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Does home care for dependent elderly people improve their mental health?

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ABSTRACT

While theoretical models on long-term care decisions assume that the health production function of dependent elderly depends positively on the care received, it has not received much attention in the empirical literature. We estimate the effects of both informal and formal home care on the mental health of elderly individuals in France needing help with daily activities. We adjust for the endogeneity of care with instrumental variables, using characteristics of adult children and geographical disparities in access to public long-term care coverage. The results show that informal care reduces the risk of depression of dependent elderly and that formal care increases their general mental health.

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1. Introduction

The aging of baby-boomers, coupled with the increase in life expectancy, leads to a greater risk of old-age dependence in France. The number of dependent elderly is expected to double by 2060, reaching 2.3 million people. More generally, between 2000 and 2060, the proportion aged 75 and over will increase from 8% to 16% (National Institute of Statistics and Economic Studies). The increase in the ratio of elderly to working-age people will generate high social costs (e.g., insuring the Pay-As-You Go System's equilibrium). Moreover, total French public spending on long-term care represented 24 billion Euros in 2010 (1.2% of GDP), including 14 billion for health expenditures, 7.5 billion for long-term care and 2 billion for accommodation.

In this context of an aging population, maintaining the mental health of older people is important. Indeed, depression and anxiety in older adults are associated with higher healthcare costs (Unützer et al., 1997; Vasiliadis et al., 2013). In addition, poor mental health may accelerate the disability[1]. The effect of pathology on impairments and the effect of functional limitations on disability are higher for depressed individuals than for non-depressed ones (Van Gool et al., 2005). Otherwise, mental health is a major political concern, as underlined in the Comprehensive mental health action plan 2013–2020 (WHO) and in the European pact for mental health and well-being launched in 2008. This latter initiative makes the mental health of older people one of its five priority areas and invites policy makers and stakeholders to "*provide measures to*

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[1] The disability model (Verbrugge and Jette, 1994) involves four consecutive phases: pathology, impairment, functional limitation and disability.

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promote mental health and well-being among older people receiving care (medical and/or social) in both community and institutional settings". In France, the law on the adaptation of society to the aging of the population, adopted by the National Assembly in September 2015, highlights the role of preventing suicide among elderly persons. Indeed, in 2010, people aged 65 and over accounted for 28% of suicides, which often result from undiagnosed and untreated depression.

Support of elderly people in France is delivered mainly by family members as informal care. Thus, the French High Family Council[2] estimates that 3.6 million elderly people live in ordinary households and receive care due to health problems; 48% of them receive only informal care, 20% only formal care and 32% are helped by both formal and informal care. Care hours provided by family caregivers are estimated at over one billion hours, which would represent 77% of the total hours of care.

Several theoretical models include a health production function which has two inputs: formal and informal care (Byrne et al., 2009; Pezzin et al., 1996; Pezzin and Schone, 1999; Stabile et al., 2006; Thiébaut et al., 2012; Van Houtven and Norton, 2004). However, to the best of our knowledge, this function has not received much attention in the empirical literature. Our goal is to estimate from French data the effects of both formal home care (provided by professional workers) and informal care (provided by the family and other relatives) on the mental health of dependent elderly living at home. For this, we use two mental health indicators: depression and the Mental-Health Inventory (MHI-5). We take into account the potential endogeneity of care using an instrumental variables analysis. From a public policy perspective, this study identifies the most effective care arrangements in terms of mental health.

The article is organized as follows: Section 2 offers a summary of the existing literature; Section 3 presents the data and methodology used; Section 4 provides some descriptive statistics, the results of the estimations and robustness tests. Finally, the last section is devoted to discussion and the conclusion.

2. Background

While the literature suggests that informal care may have both positive[3] and negative effects[4] on the emotional well-being of the elderly (see for example Fast et al., 1999, for a literature review), the economic literature sees formal and informal care as inputs in an elderly person's health production function. One type of theoretical model of long-term care arrangements considers a unique utility function for the entire family. Hoerger et al. (1996) consider the effect of public subsidies on the living arrangements of a dependent elderly person (living alone, living with a child or moving into a nursing home). They assume that the family utility increases with informal and formal care and that the marginal utility of care increases with the severity of the disability, but they do not formalize a health production mechanism. Pezzin et al. (1996) also study the impact of a public program on living arrangements and define a health production function. The production of a disabled elderly person's functioning, conditional on the level of disability, requires formal or informal care. Stabile et al. (2006) study the ability of dependent elderly to perform ADLs (activities of daily living). This level of ability is determined by a production function, which depends positively on informal and formal care for a given health status.

Other models examine the decisions of two individuals – a disabled parent and a child – who have different utility functions. Pezzin and Schone (1999) consider informal care and the labour supply of a daughter who has a dependent parent, as well as their living arrangements. A parent's physical health or well-being, conditional on functional or cognitive disability, is defined as a public good whose production depends on formal care (purchased in the market by the parent) and informal care (provided by the daughter). More recently, Thiébaut et al. (2012) build a theoretical model to study the impact of a French reform which would consist of recovering public contributions paid to dependent elderly from part of their estate after their death. They consider a quality of life production function with two inputs: formal and informal care. They assume that informal care is preferred to formal care by the parent and that the marginal productivity of formal care is constant (possible turnover of professional workers), while the marginal productivity of informal care is decreasing (informal caregivers tire more easily).

Finally, some models allow for the presence of multiple potential informal caregivers. Van Houtven and Norton (2004) define the parent's health status as a function (adapted from Grossman, 1972) of total informal care (from all children), of formal medical care and of human capital. Byrne et al. (2009) specify a game-theoretic model of family decisions in which children allocate time for work, leisure, informal care and they allocate money for consumption and formal care. The elderly individual(s) (it may be a couple) allocate time for informal care and leisure and they allocate money to consumption and formal care. The health quality of the elderly – which is defined as an "*aggregate measure of true health [...] and accommodations made for health problems*" – depends on informal care, formal care and on a set of demographic characteristics. In the latter two references, children are altruistic in the sense that their utility depends on the parent's health.

To the best of our knowledge, only Stabile et al. (2006) and Byrne et al. (2009) provide empirical results on the health effects of formal and informal care on the care recipient[5]. The first study uses Canadian data and shows that greater generosity of public home care programs (at the provincial level) leads to a higher probability of reporting good self-assessed health. When it takes into account the potential endogeneity of public generosity, the effect becomes insignificant. Nevertheless, this work does not estimate the effect of informal care.

Byrne et al. (2009) use US data and find that formal care and informal care – especially care provided by a spouse – have only small positive effects on the parent's health quality[6]. Furthermore, they show that informal care provided by a child is more effective than formal care; an additional hour of informal care implies a 0.12% increase in the health quality of parents. Finally, Rice et al. (2009) do not directly study health, but show that more hours of care decrease the probability of unmet needs for assistance in daily life activities. However, this study cannot be easily generalized, since it only concerns the very frail elderly (Medicare and Medicaid dually enrolled elderly) in six states of the US.

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[2] Haut Conseil de la Famille. 2011. La place des familles dans la prise en charge de la dépendance des personnes âgées (Report).

[3] Elderly people cared for by their children report that they are less restless, lonely, bored and unhappy in comparison with other older people.

[4] Loss of personal control in their lives, stress, tension between needing care and not wanting to be a burden, restricted future outlook, lower psychological morale.

[5] By contrast, the recent economic literature has been more interested in estimating health effects of informal care on the caregivers (see for example Coe and Van Houtven, 2009; Do et al., 2015; Van den Berg et al., 2014).

[6] Since there is no direct measure for health quality of parents available in the data, the authors observe it indirectly through its effect on utility (which is measured by a dummy variable indicating if the elderly person was happy during the past week).

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