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Social networks and the probability of having a regular family doctor

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ABSTRACT

Social supports have been shown to affect health in a variety of ways. This paper explores a hitherto ignored avenue linking social supports to health, namely through their influence on having a regular family doctor. We examine the role played by social supports in helping to explain why a significant portion of the Canadian population does not have a regular family doctor even though primary care is fully covered by the public insurer and when having a regular physician is associated with better care and with access to specialists. Five Canadian Community Health Surveys spanning 2001 to 2010 ($n = 13{,}872$ to $n = 30{,}814$) are employed, containing information on three measures of social support: sense of belonging to the local community, how often an individual has someone to confide in, and number of close friends and relatives. We find evidence of a positive link between social supports, especially sense of belonging, and having a regular doctor. Our results suggest that the benefits associated with policies geared towards community development and strengthening neighborhoods may also include facilitating access to primary-care physicians and, importantly, improving the matching of patients with regular family doctors.

1. Introduction

Inequality in healthcare utilization exists today even though universal healthcare has been around in Canada for over 40 years (Health Canada, 2011; Haggie, 2012). Several reasons account for this inequality, including income and other socio-economic characteristics, gender, immigrant status, and the composition of the family. Income is shown to increase the probability of visiting a general practitioner at least once a year (Dunlop et al., 2000; Allin, 2008); women tend to use outpatient medical services more frequently than men (Bertakis et al., 2000; Nathanson, 1975); and recent immigrants report having difficulty getting access to healthcare (Sanmartin and Ross, 2006).

One problem with accessing healthcare services is the perceived shortage of family doctors in Canada. According to the College of Family Physicians of Canada (2009), about one in five individuals in Canada do not have a regular family doctor. This statistic is troubling: if individuals do not have continuity of care at the primary level, then their ability to access specialists and undergo preventative treatments is compromised (e.g., Dunlop et al., 2000; Crooks et al., 2012). McIsaac et al. (2001) found a relationship between regular visits to a family doctor and receiving preventive services, like blood pressure checks. Individuals without a family doctor are likely to experience difficulties accessing routine care (Dunlop et al., 2000; McIssac et al., 2001; Sanmartin et al., 2004; Sanmartin and Ross, 2006).

This paper is the first to explore another factor that may be associated with whether or not an individual has a regularly family doctor, namely social supports. Social supports may accord a 'privileged access to information' (Portes (1998, p. 5), thus enhancing knowledge of healthcare services and their accessibility (Lambrew et al., 1996; Scheffler and Brown, 2008, p. 323). As a result, social supports can improve the quality and availability of information on family doctors who are accepting new patients, leading to, among other things, more accessible services. Understanding better the factors linked to having a regular family doctor is particularly important in jurisdictions where the supply of family physicians is a constraint, as is the case in most Canadian jurisdictions. Even in jurisdictions where physicians are plentiful, social supports may assist in facilitating improved matching across physicians and potential patients.

2. Social supports and accessing physicians

According to Uchino (2006) social support pertains to the structure of an individual's social life and the functions that this structure serves. A rich and varied literature examines the link between different aspects of social support and health. Much of this

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work is preoccupied (quite rightly) with developing a taxonomy that enriches our understanding of how social support may affect health. Schwarzer and Leppin (1991) provide a review of the earlier literature and highlight the lack of consensus surrounding this relationship. In an attempt to reconcile these apparent differences and understand better the mechanism underlying supports and health, they develop a model that causally links social supports to our ability to cope with stress which, in turn, is linked to our immune function and thus health. The importance of social support as a "stress protector" is more recently unscored by Uchino (2006), who reviews how it affects our physiology through lowering stress and, among other things, improving cardiovascular health.

To the extent that social support (or lack thereof) affects health outcomes, it affects the use of the healthcare system. However, here we hypothesize a much more direct link between social support and the use of the healthcare system – namely, its impact on having a regular family doctor. To this end, Andersen's (1995) 'behavioral model of health service use', and the literature based thereon (e.g., Babitsch et al., 2012), provides additional guidance as to the link between social support and health-service use. This model has social structure as a "predisposing characteristic" that affects health-service use.

The empirical literature on social support and *accessing* healthcare services is limited, and sparser still if one is interested only in papers employing statistical techniques. Much of the empirical literature looking at social support and access focuses on specific populations. Several papers have linked networks to healthcare access for the immigrant community: Miltiades and Wu (2008) find that for Chinese immigrants their social networks are a primary predictor of GP visits; Devillanova (2008) shows how strong social ties affect the time to access primary care for immigrants, and Deri (2005) finds evidence that networks affect healthcare utilization in groups where traditional or alternative medicine is the cultural norm. Other vulnerable populations have also been shown to rely on social supports to enhance access to necessary medical services (Knowlton et al., 2005). In all cases, the link between social supports and access is via the transmission of quality information.

Here, we are interested in the link between social support and a particular aspect of access, namely the presence of a regular family doctor. We hypothesize that information, especially high quality information available through social supports and neighborhood connectedness, may contribute to the matching of family physicians and patients. Three measures of social support are employed: having a sense of belonging to a community, having someone in whom to confide, and the number of close friends and family.

3. Data and empirical strategy

The dependent variable in this paper takes the value of "1" if the individual has a regular family doctor, and "0" if not. One can think of the 'decision' to have a regular family doctor or not as being the outcome (denoted by y^*) of a benefit-cost calculation undertaken by the individual and which is generally unobservable (Greene, 2011, p.686). Several factors influence this calculation, and can be represented by the vector X. Although we do not observe the net benefit, y^*, we do observe whether or not the individual has a regular family doctor, thus:

$$y = 1 \text{ if } y^* > 0,$$

$$y = 0 \text{ if } y^* \leq 0$$

If the benefits associated with having a family doctor outweigh the costs, then y^* is positive and we observe $y = 1$ (the presence of a regular doctor), otherwise we do not ($y = 0$). There are several ways of estimating this model; the two most appropriate being the probit and logit models. If the errors in the regression are normally distributed, then we have a probit approach, if they follow a logistic distribution, then it is the logit. With a large enough sample, the logistic distribution converges to a normal distribution. The choice of which technique to employ is largely a question of taste: economists tend to favor the probit approach (e.g., see Laporte et al., 2008; D'Hombres et al., 2010), whereas other health-care analysts tend to favor the logit model. While both approaches yielded very similar results, our discussion focuses on the probit model.

We employ the confidential master files for five *Canadian Community Health Surveys* (*CCHS*): 2001, 2005, 2008, 2009, and 2010, that provide detailed information on individuals aged 12 or older in all provinces and territories (we focus on those aged 20 and above). Because these data are collected and anonymized by Statistics Canada, we did not have to seek ethics approval for their use. However, we did have to seek approval and security clearance from Statistics Canada to access these confidential files through the Research Data Centre located at the University of Ottawa.

In addition to collecting demographic, socioeconomic and health information, the CCHSs also collect information on an individual's sense of belonging to the community and his or her support network. However, one problem with the surveys is that each province or territory had the option of asking the social support questions, and some decided not to. While the 2001 survey covered the most jurisdictions, with Manitoba being the only province that did not use this optional component at all; only individuals in one region of Ontario (Brant) and eight regions of Saskatchewan were asked the social support questions. We were obliged to drop residents of Alberta and Saskatchewan for 2001 as no information on the supply of physicians was available by health region for this year. In 2003, only residents of Canada's least populous provinces, Newfoundland and Prince Edward Island, were asked about social support ($n = 2290$), and hence we omitted that survey. The 2005 survey covers respondents from Quebec, Alberta, British Columbia, and the Northwest Territory; in 2008, British Columbia, Nova Scotia, Quebec, Yukon, and Nunavut used this optional component; whereas New Brunswick, Quebec, Saskatchewan, British Columbia, and the Northwest Territories used this optional component in 2009 and 2010 (see Statistics Canada (2001, 2003, 2005, 2008, 2009)). In addition to dropping individuals under the age of 20 and observations from the missing social support component, we also eliminated individuals residing in the Territories, and those who did not respond to other questions of interest to this study (see Table 1 for a complete list), leaving a sample of 22,242 observations in 2001, 30,814 in 2005, 13,872 in 2008, 19,113 in 2009, and 14,071 in 2010.

Table 1 defines all of the variables used in the analysis and Table 2 provides their sample means. Data are adjusted by the weights provided by Statistics Canada to render the survey representative of the Canadian population. The sample means are reasonably stable across the five surveys. The dependent variable for the regression analysis is created from the answer to the question "do you have a regular medical doctor". The vast majority of respondents answered this question, with less than one fifth of one percent either refusing to answer or responding that they did not know. As reported in Table 2, about 85% of the population reports having a regular family doctor.

The independent variables are grouped into three categories: individual and household characteristics, locational variables and social support characteristics. In the first group, gender has been shown to affect the demand for healthcare services with women tending to use outpatient medical services more frequently than men (Bertakis et al., 2000; Nathanson, 1975). Age ranges were