



A multi-level analysis of urban/rural and socioeconomic differences in functional health status transition among older Chinese

Zachary Zimmer^{a,*}, Ming Wen^a, Toshiko Kaneda^b

^a University of Utah, Institute of Public and International Affairs and Department of Sociology, 260 S. Central Campus Drive, Room 214, Salt Lake City, UT 84112, United States

^b Population Reference Bureau, Washington, DC, United States

ARTICLE INFO

Article history:

Available online 13 May 2010

Keywords:

China
Disability
Health transition
Mortality
Rural
Social class
Urban
Older people

ABSTRACT

The main purpose of the study is to assess urban versus rural differences in functional status transitions among older Chinese, aged 55+, and to examine how individual and community level socioeconomic indicators alter the rural/urban effects and themselves influence transitions. The study uses a hierarchical linear modeling approach that considers individual responses to be embedded within communities. Data come from the 2004 and 2006 rounds of the Chinese Health and Nutrition Survey. The study considers the functional transitions of 2944 individuals living across 209 communities in nine Chinese provinces. Functioning is measured at baseline as being able or not being able to conduct all of the following: walking, standing, climbing stairs, lifting, kneeling. Outcomes include having or not having a functional limitation, measured the same way, dying, or not responding. Outcomes are modeled adjusted for baseline functional status. Findings indicate urbanites have substantial advantages. They are less likely to have a limitation at follow-up and less likely to die over the study period. Some of this is explained by socioeconomic indicators measured at two levels. Cross-level interactions suggest education and having insurance operate differently in urban and rural areas. Community-level indicators are somewhat less predictive, and much of the urban advantage is unexplained. In conclusion, the study suggests differences in the influences of socioeconomic indicators in China versus what has been found in the past, and that place of residence in China is a particularly robust predictor of functional health transitions.

© 2010 Elsevier Ltd. All rights reserved.

Introduction

This study uses hierarchical modeling to assess rural/urban differences in two-year functional status transitions among Chinese 55 and older and the degree to which individual and community level socioeconomic status (SES) determinants explain these differences. The focus on the older population is important given demographic change, fueled by declining levels of fertility, which means that China has one of the fastest growing elderly populations in the world. According to estimates, China's 55 + population, which at time of writing made up about 15% of the country's population, will grow to over 30% within 25 years (United Nations, 2009). The health of this population segment will have obvious implications for future formal and informal costs, an issue that is of great concern to Chinese policy makers (Riley, 2004).

While SES disparities in China have been studied (e.g., Beydoun & Popkin, 2005; Liang et al., 2000; Zeng, Poston, Vlosky, & Gu, 2008; Zhu & Xie, 2007) publications that focus on rural/urban differences

is modest in number, and those that exist mostly concentrate on mortality (Fang, 1993; Li & Sun, 2003; Zimmer, Kaneda, & Spess, 2007). Zimmer et al. (2007) showed part of the rural disadvantage in mortality to be a function of a combination of community and individual SES. The current study extends upon this by considering a broader measure of health and employing cross-level hierarchical effects to test for community by individual level interactions. Functional status, and its counterpart disability, represents an increasingly important indicator of health for older populations, as is witnessed in a number of ways. Functional items are now routinely included in population-level surveys of older people around the globe (Borsch-Supan, Hank, & Jurges, 2005; National Institute on Aging, 2007). There is escalating dialogue on ways of measuring and linking aspects of functional status (Deeg, Verbrugge, & Jagger, 2003; Freedman & Martin, 2006). There is also increasing recognition of the connection between functional status and other quality of life outcomes in later years (Barberger-Gateau & Fabrigoule, 1997; Jiang, Tang, Futatsuka, & Zhang, 2004). Finally, the field of health and aging is witnessing growing interest in assessing functional status at population levels (Freedman, Martin, & Schoeni, 2002; Jagger et al., 2009). An important

* Corresponding author. Tel.: +1 801 585 0718.

E-mail address: zachary.zimmer@ipia.utah.edu (Z. Zimmer).

finding from this research is recognition of functional status as both dynamic and predictive, with improvements and deteriorations possible, and limitations being a predictor of mortality (Branch, Katz, Kneipmann, & Papsidero, 1984; Crimmins & Saito, 1993; Hardy & Gill, 2004; Rogers, Rogers, & Belanger, 1989). Thus, where data are available, research has emphasized transitions, defined as follow-up functional status adjusting for baseline status.

Like other health outcomes, indicators of SES have been considered vital to functional status transitions (Grundy & Glaser, 2000; Kaplan, Strawbrige, Camacho, & Cohen, 1993; Lantz et al., 2001). Specific reasons for the link have been difficult to pinpoint, especially given inconsistencies across developing and developed societies (Liang, Liu, & Gu, 2001; Zimmer, Liu, Hermalin, & Chuang, 1998), but explanations revolve around psychosocial advantages bestowed upon those with high SES. These include material pathways, such as the increase in health resources afforded by those with higher SES, and non-material pathways, such as greater ability to understand disease processes and act in adequate ways in response to illness, the associated link with behaviors, increased confidence and locus of control, and better social support and stronger networks (House, Kessler, Herzog, Mero, & Breslow, 1992; Marmot & Siegrist, 2004).

Theoretical and empirical research across various international settings has also considered the complimentary notion of community SES as a predictor of health outcomes including functional status (Glass & Balfour, 2003; Pickett & Pearl, 2001; Schootman et al., 2006; Wen, Browning, & Cagney, 2003; Wight et al., 2008). The community in which individuals live can influence health through mechanisms such as accessibility to health service and personnel, availability of amenities, infrastructure, communication and education, and factors that indirectly relate to individual SES such as community income and education. Thus far, however, findings concerning community SES have been more mixed than for individual SES. This seems particularly true among older adults. Some studies find no contextual influence of community SES on mortality in later life (Anderson, Sorlie, Backlund, Johnson, & Kaplan, 1997; Haan, Kaplan, & Camacho, 1987; Waitzman & Smith, 1998), while others report community effects net of individual variables (Ecob & Jones, 1998; Wen, Cagney, & Christakis, 2005). Previous literature has not clarified the precise sources of these empirical discrepancies. One possibility is that community SES effects are specific to local settings and sensitive to geographic definitions. It is also possible that community SES plays a weaker and less stable role in contributing to mortality because effects may depend upon complex moderating and intermediating variables that are more proximate to individual health.

Little research has considered communities in developing societies. If community influences health outcomes, China might be a setting where such differences are likely to emerge. Recent economic development in China has been accompanied by well documented inequalities by region, particularly rural/urban disparities that encompass health services (Anson & Sun, 2003; Beach, 2001; He, Sengupta, Zhang, & Guo, 2007; Tang et al., 2008). Rural communities have fared poorly, a reality that has prompted recent comment from government officials who have promised to focus on strategies aimed at reducing economic and health gaps between urban and rural areas (Kahn, 2004). As such, rural and urban communities in China are characterized by different levels of SES, which may influence and explain any advantage that urbanites have with respect to individual health outcomes.

Based on the past literature, the current study considers that SES can influence health outcomes on two levels. First, individuals living in urban areas may have different characteristics than those in rural areas. For instance, they may better access to health

insurance. Second, the communities in which people live can differ. Urban communities may be better endowed with health related resources and infrastructure that promotes better health. Thus, our study asks several questions. Does the urban health advantage noticed in previous research in China translate into more favorable functional transitions for older urban residents? Do individual and community level SES characteristics influence these differences? What is the impact of having high individual level SES versus high community level SES? Finally, is it better to have high SES and live in a rural area or low SES and live in an urban area?

Method

Data

Data come from the China Health and Nutrition Survey (CHNS), a longitudinal panel study organized by the Carolina Population Center at the University of North Carolina in collaboration with the National Institute of Nutrition and Food Safety at the Chinese Center for Disease Control and Prevention (Chinese CDC). Based on a multistage random cluster process, the sample draws households from urban and rural areas within communities, which are the primary sampling units (PSU). While there are seven waves of data dating back to 1989, the current study employs the last two waves, with the baseline being 2004 and follow-up 2006. The 2004 baseline sampled 216 communities across 9 provinces (Guangxi, Guizhou, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Liaoning, and Shandong). The sample contains 14,478 individuals living in 3795 households. The last two survey waves were chosen for three reasons. First, detailed questions on functional status among older people, the outcome measure in this study, were not asked until later waves. Second, the time between surveys differs between different survey waves (e.g., 1997 and 2000; 2000 and 2004; 2004 and 2006). While different follow-up periods create difficulties in assessing transitions, research is also showing that longer intervals mean less reliable measures of transition (Wolf & Gill, 2007). Third, SES indicators, particularly on a community basis, are changing rapidly in China, and measures that go back in time may be inconsistent with those from more recent years.

The analysis uses data from two databases. The first is information about individuals obtained from household surveys. This includes demographic and SES indicators, as well as functional status items about all household members 55 and older. Our study is limited to the 55 and older population of which there was 3040 individuals in 2004 living in communities that were followed-up in 2006. Eliminating cases missing baseline functional status information or communities without complete community information reduces the sample size to 2944, 1052 of which live in urban communities and 1892 in rural communities. For the household survey, attempts were made to conduct face-to-face interviews with each member. When particular members were not available, information was collected from other members knowledgeable about the indexed individual.

The second is the community questionnaire, completed face-to-face by a knowledgeable respondent for each PSU. Communities were defined as per official administrative definitions, which divide the country into urban and suburban neighborhoods, considered urban places, versus towns and villages, or rural places. Urban and suburban areas are metropolitan places with populations of 100,000+. The 216 communities surveyed consist of 36 urban and 36 suburban neighborhoods, 36 towns and 108 villages. The knowledgeable community respondent was the official head of the community, such as village heads for villages or the official head of the neighborhood associations for urban areas. Although accuracy of this community data has not been specifically examined, recent

Download English Version:

<https://daneshyari.com/en/article/953089>

Download Persian Version:

<https://daneshyari.com/article/953089>

[Daneshyari.com](https://daneshyari.com)