Disability among Urban and Rural Elderly in China: Explaining Disparities Using Individual- and Community-level Characteristics

Toshiko Kaneda
Population Reference Bureau

Zachary Zimmer
University of Utah

Kaiti Zhang
China Research Center on Aging

This study contrasts disability among older adults in urban versus rural China and examines a series of individual- and community-level factors that may account for differences in disability status. It is well known that living standards and ways of life differ dramatically between urban and rural areas in developing countries, and these divergences have large implications for well-being of residents. However, specific details of these differences and their mechanisms are still being debated. Because advantages and disadvantages that relate to place of residence can accumulate over the life course, older adults may be particularly susceptible to the conditions of their living environments, making place of residence a strong predictor of disability in old age. At the same time, because those who survive to older ages may be more robust than others, differences in disability levels of urban and rural elders may be attenuated and impacts may be less severe than might be expected. The current paper will explore these basic disability differences using an extremely large and inclusive dataset from China, and will examine some of the mechanisms behind the association.

Unfortunately, there is little research available on the well-being of urban and rural elderly in developing countries to date and therefore little past literature on which to develop hypotheses. Along with population aging, urbanization is considered to be among the most prominent demographic trends of the century. As a country becomes more urbanized, rural areas tend to host disproportionately greater number of older adults. Understanding the differences in the well-being of urban and rural elderly and their determinants is essential for informing policies on improving health of older population in the context of rapid development. The current analysis therefore will add to an important and under-researched area within demography.

China provides an excellent setting for the study for several reasons. Today, all of China is developing rapidly, but urban and rural life remains profoundly divergent due to decades of socioeconomic and political policies that separated virtually every aspect of urban and rural living since the 1950s. China is also undergoing one of the most rapid rates of both population aging and urbanization in the world. The percentage of older adults ages 65 and over is projected to triple from 8% to 24% between 2006 and 2050. On the other hand, the urban population is projected to grow from 40% to 60% of the total population between 2005 and 2030.

Based on the minimal number of studies from China (Zimmer, Kaneda, and Spess 2007) and a review of existing literature from other countries (Montgomery et al. 2003), we can hypothesize that there is an urban advantage in disability among Chinese elderly, and such advantage can be explained by differences in socioeconomic status, available healthcare

resources, health behaviors, and levels of social support. We hypothesize that these factors operate at both individual- and community-levels.

We use data from the 2000 wave of the Sample Survey on Aged Population in Urban/Rural China (SSAPUR) conducted by the China Research Center on Aging. The data is uniquely suited for our analysis. The survey contains information on approximately 20,000 civilian non-institutionalized individuals ages 60 and over from 80 urban and 80 rural communities across 20 provinces. The study sample is representative of over 90% of older population in China. Having a large number of communities is essential for obtaining robust estimates in multi-level models. The survey also contains detailed data on a wide range of characteristics at both individual- and community-levels that have been shown to relate to health. It, thus, allows for a detailed analysis of the individual- and community-level correlates of health in old age, which is often difficult in developing countries given data limitation.

We define disability as having difficulty performing any of the following six activities of daily living without help from others: eating, bathing, dressing, toileting, getting in and out of bed, and walking indoor. Our explanatory variables are a series of risk factors that fall into one of the four domains mentioned earlier. We examine the risk factors both at individual- and community-levels. The list of risk factors by domains and levels are presented in Table 1.

—Table 1 about here—

We present in Table 2 disability status for urban and rural elderly for the composite indicator and for each of the six ADLs. The composite disability measure shows that 20.3% of rural elderly have disability compared to 14.7% of urban elderly. The difference is statistically significant. Rural elderly are significantly more likely than urban elderly to have difficulty performing three of the six ADLs; bathing, eating, and dressing. Therefore, the bivariate results support our initial hypothesis about disability divergences across place of residence.

—Table 2 about here—

Preliminary analyses presented here uses logistic regression, adjusting standard errors using a first-order Taylor series linear approximation to control for clustering. (Our plans are to graduate to hierarchical multi-level models using HLM 6.02 for the final paper.)
In our base model, we predict disability status with urban (versus rural) residence, age, and sex. This model shows that urban residence is significantly negatively associated with disability status, reproducing the bivariate results shown above. Next, we estimate a model for each domain in which we predict disability status using individual- and community-level characteristics. Our final model predicts disability status using all statistically significant risk factors from the previous analyses above simultaneously. Urban residence falls out of significance in the final model. We present in Table 3 a list of risk factors included in the final model and their levels of statistical significance to give a sense of how a wide range of indicators are important in predicting disability and in explaining urban-rural difference. The final paper will present the full results from all analyses. Discussions will shed light on urban-rural disparities in disability in older population in China as well as reflect upon implications for other developing countries.

—Table 3 about here—

Table 1. Explanatory Variables: Individual- and Community-level Characteristics in Four Domains for Older Adults in China

Domains	Individual-level	Community-level
Socioeconomic	-Primary school or more -Cadre status -Owns home -Has gas, water, heating & WC at home -Has enough savings	-Revenue per capita -% of residents with phone services -% who owns home -% with gas, water, heating and WC
Healthcare Resources	-Has health insurance -Has a health clinic nearby -Convenient to see a doctor	-Number of hospitals -Number of hospital beds -Number of doctors -% of residents with health insurance
Health Behaviors	-Smokes cigarettes -Drinks alcohol	-% who smokes -% who drinks -% who exercises or plays sports -% who engages in social activities
Social Support	-Married -Lives with a child -Thinks his/her children are filial -Visits neighbors	-% who lives with a child -% who thinks his/her children are filial -% who visits with neighbors

Table 2. Proportion of Older Adults in Urban and Rural China Reporting Difficulty Performing Activities of Daily Living

	Urban (N=4730)	Rural (N=15,525)
Having difficulty performing at least one of the six ADLs	.147	.203**
Bathing	.131	.175*
Walking indoor	.050	.054
Eating	.025	.051*
Toileting	.042	.051
Getting in/out bed	.043	.049
Dressing	.030	.048**

*p<.05 **p<.01 ***p<.001

Table 3. Logistic Regression Results Predicting Disability Status of Older Adults in Urban and Rural China[1]: Levels of Statistical Significance for Individual- and Community-level Characteristics

Individual-level	Community-level
-Married** -Owns home* -Has enough savings*** -Drinks alcohol* -Convenient to see a doctor**	-Urban† -Revenue per capita† -# of hospitals† -% w/ health insurance** -% w/ kids who are filial** -% engaged in social activities*

†p>=0.5 *p<.05 **p<.01 ***p<.001

[1]Model controls for age and sex.

References

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