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Offspring education and parental mortality: Evidence from South Asia

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ABSTRACT

Decades of research show that education not only confers individual health benefits, but it also spills over to advantage subsequent generations. More recently, research has confirmed that the intergenerational health benefits of education can also flow upward: aging adults with more highly educated children experience better health and higher survival. Research has documented this finding in high-income settings, and also in select low- and middle-income contexts, raising questions about how having an adult child who attended relatively low levels of education can benefit aging parents' well-being. In this study, we use multilevel, long-term panel data on a cohort of older adults from the Chitwan Valley Family Study in rural Nepal to establish whether the association between offspring education and parents' survival is observable in this extremely poor, agrarian context. Extending past studies, we then leverage additional data on older adults to examine the association between offspring education and two theorized mechanisms: older adults' better health behaviors and their greater support in later life.

1. Introduction

Decades of social science research has confirmed that, across diverse regions of the world, educated individuals are healthier and live longer (Baker et al., 2011; Molina, 2016), and they have healthier children who are more likely to survive to older ages (Smith-Greenaway, 2013). Recently, studies have begun to investigate if educational benefits also flow upward from adult children to improve their aging parents' health (De Neve and Kawachi, 2017).

Initially, studies documenting the health benefits associated with having more highly educated children focused on high-income settings, showing that older adults with college-educated children experience substantially lower mortality rates relative to individuals whose children did not attend college (Friedman and Mare, 2014; Graham and Sabater, 2016; Torssander, 2013; Zimmer et al., 2007). These studies emphasize the material, social, and informational support that college-educated children can provide their aging parents. This work offers little reason to assume that adult children's education will have any bearing on parents' mortality in low- and middle-income countries, where children commonly discontinue school at the primary or secondary level, healthcare is generally limited, and mortality risks are more pervasive. Nonetheless, growing evidence from lower-income settings shows that older adults with more highly educated offspring in these contexts also experience survival advantages (De Neve and Kawachi, 2017). These studies raise questions of the salience of the link between offspring education and parental survival in some of the world's poorest settings, and the mechanisms that could drive it.

Our current study focuses on rural Nepal to offer the first analysis of the relationship between offspring education and women's and men's mortality in an extremely low-income context typical of the environments of many families residing in South Asia, the most populous world region, which is aging rapidly (Acharya, 2012; Gurung et al., 2016; Poudel and Magar, 2016). Like older adults in

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many of South Asia's—and the world's—poorest, agrarian communities, the majority of older adults in rural Nepal enter late life after having endured years of poverty, physical labor, low nutrition, and minimal access to education or health services. Yet, due to the construction of schools during the 1970s (for more details see Beutel and Axinn, 2002; Brauner-Otto, 2012), most older adults' children, particularly sons, have had the opportunity to attend primary and secondary school. Indeed, educational opportunities have historically favored boys over girls in rural Nepal (Stash and Hannum, 2001; Vogel and Korinek, 2012), due in part to parents disproportionately investing in and supporting their sons' education in light of the cultural expectation that sons will provide for them in old-age (Brunson, 2010; Chalise et al., 2010; Niraula, 1995; Rajan, 2003). Unlike western countries, where daughters typically care for their parents, in Nepal, filial responsibilities fall to sons—signaling the potential salience of sons' educational attainment for their parents' health and well-being in this context.

Thus, our first study goal is to establish if adult sons' educational attainment influences women's and men's mortality in rural Nepal, as has been shown of offspring educational attainment and older adults' mortality in other, select low- and middle-income settings. To do so, we analyze multilevel panel data from the Chitwan Valley Family Study (CVFS), which features 16 years of monthly mortality data following the baseline survey in 1996. We model women's and men's mortality separately to assess whether gender differences in older adults' health-related experiences, and/or differences in the parent-child relationship, lead adult sons' educational attainment to distinctly affect women's versus men's risk of mortality. After establishing whether there is an association between adult sons' education and women's and men's risk of mortality, our second study goal is to identify the possible relevance of two previously theorized mechanisms. Specifically, we leverage additional data on CVFS respondents collected in 2006 to analyze whether adult sons' educational attainment is associated with women's and men's health behaviors and/or old-age support, as past studies hypothesize but have not confirmed empirically.

2. Background

2.1. Intergenerational health benefits of education

Researchers have long recognized that education not only benefits those who acquire it but can spill over to produce intergenerational health benefits for children. These benefits include improved nutritional status (Glewwe, 1999), lower risk of respiratory illness (Khandke et al., 1999), and increased likelihood of survival (Smith-Greenaway, 2013).

Of course, intergenerational influence is not a one-way process: children powerfully influence their parents (Axinn and Thornton, 1993; Bell and Harper, 1977; Gecas and Seff, 1990; Glass et al., 1986; Hagestad, 1984; Lerner and Spanier, 1978; Peterson and Rollins, 1987). Just as educational benefits flow downward from parent to child, a growing number of studies of predominately high-income contexts show they can flow upward from adult children to their aging parents (De Neve and Harling, 2017; Friedman and Mare, 2014; Torssander, 2013; Yahirun et al., 2016, 2017; Yang et al., 2016; Zimmer et al., 2007). Highlighting the complex healthcare web in high-income countries, and the need to navigate different treatment options and specialists, researchers contend that college-educated adult children are more effective advocates for their aging parents (Torssander, 2013). Given that the Internet is increasingly used to obtain health-related information, researchers also contend that college-educated children's greater access to and familiarity with securing medical information from the web may further advantage their parents (Friedman and Mare, 2014).

More recently, however, growing evidence from low- and middle-income settings in countries as diverse as South Africa (De Neve and Harling, 2017), Mexico (Yahirun et al., 2016, 2017), and China (Yang et al., 2016) similarly shows that older adults with more highly educated offspring experience lower risk of mortality. That is, even in these settings where adult children have attended minimal school, healthcare is limited, and mortality risks are pervasive, older adults with more highly educated children experience lower mortality relative to parents whose children have attended less school (for a review, see De Neve and Kawachi, 2017).

Evidence that children's education is a key correlate of older adults' survival across a range of economic contexts raises questions of the salience of this finding to some of the world's poorest communities, like those in rural Nepal. The expansion of education is occurring particularly rapidly in some of the poorest countries in the world (Hannum and Buchmann, 2005), raising questions of the broader demographic benefits of this transition—even in the absence of widespread economic development. In the context of rural Nepal, the potential role of sons' education is of particular interest, given that Nepalese parents have historically invested disproportionately in their sons' education, as they view sons as responsible for providing them with old-age care (Stash and Hannum, 2001). Thus, in the following sections, we discuss the ways in which having a more highly educated son may pattern women's and men's mortality in rural Nepal. Drawing on past hypotheses that adult children with more education may support their parents and encourage them to be healthier (De Neve and Kawachi, 2017), we discuss specifically how sons' educational attainment may pattern women's and men's (1) health behaviors and (2) support in late life.

2.2. Mechanisms driving the link between offspring education and women's and men's survival

2.2.1. Health behaviors

Despite mounting evidence that offspring education patterns women's and men's mortality in diverse contexts across the globe, we know little about why this is the case. Prior work posits that a principal way more highly educated children benefit older adults' survival is through influencing health-related behaviors (Berkman et al., 2000; Cutler and Lleras-Muney, 2010; Field and de la Roca, 2005). From a social influence perspective, more highly educated individuals can indirectly influence family members' health behaviors simply by modeling a healthier lifestyle (Cohen, 2004). Alternatively, from a social learning perspective, children may explicitly encourage their aging parents to adopt healthier behaviors (Montgomery, 1998).