

Does social capital lead to better health ? a review of causal research

Xindong Xue^{1,a}, Qihui Lei^{2,a}

^{1,2} Zhongnan University of Economics and Law, School of Public Administration, Wuhan, Hubei, China, 430073

^axuexingdong@126.com, ^bsunrainlqh@163.com

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Abstract. This paper summarizes and reviews the relevant literature on the causal relationship between social capital and health in western countries and China. The endogeneity of social capital poses challenges to identify the causal relationship. The empirical evidence so far remained mixed due to various measurement of social capital, research objectives and identification methodology. This paper concludes that the relationship between social capital and health should be taken as one of the key directions for China's health policy research.

Introduction

According to the health capital theory proposed by Grossman(1972), health is a produced by an individual's genetic, lifestyle, natural environment, medical services and social factors[1]. Since the concept of social capital was introduced in the 1990s, the relationship between social capital and health has become a popular topic in the fields of sociology, economics, epidemiology and public health. The World Health Organization asserts that health is greatly influenced by social factors and an effective health policy should be promoted from the mobilization of social factors (WHO, 2008)[2].

Mechanisms Linking Social Capital to Health

Figure.1 summarizes four main mechanisms why social capital may lead to better health.

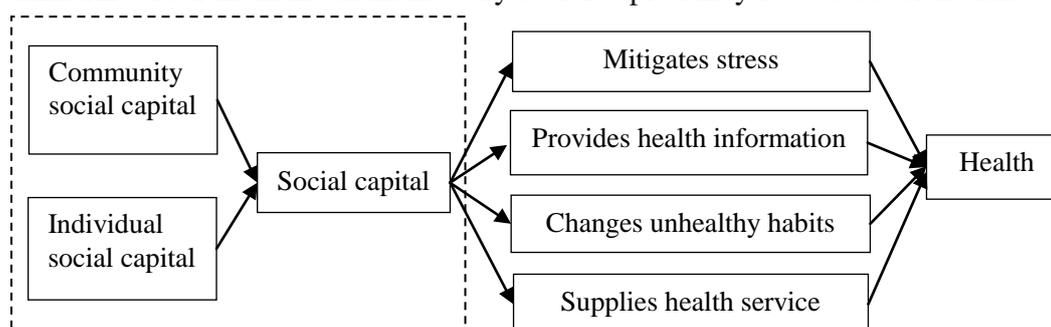


Figure 1. Mechanisms linking social capital to health

First, social capital can reduce stress through a trusting environment or good relationships (Scheffler et al., 2007; Folland, 2008)[3,4]. Moreover, social capital can mitigate the psychological burden during the medical treatment since patients will have more confidence in doctors (Laporte, 2008)[5]. Second, social capital makes health information available to community members and improve their health decisions about diet, exercise and medical care. Third, social capital can affect the community norms of behavior, may instill a sense of responsibility to others and take more healthy lifestyle, such as weight loss, smoking cessation (Brown et al., 2006)[6]. Fourth, social capital increases the accessibility to health services, the informal networks and safety net of community members, which may provide more health benefits program, thus improving their health (Murgai et al., 2002; Mellor, 2005)[7,8].

Current Research in Western Countries

Although a large number of previous studies indicate that there is a positive association between social capital and health, the causal relationship between them is still not clear. Recently, some studies began to solve these problems by employing various strategies, which include instrumental variable (IV) estimator, fixed effects (FE) model and simultaneous equations model (SEM).

The most common approach to overcome endogeneity is to use IV. This approach requires an IV is strongly associated with the endogenous social capital variable and at the same time is uncorrelated with the error term. Brown (2010) chooses the climate characteristics and racial differences as IVs. He find social capital can significantly reduce the number of smoking behavior[9].D'Hombres et al. (2010) use the average value of social capital in the community level as instrument variables, and find that higher degrees of trust and lower degrees of social isolation positively affect health in eight transition countries [10].Ronconi (2010), using instrumental variables and community fixed effects model to study the causal relationship between individual social capital and health, informal communication as a social capital indicator and select two individual level instrumental variables: whether there is public transportation in the neighborhood ;whether the person reports that transportation is an important problem in her/his life. The conclusion is that higher social capital leads to better health status, whether they are male or female[11]. Yamamura (2011) focuses on the relationship between social capital and self-rated health in the labor market. In order to control for the endogeneity of social capital errors, the author adopts a two-stage least squares estimation method (2SLS) and three instruments. They are: whether owning a house, whether have a child, resident life years in the current place. The impact of social capital on health appears different between workers and non-workers: non-workers appear healthier since they have more time to accumulate social capital to improve health, but workers have not changed[12].

Furthermore, Fiorillo and Sabatini (2011) employ the personal attitude towards politics and the number of informal relationship as IVs. They conclude that structural social capital can improve health status[13].Subsequently, Goryakin et al. (2013), based on the data from former soviet union nations, reach the conclusion that trust is significantly correlated with physical health, but the degree of social isolation is correlated with mental health[14].Ljunge (2014) deals with the endogeneity by using trust in the birth place before immigrated as a social capital indicator and the former state of the immigrant language structure as a IV. He draw the conclusion that who shares more ancestral trust will be healthier, since trust can significantly improve individual health status[15]. Hollard (2015), in a similar way, instruments social capital with "ancestral trust ". He explores how social capital may influence on the primary health service supply in the sub Saharan desert area. In order to solve the reverse causality between social capital and health, he used the two step least squares estimation method with instrumental variable, and find that trust can improve the quality of local primary health care facilities[16].

Some scholars use panel data to infer the causal relationship between social capital and health. Snelgrove (2009) using the British household survey panel data to analyze the relationship between self-rated health and community social capital, social trust and civic participation are the measurement index of community social capital. He applies the multiple logistic regression models, controlling for personal characteristics, initial self-rated health and social trust variables, and demonstrated that living in areas with high levels of social trust leads a better health status among community members[17]. Cheuk Yinho (2014) estimates the effect of an individual's number of friends on own health outcomes. The identification strategy exploits the panel structure of the friendship data from the National Longitudinal Study of Adolescent Health to estimate individual fixed effects in the likelihood of friendship formation and then uses the fixed effect estimates as a control function in a model relating health outcomes to number of friends. That two-step estimation method effectively solves the omitted variable bias. Empirical results show that having more friends improves physical and mental health , and reduce the frequency of smoking. It also illustrates that accumulating social capital through friendship interactions is beneficial to health to physical and mental health[18].

A small body of literature also finds the inverse effect, moving from health to social capital.

Therefore, the relationship between the two variables is circular. Sirven and Debrand (2011) use a panel data of health, ageing and retirement in 11 European countries. Social capital is measured by participation of social organizations. A two dynamic equations is established which linked the current health with lagged social capital and social capital with health so the equations are not properly simultaneous; simultaneity derives instead from the assumed association between the error terms of the two equations. Results show that the effect of social capital on health status is highly significant, poorer health will influence participation in social activities, and the reverse effect is much stronger[19]. Rocco et al. (2013) explicitly model the simultaneous circular relationship between social capital and health. As in standard simultaneous equation models, identification of the structural parameters is achieved by means of exclusion restrictions. Their results confirmed the circular relationship between social capital and health, and the effect of community social capital is more important than that of the individual social capital[20].

Current Research in China

The relevant research on social capital and health starts late in China and most of them focus on the associations rather than the causality. Yu Qianqian et al.(2007) explore major factors determining health status of rural residents in Shandong province through two Logistic regression analysis. The authors find that social capital can significantly improve health[21]. Yu Hui and Huang Ronggui (2008) use multiple linear regression model and find that the individual social capital and community social capital have a significant effect on the mental health[22]. Wang Hongmei (2009) uses survey data from 22 villages in China to examine the relationship between social capital and self-rated health of rural residents. Their study indicate that trust and distrust in the individual level will affect farmers' health[23]. Zhou Guangsu et al. (2014) studies the effect of income inequality, social capita on health. They highlight that social capital promotes the transfer payments of private lending and the relatives and friends, thus promotes the individual to obtain the medical resources, and has a significantly positive effect on the health of the residents[24]. These studies have only focused on the association between social capital and health, thus the policy implications are limited. Recently, Chinese scholars have begun to explore the cause and effect relationship between social capital and health.

Xue Xindong and Gordon Liu (2012) use the 2008 China Health and Retirement Longitudinal Study (CHARLS) and confirm that there is a causal relationship between social capital and health . They select two instrument variables to control for the endogeneity of social capital: whether the community has a road to pass through and the distance to nearest bus station. Their IV results indicate that the effect of social capital on health status is highly significant and there exists gender differences in this relationship. Women have more health benefits from social capital than men[25].

Huang Weiwei, Lu Qian and Zhao Minjuan (2015) use simultaneous equation model to analyze how social capital affect on health of the elderly. Based on the factor analysis, the article constructs the individual level social capital index through four dimensions: social network, social trust, social prestige and social participation, and take lifestyle as an intermediary variable. The empirical analysis shows that social capital has a significantly impact on the overall health quality of the elderly. Not only are there direct effect on the psychological and mental health of elderly by social capital, but also the indirect effect through lifestyle .However, the mediating effect of lifestyle is weaker than the direct effect[26] .

Conclusion

Overall, although some studies indicated that social capital can improve health, there are still several limitations and challenges in identifying the causal relationship between social capital and health. Based on the relevant literature, we put forward the possible directions for future study .

The first direction is to construct a more accurate measurement of social capital. Social capital has strong cultural attributes. The diverse cultural background results in different attributes of social capital in the different countries. As the definition of social capital is complex and multidimensional,

scholars may define social capital in different ways. It is difficult to observe and measure the social capital directly, even in the same conceptual framework, so the use of other substitute indicators is necessary. The diversity of measurement, the lack of reliability and validity of the test result in mixed conclusions. A more systematic and comprehensive measurement framework should be established in the future, different dimensions of social capital should be put in the one framework to measure so that we can analyze the impact more accurately.

The second direction is that the subjective indicator of health, although commonly used in health measurement, may result in potential errors. Especially when both the social capital and health are self-evaluation indicators, the psychological characteristics of the individual interviewed may cause them to move in the same direction. For example, optimistic people will tend to believe they are healthier, happier, and feel that their neighbors are more trustworthy. This biased error will cause false causal relationship between social capital and health. The degree of this error cannot be figured out in the research, so more objective indicators of social capital and health is critical to the estimation.

The third direction is to explore whether there is a difference in the relationship between social capital and health effects at different levels or groups. Some studies point that the relationship between the social capital and health at the individual level is stronger than that at the community level. After controlling for the social capital at the individual level, the role of community level social capital on health is not so significant(Lindstrom,2004)[31]. Therefore, it is meaningful to ascertain which level of social capital affect health most, the national level, the community level or the individual level.

The last direction is to eliminate the endogeneity. The major problem in the study of the relationship between social capital and health is the endogeneity of social capital. If we do not take into account the endogeneity, the results of the OLS regression will be biased. Reverse causality, omitted variable bias and self-selection bias may all lead to endogenous problems.

In general, although a large number of studies believe that social capital significantly affects the health of individuals, there are still enough reasons to suspect that such a relationship may be not true. The existence of a reverse relationship is possible as the health of the individual can also affect social capital. People with high social capital will choose to contact with those who have higher social capital. In addition, the innate social capital endowments and preferences are inherited by their parents, which cannot be observed by the researcher, may also cause spurious correlation.

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湖北武汉东湖高新区南湖大道182号中南财经政法大学公共管理学院 薛新东 手机：
13237189787