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Quality and quantity: The role of social interactions in self-reported individual health

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ABSTRACT

The public health literature on the detrimental effects of social isolation has shown that the quantity of social connections is positively correlated with individual health. Drawing on pooled cross-sectional data, we test this hypothesis on a representative sample of the Italian population. Our findings show that, in addition to the quantity of interactions, it is their quality – as measured by subjective satisfaction derived from relationships with friends – that works as the best predictor of self-reported health. The frequency of meetings with friends is significantly and positively correlated with good health in all regressions. However, when we add our measure of the quality of relationships to the probit equations, the statistical significance of "quantitative" measures is scaled down. Satisfaction with relationships with friends exhibits a positive and highly significant coefficient. Results of the multivariate probit analysis point out the potential role of unobservable variables suggesting the existence of endogeneity problems which require further investigation.

We point out the existence of health disparities based on socio-economic status. There is a higher probability that poorer and less educated individuals report poor health conditions. The risk is even higher for unemployed and retired workers. This paper contributes to the literature in two substantive dimensions. This is the first empirical study of the relationship between social interactions and health in Italy. Second, we add to previous empirical studies by taking into account not only the frequency of various kinds of meetings but also indicators of their "quality", as measured by agents' subjective satisfaction with their social participation. The reliability of the analysis also benefits from the uniqueness and comprehensiveness of our dataset, which tries to overcome a structural deficiency in Italian data by merging information on agents' behaviours and perceptions with data on household income.

Introduction

In the last two decades, many of empirical studies have tested the hypothesis that social interaction, social trust and community cohesion can improve health at the individual level. The literature has proposed several explanations for this potential link. More intense social relationships may facilitate individuals' access to social support and healthcare, as well as the development of informal insurance arrangements (Altschuler, Somkin, & Adler, 2004; Baron-Epel, Weinstein, Haviv-Mesika, Garty-Sandalon, & Green, 2008; Ferlander & Mäkinen, 2009; Giordano & Lindstrom, 2010; Poortinga, 2006). They can promote the diffusion of health information, increase the likelihood that healthy norms of behaviour are adopted (e.g., physical activity and use of preventive services) and exert social control over deviant health-related behaviours, such as drinking and smoking (Folland, 2007; Kawachi, Kennedy, & Glass, 1999; Lundborg, 2005; Melchior, Berkman, Niedhammer, Chea, & Goldberg, 2003; Yamamura, 2011a). Cohesive networks may exert the so-called "buffering effect", by balancing the adverse consequences of stress and anxiety through the provision of affective support, and by acting as a source of self-esteem and mutual respect (De Silva, Huttly, Harpham, & Kenward, 2007; Fujisawa, Hamano, & Takegawa, 2009; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). According to Berry and Rodgers (2003), the correlation between social connectedness and mental health is due to the association of interpersonal interactions with a protective factor – trust.

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This paper adds to the existing body of research by arguing that social relationships do not matter *per se*. What may really count is their "quality" or, in other words, whether these relationships are perceived as "satisfactory" or not. It seems reasonable to argue that only satisfactory relationships may be able to provide the moral support necessary to make the buffering effect work and may sustain the establishment of mutual assistance mechanisms, the circulation of health-related information and the promotion of healthy behaviours.

Using a nationally and regionally representative dataset, we empirically test the impact of the quantity and quality of social interactions on individual health in Italy. This is a worthy case study for at least two reasons. First, the link between various aspects of social interaction and health has been tested almost all over the world but, to our knowledge, not in Italy. Second, the Italian National Health Service aims to provide universal coverage free of charge at the point of use. Equal access to uniform levels of health care according to needs is in principle guaranteed to everyone, yet significant disparities in the use of healthcare services have been registered, depending on socio-economic status and the area of residence (Atella, Brindisi, Deb, & Rosati, 2004; Masseria & Giannoni, 2010). It is therefore an interesting task to investigate which socio-economic phenomena may be associated with the development of health inequalities.

Social interactions and health

Over the past 20 years, the health economics and social epidemiology literatures have extensively analyzed the impact of social interactions on individual health. Various aspects of individual relationships have been addressed, from relationships with family and friends to membership of various kinds of associations, community cohesion, and the ability to carry out collective actions, often grouped together under the common label of social capital. Following Putnam, (Putnam, 1993, 1995), social capital is usually referred to as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit." (Putnam, 1995, p. 65). Uphoff (1999) further distinguished between structural and cognitive dimensions of the concept. Structural social capital deals with individuals' behaviours and mainly takes the form of networks and associations that can be observed and measured through surveys. Cognitive social capital derives from individuals' perceptions, resulting in norms, values and beliefs that contribute to cooperation. These latter aspects involve subjective evaluations of the social environment. Both structural and cognitive dimensions include several sub-dimensions whose relationship with health variables in turn varies depending on the context and on the effect of other potentially influential individual and local factors (Berry, 2008; Moore, Daniel, Gauvin, & Dubé, 2009; Yamamura, 2011b). For example, membership of associations has been found to be positively correlated with health in some studies (Giordano & Lindstrom, 2010; Kawachi et al., 1999; Poortinga, 2006; Rose, 2000) and insignificant in others (Carlson, 1998; D'Hombres, Rocco, Shurcke, & Mckee, 2010; De Silva et al., 2007; Petrou & Kupek, 2008; Yip et al., 2007).

The complexity of social capital is further demonstrated by the existence of deep and changeable relations between its sub-dimensions. Social norms of trust and reciprocity prompt cooperative behaviours, in turn fostering the accumulation of durable ties (Antoci, Sabatini, & Sodini, 2011). However, certain types of networks - such as, for example, youth gangs or small groups pursuing sectarian interests - can hamper the exchange of information and the diffusion of trust between group members and the surrounding social environment (Gittel & Vidal, 1998; Knack & Keefer, 1997; Sabatini, 2008).

In this paper, we particularly focus on social interactions with friends (which, following Berry and Welsh (2010) can be referred to as "informal social connectedness"). This dimension of social capital appears to be the more robust predictor of health. In order to test role of other structural social capital's sub-dimensions, the empirical analysis also controls for active and passive membership of associations, and religious participation.

Social interactions with friends may improve health through four channels:

1) Transmission of health information. Networks of relationships are a place to share past experiences on diseases, doctors, prices, health facilities and therapies. This privileged channel of information fosters matching procedures (in the sense that patients spend less time finding the appropriate doctor), lowers the cost of health information, speeds up the diffusion of knowledge on health innovation and eliminates mistaken perceptions on the role of healthcare, discouraging patients from undertaking inappropriate treatment. The role of networks in transmitting information is stressed by several studies that found a significant and positive correlation between various aspects of social capital and actual or perceived health (Berkman, Glass, Brisette, & Seeman, 2000; D'Hombres et al., 2010; Kim, Subramanian, Gortmaker, & Kawachi, 2006).
2) Mutual assistance mechanisms. In case of sickness, the support of family and friends plays a fundamental role in ensuring access to healthcare services and facilities, for example through financial assistance, transportation services and help in dealing with doctors. In countries where public health systems do not provide universal coverage for all patients, informal financial support plays a fundamental role in ensuring access to services for individuals otherwise excluded from formal schemes. Mutual, spontaneous insurance arrangements are particularly relevant in underdeveloped areas, characterized by limited supply and widespread informal economy (Ayé, Champagne, & Contandriopoulos, 2002; Mladovsky & Mossialos, 2008). Social contacts may foster individual access to services even when public protection schemes are designed to provide universal coverage (Van Doorslaer, Koolman, & Jones, 2004). For example, empirical evidence on the Italian National Health System (NHS) – which theoretically covers all citizens on equal terms – suggests that the wealthy are more likely to be admitted to hospitals than the poor (Masseria & Giannoni, 2010). With reference to Italy, Atella et al. (2004) found that individuals who might be considered vulnerable from a societal perspective – i.e. the sick, the elderly, women and those with low incomes – were less likely to seek care from specialists and more likely to seek care from general practitioners. Since, in the Italian NHS, services are in principle equally accessible to all citizens, health inequalities based on socio-economic status may also be related to people's ability to acquire suitable information and to find the right contacts in the right places, which in turn is influenced by the extension of one's social network.
3) Promotion of healthy behaviours. Social interactions may foster the development of social norms that support health-promoting behaviours, such as prevention and physical activity, or constrain unhealthy habits, such as drinking and smoking. For example, jogging with a friend or joining a football team may make physical exercise less boring and painful, thus providing incentives to increase fitness and to keep weight under control. According to Haughton McNeill, Kreuter, and Subramanian (2006), "through social networks individuals form a sense of attachment and connectedness to one another