study. Ethical clearance was obtained for SAGE from the WHO Ethical Review Committee plus from the Ethics Committee, Shanghai Municipal Centre for Disease Control and Prevention, Shanghai, China for SAGE China Wave 1 and the Institutional Review Board, International Institute of Population Sciences, Mumbai, India for SAGE India Wave 1. The dataset is available for research use through the WHO SAGE website http://apps.who.int/healthinfo/systems/survey data/index.php/catalog.

Data

Analysis is based on data from the Study on global AGEing and adult health (SAGE) Wave 1 conducted in China and India during 2007–10 (Kowal et al., 2012a). The samples consist of adults aged 50 years and older, with smaller samples of younger adults aged 18–49 years included for comparison purposes. A multistage, stratified, clustered sample design was used to select households and respondents. Face-to-face interviews were used to ask questions about household assets, income, consumption, and transfers; background socio-demographic characteristics, and health conditions in 11,230 Indian and 14,811 Chinese adults (18 years or older). However, this analysis is restricted to rural-dwelling older adults aged 60 years and older resulting in final sample sizes of 2706 in India and 3623 in China. Notably, SAGE data captures the older adult population of China and India very well, and are nationally representative (Weir et al., 2014; Kowal et al., 2012a,b).

Variables

The dependent variable is the health status of rural older adults. For this analysis, health status of older adults was a multidimensional phenomenon operationalized by using the 'disablement' framework developed by Nagi (1964) and recently applied by Zimmer (2008) to assess the effect of economic inequality on health of older adults in rural Cambodia. Following the disablement framework, health status was categorized into four components: active disease, physical impairment, functional limitation, and disability. The specific questions used for constructing these variables are provided in the Appendix A.

Active disease was measured based on the following question format, "Have you ever been told by a health professional that you have . . .?" The set of health conditions included angina, arthritis, asthma, depression, diabetes, and stroke. A 'yes' to any of the six conditions and 'active disease' was coded as '1', or otherwise '0'.

Physical impairment refers to body dysfunction or difficulty in basic physical movement or sensory and cognitive ability. It was measured on the basis of information such as did the respondent have problems in concentrating, bodily discomfort, learning new tasks, recognizing an object/person. Vision was also included for a total of six questions to generate this variable. A 'yes' to any of six questions resulted in 'physical impairment' being coded as '1', or otherwise '0'.

Functional limitation was based on questions about whether in the last 30 days, the respondent had any difficulty sitting, walking, standing up, crouching, picking up things with one's fingers, climbing a flight of stairs, or extending arms above one's head. A 'yes' to any of these questions meant 'functional limitation' was coded as '1', or otherwise '0'.

Disability included seven items commonly referred to as activities of daily living (ADLs), which are tasks necessary for daily self-maintenance. This variable was based on responses to questions such as how much difficulty they have with bathing, eating, getting dressed, day to day work, carrying things, getting up from lying position, and toileting. A 'yes' response to any of the questions and then 'disability' was coded as '1', or otherwise '0'.

Independent variables were included on the basis of the disablement process described by Jette (2006). The schematic below (Zimmer, 2008) describes how pre-disease and disease states may lead to disability: