



Access to healthcare services makes a difference in healthy longevity among older Chinese adults[☆]

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ABSTRACT

The positive impact of access to healthcare on health and survival among older adults is well-documented in Western societies. However, whether the pattern still holds in developing countries where healthcare coverage is more limited is largely unknown. China, a developing country with the largest population in the world, has been transforming its antiquated healthcare system during the past few decades in response to rapid population aging. Yet, in recent years the lack of access to healthcare has been identified as the top concern by most citizens in China. We used the Chinese Longitudinal Healthy Longevity Survey and the community-level data sources from the National Bureau of Statistics of China to examine the impact of current as well as childhood access to healthcare services on subsequent three-year survival and healthy survival at old ages from 2002 to 2005 under a multilevel context. Healthy survival was measured by a cumulative deficit index calculated from thirty-nine variables pertaining to various dimensions of health. Our analyses showed that access to healthcare at present and during childhood improved the odds of subsequent three-year survivorship by 13–19% and 10%, respectively, controlling for various confounders. But the effect of access to healthcare at present was no longer statistically significant once baseline health status in 2002 was controlled for. Access to healthcare at present increased odds of healthy survival by 22–68%, while access to healthcare in childhood increased odds of healthy survival by 18%. All patterns held true for both men and women, for urban and rural areas, across ages, as well as across socioeconomic statuses. Our findings suggested that positive inputs such as access to healthcare services over the life course make a substantial difference in healthy longevity, which has implications for the establishment of the universal healthcare system.

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Introduction

With the transformation of China's healthcare system from a government-managed system that provided affordable basic healthcare to all citizens to a market-oriented system, Chinese

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people have witnessed a universal and substantial decline in access to healthcare in spite of China's rapid economic growth since the late 1970s (Bloom & Gu, 1997; Blumenthal & Hsiao, 2005; Yip & Hsiao, 2008). In addition, according to the Chinese government, there is severe inequality in healthcare services between cities and rural areas, with 80 percent of health resources (e.g., hospitals and healthcare practitioners) allocated to the cities. Coastal regions have also enjoyed more health resources than inland regions (Lee, 2004). Due to lack of adequate public funding, many rural clinics have become privatized for-profit institutions, and rural residents have witnessed a greater decline in access to healthcare than urban people (Lee, 2004; Yip & Hsiao, 2008). In short, skyrocketing medical costs are prohibiting people with low socioeconomic status and older people from getting basic healthcare services in both rural and urban areas (Gu & Vlosky, 2008; Liu, Zhao, Cai, Yamada, & Yamada, 2002; Liu, Zhang, Lu, Kwon, & Quan, 2007). For the first time since the economic reform, healthcare replaced employment as the most important concern in 2002 among urban residents (Dong, 2003).

The steady decline in access to healthcare could have a negative impact on the health and well-being of Chinese people. The purpose of this study is to provide solid empirical evidence on whether access to healthcare can enhance healthy longevity at old ages. Before the second half of this century, China will have the largest number of the elderly in the world, at a time when its healthcare system will undergo major transformation. The investigation of the relationship between access to healthcare and health outcomes helps us better understand the role of access to healthcare as a positive input on the stock of health capital at old ages (Grossman, 1972), and provides important information to policy makers as they try to revamp the country's healthcare system.

Literature review

Numerous studies in Western societies showed that access to healthcare yielded positive effects on health and mortality. One study from a population-based elderly sample in Spain showed that lack of access to adequate medical service increased five-year mortality by 80% among those who had reported two or more chronic conditions, and increased mortality by 155% among those who were disabled in instrumental activities of daily living (IADL) (Alonso, Orfila, Ruigomez, Ferrer, & Anto, 1997). Studies in the North America revealed that access to healthcare made the most difference in slowing down functional decline and reducing the risk of death among those elders with no functional limitations at baseline (Porell & Miltiades, 2001).

In the United States, access to healthcare is largely determined by health insurance, and there is substantial evidence that lack of health insurance negatively impacted health and survival. For example, lack of insurance was associated with poorer self-rated health, more functioning problems, a greater number of chronic conditions, and a greater perceived need for services among older Americans (Goin, Hays, Landerman, & Hobbs, 2001; Hadley, 2007; Okoro, Young, Strine, Balluz, & Mokdad, 2005). Researchers also found that lack of insurance was associated with higher mortality risk among adults (Frank, Clancy, & Gold, 1993) and the near-elderly even after adjusting for possible confounders, especially among persons with low income or with specific chronic disease conditions (McWilliams, Zaslavsky, Meara, & Ayanian, 2004). Such differentials in health outcomes might be explained in part by early detection and diagnosis of health problems due to a higher frequency of physician visits and checkups (Aday, 1993; Card, Dobkin, & Maestas, 2004).

In addition, prior research indicated that timely access to healthcare when in need mattered when it came to survival. One study reported that wait times for healthcare were also positively associated with mortality risk (Prentice & Pizer, 2007), possibly because delayed access to healthcare could cause delays in diagnoses and treatments (Kenagy, Berwick, & Shore, 1999). Bunker, Fraizer, and Mosteller (1994) reported that almost half of the increase in life expectancy in the last 25 years may be attributed to medical care.

One shortcoming of the extant literature is the lack of research using data from non-Western countries. It is unclear to what extent the protective effect of access to healthcare on health and mortality found in developed countries will still hold in newly developed or developing societies where the healthcare system is either largely underdeveloped or under reform. One study in Taiwan (Chen et al., 2007) reported that improvements in access to healthcare services did not yield significant protective effects on self-rated health and one-year mortality risk, although there appeared to be significant increases in the utilization of both outpatient and inpatient care among the elderly after the implementation of a new universal health insurance program in 1995. Authors attributed this finding to the short-term follow-up that prohibited them from detecting the significant protective effect of access to healthcare on health,

given that health is a lifetime investment and other factors such as the environment, lifestyle, and health behavior play significant roles in improving population health (Chen et al., 2007). More research is needed in developing countries on the association between access to healthcare and health outcomes as more and more developing countries (including China) are revamping their healthcare systems.

Another limitation is that prior studies in gerontology and geriatrics usually examined the association between access to healthcare and a specific health condition. As pointed out by some researchers, the benefit of access to healthcare for one health condition may not be translated into a benefit for another health condition or coexisting conditions (Alonso et al., 1997). Thus, most studies in this area were unable to capture the associations between access to healthcare and broader or more holistic health outcomes.

Third, there is a paucity of research that examines the association between access to healthcare resources and health or mortality at very advanced ages due to lack of data. Most previous studies did not have enough cases to examine access to healthcare and well-being for the oldest-old, the fastest growing segment of the elderly population. Fourth, a growing body of research demonstrated that earlier life conditions improved health status in later life (e.g., Finch & Crimmins, 2004; Preston, Hill, & Drevestadt, 1998). However, most studies did not fully examine the long-term impact of access to healthcare at early life stages on health and mortality in old age. Further, an increasing number of recent research indicated that community/neighborhood characteristics had significant influences on late life health and mortality (e.g., Kawachi & Berkman, 2003), suggesting that these factors were the potential confounders in the associations between access to healthcare and health. Yet, few studies in this area integrated community/neighborhood factors into the framework.

Using the 2002 wave of the Chinese Longitudinal Healthy Longevity Survey (CLHLS) and its follow-up interview in 2005, this study examines the associations between access to healthcare services, at present as well as in childhood, and people's stock of health capital in terms of survival and healthy survival after accounting for various individual and neighborhood/community factors among the Chinese elderly aged 65–109. Below we start by providing some background on the healthcare system in China.

Healthcare system in China

The current Chinese healthcare system with an urban/rural health disparity can be traced back to the early 1950s, a couple of years after the establishment of the People's Republic of China. In urban areas, health insurance consisted of the Government Insurance Scheme and the Labor Insurance Scheme; together they covered 100% of treatment and prescription drug expenses for almost all urban employees and 50% of the costs for all dependents of beneficiaries before the urban system was reformed in the middle of the 1980s (Dong, 2003). This system is normally called *the free public medical care system*, also known as the employment-based healthcare system since it was only available to urban employees. The cost of healthcare services was affordable and accessible even for the poor and uninsured due to government ownership, strictly government-controlled drug prices, and substantial subsidies to hospitals (Yip & Hsiao, 2008). After the healthcare system reform in the middle of the 1980s, the government decentralized its responsibility for running hospitals and the urban system shifted to a cost-sharing and then to an urban-based social health insurance scheme that only covered urban employees/retirees, excluding rural-urban migrant workers (Shi, 1993; Yip & Hsiao, 2008). The program combined individual medical savings accounts and catastrophic insurance, and was financed by the employers and the employees. The latest estimates showed that

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