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Mother's social capital and child health in Indonesia

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ABSTRACT

Social capital has been shown to be positively associated with a range of health outcomes, yet few studies have explored the association between mother's social capital and children's health. This study examines the relation between mothers' access to social capital (via participation in community activities) and child health. Instrumental variable estimation was applied to cross sectional data of the Indonesian Family Life Survey (IFLS) 2007 which consist of face-to-face interviews among the adult population in Indonesia ($N_{mothers}$ = 3450, $N_{children}$ = 4612, $N_{communities}$ = 309, and participation rate at 92%). The findings show strong evidence for the causal flow running from a mother's social capital to her children's health. All instruments are highly correlated with mothers' social capital but uncorrelated with child health. The findings are also robust to individual and community characteristics associated with child health, and suggest that enlarging mothers' social capital through various community activities is a particularly relevant intervention for reducing child health disparities in Indonesia.

Introduction

In the past two decades, social capital has increasingly gained attention in health research (Kawachi, Subramanian, & Kim, 2008). Social capital can be conceptualised as the property of individuals and communities. Portes (1998:12) believes social capital as "the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structures". In contrast, Putnam (1995:67) conceives social capital as a community-level resource and a distinctly social feature that is reflected in the structure of social relationships. He defines social capital as: "features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit". In this study, we conceive social capital as a community-level resource accessed by individuals, specifically mothers. Child health is affected by mothers' access to networks via their participation in community activities. In these networks, information about health (among others) circulates. Mothers' access to networks may differentially depend on the extent to which they participate in community activities and the availability of such networks.

Kawachi and Berkman (2000) describe the mechanisms by which community social capital affect health. Firstly, social capital provides channels for the distribution of knowledge and information related to health. Health promotion can be distributed more rapidly through social networks, channels which again are found to be especially important in developing countries. Secondly, social capital can serve as a mechanism for maintaining healthy behaviour norms and exerting social control over detrimental health behaviour. Thirdly, social capital allows for the promotion of access to services and amenities, as more cohesive neighbourhoods are better equipped to mobilise collective action to champion the development of and access to health-related services. Fourthly, social capital serves as a conduit for psycho-social processes, including the development of social support and mutual respect. Such norms can translate into easier child-rearing, improved self-government, and the maintenance of a healthy social environment. In addition, the Marmot reviews (2010) notes that social capital also enables communities to be responsive to the national and local initiatives, including those instigated by government or health organisations.

The mechanisms linking mothers' social capital and children's health are channelled via improvements in mothers' knowledge that in turn affects their parenting behaviour (Anderson & Damio, 2004; De Silva & Harpham, 2007; Martin & Rogers, 2004). De Silva and Harpham (2007) suggest that social networks, through their participation, enable mothers to know more due to knowledge transfer (e.g. where to obtain additional cheap sources of food), to think differently due to attitude influences (e.g. attitudes towards hygiene practices), and to do things differently (e.g. breastfeed for longer). These mechanisms are illustrated by

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research from the United States, which shows that women with more social capital have increased odds of breastfeeding their child for longer (Anderson & Damio, 2004). Other research shows that both household and community-level social capital is associated with reduced odds of household hunger (Martin & Rogers, 2004). In a setting such as Indonesia, where most adult females have only attained a primary level of education, social networks may provide mothers with information they have not obtained through schooling (Wibisana, Trihono, & Nurwati, 1999). This information ranges from the benefits of oral rehydration therapy to the location of preventive care providers.

Two research gaps exist within the literature on social capital and health. Firstly, most focuses on adult health in developed countries (for reviews, see Kawachi & Berkman, 2000). However, given that the effect of social capital is hypothesised to vary by subgroups and contexts (Cutrona & Russell, 2000; De Silva & Harpham, 2007), it is important to study the effect of social capital on child health in developing countries. This study provides this focus, and is thus a contrast with the far more extensive work on social capital and adult health that draws on data from developed countries, mainly the United States and Western Europe. Indonesia is particularly suitable for this study, not only because of the government concern to improve child health status, but also because many regions of the country boast a long-standing indigenous tradition of community involvement (or social capital) (Beard, 2005, 2007; Grootaert, 1999; Miller, Schiffer, Lam, & Rosenberg, 2006). Relatively little research however has examined the implications of this tradition for social capital and child health.

Secondly, several empirical studies examining the relationship between mothers' social capital and child health do not take into account the reverse causality issue which compromises the relationship (for example De Silva & Harpham, 2007; Macinko & Starfield, 2001; Tuan, Harpham, & De Silva, 2006). The characteristics that promote mother's social capital are likely to be influenced by children's health. For example, a sick child may prevent the mother from participating in community activities, hence a reduction in social capital (Tuan et al., 2006). Failure to take this into account will lead to bias estimate of the relationship between mother's social capital and child health. In this study, instrumental variable estimates are used to establish the direction of causal effect between a mother's social capital and her child's health. This method is increasingly gaining ground, even among biomedical researchers who study, among others, chronic obstructive pulmonary disease (Lindenauer et al., 2010), prostate cancer (Lu-Yao et al., 2008), and acute myocardial infarction (Stukel, 2007). Studies also show that this method performs well in ruling out reverse causality, from social capital to various determinants such as welfare (Narayan & Pritchett, 1999), poverty and welfare (Grootaert, 1999), employment (Bayer, Ross, & Topa, 2005), violent crime (Lederman, Loayza, & Menendez, 2002), and health (D'Hombres, 2010). Because this approach in part reflects the aspects of the Indonesian setting, we turn to a discussion of contexts and then describe the data and methods employed.

Community development and health in Indonesia

Indonesia's economic growth has been robust since the financial crisis of 1998, and appears well positioned with an average of 4–6% since 2002 (World Bank, 2008). Mother and child health status improved after the crisis. Mother mortality ratio decreased sharply from 340 per 100,000 live births in 2000 to 220 per 10,000 live births in 2010. Malnutrition, measured using both height for age and weight for age, decreased during this period (from 42% and 25% in 2000 to 37% and 18% in 2010 respectively). Female and male life expectancy at birth increased from 67 years and 64 years in 2000 to 71 years and 67 years in 2010 respectively (World Bank, 2012).

Many regions of Indonesia have been known for indigenous tradition of community involvement (Beard 2005, 2007; Bowen, 1986; Geertz, 1962; Grootaert, 1999). This tradition is often recognised with a set of key Indonesian terms: *gotong royong* (Bowen, 1986; Koentjaraningrat, 1961), *arisan* or *binda* (Geertz, 1962), *koperasi*, *rukun* and *musyawarah* (Bowen, 1986), and *kerja bakti* (Beard, 2005). In Indonesia the generalised reciprocity aspect of social capital is best illustrated by the sociocultural ethic of *gotong royong* (meaning generalised reciprocity) both in rural and urban areas; this remains a strong social norm in Indonesia as well as a powerful determinant of social capital (Bowen, 1986). In many instances, this tradition of community involvement leads to the formation of grassroots organisations, which government subsequently adopts as part of its regional and national programmes. These programmes have often been cited by donor organisations as an example of community development success stories (Shiffman, 2002). Their goals differ, but include improving healthcare, education, sanitation, security and village upkeep (Wibisana et al., 1999).

Programmes that involve mothers are found across local communities. At least one type of volunteer programme was existed in each of the 309 communities included in the 2007 IFLS. We focus on the involvement of mothers in five specific programmes: community meetings, village cooperatives, voluntary labour, village upkeep, and women's associations. Table 1 draws on the data and presents descriptive statistics of mothers volunteering in these programmes. Forty-three percent of mothers report getting involved in at least one programme in the year prior to interview. In addition, among those who participated, about one-third was involved in more than one programme. With respect to the type of activity in which the women were involved, participation is highest for voluntary labour, community meetings and the women's association.

None of these five programmes are specifically geared towards improving children's health, a feature which is essential to the interpretation of the results. If the programmes in which mothers participate did target child health, a positive association between mothers' social capital and child health would be likely to reveal the effect of the programme and not necessarily the social capital of mothers generated by participating in that programme.

Methods

Indonesian Family Life Survey (IFLS) 2007

IFLS is an on-going longitudinal survey that began in Indonesia in 1993. It represents 83% of Indonesia's population living in 13 provinces and 262 districts (Frankenberg & Thomas, 2000), and brings together a rich set of information on individuals and households, the communities they live in, and the facilities that are available to them. Households (defined as a group of people who reside together and 'eat from the same cooking pot') were

Table 1
Mothers' social capital in various community programme.

Type of community programme	Percentage participating
Mother participation in any program	43%
Mother participation at least in one program	27%
Women association	10%
Community meeting	11%
Cooperatives	3%
Voluntary labour	12%
Village upkeep	8%

Source: IFLS 2007.