

The role of social capital in reducing non-specific psychological distress: The importance of controlling for omitted variable bias

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Abstract

This paper examines the relationship between area-level social capital and non-specific psychological distress. It demonstrates that not controlling for non-time-varying omitted variables can seriously bias research findings. We use data from three cross-sections of the US National Health Interview Survey (1999, 2000, and 2001): 37,172 observations nested within 58 Metropolitan Statistical Areas. We also add data from the Area Resource File and County Business Patterns. We use a validated measure of social capital, the Petris Social Capital Index (PSCI), which measures structural social capital.

We estimate a two-level multilevel linear model with a random intercept. Non-specific psychological distress is measured using a valid and reliable indicator, the K6. Individual-level variables include sex, age, race/ethnicity, marital status, education, family income, smoking status, exercise status, and number of visits to a health professional. Area-level covariates include the PSCI, the unemployment rate, psychiatrists per 1000 population, non-psychiatric physicians per 1000 population, and area-level indicators to account for non-time-varying area-level omitted variable bias. Time dummies are also included.

We find that lagged area-level social capital is negatively related to non-specific psychological distress among individuals whose family income is less than the median. These associations are much larger when we control for non-time-varying area-level omitted variables.

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Introduction

Each year, about one quarter (26.2%) of the adult US population suffers from a DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, fourth edition, 1994) diagnosable mental disorder, while less than one quarter of this group (5.8%) suffer

from a serious mental illness (SMI) (Kessler, Chui, Demler, & Walters, 2005). To illustrate the magnitude of the problem, we apply these percentages to the 2000 US Census, which suggest that in the year 2000 about 55.3 million people suffered from a diagnosable mental disorder and about 12.7 million people suffered from a SMI.

The prevalence of mental illness varies across the US. The variation in SMI prevalence by state varies from 7.18% in Hawaii to 10.98% in Rhode Island (Substance Abuse and Mental Health Services Administration, 2003). Variation in social capital may be one reason for this. In fact, the association

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between social capital and mental health is the subject of three recent reviews (Almedom, 2005; De Silva, McKenzie, Harpham, & Huttly, 2005; Whitley & McKenzie, 2005).

Considerable variability exists in the literature regarding the definition of social capital (Hawe & Shiell, 2000; Macinko & Starfield, 2001; Paldam, 2000). We define social capital as the density of trust, networks, or cooperation within a geographical area. See Paldam (2000), and Paldam and Svendsen (2000) for a discussion of this definition. We focus on the observable social structures that allow trust, networks, and cooperation to be built. There is a demand for and supply of such social structures within any given area. As such, social capital may be indirectly measured from either the supply-side (providers of the social structures that facilitate the development and maintenance of social capital) or the demand-side (users of these social structures). Change in the level of social capital within an area occurs when demand and/or supply of these social structures shifts. Change in these social structures can be initiated from either the demand- or the supply-side. Demand-side measures and supply-side measures will tend to correlate, so measures of either are useful in research.

Social capital is conceptualized to include two components: cognitive and structural. The cognitive component includes perceptions of trust, reciprocity, and sharing. The structural component includes the extent and intensity of associational links and activity in society (e.g., the density of civic associations, measures of informal sociability, and indicators of civic engagement) (Harpham, Grant, & Thomas, 2002). Both the cognitive and structural aspects of social capital can be bonding (connections between similar individuals), bridging (connections between dissimilar individuals), or linking (connections across different levels of social status).

Health benefits (including mental health) have been theorized to flow from social capital to the individual through a number of pathways (Kawachi & Berkman, 2000; McKenzie, 2006). These pathways can arguably be collapsed into three major pathways as shown in Fig. 1. First, social capital can enhance the diffusion of information on healthy behaviors. This information is thus more available to individuals who can gather and apply this information to develop healthy behaviors, which, in turn, can improve their health. For example, Stephens, Rimal, and Flora (2004) and Viswanath,

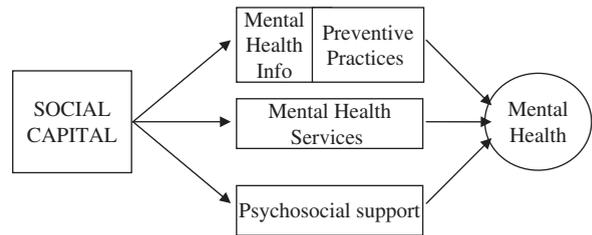


Fig. 1. Pathways between social capital and mental health.

Randolph Steele, & Finnegan (2006) find that membership organizations serve as channels of health information. While social capital may also spread information on unhealthy behaviors, the literature to date suggests that the effect of social capital, for example, on smoking behavior, is health enhancing overall (Brown, Scheffler, Seo, & Reed, 2006).

Second, social capital can provide potential avenues for psychosocial support, which can be accessed by individuals who then receive psychosocial support that can reduce stress and improve mental health. See Kawachi and Berkman (2001) for a discussion of social ties and mental health.

Third, social capital can promote political organizing, which may result in more mental health resources being brought into a community. This may result in more individuals receiving mental health services and thus improving their mental health. See Kawachi and Berkman (2000) for a discussion.

The associations in the literature to date between social capital and mental health are consistent. At least seven published studies have examined the association between area-level social capital and mental health. Six of these studies focus on adults and find a positive relationship between social capital and mental health (or a negative relationship between social capital and mental illness). The remaining study focuses on children and also finds a positive relationship between social capital and mental health. The studies are described below.

Araya et al. (2006) found a negative association between measures of social capital and psychological distress in 51 postcodes using multilevel logistic and linear regression. Miller, Lam, Scheffler, Rosenberg, and Rupp (2006) found a negative association between the number of social organizations in 306 communities in Indonesia and measures of mental distress using repeated cross-sections and regression analysis. Lofors and Sundquist (2006) found a negative relationship between linking social

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