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## Children's migration and lifestyle-related chronic disease among older parents 'left behind' in india



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### ABSTRACT

Lifestyle-related chronic diseases such as cardiovascular diseases and diabetes are now the leading causes of death and disability in India. Interestingly, those Indian states with the highest prevalence of lifestyle-related chronic disease among older adults are also found to have the highest rates of international or internal out-migration. This paper investigates the association between having migrant (adult) children and older parents' lifestyle-related chronic disease in India. Bi-variate and multivariate analysis are conducted using data from a representative sample of 9507 adults aged 60 and older in seven Indian states from the UNFPA project 'Building Knowledge Base on Ageing in India'. The results show that for any of the diagnosed conditions of hypertension, diabetes and heart disease, the prevalence among older people with a migrant son is higher than among those without. More specifically, the odds ratio of reporting a lifestyle-related chronic disease is higher among older adults with at least one adult son living in another district, State or outside India than those with their children living closer. This study contributes empirical evidence to the academic and policy debate about the consequences of globalization and urbanization for older people's health status generally, and particularly their risk for reporting chronic diseases that relate to changes in their lifestyle.

### 1. Introduction

Chronic diseases such as cardiovascular diseases and diabetes are now the leading causes of death and disability in India (Patel et al., 2011; Pappachan, 2011; Diamond, 2011). There is substantial overlap between hypertension, diabetes and heart disease in terms of their aetiology and disease mechanisms; for example, obesity, inflammation, stress and insulin resistance all share common (Cheung & Li, 2012), with research showing that adults with diabetes are more likely than those without diabetes to have hypertension, and are two to four times more likely to have a heart attack, stroke, angina, and coronary artery disease (Nathan et al., 2005; Ali, Narayan, & Tandon, 2010).

The World Health Organization Report on 'Preventing Chronic Diseases a vital investment' (WHO, 2005), highlighted the important role of a small set of common, and modifiable, risk factors - including unhealthy diet, physical inactivity and tobacco use - in determining chronic disease, with such life-style choices being influenced in turn by the processes of globalisation and urbanisation. A recent report in India found that older adults in Kerala, Punjab and West Bengal show the highest prevalence of hypertension, diabetes and heart disease (UNFPA, 2012). At the same time, these states witnessed the highest rate of international out-migration (Kerala and Punjab), and a high rate of

internal migration (West Bengal) and receipt of remittances (UNESCO & UNICEF, 2012). This raises the intriguing question of whether the increased migration of adult children as a result of globalisation and urbanisation may be playing an intermediate role in the chronic health conditions of their aged parents and if so, whether this opens up areas amenable to policy intervention.

The relationship between adult children's migration and the health of older parents left behind is theoretically unclear, and it is hard to predict whether the migration effects are primarily positive or negative. Previous research suggests that the effect of remittances is likely to change parental health in a positive way. However, little is known about how much of these remittances are received by elderly parents and how this impacts upon health seeking behaviour. Moreover, elderly parents may suffer from emotional distress when their children are absent, and this chronic negative emotion may predispose them to a change in their lifestyle towards less healthy behaviours, such as smoking and consumption of high-fat diets. Also, elderly parents may require physical support (including support in seeking health care) from their adult children, which may be disrupted or unavailable when his/her child migrates.

Previous qualitative studies have found that adult children's migration may yield a benefit or a disadvantage for the health outcome of

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parents 'left behind', depending on the specific country context and the nature of the relationship following the migration of the child(ren) (Miltiades, 2002; Vullnetari & King, 2008; Knodel & Saengtienchai, 2007; Grant, Falkingham & Evandrou, 2009). The local culture, the importance of kinship networks, and the social and legal arrangements related to elderly care, are all factors which can intervene in the relationship between adult children's migration and their parents' health, both positively and negatively. For instance, remittances sent by migrant children may provide funds to facilitate their parents' access to health services, particularly in countries where free health care or insurance is absent (Biao, 2007). Such remittances may also offer opportunities to older people to improve their diets, leisure or living conditions, and to reduce their experience of psychological distress caused by poverty (Biao, 2007). However, remittances may not always be regular, or indeed directed towards one's elderly parents (Grant et al. 2009). At the same time, children's outmigration has been evidenced to lead to reduced physical and emotional support provided towards one's parents, which can have detrimental effects if there are no substitutes (Qin, 2008). If emotional loss, isolation and a lack of physical care outweigh the gains of out-migration of adult children, such migration may negatively affect their parents' health. Quantitative studies also reflect mixed findings. For instance, positive effects of children's out-migration on their parents' health in the origin community have been found in Thailand and Indonesia (Abas et al., 2009; Kuhn, Everett, & Silvey, 2011). In contrast, negative effects have been found in China and Mexico (Ao, Jiang, & Zhao, 2015; Antman, 2010a; 2010b). Most of the previous studies have considered older individuals' self-rated health as the outcome variable, and outcomes linked to lifestyle-related chronic diseases remain relatively under-researched. This paper therefore aims to add to the literature in this field by investigating the association between adult children's migration and older parents' lifestyle-related chronic disease in India using diagnosed conditions of hypertension, diabetes and heart disease as the outcome variables. To the best of our knowledge this is the first paper to do this.

## 2. Data and methods

### 2.1. Data

This study analyses data collected as part of the UNFPA 'Building Knowledge Base on Ageing in India (BKPAI)' project. The BKPAI Survey was conducted in 2011 in seven major demographically advanced states of India - Himachal Pradesh, Punjab, West Bengal, Odisha, Maharashtra, Kerala and Tamil Nadu. Seven states covering the Northern, Southern, Western and Eastern regions of each state were purposively selected, and within each state, a random sampling method was applied to select eligible respondents aged 60 and above. Detailed information about the survey sampling is provided in a previous report (UNFPA, 2012). The BKPAI survey data includes information on older people's mental and physical health, their living arrangements, socio-economic circumstances, including employment status and household assets, as well as information on intergenerational exchanges within the family and participation in social activities. The total sample size interviewed is 9692 individuals. Since the purpose of this paper is to examine the association between adult children's migration and the health of their parents 'left behind', 133 childless respondents were excluded, as were respondents with missing data on key variables in the analysis. The final analytical sample used in the paper is 9507 adults aged 60 and above with at least one living child.

Ethical approval analysing these data to study the wellbeing of older people in India has been obtained from the Ethics Committee in the University of Southampton (Ethics ID:21228, permits:13/06/2016).

### 2.2. Measurements

#### 2.2.1. Lifestyle-related chronic disease

The central survey question used in the analysis asks: 'Has a doctor or nurse ever told you that you have any of the following ailments?', and has two response options (yes or no). The 20 listed chronic morbidities are: **A. Arthritis, rheumatism or Osteoarthritis**; **B. Cerebral embolism, stroke or Thrombosis**; **C. Angina or angina pectoris (heart disease)** (Heart attack, coronary heart disease, angina, congestive heart failure or any other heart problem); **D. Diabetes**; **E. Chronic lung disease (emphysema, bronchitis, COPD)**; **F. Asthma (allergic respiratory disease)**; **G. Depression**; **H. High blood pressure (hypertension)**; **I. Alzheimer's disease**; **J. Cancer**; **K. Dementia**; **L. Liver or gall bladder illness**; **M. Osteoporosis**; **N. Renal or Urinary tract infections**; **O. Cataract**; **P. Loss of all natural teeth**; **Q. Accidental injury (in the past one year)**; **R. Injury due to fall (in the past one year)**; **S. Skin disease**; and **T. Paralysis**. In this study, any respondents who reported any of the three following diseases - hypertension, diabetes or heart disease - were defined as having a lifestyle-related chronic disease.

#### 2.2.2. Migrant child (migrant son)

The survey questions ask the place of residence of each child not residing with the respondent, with four response options (within the district; outside the district but within the state; outside the state but within India; and outside India). Also, the survey questions ask the sex and marital status of each child. Having a migrant child is defined in this study as has any child currently living either outside the district or outside the state but within India, or outside India. In the Indian context, dependency in later life is mainly on sons or unmarried daughters, as daughters frequently live elsewhere after marriage. Once married daughters are excluded, very few Indian elders have an unmarried migrant daughter. Thus the analysis focuses on having a migrant son as the key independent variable.

#### 2.2.3. Other control variables

Covariates include a range of factors which have been shown to be important in previous literature exploring factors associated with older people's health outcomes. These include the demographic characteristics of age and sex (Lloyd-Sherlock, Beard, Mincuci, Ebrahim, & Chatterji, 2014) as the impact of risk factors accumulates over individuals' life course (Ben-Shlomo & Kuh, 2002); socio-economic factors including education, caste, income and household wealth quintile (Mahal, Karan, & Engelgau, 2010; Corsi & Subramanian, 2012; Deepa, Anjana, Manjula, Venkat Narayan, & Mohan, 2011; Gupta et al., 2012); living arrangements (Samanta, Chen, & Vanneman, 2014); health-risk behaviours such as smoking and alcohol drinking (Laxmaiah et al., 2015); and geographic factors (Kinra et al., 2010; Ramachandran et al., 2004; Joshi et al., 2006; Vijayakumar, Arun, & Kutty, 2009; Sarkar, Das, Mukhopadhyay, Chakrabarti, & Majumder, 2006). Household wealth quintile was computed using Principle Component Analysis based on 30 assets and housing characteristics including: household electrification; drinking water source; type of toilet facility; type of house; type of cooking fuel; house ownership; ownership of a bank or post-office account; ownership of a mattress; a pressure cooker; a chair; a cot/bed; a table; an electric fan; a radio/transistor; a black and white television; a colour television; a sewing machine; a mobile telephone; any landline phone; a computer; internet facility; a refrigerator; a watch or clock; a bicycle, motorcycle or scooter; an animal-drawn cart; a car; a water pump; a thresher and a tractor. This measurement shows a good socio-economic gradient of health outcomes among elder adults in a previous report emanating from the survey (UNFPA, 2012). The number of sons is controlled for in the model, as having more male children may be associated with a higher probability of at least one son migrating out.

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