Social Science & Medicine 75 (2012) 1288–1295

Contents lists available at SciVerse ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Social capital and health of older Europeans: Causal pathways and health inequalities

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ARTICLE INFO

Article history:
Available online 4 June 2012

Keywords:
Healthy ageing
Social capital
Health inequality
Granger causality
Panel data
Europe

ABSTRACT

This study uses a time-based approach to examine the causal relationship (Granger-like) between health and social capital for older people in Europe. We use panel data from waves 1 and 2 of SHARE (the Survey of Health, Ageing, and Retirement in Europe) for the analysis. Additional wave 3 data on retrospective life histories (SHARELIFE) are used to model the initial conditions in the model. For each of the first 2 waves, a dummy variable for involvement in social activities (voluntary associations, church, social clubs, etc.) is used as a proxy for social capital as involvement in Putnamesque associations; and seven health dichotomous variables are retained, covering a wide range of physical and mental health measures. A bivariate recursive Probit model is used to simultaneously investigate (i) the influence of baseline social capital on current health – controlling for baseline health and other current covariates, and (ii) the impact of baseline health on current participation in social activities – controlling for baseline social capital and other current covariates. As expected, we account for a reversed causal effect: individual social capital has a causal beneficial impact on health and *vice-versa*. However, the effect of health on social capital appears to be significantly higher than the social capital effect on health. These results indicate that the sub-population reaching 50 years old in good health has a higher propensity to take part in social activities and to benefit from it. Conversely, the other part of the population in poor health at 50, may see their health worsening faster because of the missing beneficial effect of social capital. Social capital may therefore be a potential vector of health inequalities for the older population.

Introduction

The literature on social phenomena and health has for a long time been a well-established research topic in public health (Berkman & Syme, 1979; Brown & Harris, 1978; Cobb, 1976; Lynch, 1977). It is only since the 1990's that subsequent studies dealing with social connectedness and social cohesion have systematically been referred to as "social capital". Almost in consequence of this vogue, many charges against social capital have made it one of the "essentially contested concepts" in the social sciences (Szreter & Woolcock, 2004). Nevertheless, empirical research has undoubtedly provided some thriving conceptual and theoretical developments (Kawachi, Subramanian, & Kim, 2008). For the pros, social capital is an encompassing umbrella under which unprecedented patterns of thinking have emerged.

One of the most salient new strands of research investigates joint individual and contextual effects of social capital on health. Several recent studies have already emphasized the positive influence of multi-level measures of social capital on individual health outcomes (e.g. Olsen & Dahl, 2007; Scheffler, Brown, & Rice, 2007). A common finding of these studies suggests that the influence of social capital is underestimated when multi-level influence is not taken into account. Another important contribution of the social capital literature has been to go beyond correlations. The recourse to instrumental variables (IV) shed some light on the until-then little-known causal relationships between social capital and health. By and large, pioneer studies found a causal beneficial impact of social capital on health (e.g. D'Hombres, Rocco, Suhrcke, & McKee, 2010; Folland, 2007; Rocco & Suhrcke, 2008; Ronconi, Brown, & Scheffler, 2010).

The purpose of this research is to contribute to the ongoing debate on the causal relationships between social capital and health with regard to the assumption that both variables influence each other (e.g. Islam, Merlo, Kawachi, Lindström, & Gerdtham, 2006; Von dem Knesebeck, Dragano, & Siegrist, 2005). Two opposite streams of causal relationships can describe the relationship between social capital and health. On one hand, several theoretical pathways are usually invoked to explain the positive influence of social capital on health (e.g. Kawachi & Berkman, 2000; Scheffler et al., 2007). Social

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http://dx.doi.org/10.1016/j.socscimed.2012.05.009

capital can enhance the diffusion of health information (Stephens, Rimal, & Flora, 2004; Viswanath, Randolph Steele, & Finnegan, 2006) and can foster norms of healthy behaviours (Brown, Scheffler, Seo, & Reed, 2006) that improve health. Social capital is also thought to provide psychosocial support that can reduce stress and improve mental health (Almedom & Glandon, 2008). On the other hand, poor physical and mental health can reduce the chances of taking part in social organisations since these almost always require a moderate level of activity (just meeting up with people can be difficult for individuals with limitations) and some social aptitudes (depression is a well-known factor of social isolation).

Our contribution is to provide some empirical investigations of the potential existence of a circular relationship between social capital and health, since to our knowledge, no formal evaluations have been yet proposed. A time-based approach (*à la* Granger) is considered in which a two-equation recursive model is used to simultaneously investigate (i) the influence of baseline social capital on current health – controlling for baseline health and other current covariates, and (ii) the impact of baseline health on current participation in social activities – controlling for baseline social capital and other current covariates. We use panel data from the Survey on Health, Ageing, and Retirement in Europe (SHARE). Waves 1 and 2 of SHARE provide a sample made up of 20,000 households (of which at least one member is aged 50 and over), interviewed in 2004 and again in 2006 in eleven European countries. Additional wave 3 data on retrospective life histories (SHARELIFE) are used to fit the dynamic model. No ethical approval was required for this study.

The focus on aged people is motivated by two main reasons. Firstly, "healthy ageing" strategies (WHO, 2006) are now central to public policies as ageing has become a major concern for public health and economic sustainability in Europe. Among the various directions that may help to achieve this goal, the increased participation of older people in social activities (or social capital) may be decisive (see Agren & Berensson, 2006). Secondly, although a growing body of the literature reports the absence of correlation between participation in social activities and self-rated health (Greiner, Li, Kawachi, Hunt, & Ahluwalia, 2004) or other health outcomes (Ellaway & Macintyre, 2007); a close look at the literature advocates that the positive effects of social capital on health could be significant for the sub-population of older people (Kondo, Minai, Imai, & Yamagata, 2007; Sirven & Debrand, 2008; Veenstra, 2000).

The paper is structured as follows: the next section presents data from the SHARE project and some descriptive statistics. The method section deals with statistical issues and the different tests applied here. Regression results and interpretations are given in the results section; while implications for public policy, potential limitations and further research issues are discussed in the final section.

Data

Sample

The Survey on Health, Ageing, and Retirement in Europe (SHARE) is a multidisciplinary and cross-national cohort of individual data on health, socio-economic status and social and family relationships of more than 40,000 individuals aged 50 or over (cf. Börsch-Supan & Jürges, 2005). Eleven countries contributed to the 2004 SHARE baseline study. They are a balanced representation of the various regions in Europe, ranging from Scandinavia (Denmark and Sweden) through Central Europe (Austria, France, Germany, Switzerland, Belgium, and the Netherlands) to the Mediterranean (Spain, Italy and Greece). Further data were collected in 2006–07 during the second wave of SHARE in these countries. SHARELIFE, the third wave of the project, was conducted in 2008–09 over the same population who took part in the two previous waves. This time, the respondents were interviewed about their life history. Different fields such as childhood health, education, job career, family life, housing, etc. were surveyed and provide useful information on initial conditions and life course. The longitudinal sample over the three waves consists of more than 12,000 non-institutionalised individuals born before 1955 in 11 countries (cf. Table 1).

Indicators of social capital

For each wave, a dummy variable for involvement in social activities is derived from the participation (or not) in five social activities (voluntary/charity work, training course, sport/social club, religious organisation, and political/community organisation). Individual i will be assigned 1 as her social capital value if she is involved in at least one of these five associations and 0 elsewhere.

This variable is used as a proxy for social capital as involvement in Putnamesque associations. This is one of the most usual variables of individual social capital in the empirical literature; it is widely used in most surveys and thus enables comparisons to be made with other studies. Social participation is also relevant from a public policy perspective, since voluntary associations are essential partners of government agencies in Europe – to the point that Members of the European Parliament proposed 2011 to be designated the European Year of Volunteering.

Table 2 indicates that more than 40% of the sample respondents (41.7% in wave 1 and 43.1% in wave 2) report taking part in at least one form of the above mentioned social activities. In 2006–07, northern countries (Sweden, Denmark, the Netherlands) and Switzerland have rates of social participation higher than 50%, and southern countries like Spain and Italy have rates under 20%. Notice that Greece keeps averages rates of social participation at both waves since a large majority of the respondents are involved in a religious community. (The instruction for SHARE interviewers states that "Taking part in activities of a religious organisation includes church, synagogue, and mosque attendance.") By and large, living in a northern country significantly strengthens the chances of taking part in social activities. See Hank (2011) for an analysis and detailed discussion of individual and institutional determinants of volunteering, helping, and caring using SHARE data.

Health measures

SHARE data provide an important range of physical and mental health measures. Considering several measures of health in turn as dependant variables may shed light on the various possible phenomena related to social capital, as well as reducing the reporting bias effect. (see Kawachi et al., 2008, for a comprehensive survey of the literature on the relationships between social capital and various

Table 1
Sample description by age class and country.

Country	Age class at wave 1 (2004–05)							
	[50–54]	[55–59]	[60–64]	[65–69]	[70–74]	[75–79]	80+	Total
Austria	90	116	138	113	78	53	30	618
Germany	217	193	249	209	107	63	29	1067
Sweden	192	271	278	222	143	104	81	1291
Netherlands	228	289	240	172	134	72	61	1196
Spain	138	175	159	163	166	101	72	974
Italy	188	300	317	245	182	99	61	1392
France	201	276	205	192	156	129	98	1257
Denmark	159	173	162	116	97	66	60	833
Greece	326	290	251	243	216	110	91	1527
Switzerland	94	101	98	76	63	51	35	518
Belgium	312	445	334	316	289	206	139	2041
N. obs.	2145	2629	2431	2067	1631	1054	757	12,714
As % of total	16.87	20.68	19.12	16.26	12.83	8.29	5.95	100