Son Preference and Women's Health in China: A Life Course Study

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Abstract: Son preference is a severe form of gender discrimination against women and can affect gender health disparities in many ways. This study adopts a life course approach to examine how adverse childhood experience of parental son preference and exposure to son preference at the regional level may affect Chinese women's physical and mental health in later life. This study will also examine whether these associations are moderated by sex composition of adult women's children. Aggregate population census data will be linked to nationally representative longitudinal survey data to answer these research questions. This study will also explore two potential mechanisms: gender bias against girls in terms of nutritional intake and human capital development.

Introduction

Son preference is a severe form of gender discrimination against women. China is one of the countries where pervasive son preference persists. According to data from China's 2010 Population Census, sex ratio (number of males per 100 females) at birth (SRB) was 114.06, 118.64, and 119.09 in cities, towns, and rural villages, respectively (National Bureau of Statistics of China 2012). The abnormally high SRB has been attributed to multiple factors such as sex-selective abortion, infanticide and delayed or late birth registration (Li, Yi and Zhang 2011; Shi and Kennedy 2016), all of which are rooted in son preference. China's high SRB has raised policy concerns about such potential consequences as gender-imbalanced marriage market (Hesketh and Xing 2006) and increased crimes (Edlund et al. 2013).

Son preference can affect gender health disparities in many ways. In India, many studies have established that parents with son preference provide better care to sons than to daughters in terms of food, clothing, childcare time, and health care, leading to gender differentials in child nutrition, morbidity, and mortality (Arnold, Choe and Roy 1998; Barcellos, Carvalho and Lleras-Muney 2014; Das Gupta 1987; Hu and Schlosser 2015; Pande 2003; Sen and Sunil 1983). In extreme cases, strong son preference may lead to practice of female infanticide (George 1997). In China, researchers have found that parents with son preference tend to reduce human capital investment in daughters (Brown and Park 2002; Gong, van Soest and Zhang 2005), which in turn may impair their later-life health.

Son preference may also be detrimental to maternal health. In China, having a first-born son improves a woman's intra-household bargaining power, which in turn improves her nutritional intakes and reduce her risk of being underweight (Li and Wu 2011). In India, having a first-born daughter increases a woman's risks of anemia, being a victim of domestic violence,

and mortality (Milazzo 2018). In addition, having one or more sons from earlier pregnancies reduces a pregnant women's likelihood of receiving maternal care due to family resource dilution (Self and Grabowski 2012).

Previous research on the association between son preference and women's health has several limitations. First, health outcomes of interest are largely restricted to childhood nutrition and disease status. Research on adult women's health outcomes remains scarce. Second, a few studies have examined maternal health in terms of nutrition, prenatal care, and mortality (Li and Wu 2011; Milazzo 2018; Self and Grabowski 2012), but they focus on the gender discrimination experienced by adult women as mothers. Little is known about the long-term effect of adverse childhood experience of son preference on women's later-life health. Third, many studies treat son preference as a norm pervasive in Chinese or Indian families, especially in rural areas, but ignore regional variation within a country (for an exception, see Pande 2003) or heterogeneity at the household level.

To fill these gaps in the literature, this study adopts a life course approach to examine the association between son preference and health in middle-aged and older Chinese women. A life course approach highlights the important roles of the timing, sequencing, and duration of life events in shaping behavior outcomes (Elder 1994, 1998). This principle predicts a cumulative process of health advantage or disadvantage as people age as well as the long-term influences of earlier life conditions on later life health outcomes (Ben-Shlomo and Kuh 2002; Kuh et al. 2003). Life course theory also emphasizes the broad social and historical contexts within which an individual's health trajectory unfolds over his or her lifespan. This principle coincides with the conventional multilevel framework that focuses on contextual effects on individual behavior and outcomes (Diez-Roux 1998, 2001).

Guided by these principles of the life course theory, this study asks three research questions: (1) Does childhood experience of parental preference for sons have long-term impact on women's health in later life? (2) Is son preference at the regional level independently associated with adult women's health? (3) Does having one or more sons moderate the health effect of childhood experience of son preference or that of regional son preference?

Data and Measures

To answer these research questions, this study will draw on individual- and family-level data from the 2011, 2013, 2014, and 2015 waves of the China Health and Retirement Longitudinal Study (CHARLS), a nationally representative longitudinal survey of adults aged 45 and older and their spouses, if available. CHARLS sampled 17,708 residents from 150 counties across 28 provinces in China, with a response rate of 80.5%, in 2011. This study will also draw on aggregate data from China's 2010 Population Census to measure son preference at the prefecture level (similar to counties in the U.S.). We will match prefecture-level measures of son preference to the CHARLS respondents based on their self-reported birth prefecture. Our analytical sample will consist of female respondents of 50 years or older at baseline. We choose this age cut-off point to ensure that the selected women have completed birth histories.

We will examine both physical and mental health outcomes. Physical health will be measured by self-rated health (ordinal) and number of self-reported chronic diseases (continuous). Mental health will be captured by depressive symptoms which are measured by the 10-item Center for Epidemiologic Studies Depression Scale (CESD-10) and used in prior studies of CHARLS data (Li et al. 2016; Li et al. 2015; Xu 2018).

The key independent variables include childhood experience of parental preference for sons and regional son preference. Childhood experience of parental son preference is based on respondents' retrospective recall of the degree to which their parents preferred sons to daughters as they grew up. The response categories include "not at all" (=1), "a little" (=2), "somewhat" (=3), and "very much" (=4). Regional son preference is measured by SRB at the prefecture level from China's 2010 Population Census aggregate data. The key moderating variable is children's sex composition. Each adult woman will be classified into one of three categories: no son, having a first-born son, or having a son at a higher birth order (i.e., having a first-born daughter).

Statistical Analysis

We will model health outcomes at baseline, as well as changes in health status over the four-year follow-up period. We will stratify the sample into rural and urban subsamples to account for rural-urban divide in social norm and economic development. In all the models, we will control for women's demographic and socioeconomic characteristics including age, marital status, ethnicity, household size and income, and prefecture fixed effects. We will not estimate individual fixed effects models because the key independent variables are time-constant. Instead, we will estimate random effects models of changes in health between 2011 and 2015.

We will answer research question #3 by adding interactions between children's sex composition and the two key independent variables. We will also test whether childhood nutrition and human capital development (using educational attainment as a proxy) are potential mediators linking early life experience of son preference to adult women's health in later life.

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