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Individual and province inequalities in health among older people in China: Evidence and policy implications

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ABSTRACT

This paper uses multi-level modelling to analyse data from the nationally-representative Chinese Health and Retirement Longitudinal Study (CHARLS) in order to investigate the characteristics associated with poor health among older people, including individual and household characteristics as well as the characteristics of the provinces in which the older person lives (contextual effects). The results show that older Chinese women, rural residents, those with an education level lower than high school, without individual income sources, who are ex-smokers, and those from poor economic status households are more likely to report disability and poor self-rated health. Differentials in the health outcomes remain substantial between provinces even after controlling for a number of individual and household characteristics.

1. Introduction

Improvements in life expectancy in China over the past 50 years combined with marked declines in fertility have resulted in rapid population ageing, reflected in an increase in the absolute and relative number of older people in the population and resulting in a challenge for the design of adequate social policies in health and social care (Cai et al., 2012; Woo et al., 2002). Moreover, these demographic changes have taken place alongside significant social and economic developments which are further reshaping China's population. Before 1976, which marked the death of Chairman Mao, "economics gave way to politics" and the state had a strong mandate to run the economy and organise production for the benefit of society (Chen, 2002: 571). During this time, and typically for a centrally-planned economy, Chinese citizens were promised guaranteed employment (often referred to in popular culture as the "iron rice bowl"), egalitarian distribution of resources and outputs, and cradle-to-grave welfare coverage (Li, 2012). The transition from a socialist to a market economy, which accelerated from the late 1970s onwards, created opportunities for the development of social welfare services and the solution of fundamental social problems; however inequalities between occupational groups and regions emerged as "new" social risks facing the government. Recent market reforms, decentralisation and economic globalisation have impacted different social groups, regions and industries unevenly (Zhu, 2013) with the resultant rural–urban migration rapidly altering the demographic composition of different regions in China. Increasing rural–urban migration has served to further emphasise the dual policy challenge of health and social provision for low-paid migrants in cities, and for older people "left behind" in rural areas often caring for grandchildren (Biao, 2006). Against the background of population ageing in one of the world's most populous nations, understanding the determinants which contribute to poor health outcomes among older people in China is the key to understanding future patterns of health, as well as their relationship to economic development in this region.

Existing research has highlighted that both individual and province-level factors contribute to inequalities in health among older people in China (e.g., Feng et al., 2012; Yin and Lu, 2007), with province level effects reflecting regional diversity in the extent of welfare provision and the demographic and socio-economic composition of the population. This paper investigates the characteristics associated with the risk of poor health among older people, including individual and household characteristics,

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as well as the characteristics of the provinces in which the older person lives. By adopting a multilevel approach and using nationally representative data, this paper contributes to our better understanding of the availability and appropriateness of health services for older people and policy changes necessary to protect the wellbeing of older people in the future.

1.1. Effect of individual and household characteristics on health status

A large body of existing literature from Europe and North America has evidenced the association between a range of demographic and socio-economic characteristics and an individual's health status; however such research evidence is still scarce in the Chinese context. Marmot and Bell (2012) in the British context revisited the strong link between socio-economic status and poor health status, while evidence from other countries of the developed world is compatible (Berkman and Epstein, 2008; Choi and Marks, 2013). Although the direction of the causal mechanism between poor socio-economic status and poor health status is the subject of on-going research and debate the evidence of the association between the two concepts, regardless of the way they are operationalised in empirical research (e.g. socio-economic status as individual income, and health status as self-reported health), is not disputed. The relatively scarce evidence in the Chinese context presents a more complex picture as a result of historical and socio-political factors which have shaped demographic patterns, the provision of healthcare services and access to such services alike. For instance Liang et al. (2000) examined this relationship in Wuhan city and found a socio-economic gradient in the report of poor health status, with individuals in lower socio-economic classes being more likely to report poor health than those in higher classes. More recently, however, Zimmer and Kwong (2004) found that more "traditional" socio-economic indicators such as income and education were relatively weak predictors of poor health status, while savings and pension eligibility indicated a stronger effect. In longitudinal studies, Gu and Xu (2007) found that among the oldest old (above 80 years) individuals who were literate and economically independent were less likely to develop disabilities than older individuals who were illiterate and economically dependent. By contrast, Li et al. (2009) did not find any association between educational attainment and an individual's report of self-reported health (SRH), mortality and difficulty with performing Activities of Daily Living (ADLs). Other research by Lowry and Xie (2009) has noted that although socio-economic status is positively and strongly associated with health status for individuals at younger ages in China; such an association is weaker in the latter part of the life course. Finally, Feng et al. (2013) concluded that the effect of socio-economic factors on health does indeed appear to be small when other variables (e.g. care sources and medical sources for older people) are taken into account. Crucially, this body of work suggests a couple of points: firstly, that the nature of the association between health status and socio-economic status largely depends on the indicators used in the analysis (e.g. poor self-reported health rather than the report of disability); and secondly that the nature of such an association may take a particular form for individuals in the latter part of the life course, where socio-economic status is less likely to be characterised by one's link to the labour market.

Previous research has also found an association between individuals' health status and the characteristics of their household, with older people in higher economic-status households being more likely to report good health than those in lower-status households. Feng et al. (2013) found that among older people whose family income was above the median the odds of reporting good self-rated health were 1.6 times higher than among those whose family income was in the lowest quartile of the distribution, possibly as a result of a greater ability to afford better health care and medical consumption. For older people in poverty the state provides some social protection such as the "Five Guarantees Household Scheme" for older people in rural areas with no children, income, and property (Zhu, 2013), and "Dibao" for those with household incomes lower than the standard of Minimum Livelihood of the city (village)[1]. However, older people who receive financial assistance from the state are the least likely to report good self-rated health due to the inadequacy and underdevelopment of the state financial provision (Feng et al., 2013). Such findings point to the need to better understand the relationship between household characteristics and individuals' health, particularly among older individuals who are considered to be in the lowest socio-economic strata of the Chinese society.

1.2. Effect of province characteristics on individuals' health status

Contextual effects on individuals' health status have also been evidenced by previous research (e.g. deprivation and mortality (Jones et al., 2000), income inequality and self-rated health (Feng et al., 2012)). The features of the areas where people live (such as social environment, healthcare access, and social cohesion) have been shown to make a difference to health outcomes, for example by linking strong social cohesion to better individual health (Jones and Moon, 1993; Diez Roux and Mair, 2010; Gu et al., 2009). Due to the history of socio-economic transition witnessed in the Chinese society China is highly spatially differentiated in terms of its economic development and social security, resulting in variability in the quality and availability of health care between provinces. In macro-level studies, inequalities in terms of the availability of health care services, income and social status at the province level have been found to be associated with health inequalities between provinces in China (Fang et al., 2010; Li and Wei, 2010). By contrast micro-level studies have found no evidence of a significant improvement in the health of poorer older people living in provinces with better health facilities (Feng et al., 2013) while Yin and Lu (2007) found that the prevalence of medical conditions at the province level had an impact on elderly persons' report of disability, defined as difficulty with specific Activities of Daily Living (ADLs). Such disparities in the literature call for a close examination of the relationship between individual, household and province-level factors and the health status of older individuals in China.

This paper aims to contribute to the literature by investigating health outcomes for older people in China and examining the extent to which such outcomes are influenced by both individual and household, and province-level characteristics. The paper addresses the following research question: *how does the health of older people vary according to demographic characteristics, socio-economic indicators, household/family factors and provincial level factors*? The next section discusses the data and methods to be used. The results of a series of multivariate regression models are then presented followed by a discussion of the results, drawing out the implications for policy makers.

[1] The Five Guarantees refer to food, clothes, housing, medical care, and burial after death. The Dibao is a minimum living standard guarantee (Wang, 2007). The benefit varies between urban and rural areas as well as different provinces. It was approximately 330 Chinese Yuan per month (about US $ 47) in urban areas and 172 Chinese Yuan (about US $ 24) in rural areas in 2013. In Shanghai (one of the most developed provinces), the Dibao is 570 (US $ 81) and 430 (US $ 61) respectively for urban and rural residents (People.com, 2013; The Central People's Government of the People's Republic of China, 2012).