

Social Capital and Health

Variations, Associations and Challenges



Fredrica Nyqvist

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Abstract

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Abstract

Although social capital and health have been extensively studied during the last decade, there are still open issues in current empirical research. These concern for instance the measurement of the concept in different contexts, as well as the association between different types of social capital and different dimensions of health. The present thesis addressed these questions. The general aim was to promote the understanding of social capital and health by investigating the oldest old and the two major language groups in Finland, Swedish- and Finnish-speakers. Another aim was to contribute to the discussion on methodological issues in social capital and health research.

The present thesis investigated two empirical data sets, Umeå 85+ and Health 2000. The Umeå 85+ study was a cross-sectional study of 163 individuals aged 85, 90, and 95 or older, living in the municipality of Umeå, Sweden, in the year of 2000. The Health 2000 survey was a national study of 8,028 persons aged 30 or above carried out in Finland in 2000-2001. Different indicators of structural (e.g. social contacts) and cognitive (e.g. trust) social capital, as well as health indicators were used as variables in the analyses. The Umeå 85+ data set was analyzed with factor analysis, as well as univariate and multivariate analysis of variance. The Health 2000 data was analyzed with logistic regression techniques.

The results showed that the Swedish-speakers in the Finnish data set Health 2000 had consistently higher prevalence of social capital compared to the Finnish-speakers even after controlling for central sociodemographic variables. The results further showed that even if the language group differences in health were small, the Swedish-speakers experienced in general better self-reported health compared with the Finnish-speakers. Common sociodemographic variables could not explain these observed differences in health.

The results imply that social capital is often, but not always, associated with health. This was clearly seen in the Umeå 85+ data set where only one health indicator (depressive symptoms) was associated with structural social capital among the oldest old. The results based on the analysis of the Health 2000 survey demonstrated that the cognitive component of social capital was associated with self-rated health and psychological health rather than with participation in social activities and social contacts. In addition, social capital statistically reduced the health advantage especially for Swedish-speaking men, indicating that high prevalence of social capital may promote health.

Finally, the present thesis also discussed the issue of methodological challenges faced with when analyzing social capital and health. It was suggested that certain components of social capital such as bonding and bridging social capital may be more relevant than structural and cognitive components when investigating social capital among the two language groups in Finland. The results concerning the oldest old indicated that the structural aspects of social capital probably reflect current living conditions, whereas cognitive social capital reflects attitudes and traits often acquired decades earlier. This is interpreted as an indication of the fact that structural and cognitive social capital are closely related yet empirically two distinctive concepts. Taken together, some components of social capital may be more relevant to study than others depending on which population group and age group is under study. The results also implied that the choice of cut-off point of dichotomization of self-rated health has an impact on the estimated effects of the explanatory variables. When the whole age interval, 35-64 years, was analyzed with logistic regression techniques the choice of cut-off point did not matter for the estimated effects of marital status and educational level. The results changed, however, when the age interval was divided into three shorter intervals. If self-rated health is explored using wide age intervals that do not account for age-dependent covariates there is a risk of drawing misleading conclusions.

In conclusion, the results presented in the thesis suggest that the uneven distribution of social capital observed between the two language groups in Finland are of importance when trying to further understand health inequalities that exist between Swedish- and Finnish-speakers in Finland. Although social capital seemed to be relevant to the understanding of health among the oldest old, the meaning of social capital is probably different compared to a less vulnerable age group. This should be noticed in future empirical research. In the present thesis, it was shown that the relationship between social capital and health is complex and multidimensional. Different aspects of social capital seem to be important for different aspects of health. This reduces the possibility to generalize the results and to recommend general policy implementations in this area. An increased methodological awareness regarding social capital as well as health are called for in order to further understand the complex association between them. However, based on the present data and findings social capital is associated with health. To understand individual health one must also consider social aspects of the individuals' environment such as social capital.

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- II Nyqvist, F., Gustavsson, J., & Gustafson, Y. (2006). Social capital and health in the oldest old: The Umeå 85+ study. *International Journal of Aging and Later Life*, 1(1), 91-114.
- III Nyqvist, F., & Martelin, T. (2007). Skillnader i självskattad hälsa mellan svensk- och finskspråkiga i Finland. *Sosiaalilääketieteellinen aikakauslehti*, 44(2), 78-86.
- IV Nyqvist, F., Finnäs, F., Jakobsson, G., & Koskinen, S. (2008). The effect of social capital on health: The case of two language groups in Finland. *Health & Place*, 14(2), 347-360.
- V Finnäs, F., Nyqvist, F., & Saarela, J. (2008). Some methodological remarks on self-rated health. *The Open Public Health Journal*, 1, 32-39.

1 Introduction and Background

A long-standing body of research has underscored the association of health outcomes with sociodemographic characteristics, health behaviors and psycho-social characteristics of the individuals (e.g. Bjorner et al., 1996; Mackenbach & Bakker, 2002; Wilkinson & Marmot, 2003). In other words, married people, highly educated people, those who have low health risk behavior, and those who have a supportive social network usually experience better health. To understand individual health, there is an increasing recognition that one must also look into other aspects of the individuals' environment such as family and friendship relationships, relationships within more formal institutions and trust between individuals or into the level of social capital (Kawachi et al., 1997; Putnam, 2000; Rose, 2000; Hyypää & Mäki, 2001b, 2003; Lindström, 2004).

Social capital as a concept was introduced into sociology (Bourdieu, 1986; Coleman, 1988, 1990) and political science (Putnam, 1993) in the mid-1980s and early 1990s, although the roots of social capital can be traced to classical sociology such as the work of Émile Durkheim (1897/1951) on social integration and suicide. Even if the concept of social capital can be defined and treated differently, it is in general described as a resource that is realized through relationships (Schuller et al., 2000). The existing literature highlights, however, two distinct conceptualizations of social capital. One approach underlines the network perspective, i.e. social capital is described as social networks with values for the individuals within the specific network (Bourdieu, 1986; Coleman, 1988, 1990; Portes, 1998; Lin, 1999). By contrast, social capital may also be seen as a resource available for communities and societies. Within this approach, social capital is seen as a resource that allows citizens to attain mutual goals such as democracy building or higher economic performance (Putnam, 1993, 2000; Fukuyama, 1999).

Social capital has generally been shown to play a role in explaining health inequalities (Carlson & Chamberlain, 2003; Kawachi et al., 2004; De Silva et al., 2005; Islam et al., 2006) and it is currently receiving considerable academic and public attention. Although social capital has been extensively studied within health research during the last decade, there are still open issues in current empirical research. These concern for instance the measurement of the concept in different contexts, as well as the association between different types of social capital and different dimensions of health (Harpham et al., 2002). The present thesis addresses these questions. The general aim of this thesis

is to promote the understanding of social capital and health by investigating the oldest old and the two major language groups in Finland, Swedish- and Finnish-speakers. Another aim is to contribute to the discussion on methodological issues in social capital and health research. Social capital and health are two comprehensive concepts that can be examined separately and analyzing them together requires methodological awareness regarding both concepts.

The present thesis is organized as follows. Chapter 2 contains an introduction to the theories of social capital and different components of social capital. Earlier research on social capital and health are presented in Chapter 3, followed by a discussion on why social capital may influence health. The focus in Chapter 4 is on some central remarks regarding the analysis of social capital and health. Chapter 5 presents the aims of this thesis whereas Chapter 6 contains the data and methods. Chapter 7 presents the main results and Chapter 8 discusses thoughts and questions that stem from the empirical analysis of the materials.

2 Theories of Social Capital

Foundations of social capital

The origin of the concept of social capital lies in the classical sociology of the nineteenth century (for a review on the classical roots see e.g. Portes and Sensenbrenner, 1993) but it has been made popular by Pierre Bourdieu, James Coleman, and Robert Putnam. According to Bourdieu (1986), social capital is “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (p.248). Coleman (1990) again states, “Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within the structure” (p.302). Putnam (1993) defines social capital as “features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions” (p.167). In one of his later works, Putnam (2000) defines social capital as “connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them” (p.19). These exemplify the broad spectrum of foundations of social capital which vary according to authors and various theoretical traditions.

Broadly speaking, there are two approaches to the concept of social capital: the individual (network) and collective approach. The individual approach is found within the sociological tradition, where social capital is seen as an individual resource including social networks, support and trust in local environments and in relationships between individuals (Bourdieu, 1986; Coleman, 1988; Burt, 1992; Portes, 1998; Flap, 1999; Lin 1999). Social capital enables individuals to gain access to resources that would otherwise not be accessible, such as ideas, information, services and support. Within this individual version of social capital, the individuals benefit directly from their own social network in the form of better jobs, better educational performance, better economy, better health, etc. Since resources within the network are of key concern, a rather common method is to employ sociometric analysis by using sampling techniques such as saturation survey, name generator and position generator to map the network and the resources embedded therein (see Lin, 1999).

The public good aspect of social capital is emphasized in Coleman's later work (1990) and consequently, Coleman's theory could be seen as a bridge from the individual approach to the broader understanding of social capital as used, for example, by Putnam (1993, 2000). Coleman (1990) argues that once social capital is created, it benefits all the individuals within the relevant social structure in contrast to human and physical capital where the benefits only accrue to the one who invested in them. The benefit of social capital is hence not exclusively for the individual which is regarded as one important feature within the collective approach as well. However, the collective approach utilizes social capital as a feature of a community, region or even a nation that can hold differing levels of social capital (Putnam, 1993, 1995, 2000; Fukuyama, 1999).

The study of Italy in Putnam's book, *Making Democracy Work* (1993), is regarded as a pivotal text within this collective approach to social capital. For Putnam, a society with high levels of social capital is characterized by a high level of social participation, trust in others, and reciprocity that enhances interactions with other people. The higher the level of these features the more cooperation for mutual benefits are facilitated. He suggests that networks of civic engagement, measureable, for example, by citizens' membership in clubs and participation in associations, foster "norms of generalized reciprocity and encourage the emergence of social trust" (1995, p.67). Within this collective construct social capital is mainly seen as public good or in other words individuals can gain the benefits of living in an area with a high level of participation, without necessarily having to participate themselves. Although the social capital definition of Putnam clearly has collective attributes, he sees social capital as having relevance also on an individual level (having properties of a "private good") (Putnam, 2000, p.20). Social capital can thus have benefits for the wider society as well as for the individual as regards his or her personal goal attainment. The definition of social capital used in health research usually originates with Putnam, regardless of whether the analysis of social capital is on a collective or an individual level (shown in more detail in Chapter 3), and puts emphasis on network and social ties, voluntary associations, trust and norms of reciprocity.

Components of social capital

Besides the definitional difference of the concept as an individual or collective resource, social capital may also be classified according to its different components (Figure 1) which underlines the multidimensional nature of the concept.

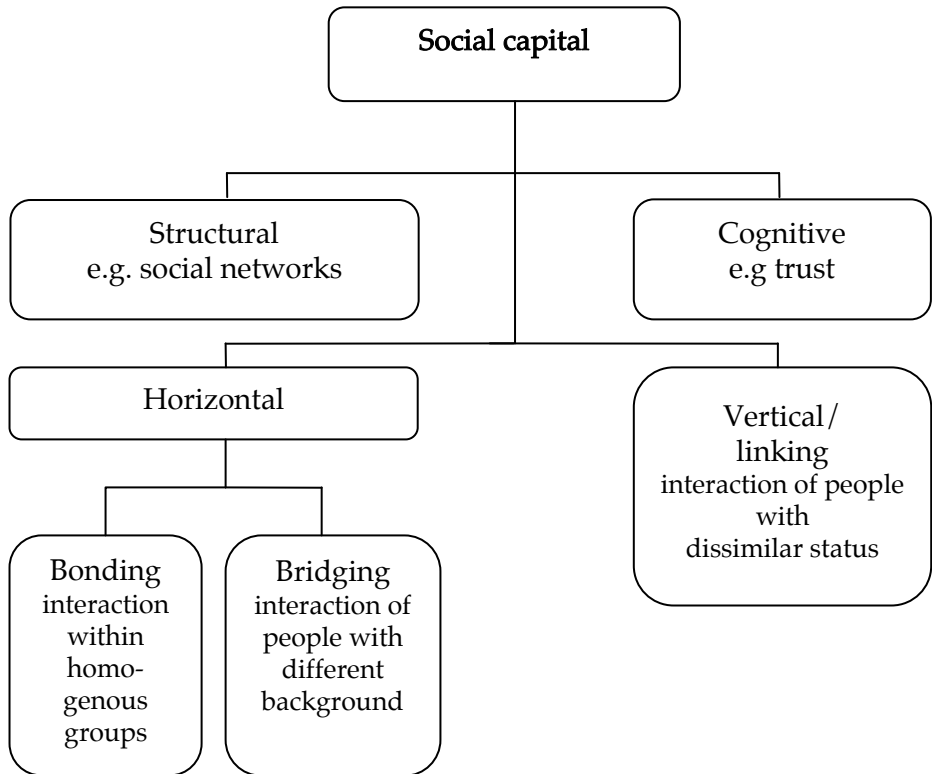


Figure 1. Components of social capital.

Note. Modified from Islam et al., 2006, Figure 1.

One key distinction can be made between structural and cognitive social capital (Harpham et al., 2002; Islam et al., 2006). Social networks and trust are suggested as main indicators of structural and cognitive social capital respectively (Schuller et al., 2000). For example, Uphoff (1999) and Bain and Hicks (cited in Krishna & Schrader, 2000) clearly made a distinction between these two components of social capital, even if Coleman (1990) and Putnam (1993, 2000) also included structural and cognitive elements in their definitions. The structural part of social capital describes the networks, relationships, and institutions that link people and groups together. The cognitive side of social capital is derived from mental processes and consists of values, attitudes, trust, confidence and norms and has to do with the more qualitative aspects of social capital (Stone, 2001). In the literature there is a lack of consensus about the definition of the cognitive type of social capital and it has also been referred to as quality aspects (Stone, 2001) or cultural and attitudinal aspects of social capital (Stolle, 2003).

Uphoff (1999) suggests that the structural and cognitive components are related and interconnected, since structural social capital such as social networks originates initially from cognitive processes. Norms, values and attitudes that constitute cognitive social capital rationalize cooperative behaviors and make them respectable, therefore Uphoff suggests that in practice it is difficult for the two types to persist, that is, one without the other. Nevertheless, they are distinguishable aspects of social capital and Uphoff suggested that they should be separated from each other, which has also been emphasized as important within health research (Harpham et al., 2002; De Silva et al., 2005). When structural and cognitive social capital is separated it is possible to see how these components operate empirically.

Figure 1 shows that social capital can also be seen as bonding, bridging or linking. Putnam (2000), for example, separated two types of horizontal social capital: bonding and bridging. Bonding social capital refers to intra-group ties and is exclusive and may be characterized by homogeneity. Bridging social capital is more fragile than bonding but also more inclusive of heterogeneous individuals, which is usually seen as a more productive form of social capital with regard to development of democracy. Besides bonding and bridging social capital, Woolcock (2001) identified a third form, linking social capital, as relations between different social strata in a hierarchy where groups possess unequal wealth, power and status. Linking social capital is closely related to what Putnam defines as vertical social capital (1993). As can be seen from Figure 1, both cognitive and structural social capital can be bonding and bridging as well as linking.

In addition, social networks may further be analyzed by their strength. Although Granovetter (1973) did not employ the social capital theory himself, his publication *The Strength of Weak Ties* (1973) has influenced the work of Coleman (1988) and Putnam (1993). Granovetter distinguished between strong and weak ties in relation to finding a job. In a network with strong ties all members will receive the same information but in a network with weak ties, between unconnected groups the individual with a connected position receives information faster than the others, and hence has an advantage in the employment market. Coleman (1990) in turn, argued that within a family a close and dense network is the best form for raising a child, whereas Putnam has focused more on weak ties within voluntary associations and less on strong family ties (2000). In other words, the significance of strong and weak ties is highly dependent on the context. In Table 1 a synthesis of different network ties are presented. As can be seen from Table 1, bonding, bridging and linking ties can be analyzed by strength. For example, bonding ties between people with similar social background may be regarded as weak, such as the ties between members within unions or strong such as those between immediate family members. Similar distinctions can be made for bridging and linking ties. The significance of different background characteristics of the ties varies and needs to be identified in each study such as gender, age, ethnicity, socioeconomic status, etc.

Table 1. *Synthesis of different network ties: horizontal and vertical; bonding, bridging, and linking; weak and strong ties*

		Weak ties (no closure)	Strong ties (closure)
Horizontal ties	Bonding ties (same background)	Members in homogenous associations, unions etc.	Close friends or immediate family with similar social characteristics.
	Bridging ties (various backgrounds)	Members in diverse associations.	Close friend or immediate family with different social characteristics. e.g. inter-ethnic marriages
Vertical ties	Linking ties (unequal hierarchical positions)	Ties between citizens and civil servants.	Ties between a caregiver and a care receiver.

Note. Modified from Ferlander, 2007, Table 1, p. 117.

Similar to network ties, trust – central to the conceptualization of cognitive social capital – has various forms and is best divided into several sub-groups. An important distinction is usually made between trust towards other people and confidence in institutions of governance (Luhmann, 1979; Putnam, 1993; Seligman, 1997). Trust in other people is usually further divided into generalized trust or thin trust (Putnam, 1993) and particularized trust or trust in familiar people (Uslaner, 2002). Putnam (2000) made a distinction between thin and thick trust. He says that thick trust occurs with dense networks of relatives, friends and neighbors and it is based on personal experience or on information from familiar resources on the trustworthiness of the person. Thin trust in turn is extended to include people beyond one's own network to people who are not known personally. Thin trust or generalized trust is thus an abstract trust in others and it is commonly included in studies of social capital (see Chapter 3). High level of generalized trust or the belief that other people around you can be trusted, allows people to cooperate to attain mutual benefits (Putnam, 1993).

3 Previous Research on Social Capital and Health

Studies of social capital and health

Systematic literature reviews of earlier social capital and health studies have been published in several previous reports (Macinko & Starfield, 2001; Carlson & Chamberlain, 2003; Kawachi et al., 2004; De Silva et al., 2005; Islam et al., 2006). It is apparent from previous reviews that the complexity of social capital theory has resulted in research where social capital in health studies is either studied at the individual level, the collective level (also referred to as ecological (e.g. Kawachi et al., 2004) or contextual social capital (e.g. Kawachi et al., 1999)) or on both levels, i.e. multilevel studies, where it is possible to disentangle the individual and collective effect of social capital.

To date, it seems that the results based on analysis on individual social capital are more robust compared to the collective approach (De Silva et al., 2005; Islam et al., 2006). However, this is perhaps mainly to do with the methodological difficulties of how to measure collective social capital (for a discussion see Chapter 4). The focus in present chapter is therefore on previous individual-level social capital studies (the results are based on individual respondent's answers) and on its structural and cognitive components. In Appendix A studies analyzing the association between individual-level social capital and health are summarized in Table A1. The same individual-level studies mentioned by Islam and colleagues (2006) were used¹ and the list has been further up-dated with more recent studies by searching for social capital and health studies until the end of year 2007, using the Finnish database Nelli Portal (National Electronic Library Interface). A total of 25 studies are reviewed in Table A1. Table A1 summarizes the study design, the health outcome, the measure of social capital and the main results. In Table A1 the structural and cognitive components of social capital are separated where possible.

Table A1 illustrates that individual-level social capital has been studied in diverse population groups. Some studies are limited to a specific geographical area (e.g. Hyypä & Mäki, 2001b, 2003; Chavez

¹ Except for a study by Veenstra (2002) who also included an ecological item (associational density) in the social capital index.

et al., 2004; Liukkonen et al., 2004) whereas other studies are nationwide and population-based (e.g. Rose, 2000; McCulloch, 2001; Smith & Polanyi, 2003; Carlson 2004; Helliwell & Putnam, 2004; Westin & Westerling, 2007). Most of the studies are cross-sectional and a few are follow-up studies (Bolin et al., 2003; Liukkonen et al., 2004, Sundquist et al., 2004, Hyyppä et al., 2007). The response rate varies between 40 per cent (Veenstra, 2000) and 96 per cent (Nakhaie et al., 2007).

Table A1 illustrates the diversity in choice of indicators used to measure social capital and also illustrates that there are different ways to operationalize the concept. A few studies followed Bourdieu's conceptualization of social capital (Ziersch, 2005; Rojas & Carlson, 2006), focusing on different forms of capital and on the resources in the networks, whereas the most common measures of social capital followed Putnam's definition (1993) of social capital and looked at participation in various forms such as membership in voluntary associations or at levels of trust in other people. Some studies limit their definition of social capital to include only the structural aspects, i.e. assessing networks, social participation and civic engagement (Bolin et al., 2003; Sundquist et al., 2004; Veenstra, 2005). However, most studies include structural as well as cognitive measures of social capital or combine high/low trust and high/low social participation into four possible combinations (Lindström, 2004; Ali et al., 2006). The cognitive aspects of social capital are measured with items on trust, reciprocity and safety. Particularly Harpham and colleagues (2004) extend the cognitive dimension by including items on cohesion, solidarity, social control and social support.

A few studies (not shown in Table A1) have distinguished between bonding and bridging social capital (e.g. Mitchell & La Gory 2002) and only recently has the association between linking social capital and health been examined in relation to health risk behavior (Lindström & Janzon, 2007). A study by Sirven (2006) took into account the contextual specificity for the community such as traditional ceremonies and the values shared between members of the community when assessing the bonding aspect of social capital

The concept of health is multidimensional, and can be defined and operationalized in various ways (Bowling, 1997; Manderbacka, 1998). This can be noticed in Table A1 by the diversity in choice of health indicators used in the studies. Broadly speaking, health can be divided into positive and negative health (Bowling, 1997; Manderbacka, 1998). Negative health focuses on diseases and mortality whereas positive health mainly focuses on well-being and adds more to health than just the absence of ill health. The World Health Organization's (WHO) classical definition of health as "a state of complete physical, mental and social well-being, and not only

merely the absence of disease and infirmity" (WHO, 1948) is a well-known example of a positive health definition. Within the research of social capital different dimensions of health have been studied - biological, psychological and social (Manderbacka, 1998) - by using indicators such as coronary heart disease, psychological health (e.g. GHQ-12) and happiness. Self-rated health (SRH) is an example of an indicator of overall health (Manderbacka, 1998), and is commonly included in social capital research (see Appendix B).

Most of the studies in Table A1 show a positive relationship between social capital and different dimensions of health. However, taking a closer look at the results indicates variations on the association between social capital and health. In some studies only the cognitive aspects (Harpham et al., 2004; Phongsavan et al., 2006) or specific combinations of the structural and cognitive aspects (Lindström, 2004; Ali et al., 2006) were associated with health. When several health indicators were analyzed within the same study the association tended to differ depending on the health outcome (Lindström, 2004; Liukkonen et al., 2004; Veenstra, 2005; Ziersch et al., 2005). In the study by Ziersch et al. (2005) for example, the findings showed that different indicators of social capital were associated with mental health but no association was found with physical health. In the study by Veenstra (2005), participation in voluntary association had a positive relationship with emotional distress, over-weight status, and self-rated health but not with chronic diseases. Some of the studies did show a weak or a non-significant association between social capital and health, especially when the models were adjusted for other background variables (Veenstra, 2000; Liukkonen et al., 2004; Ali et al., 2006; Nakhaie, et al., 2007). In the cross-national study by Pollack and von dem Knesebeck (2004) lack of participation in different social activities was associated with poor self-rated health and depression in Germany but not in the US sample. In addition, the study by Andrew (2005) among elderly in care homes and community residential settings showed that the association between social capital and health tended to be stronger among the elderly in the community. The results indicated that the relevance of social capital to health might be different in two elderly population groups.

Mechanisms between social capital and health

Several explanations as to why social capital has an effect on health have been suggested. It is likely that the mechanisms between individual social capital and health are similar to those suggested as relevant between social networks and health. From the social network research (for a comprehensive review see Berkman and Glass, 2000), it is known that the network influences the health-promoting or health-damaging behaviors of the individual such as physical exercise or alcohol and smoking behavior. Another explanation suggests a psychological mechanism, i.e. a social network may influence self-esteem, may give support in high stress situations and improve the individual's sense of well-being. There is also the possibility of a physiological effect, which is suggested by a decrease in blood pressure and level of stress hormones for socially integrated individuals. The immune system seems also to be strengthened for individuals with supportive networks. Despite the fact that previous research usually takes into account the positive association between social networks and health, it is possible that social relations may lead to negative experiences such as conflicts, jealousy and disappointments (Thoits, 1985) which could have a detrimental effect on health. Evidence suggests that social networks within certain groups are similar to the risk networks of the individual as regards the spread of diseases (Neaigus et al., 1994; Rhodes et al., 2005).

Several mechanisms between collective social capital and health have been put forward as important. It has been suggested (Kawachi & Berkman, 2000) that higher levels of social capital may influence community members' health behavior by promoting a more rapid diffusion of health information and be more effective at exerting informal control over deviant health behavior. An example of the latter occurs when concerned adults inform to the parents if they see an under age child smoking or consuming alcohol. Moreover, social capital may affect the individual's access to services and amenities. In communities with high social capital cooperation is facilitated between individuals that helps to attain certain goals such as access to local health care and health related services. Social capital may also influence the health of individuals by psychosocial processes. Social capital may, for example, act as buffer against stressful events that are known to be pre-determinants of ill-health.

Recent studies suggest that the components of social capital have associations with different indicators of health. It has, for example, been suggested that cognitive social capital has a strong effect on mental health in particular (De Silva et al., 2005). It has been

hypothesized that the cognitive aspects improve individual health, whereas the structural aspects of social capital improve community health and well-being (Thomas, 2006). Hence, the mechanism between different aspects of social capital and health seems to vary. According to Harpham et al. (2002) the structural aspect provides support through formal and informal institutions, whereas cognitive social capital may increase the sense of belonging, which would be beneficial, particularly with regard to mental health. These assumptions need, however, to be confirmed in empirical research.

4 Some Considerations Analyzing Social Capital and Health

Individual and collective social capital

There is an ongoing debate whether social capital – a resource that is realized through relationships – is manifested in the characteristics of individuals or at a collective level, where the resource is available to all members of a collective. Some empirical findings suggest that social capital is a collective construct that influences health (Subramanian et al., 2003) whereas some multilevel studies have found a positive association between social capital and health only at the individual level (see Kawachi et al., 2004; Poortinga, 2006). Regardless of the approach, specific methodological limitations should be noticed by the commitment to one view or the other. The studies presented in Table A1 reflected individual attributes without, however, accounting for the possibility that the association between social capital and health could be due to collective effects. One key methodological problem within the collective approach is, however, the definition of collective. Although the collective is usually limited to geographical communities, it could also be psychological or functional such as a work or religious community (McKenzie & Harpham, 2006).

Within the collective approach, it is common to ask the individuals about different attributes and aggregate the responses to represent social capital at a collective level (Kawachi et al., 1997) with the assumption that social capital at a collective level equals an aggregated individual-level social capital. It is possible, however, that collective social capital only reflects individual level association and that collective social capital is more than the sum of the attributes of the individuals (Portes & Landolt, 1996). Since collective social capital is inherent in the structure of society it has also been suggested that analysis of social capital should be made on measures obtained through direct observations of society rather than on data gathered at the individual level (Lochner et al., 1999).

Today, there is an increasing interest in using multilevel methodologies for disentangling the individual and collective effect (see e.g. Kawachi et al., 2004). With multilevel analysis it is, for instance, possible to examine whether health differences within a

geographical area depend on the characteristics of the individuals living in this area or if individual health differences are due to area effects.

Causes and consequences

In Putnam's work (1993), it was difficult to distinguish the causes of social capital from its consequences. In other words, social capital influences positively different outcomes but its existence originates from the same outcome. Consequently, the need to distinguish the causes of social capital and the consequences has been stressed as important (Portes, 1998; Woolcock, 1998). A mixture of these is a source of confusion concerning the benefits of social capital. This issue is especially challenging when studying health as the outcome variable. Good individual health is one important characteristic for being able to engage in social activities and to generate social capital. In addition, social capital seems to have an affect on health through a change in health behavior, increasing resources that influence health positively or through psychosocial mechanisms (Kawachi & Berkman, 2000). An increase in health may in turn increase the possibility to generate social capital and so on and so forth. There is no simple solution to distinguishing the causes from their effects in health research, and this issue is highly relevant in cross-sectional studies (such as most of the studies in Table A1) when social capital and health have been measured at the same point in time.

Negative aspects of social capital

It is recognized in the literature that social capital has negative or dark sides (Portes, 1998; Putnam, 2000) or that some aspects of social capital are more beneficial than others depending on the context (Granovetter, 1973; Coleman, 1988; Putnam, 2000). Portes (1998) discussed four negative consequences of social capital based on ethnographic research in the US. These are exclusion of outsiders, excess claims on group members, restrictions on individual freedoms and downward levelling norms. The last indicates that there are situations where group solidarity is created as an opposition to mainstream solidarity to prevent group members from leaving the

network. Putnam has been criticized for ignoring the negative aspects of social capital (Portes, 1998). In his later work (2000), he learned from this criticism and discussed the “dark side” of social capital such as corruption, nepotism and terrorism.

Within health research, one intriguing challenge remaining is to be able to distinguish positive health-enhancing social capital and the negative health-damaging social capital (Campbell, 2000), which presumably differ highly depending on the context. Although bridging social capital, i.e. interaction between people with different backgrounds, is assumed to bring more positive outcomes (Putnam, 2000), bonding social capital may also have positive effects among the connected people but a negative effect for those who disagree or do not conform to current norms or for those left outside. It has been suggested that social engagement in close-knit communities where the pressure to conform is strong may have damaging effects on mental health for individuals who do not “conform” to current norms (Kawachi & Berkman, 2001). In a study by Mitchell and LaGory (2002) in an impoverished inner city community in Southern US the results showed a positive association between bonding social capital and poor mental health, contrary to the expected result. Mitchell and LaGory (2002) explained the findings between group membership and poor mental health as perhaps being caused by active social participation having a deteriorating effect on health, if individuals live in strained circumstances and their resources are already stretched. In addition, recent research suggests that social participation may either strengthen healthy norms or contribute to unhealthy conditions and behaviors such as smoking or alcohol consumption (Lindström, 2003; Greiner et al., 2004).

Analyses of self-rated health

The challenges when analyzing social capital at different levels are distinguishing the causes and consequences of social capital and taking into consideration the negative aspects of social capital. Both these are of key concern within social capital and health research. It seems, however, that less attention has been paid to methodological remarks concerning the health analyses within social capital research. In the following discussion, some considerations analyzing the measure of self-rated health are highlighted. Self-rated health was chosen since it seems to be a reliable global measure for an individuals’ health status (Lundberg & Manderbacka 1996;

Martikainen et al., 1999) and has been used in many studies. In Appendix B individual-level social capital studies are summarized in Table B1 that have used self-rated health as an outcome variable in Table A1. The focus in Table B1 is then placed on the measures of self-rated health, the treatment of age in the analysis and the choice of statistical methods.

Measures of self-rated health can be classified into three main categories: non-comparative self-rated health, age-comparative self-rated health and time-comparative self-rated health (Bjorner et al., 1996). The first two are found in Table B1. Most studies in Table B1 have used logistic regression models when analyzing self-rated health and I choose here to focus on the studies using logistic regression techniques to emphasize some methodological consequences of this frequently used approach. As shown in Table B1, it is common for the respondent to have five response alternatives to choose from when assessing self-rated health: "good", "rather good", "average", "rather poor" or "poor". The rather arbitrary cut-off point of dichotomization on a five-point scale is usually drawn between "average" and "rather good" health although different cut-offs are used as well (see Hyyppä & Mäki 2001b, 2003 in Table B1).

A problem when dichotomizing a self-rated health measure is caused by the fact that the original measurement of health has been made on an ordinal rather than on an interval scale. This means that the differences between good and average health may not be of the same magnitude as the differences between average and poor self-rated health. Information may thus be lost when reducing the response categories into a binary outcome. Some researchers have analyzed how serious a problem this is for making inference about individuals' health status. However, the conclusions are somewhat mixed. Some suggest that regardless of cut-off points self-rated health is associated with the same factors (Mackenbach et al., 1994, Manderbacka et al., 1998; Leinonen et al., 2001). Other suggest that different self-rated health categories are predicted by different factors and are therefore sensitive to the cut-off points of dichotomization (Smith et al., 1994; Kempen et al., 1998; Shields & Shooshtari, 2001; Benyamini et al., 2003).

Age also poses problems for the analysis of self-rated health. Self-rated health is highly age dependent (e.g., Reijneveld & Gunning-Shepers, 1995; Shadbolt, 1997; Shooshatri et al., 2007) and the explanatory factors such as social capital may also be dependent on age (Putnam, 1996). If self-rated health is explored using wide age intervals and if the explanatory variables are dependent on age, it is

not possible to distinguish the age specific effects by using age as one of the many control variables.

5 Aims

The main aim of this thesis is to promote the understanding of social capital and health. The present thesis focuses on the oldest old, i.e. people aged 85 and over, and two language groups in Finland – the Swedish- and Finnish-speakers – to examine the following specific research aims.

- 1) To examine language group variations in social capital. (IV)
- 2) To examine language group variations in self-reported health. (III)
- 3) To examine the association between social capital and health. (II, IV)
- 4) To emphasize some methodological challenges when analyzing social capital and health. (II, IV, V)

In the present thesis, social capital is broadly conceptualized as networks of social relationships and the norms and values associated with these relationships. Structural as well as cognitive components of social capital are examined in relation to sociodemographic characteristics (IV) and to various aspects of health (II, IV). Social capital has been analyzed at different levels within health research (see Macinko & Starfield, 2001). Here, social capital is analyzed at an individual level, based on individual respondent's answer to survey questions.

Earlier empirical findings have suggested an association between social capital and health among the elderly in general (Veenstra, 2000; Pollack & von dem Knesebeck, 2004; Andrew, 2005), whereas specific knowledge concerning the association between social capital and health among the oldest old is limited. It may be hypothesized that social capital is an especially relevant health resource for the oldest old. People in the oldest age groups have, for example, an especially greater risk of losing their spouses and friends, which makes them more dependent on available social capital at different levels in society (Cannuscio et al., 2003). (II)

Studies based on population registers have shown that Swedish-speakers in Finland (a minority language group) live longer (Valkonen, 1982; Martelin, 1994; Koskinen & Martelin, 2003; Saarela & Finnäs, 2005a, 2005b, 2006) and that retirement due to disability is

lower among Swedish-speakers compared to the Finnish-speakers (the majority language group) (Hyypä & Mäki 2001a; Saarela & Finnäs, 2002). Survey-based information on self-reported health differences between the Swedish- and Finnish-speaking adults is limited (Hyypä & Mäki, 2000, 2001b), and is thus examined in the present thesis. (III) It has been suggested that social capital may explain health differences between the language groups in Finland (Hyypä & Mäki, 2001b) and this issue will be further investigated. (IV)

Some methodological challenges when analyzing social capital and health will be highlighted. In the present thesis, the analysis of social capital among the oldest old and among the two language groups will be discussed. (II, IV) Finally, methodological remarks regarding the analysis of self-rated health will be emphasized, which may have implications for the understanding of the association between social capital and health. (V)

6 Data and Methods

The results in this thesis are based on five publications, and an overview of the studies is presented in Table 2. The first article (I) published in the present thesis problematizes the social capital concept and the measures of social capital within health research. The results from the first publication constituted a literature background to the empirical studies in the thesis. Publication II studies the association between social capital and health among the oldest old. Publication III reports self-reported health differences among the Swedish- and Finnish-speakers in Finland and publication IV studies the association between social capital and health. Publication V focuses on methodological challenges, analyzing self-rated health in wide age groups.

Table 2. An overview of the five studies.

	Study I	Study II	Study III	Study IV	Study V
Data source	Literature review	Umeå 85+	Health 2000	Health 2000	Health 2000
Country		Sweden	Finland	Finland	Finland
Year		2000	2000-2001	2000-2001	2000-2001
Number of cases		163	5091	3746	4503
Age group years		85, 90, 95+	30-64, 65+	30-64	35-64
Type of data		cross-sectional	cross-sectional	cross-sectional	cross-sectional
Response rate		79%	80% (Questionnaire 1) 87% (Home interview)	80% (Questionnaire 1) 87% (Home interview)	87% (Home interview)
Methods		factor analysis (principal component) MANOVA, ANOVA	logistic regression	logistic regression	logistic regression
Research aims	To evaluate whether the critique that has been directed towards social capital and health research is justified	To study the association between individual-level social capital and health	To examine the pattern and magnitude of differences in self-reported health status between the Swedish- and Finnish-speakers.	To examine how selected individual-level characteristics of social capital relate to health. Another aim is to study whether social capital could explain health inequalities between the Swedish- and Finnish-speakers in Finland	To increase methodological awareness when analyzing self-health.
Social capital indicators		social networks, social integration, attachment, trust, confidence in care-giving institutions		social participation, social contacts, trust, sense of security	
Health indicators		self-rated health, depressive symptoms, functional ability	self-rated health, working capacity, the need for help, psychological health, somatic symptoms	self-rated health, psychological health	self-rated health

Data sets

The Umeå 85+ study

The present thesis investigates two empirical data sets, Umeå 85+ and Health 2000 to examine the specific research aims defined in Chapter 5. The Umeå 85+ is a cross-sectional study of 253 individuals, aged 85, 90 and 95 or older living in the municipality of Umeå, Sweden, in the year of 2000. The response rate was 79%. The final sample in *Study II* consisted of 163 individuals, whose cognitive function, measured by the by the Mini-Mental State Examination (MMSE) screening function (Folstein et al., 1975) were above 19 points out of 30. Individuals with only slightly impaired cognition and rather intact cognition were assumed to be most likely to understand the questions. All assessments, questions and scales were interviewer administrated.

The Health 2000 survey

The Health 2000 survey is a nationwide survey coordinated by the National Public Health Institute in Finland, and carried out in 2000–2001. The study used a two-stage stratified cluster sample with the five university hospital regions as the sampling frame. From each university hospital region, 16 health care districts were sampled as clusters. Thus 80 health care districts were the primary sampling units, whereas the ultimate sample units were 8,028 persons aged 30 or over who were selected by systematic sampling from the health care districts. Information was collected at different phases through interviews, questionnaires, health examinations and telephone interviews. Most of the people in the sample participated in all survey components, and 93% responded at least to the most essential information on health and functional capacity.

Two sources of information were used for *Study III and IV*, the home interview and the basic questionnaire (Questionnaire 1). The response rates for these two survey components were 87% (home interview) and 80% (Questionnaire 1). The sample was weighted to match known population distributions with regard to age, gender, region and language distribution.

The Swedish-speakers in Finland account for approximately 300 000 or 6% of the population in Finland, and mainly reside in South and West Finland. In *Study III and IV* the analyses were restricted to

the population living in these regions in order to ensure comparability between the Swedish- and Finnish-speaking groups. The total number of individuals analyzed in *Study III* was 5091, of whom 401 were Swedish-speaking Finns, in the age group 30+. In *Study IV*, which focuses on the age group 30-64 years the corresponding numbers were 3746 and 242. Thus the sample proportion of Swedish-speakers, slightly over 5%, almost corresponded to the population statistics.

In *Study V* data from all five university hospital regions in Finland were used in the analysis. The total number of individuals analyzed was 4503 persons in the age group 35–64 years.

Indicators of social capital and health

Neither the Umeå 85+ study nor the Health 2000 survey were originally designed to measure social capital. In the Umeå 85+ study a social capital factor was constructed to be used in the analysis, whereas in the Health 2000 survey single indicators of social capital were used. The two empirical data sets included, however, extensive information on health. Three important domains of health for the oldest old were chosen in the Umeå 85+ study whereas multiple indicators of health were used from the Health 2000 survey to study self-reported health differences between the language groups in Finland. Two self-reported health measures, self-rated health and psychological health, were further analyzed when studying the association between social capital and health. Finally, the measure of self-rated health from the Health 2000 survey was used in the last study. Figure 2 illustrates the indicators of social capital and health used in *Study II and IV* and the relationship between social capital and health. In the next, detailed information on the social capital indicators and health indicators are presented.

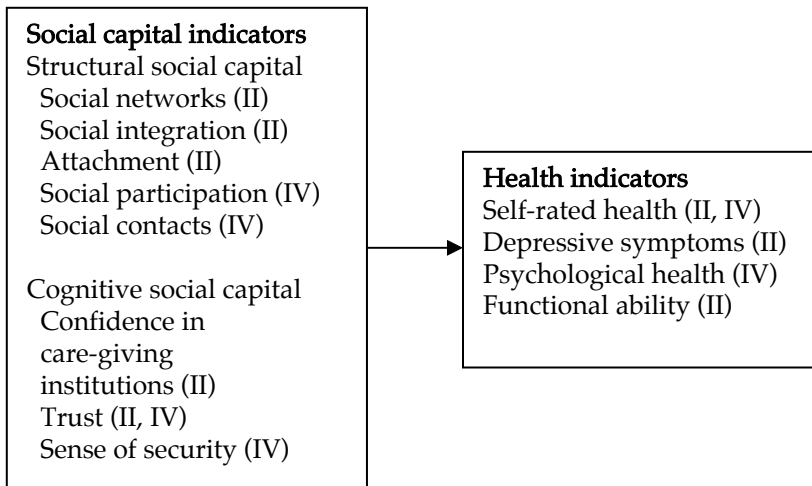


Figure 2. The indicators of social capital and health used in *Study II and IV.*

Social capital

In the Umeå 85+ study social networks, social integration and attachment were used to measure the structural component of social capital whereas trust and confidence measured the cognitive component of social capital.

Respondents were asked about the quality and quantity of their *social networks*. The quantity was assessed by asking if the respondents had children living and siblings and the quality by asking whether respondents had a close friend or family to talk to if needed (yes or no). *Social integration and attachment* was assessed using the Revised Social Provision Scale (Cutrona & Russell, 1987). The scale was originally developed to assess the four relational provisions identified by Weiss (1973). In this study, two of the provisions were used as two separate scales: social integration and attachment. According to Weiss (1973), *social integration* is provided by membership in a network of people with similar interests, whereas *attachment* results from relationships that provide emotional security and safety. Social integration and attachment were each assessed by four items, two worded positively and two negatively. Responses were made on a four-point Likert scale ranging from “strongly disagree” to “strongly agree”. Six questions tapped *confidence in care-giving institutions*. Respondents were asked about their attitudes towards different caring institutions, such as the home-help service,

residential care, health center, nursing homes, facilities for the elderly and medical care. Responses were made on a five-point scale ranging from “very negative” to “very positive”. The single item “I trust in people” assessed *trust*. Responses were made on a five-point scale ranging from “almost not at all” to “almost completely”.

In the Health 2000 survey, the structural component of social capital was measured by social participation and social contacts with family, friends or neighbors. The cognitive component of social capital was measured by trust and sense of security. The indicator of *social participation* was based on information as to whether the respondents attended club or society activities (including positions of trust in society) at least once a month. To assess *social contacts with family, friends or neighbors* the respondents were asked whether they visited family, friends or neighbors or whether they were visited at least once a week. *Trust* was assessed by the statement: “It is better not to trust anyone”. The statement was graded on a four point Likert scale ranging from “fully correct” to “fully incorrect”. Combining “fully correct” and “quite correct” into one category to indicate mistrust and “quite incorrect” and “fully incorrect” to indicate trust dichotomized the measure. To assess *sense of insecurity* the respondents were asked whether they felt unsafe when walking in the neighborhood. The question was graded on a five point Likert scale ranging from never to very often. Those who answered “very rarely” and “quite rarely” were combined to indicate “rarely”, and those who answered “quite often” and “very often” to indicate “often”. Thus, this item contained three categories “never”, “rarely”, and “often”.

Health

In the Umeå 85+ study the *self-rated health* question read: “In general, would you say your health is excellent, very good, good, fair or poor?” *Depressive symptoms* were assessed by a 15-item Geriatric Depression Scale (GDS-15; Sheik & Yesavage, 1986), a questionnaire especially developed as a screening instrument for depression in elderly populations. 0 indicates no depressive symptoms and 15 severe depressive symptoms. The cut-off point for depression was set to ≥ 5 (Sheik & Yesavage, 1986). *Functional ability* was studied by means of a cumulative scale containing five personal activities of daily living (P-ADL) and four instrumental activities of daily living (I-ADL) (Sonn & Hulter Åsberg, 1991). The five personal activities of daily living were based on an evaluation of the functional independence or dependence of the individual with regard to bathing, dressing, going

to the toilet, transfer and feeding. Instrumental activities of daily living were based on an evaluation of the functional independence or dependence with regard to cleaning, food shopping, transportation and cooking. A zero score indicated that the person was able to manage all 9 items without difficulty, and a higher score indicated a higher number of functional disabilities.

In the Health 2000 survey *self-rated health* was measured with the question "Would you describe your current health status as good, fairly good, average, fairly poor or poor?" (III-V). The measure of self-rated health was dichotomized in two different ways. The cut off on the five point scale was set between "fairly poor" and "average health" (III, V) or between "average" and "fairly good" health (III-V). Self-assessment of *working capacity* was measured on a three-class scale ("completely fit for work", "partially disabled for work", "completely disabled for work") (III). Three indicators elicited the *need for help* (III). Respondents were asked if they receive assistance repeatedly or need help with everyday activities because of reduced functional capacity. A follow up-question asked: would you need assistance or help? The third indicator measured whether the person lived in social and health care institutions. The General Health Questionnaire (GHQ-12) was used as a measure of *psychological health* (III, IV). The GHQ-12 is considered as a valid measure for minor psychiatric morbidity (Goldberg, 1972). The items on the 12-item questionnaire relate to distress, depression, self-esteem and the inability to cope in everyday situations. Each item was rated on a four point scale. The coding resulted in an overall scale ranging from 0-12, and a sum score in excess of 2 was set as a cut-off point on psychological health (Goldberg et al., 1997). Self-reported *somatic symptoms* were elicited by a 7-item inventory of the existence of any of the following symptoms recently: headache, pains in heart or chest, pains in lower back, nausea or upset stomach, soreness of muscles, trouble getting breath and continuous pains and aches. Each item was rated on a four point scale. A respondent was classified as having somatic symptoms <2 if s/he answered negatively ("not at all") to at least 6 out of 7 items (III).

Data analysis

The methods used in the data analysis are described in detail in the original publications. In *Study II* a factor analysis (using principal component analysis) was performed to assess classes of information measuring the structural and cognitive components of individual-level social capital among the oldest old. Principal component analysis was chosen since the underlying hypothesis behind this method is that it identifies the underlying dimensionality of the data, by locating clusters of questions that are related to each other (Dunteman, 1989). This method was a natural choice in *Study II* considering the diversity of social capital indicators available in the Umeå 85+ data set that tapped into the theory of social capital. In the final model, one factor emerged consisting of attachment, social integration and social network, which in the further analysis were referred to as structural social capital. The association between social capital and health was tested with multivariate and univariate analysis of variance (ANOVA and MANOVA) using age and social capital as the independent variables and self-rated health, depressive symptoms and functional ability as dependent variables.

In *Study III-V* logistic regression was applied. The results were presented as odds ratios (OR) with 95% confidence intervals, which indicated the significance of estimates. In *Study III* self-reported health differences between the language groups in Finland were analyzed controlling for language group, age, educational level, marital status and level of urbanization. The health indicators were tested according to two different models stratified by gender. In *Study IV* language group variation in structural and cognitive social capital was examined controlling for gender, age, educational level, marital status and level of urbanization. To test the association between social capital and health and whether social capital could explain health inequalities between the Swedish- and Finnish-speakers the OR were calculated for self-rated health and psychological health controlling for sociodemographic variables and health behaviors. Each health indicator was tested according to four different models stratified by gender.

In *Study V* methodological remarks analyzing self-rated health was illustrated by using logistic regression techniques. We assumed that self-rated health was dependent on age as well as several of the common explanatory variables. The measurement of self-rated health was dichotomized in two different ways. The cut off on the five-point scale was set between “fairly poor” and “average” health or between

“average” and “fairly good” health. Two out of three explanatory variables, i.e. marital status and level of education, were dependent on age, whereas the effect of the third variable, level of urbanization was assumed to be independent of age. Simple cross-tabulations were first examined but when the background variables were introduced logistic regression techniques were applied.

7 Main Results

Language group variations in social capital

The way of life of Swedish-speakers differed from that of Finnish-speakers (IV). Notable disparities between the language groups with regard to some key demographic variables were found. A higher proportion of Swedish-speakers were married and cohabiting than Finnish-speakers. Fewer Swedish-speakers than Finnish-speakers lived in urbanized communities and a higher proportion of Swedish-speakers had a higher educational degree. Previous research has shown that the Swedish-speaking language group is in several aspects an advantaged group. Marital stability is clearly stronger among Swedish-speakers (Finnäs, 1997), Swedish-speakers have a stronger position on the labor market in terms of lower unemployment rates and in some regions, a higher socio-economic position compared to Finnish-speakers (Finnäs, 2003; Saarela & Finnäs, 2003). In addition, the Swedish-speakers have been more stable with regard to within country migration. A higher proportion of Swedish-speakers living in southern and western Finland were also born there (Saarela & Finnäs, 2005b).

Since married people, people living in small towns and rural areas and highly educated people seem to experience more social capital (Putnam, 1996); one could argue that Swedish-speakers possess more social capital due to their favorable demographic situation. The results showed, however, that Swedish-speakers consistently had higher prevalence of structural and cognitive social capital compared with Finnish-speakers even after controlling for central socio-demographic variables such as gender, age, educational level, marital status and level of urbanization (IV). Length of residence in the community, seen as one important characteristic in explaining social capital (Putnam, 1996; Harpham et al., 2002), was controlled for in initial analyses but yielded no significant results and it was therefore excluded from the final model.

The reason for differences in social capital between the Swedish- and Finnish-speakers is still not clear. It has been suggested that early socialization into the Swedish culture through formal and informal networks frames language as a cultural marker between the minority and majority language groups in Finland (Sundback, 2005). It has

further been suggested that the Swedish-speaking community live in tighter social networks compared to the Finnish-speaking community which influence social capital positively (Hyypä & Mäki, 2003). Moreover, it is plausible that the Swedish-speakers relatively small number, their strong institutions and their regional distribution (McRae, 1999) constitute a favorable breeding ground for building social capital.

Although the purpose was to examine differences in social capital between the language groups, other results from the study should be mentioned. It seemed that younger age groups have more trust than older age groups. This association was the reverse compared to the association between age and trust in the USA (Fukuyama, 1999; Putnam, 2000) but consistent with results from Finland (Iisakka, 2006; Nieminen et al., 2008). Contrary to the development in the US, there is little evidence of a decline in trust in the Nordic countries (Rothstein, 2001; Rothstein & Stolle, 2003). Rothstein (2001) has suggested that higher education has a higher positive effect on trust than age in Sweden, which also seemed the case in our study. Moreover, a sense of insecurity seemed not to be significantly associated with age at all. This is interesting because other studies show highly significant associations between age and sense of insecurity, the association being an increasing sense of insecurity with increasing age (Yin, 1980, 1982; Lindström et al., 2006). The reason for the lack of association between age and sense of insecurity is not clear. One reason may be that the age interval studied excluded the older age groups. In addition, the analysis was made on one model including all the background variables which partly made the interpretation of the variables more difficult. By including the background variables stepwise in different models it might have been possible to distinguish the influences of specific variables. However, for the purpose of the study, analyzing variation of social capital between the language groups, the model was adequate enough.

Language group variations in self-reported health

In *Study III* health was measured by perceived health (self-rated health), self-assessment of working capacity, the need for help, perceived psychological health, and self-reported somatic symptoms. Although the language group differences in self-reported health were small, the results showed that Swedish-speakers experienced in general better self-reported health compared with Finnish-speakers

even after controlling for age, education, marital status and level of urbanization. Two exceptions to this generalization were psychological health for women in the age group 30-64 years and the need for help for women in the age group 65+. The differences between the language groups were significant for somatic symptoms and psychological health for men in the age group 30-64 years and for somatic symptoms for women in the age group 65+.

The results are consistent with previous register-based research showing that Swedish-speakers have lower mortality rates (Valkonen, 1982; Martelin, 1994; Koskinen & Martelin, 2003; Saarela & Finnäs, 2005a, 2005b, 2006) and a lower retirement rate due to disability than Finnish-speakers in Finland (Hyypä & Mäki 2001a; Saarela & Finnäs, 2002). The result in this study is also in accordance with those of Hyypä and Mäki (2000) regarding the measure of perceived health/self-rated health and working capacity. In their study, they also examined chronic diseases and long-term diseases and no significant differences were found however between the language groups after controlling for gender.

The reason for health differences between the language groups in Finland is not fully known. Previous findings suggest that educational level, marital status and socio-economic position do not entirely explain mortality differences between the language groups (Koskinen & Martelin, 2003; Saarela & Finnäs, 2005a). It seems, however, to be gender differences in the explanatory factors of health, since the lower mortality of the Swedish-speaking women can be entirely explained on the basis of their more favorable geographic location and socio-economic position, whereas among men a considerable difference remained when adjusting for structural differences (Koskinen & Martelin, 2003). It is also suggested that the region of birth has an impact on the health differences between the language groups (Saarela & Finnäs, 2005b). Many Finnish speakers who live in the same area as the Swedish-speakers are born in parts of the country where death rates are high. There also seems to be some genetic differences between the language groups but it is not known whether such disparities may explain the health differences (Virtaranta-Knowles et al., 1991).

Since the sociodemographic background variables in *Study III* could not explain the observed language group differences in health, the next step was to study whether social capital – measuring its cognitive and structural components – could explain some of the differences in health between the Swedish- and Finnish-speakers. Self-rated health and psychological health were chosen for this purpose (IV).

Association between social capital and health

The results implied that social capital was often, but not always, associated with health (II, IV). In the literature, it seems that social capital has different associations depending on the measure of health used (e.g. McCulloch, 2001; Harpham et al., 2004; Veenstra et al., 2005). This was clearly seen in the results among the oldest old where only one health indicator, depressive symptoms, was associated with structural social capital (II). The association between social capital and depressive symptoms was expected since previous studies have shown that individuals with strong social ties and networks are in better psychological health (Dean et al., 1990; Grundy & Sloggett, 2003). In addition, psychosocial stress factors such as rare contact with one's family may affect the development of depression among the oldest old (Päivärinta et al., 1999). The findings showed that especially the people living in institutional care were those belonging to the medium or low social capital group. These people experienced a decreased network, were less socially integrated and were less attached to another person, which could make them have a greater risk for developing depression.

The possibility of reverse causality is likely however when interpreting this finding. People living in institutional care tend to be more frail and dependent on help from others compared to those living on their own (Carrière & Pelletier, 1995; Agüero-Torres et al., 2001). It is possible in this age group that poor functional ability, and more plausible depressive symptoms, reduces the possibility to maintain social contacts and to generate social capital, rather than low level of social capital affecting health in a negative direction. A rather unexpected finding was the non-significant association between social capital and self-rated health. Self-rated health is regarded as a measure of overall health and it is likely to assume that social capital would relate to depressive symptoms as well as self-rated health. It has been suggested that older people adapt to a decline in their health with increasing age and that they rate their health more positively despite higher rates of diagnoses (such as depressive symptoms) and functional disabilities (Leinonen et al., 2001).

The results based on the analysis of the Health 2000 survey demonstrated that the cognitive component of social capital was associated with self-rated health and psychological health rather than with participation in social activities and social contacts (IV). These results were consistent with previous findings suggesting that different components of social capital, such as cognitive and structural

social capital, may have a different impact on health (Harpham et al., 2004; Pollack & von dem Knesebeck, 2004; Poortinga, 2006). The result also provided further support to the importance of cognitive social capital for psychological health (De Silva et al., 2005).

A rather unexpected finding was the inverse relationship between social participation and psychological health, i.e. less frequent social participation was associated with good psychological health. It was suggested that the single measure instrument of social participation used in the study was too crude to distinguish the positive and/or negative aspects of social participation on health. The inclusion of bonding, bridging and linking social capital that explore diverse relationships may increase the possibility to distinguish why some forms of social capital have a negative association with health whereas others bring positive consequences.

Consistent with previous research (Hyyppä & Mäki, 2001b, 2003, see Table A1), social capital is one of the explanatory factors of health differences between the language groups in Finland (III, IV). Here, the results showed that social capital reduced the health advantage especially for Swedish-speaking men. Social capital was the main explanatory factor for differences in self-rated health, whereas alcohol consumption together with social capital were important explanatory factors with regard to differences in psychological health. Nevertheless, a considerable difference in psychological health remained unexplained for men. Among women, the health advantage for Swedish-speakers was small with regard to self-rated health and the differences between the language groups totally disappeared when all the explanatory factors were introduced in the model. Finnish-speaking women experienced a health advantage over Swedish-speaking women when psychological health was analyzed. The differences in psychological health were attenuated controlling for health behavior and social capital.

Methodological challenges

Analyzing social capital

Previous research has shown that there are marked differences in the questions about social capital that are considered appropriate for various groups depending, for instance, on the subjects' age and ethnicity (Blaxter & Poland, 2002; Campbell & McLean, 2002; Cattell & Herring, 2002). This assumption was supported in the study among the oldest old when a factor analysis was performed to assess classes of information measuring the structural and cognitive components of individual-level social capital (II). Since there is no agreement on how to operationalize social capital, a factor analyses may be useful to indentify common elements of the concept. The initial step in the factor analysis was to compute a correlation matrix to assess whether factor analysis could be usefully carried out including the summary variables social networks, social integration, attachment, confidence and the single item trust. The matrix showed that neither trust nor confidence correlated significantly with any of the other items and were therefore excluded from the final model. A factor emerged from the analysis when social networks, social integration and attachment were included in the model.

A common assumption is that the cognitive component, such as trust and confidence, is a central part of social capital, although different approaches have been established (Fukuyama, 1999; Woolcock, 2001). Fukuyama (1999) sees trust as a key by-product of social capital and not as a central part of the concept, whereas Woolcock (2001) refers to social capital as networks and norms that facilitate collective action and trust as an outcome. Moreover, for the elderly, traditionally social capital measures such as membership in organizations and civic engagement are likely to diminish with increasing age and decreasing functional status (Bukov et al., 2002; Strain et al., 2002). The cognitive aspect of the concept, such as trust and confidence, may take different forms for the oldest old than for a less dependent and vulnerable age group (Mechanic & Meyer, 2000). It is highly possible that these types of questions are context related. Networks, support and trust are important with a decreasing health status, although the interaction may take a different form from younger age groups, especially when we note that the oldest old usually have lost their spouses and most of their friends in the same age group. For the oldest old, the structural aspect of social capital probably reflects current living conditions, while trust and confidence

reflect attitudes and individual traits often acquired decades earlier, which support the assumption that structural and cognitive social capital are closely related but empirically distinctive components.

Despite the importance of distinguishing structural and cognitive social capital, social capital consists of several components as illustrated in Figure 1 in Chapter 2. The use of only structural and cognitive social capital indicators in the study among the language groups did not cover important aspects of the concept such as bonding, bridging and linking social capital. Putnam saw, at least within the US, bridging social capital as the most productive for a healthy democracy since it is more inclusive, encompassing people across different social groups and backgrounds. On the other hand, bonding social capital may intensify existing networks and link people to their ethnic community (Portes & Sensenbrenner, 1993), which for some groups, like the Swedish-speaking language group, may be essential for its survival and existence while living in a culture dominated by a majority group. Consequently, it is plausible that bonding and bridging social capital may be of differencing importance when belonging to the minority or majority language group.

It seems that living context for different minorities are highly relevant in the creation and maintenance of social capital (Cooper et al., 2000; Campbell & McLean, 2002), which suggests that measures that capture contextual social capital at the neighborhood or community level to supplement individual-level social capital would be a relevant issue when studying the language groups in Finland. It is, for example, suggested that the importance of language on social capital is different in regions where the Swedish-speakers or Finnish-speakers are in a minority or majority (Sundback, 2005). Variations in regional concentration of the language groups may thus be one important contextual characteristic to be included in the analysis when developing the understanding of the association between language and social capital. In addition, with regard to historical and cultural differences between the language groups (McRae, 1999) a macro level approach, focusing on historical, social, political and economic contexts (Macinko & Starfield, 2001) might be important for understanding language group variations in social capital. Social capital differences between the Swedish- and Finnish-speakers are probably a product of complex interactions of society, history and culture and it is a challenge to discern these aspects empirically.

Analyzing self-rated health

Some central challenges when analyzing self-rated health with logistic regression analysis in wide age ranges were discussed in one of the studies (V). We assumed that self-rated health and some explanatory variables might be dependent on age. This was illustrated in the study by analyzing a rather wide age interval, 35-64 years, and the inclusion of two presumable age-dependent covariates, namely marital status and level of education. The result for the age interval 35-64 years gave the impression that the choice of cut-off point for dichotomization of self-rated health did not matter for the estimated effects of marital status and educational level. However, the results changed rather dramatically when the age interval was divided into three shorter intervals. With a narrower dichotomization of poor health, the effect of educational level, as well as marital status was found to be highly dependent on age. This was the case for both genders.

One reason for this may be that with a less common event such as poor health in the younger age groups, even rather small absolute differences produce larger odd ratios. Another explanation may be related to the selection process. At a younger age, people with poor health have not formed families, whereas at higher ages it is reasonable to expect that people with poor health have died. The age dependency on educational level may in turn mainly be explained as a cohort effect due to general increase of education over time and this phenomenon is especially apparent for the female cohort.

One would be tempted to interpret the use of the broader definition of poor health, i.e. when average health is included in the poor health category, as the parameters are more stable and seemingly reliable across ages. It may, however, be argued that this choice of cut-off point is not capable of reflecting the interrelations between age, health and the covariates. Instead, the choice of cut-off point of dichotomization should to a higher degree be guided by the theoretical underpinnings and particularly if good or poor health is in focus.

8 Concluding Discussion

The results in the present thesis imply that social capital and health may be quite different for older people compared to younger people, or for a minority language group compared to a majority language group. The results indicate the importance of considering different sociodemographic factors, such as age and language in analyzing variations in social capital and health. It seems that individual-level social capital is often but not always associated with better health. The findings among the oldest old and among the language groups suggest that certain components of social capital may be more relevant to study to different population groups and at different life stages. This thesis highlights the complexity in analyzing social capital and health not only because of different use of social capital but also due to the methodological challenges of analyzing health.

Previous findings suggest the ethnic minority groups such as refugees or immigrants (e.g. Bollini & Siem, 1995) and socioeconomic weak minority groups (Van Oyen et al., 1996) experience worse health compared to the majority group. In addition, earlier studies suggest that minority groups usually possess low social capital (Lin 2000; Subramanian et al., 2003; Drukker et al., 2005; Lindström, 2005). Those findings contradict the results for the Swedish- and Finnish-speakers that were presented in Chapter 7. The Swedish-speakers possessed more social capital and experienced slightly better health compared to the Finnish-speakers. Different minority groups are far from homogenous and the Swedish-speakers could be termed a “positive” ethnic minority (Allardt & Starck, 1981) due its advantaged situation in different ways of life (Finnäs, 1997; Finnäs, 2003; Saarela & Finnäs, 2003). To compare and generalize the results of the Finnish case with results from other international studies has, however, been difficult. To date, it seems that less research on social capital and health has been conducted on advantaged minority groups such as the Swedish-speakers.

The study among the oldest old, in particular, implied that it may be difficult to assess social capital with standardized questions in different age groups due to its context dependency. The meaning of social capital is probably different among the oldest old compared to less vulnerable age groups. It is possible that different combinations of social participation and trust as suggested by Lindström (2004; see also Table A1) could give a more balanced picture of the social capital in this age group. It has been suggested that growing individualism among younger birth cohorts have resulted in new forms of social

participation where trust in other people is no longer a precondition for engaging in social activities (Fuykuama 1999; Lindström 2004). This has been called the miniaturization of community when people have high social participation and low trust. The traditionalists, i.e. people with high trust and low social participation are especially found amongst the elderly (Lindström, 2004). The use of different combinations of high/low social capital seems highly interesting and able to promote understanding of the meaning of social capital in different age groups.

It is a challenge to study social capital. Even if social networks and trust seem to be key indicators of social capital, there exist several different foundations for social capital as was shown in Chapter 2, and there is an absence of a consensus on how to measure it. Some worry that the meaning of social capital can be stretched too easily to different people and that there is a danger that the concept is losing its meaning for health (e.g. Morrow, 1999; Campbell, 2000; Hawe & Shiell, 2000; Forbes & Wainwright, 2001; Shortt, 2004). Moreover, individual social capital studies and social network/social support studies have several similarities (see *Study I*) and some would suggest that individual-level social capital studies is simply re-labelling terminology, or merely “pouring old wine into new bottles” (Kawachi et al., 2004, p.683). As I see it, the emphasis of the cognitive component is one novel contribution within individual social capital. Social networks without trust, confidence, reciprocity etc. may not be seen as a resource for the individual. Nevertheless, it is problematic to assess social capital empirically. Social capital is embodied in the relationships between people and it is not actually the organizations or social networks per se that are interesting but the value of the relations that are secured by virtue of these formal and informal networks.

Social capital may be described as an umbrella term used to capture different characteristics such as social networks, social support, social cohesion, attitudes, trust, values, confidence and norms of reciprocity and different studies, including *Study II and IV*, focus on different types and indicators of social capital. Due to the diverse use of social capital, it is difficult to compare and generalize the results. It may even be questionable if the studies presented here (in Table A1 as well as *Study II and IV*) are measuring the same phenomenon or not. A further complicating factor is that none of the original social capital theories were developed to measure health as an outcome which has implications for the understanding of the association between social capital and health.

Similar to social capital, health is considered a multidimensional concept and it has been operationalized differently in previous

research on social capital and health (see Table A1). The focus in this thesis was put on the analysis of self-rated health, regarded as an overall measure of general health that has been used in many previous studies. It was noticed in Table B1 that age was rather often included as one control variable if using logistic regression techniques. This might be a problem if the studies are undertaken in wide age intervals. The results from the last study in this thesis implied that comparisons of odds ratios from standard logistic regression models within a study that uses a wide age interval, as well as between studies that use different age intervals might be difficult if the covariates and/or health indicators used are associated with age. Even if the last study in this thesis, for simplicity reason, was limited to three commonly used sociodemographic characteristics, the results are probably relevant for empirical social capital research as well. It is likely that the distribution and/or meaning of social capital differs among older age groups compared to younger age groups and that the influence of social capital on health may vary by age group. By including age as one control variable the potentially strong role of age-dependence of covariates in the models are disregarded. The results implied that more focus should be placed on the analyses of health in different age groups, which is a relevant aspect within social capital research as well in order to develop our knowledge of the benefits of social capital.

Strengths and limitations

The data sets on which the results are based have their strengths and limitations. The analysis of the Umeå 85+ study and the Health 2000 survey yielded highly interesting results regarding social capital and health. The data sets opened unique opportunities to study social capital and health in two different population groups. Little is known about social capital and health among the oldest old whereas social capital and health among the language groups are relatively well researched (Hyyppä & Mäki, 2000, 2001a, 2001b, 2003). However, some differences exist between the studies by Hyyppä and Mäki and studies in present thesis, e.g. the health and social capital indicator used, the dichotomization of the self-rated health question, and the setting in which the studies were undertaken.

The Umeå 85+ study and the Health 2000 survey included extensive information on health. Multiple indicators of health were used to build up a relatively comprehensive picture of self-reported

health differences between the language groups in Finland, which had not been systematically described before. Three important domains of health were analyzed among the oldest old. In addition, the response rate was very high in the Health 2000 survey indicating that the reliability of these data were high. The participation rate for the Umeå 85+ study was also high and the severely cognitively impaired were excluded in the Umeå 85+ sample to increase reliability.

Neither the Umeå 85+ study nor the Health 2000 survey were originally designed to measure social capital. This constrained the use of social capital. Although the indicators of social capital were constructed to parallel previous research, they were rather crude and I sometimes relied on the so-called “proximal” indicators of social capital (Stone, 2001), i.e. outcomes of social capital that are closely related to its key components consisting of networks and trust. An illustrative example of a proximal indicator is sense of insecurity used in *Study IV*, which may be regarded as an outcome variable of trust rather than a part of social capital as suggested in Figure 2 in Chapter 6. The social capital measures used in this thesis may thus have questionable validity. The validity of social capital measures in different settings is, in general, one major challenge facing social capital research (De Silva et al., 2005).

The methodological challenges facing social capital research discussed in Chapter 4 are also highly relevant for the empirical studies presented here. Social capital clearly reflected individual-level attributes and disregarded the possible collective effects on health. Moreover, it was not possible to separate the causes and consequences of social capital due to the use of cross-sectional data. It is likely that good health may lead to higher prevalence of social capital (a backward arrow in Figure 2, Chapter 6), rather than high prevalence of social capital leading to better health. Moreover, the cross-sectional data did not allow the unpacking of ageing, cohort, and period effects on health. A longitudinal study design is needed to untangle these limitations. The crude measure of structural and cognitive social survey did not allow a deeper analysis of the possible negative or dark sides of social capital. The inclusion of bonding, bridging and linking social capital would have been useful to disentangle negative and positive associations with health. In addition, the analysis of social capital and health based on the Health 2000 survey was made on a rather wide age interval. The low number of Swedish-speakers in the data set reduced the possibility of using shorter age intervals in the analysis.

The relatively low number of Swedish-speakers in the Health 2000 data set also reduced the ability to detect statistically significant language group differences in health. Consequently, tendencies and

patterns of language group differences in health guided the interpretation of the results. In addition, due to the low number of Swedish-speakers in the older age groups (65-) the analysis of the association between social capital and health was restricted to the working population. Larger sample sizes or overrepresentation of Swedish-speakers in Finland should be considered in future research.

Conclusions and recommendations for future research

The results raise a number of issues for further research about social capital and health in different population groups. One challenge for forthcoming research is to take to a higher degree the considerations analyzing health inequalities of the different minority groups, advantaged as well as disadvantaged. Knowledge concerning the causes of health differences for different minorities needs to be promoted. Another challenge is take age into consideration, to a higher degree, when analyzing social capital and health. The meaning of social capital for health may differ across ages, which should be acknowledged in empirical research.

A lot of research has focused on the definitions of social capital, the measurement of social capital and the consequences but less on how social capital might be generated such as the role of the family or the welfare state in social capital creation (Stolle, 2003). Identifying the sources of the variation of social capital between the language groups, particularly among middle-aged men, might yield some information on how to influence social capital and health. In addition, the findings suggest further research is necessary into social capital, living situations and health among the oldest old. It should, however, be noticed, that a sample representing a specific population group such as the oldest old may have had a high level of social capital, but it may be difficult to identify it statistically in a cross-sectional study. This implies that a different approach is needed for analyzing social capital among the oldest old. To compare social capital within the younger age groups or to investigate an individual's cohort and the social history through which they have lived might be crucial for measuring social capital in this selected age group.

More research is also needed on which aspects of social capital are important for which aspects of health, and why this is so. So far, it has been difficult to find any common patterns of association besides the association between cognitive social capital and mental health (De Silva et al., 2005). The mechanisms between different components of

social capital and different dimensions of health – biological, social as well as psychological – also need to be established before policy implementations in this area could be recommended.

Even if the results are supportive of the need to separate structural and cognitive social capital, it is apparent that significant dimensions of the concept – bonding, bridging, linking as well as the strength of ties – have been neglected. Regardless of the fact that in present thesis only social capital at an individual level has been explored, it does not mean that the collective approach is less important. Considering the multilevel nature of the concept, multilevel methodologies should increasingly be used in future research.

In conclusion, the results in this thesis imply that the uneven distribution of social capital between the language groups in Finland are of importance when trying to further understand health inequalities that exists between Swedish- and Finnish-speakers. The results indicate further studies on differences in psychological health between Swedish- and Finnish-speaking men, since a considerable difference remained unexplained in this thesis. The results also imply that social capital is of relevance for understanding health among the oldest old. There is no question, however, that the relationship between social capital and health is complex and multidimensional, which suggests that more research on social capital and health is needed. To analyze the association between social capital and health requires increased methodological awareness regarding both concepts, which have been highlighted and discussed in this thesis.

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Appendix A

Individual-level studies of social capital and health

Table A1

Study	Setting, sample size, design	Health measures	Individual-level social capital measures		Results
			Structural	Cognitive	
Rose, 2000	New Russia Barometer Survey in March-April 1998; 18 year of age or older; N=1904; nationwide; cross-sectional	Self-reported physical and emotional health	Involvement in informal/modern networks, which people rely on in different situations, social integration	formal/anti-networks	Social capital (SoCa) increased physical and emotional health more than human capital. Especially involvement or exclusion from formal and informal networks, friends to rely on when ill; control over one's life; and trust contributed to health.
Veenstra, 2000	Saskatchewan, Canada, 1997; 18 year of age or older; N=534, 40% response rate; cross-sectional	Self-rated health	Overall civic participation	Trust in government, trust in neighbors, trust in people from respondents' communities, trust in people from respondents' parts of Saskatchewan, trust in people in general	SoCa was not significantly associated with self-rated health in the general population but parts of the structural SoCa was associated with health among the elderly

Veenstra et al., 2005	Four neighborhoods in Hamilton, Canada, 2001 and 2002; N=1504, 60% response rate; cross-sectional	Self-rated health, body mass index, emotional distress, chronic conditions	Associational participation and its type and degree of involvement in the association	Participation in voluntary associations was associated with emotional distress, over-weight status and was almost significantly related to self-rated health. Overall involvement had a positive relationship with these health measures.
McCulloch, 2001	British Household Panel Study for the years 1998 and 1999; aged 16 to 54; N=4704; nation-wide; cross-sectional	Psychiatric morbidity (GHQ-12), physical health problems related to arms, legs or hands; chest regarding breathing; and heart or blood pressure	Eight questions about the neighborhood were summed up and divided into low, medium, high, and very high levels of SoCa	People in the lowest category of SoCa had increased risk of psychiatric morbidity.

Hyypä & Mäki, 2001b	Swedish- and Finnish-speakers in bilingual communities in Ostrobothnia, Finland; 16 years of age or older; N=1284, 64.2% response rate; cross-sectional	Self-rated health	Social ties and integrity (questions on friendship and voluntary neighborhood assistance), participation in cultural clubs, attendance at various cultural, religious, political, sports, recreational, work-related and community events, attendance at summer music festivals and art exhibitions and membership in a variety of voluntary associations	Reciprocal civic trust	Swedish-speakers appeared to have more SoCa than Finnish-speakers. The number of friends willing to help, trust and membership in any religious association were associated with good self-rated health.
Hyypä & Mäki, 2003	As above	Self-rated health	Four factors were extracted: voluntary associational activity, friendship network, religious involvement, hobby group	Active participation in voluntary associations, friendship ties and religious involvement were associated with good	

Hyypä et al., 2007	Mini-Finland Health Survey in year 1978 to 1980; 30 years of age or older; N=7217, 90.2% response rate; nationwide; follow-up from 1978-80 to 2004	Prediction of mortality	Three factors were extracted: residential stability, leisure participation and interpersonal trust	self-rated health. Leisure participation was associated with survival for men. In women, interpersonal trust proved predictive of all-cause and cardiovascular mortality.
Bolin et al., 2003	Swedish survey of living conditions, for the years 1980/81, 1988/89, and 1996/97; aged 16-84 years; about 3800 individuals; panel study	Self-rated health	Whether the individual had a close friend outside his or her household	SoCa had a positive effect on self-rated health.
Smith & Polanyi, 2003	The World Value Survey, Australia, United States, Sweden and Norway, 1995-97; N=5096; cross-sectional	Self-rated health	Socially oriented behaviors: membership in organizations, political activity	The study found variation in the level of social capital measures across the different welfare states. Socially oriented norms were not strongly correlated with each other, or with socially oriented behaviors. The presence of socially oriented norms or behaviors did not reduce the likelihood of lower income groups reporting

Carlson, 2004	The World Value Survey, in 18 European countries, 1995-97; aged 18-90, N=21878; cross-sectional	Self-rated health	Activity in any voluntary association	Trust in people, confidence in the legal system	Organizational activity (for men), trust in people and confidence in the legal system played a role in area differences in self-rated health. Economic factors appeared, however, to be more important than SoCa.	poor self-rated health, relative to the highest income groups.
Chavez et al., 2004	Two disadvantaged neighborhoods in south western Sydney, Australia; 213 adults (aged 18 or over) from one neighborhood and 308 from the other neighborhood; 63.9% and 60.3% response rate; house-hold level and cross-sectional	Self-reported health	Seven factors were extracted: neighborhood attachment, support networks, feelings about trust and reciprocity, local engagement, proactivity in social context, personal attachment to the area, feelings about safety		Only feelings of trust and reciprocity made significant contributions to explaining health variance.	
Harpham et al., 2004	Low income community in Cali, Colombia; aged 15-25; N=1168; cross-sectional	Mental health (self-reporting questionnaire-20 (SRQ20))	Participation	Trust in institutions, trust in people, social cohesion and solidarity, social control, perceived	Only one of the eight factors thin trust proved to be independently important for mental health.	

social support

<p>Helliwell & Putnam, 2004</p>	<p>Three different sources of survey data: World Value Survey (WVS) of the years 1980, 1991-1992 and 1995-1997, roughly 84 000 observations; Social Capital Benchmark Survey in the US, about 29000 observations, and the Canadian survey, about 7500 observations</p>	<p>Life satisfaction, happiness, self-assessed health status</p>	<p>Associational membership</p>	<p>Social trust (general, in neighbors, police)</p>	<p>SoCa was strongly associated to well-being through many independent channels and in several different forms. SoCa indicators appeared independently and robustly related to happiness and life satisfaction, both directly and through their impact on health.</p>
<p>Lindström, 2004</p>	<p>The public health survey in Scania, Southern Sweden, 1999-2000; aged 18-80; N=13715, 59% response rate; cross-sectional</p>	<p>Self-reported health and self-reported psychological health (GHQ-12)</p>	<p>Social participation describes how actively each person took part in the activities of formal and informal groups during the last year. The activities were measured as an index consisting of 13 items</p>	<p>Generalized trust in other people</p>	<p>Bad self-reported health was significantly more prevalent in the miniaturization (high-social participation/low trust), traditionalist (low-social participation/high trust) and low-SoCa (low-social participation/low trust) categories than in the high SoCa (high-social participation/high trust) category. The odd ratios of poor</p>

<p>Liukkonen et al., 2004</p>	<p>Eight Finnish towns involved in the 10-Town Study and the Temporaries in Municipal Jobs Study; full-time permanent public sector employees in 1997; N=6028, follow-up</p>	<p>Self-rated health and psychological distress (GHQ-12)</p>	<p>The combination of social participation and trust resulted in four alternatives: high-social participation/high trust (high SoCa), high-social participation/low trust (“the miniaturization of community”), low-social participation/high trust (traditionalism), and low social participation/low trust (low-SoCa)</p>	<p>psychological health were significantly higher in both the miniaturization of community and low-SoCa categories compared to the high-SoCa category, while the traditionalist category did not differ in health from the high-SoCa category.</p>
			<p>Trust in the labor market, and trust in co-worker support (social job capital)</p>	<p>A low level of social job capital was only associated with poor health in the age-adjusted model for women. When other background variables and baseline health differences were controlled for the associations were insignificant both in men and women.</p>

Pollack & von dem Knesebeck, 2004	United States and Germany, 2000 and 2001; aged 60 years of age or older; N=682 in Germany and N=608 in the US; cross-sectional	Overall health, depression (CES-D) and functional limitations	Participation in church, charity group, sports club, self-help groups, or other local activity at least once a month	Trust, reciprocity	Lack of reciprocity and mistrust was associated with poorer health in both countries. Mistrust was associated with depression and functional limitations in the US. Lack of participation was associated with poor SRH and depression in Germany.
Sundquist et al., 2004	Swedish Annual Level-of-Living Survey (SALLS) in 1990 and 1991, aged 35-74; N=6861; follow-up from 1990-91 to 2000	Coronary heart disease (CDH), morbidity and mortality	Social participation index based on 18 variables from SALLS: SoCa in the neighborhood, social, cultural and religious participation, political empowerment of the respondent	People with low social participation had increased risk of CDH.	
Andrew, 2005	The Health Survey for England, (HSE), 2000; aged 65 years of age or older; N=4190: 1677 community dwellers	Functional impairment, mental health and self-assessed	Group participation	Trust and reciprocity (the latter only asked among community dwellers), social support	Social support, group participation, and trust/ reciprocity each showed statistically significant association

and 2493 care home residents; nation-wide and cross-sectional	health (SAH)	with all of the indicators of health studied. However, only two of these associations were statistically significant among care home residents.
Ziersch, 2005 In two suburbs of Adelaide, Australia, 1999/2000; aged 18 to 90; N=530, 50.1% response rate; cross-sectional	Physical and mental health as measured by SF-12	Values, informal networks, help and control were all directly or indirectly positively associated with better mental health. No SoCa variables were associated with physical health.
Ziersch et al., 2005 The Health Development and Social Capital Project, Western suburbs of Adelaide, Australia, 1997; N=2400, 64% response rate (Questionnaire) and N=40 (In-depth interviews); cross-sectional.	Physical and mental health as measured by SF-12	A distinction was made between social capital infrastructure (SCI) including cognitive and structural components and social capital resources (SCR) (SCI) Informal and formal networks (SCR) Help, acceptance, civic actions, control Neighborhood connections, local civic action Only perceived neighborhood safety was related to physical health and neighborhood safety and neighborhood connections were positively related to mental health.

Ali et al., 2006	The public health survey in Scania, Southern Sweden, 1999-2000; aged 18-80; N= 13715, 59% response rate; follow-up during a three-year period	First time acute myocardial infarction (AMI)	See Lindström 2004	Low social participation was significantly associated with incidences of first ever AMI, while no such association between trust and AMI was observed. High trust in combination with low social participation as well as low SoCa (low trust/low social participation) were significantly associated with AMI, but after multiple adjustments only the low social participation/high trust category remained significant.
Phongsavan et al., 2006	Population wide survey of Australia, 2003; aged 16 years and older; N=12879; cross-sectional	10-item Kessler psychological distress scale (K10)	Community participation	Having trust in people, feeling safe in the community and having social reciprocity were associated with lower risk of mental health distress. No significant association between community participation and mental distress were found.

Rojas & Carlson, 2006	The Taganrog survey of 1998, Russia; aged 20 years and older; N=1795; 81% response rate; cross-sectional	Self-rated health	Membership of a trade union, political organization, or of any other organization, contact with neighbors	SoCa was stratified by education, and its effect on health varies depending on the volume of educational capital possessed.
Nakhaie et al., 2007	National Population Health Survey (NPHS), Canada, 1996-1997; subsample of people aged 25 years or older, N=44986, 95.6 % response rate for NPHS; cross-sectional	Chronic health conditions, self-rated health, overall functional health and mental distress scale (MDS)	Organizational and religious participation, contact with family, social support, intergenerational networks, contacts with friends and neighbors, blood donation, involvement in team sports, marital status, household size	The effect of social inequality was more consistent than that of SoCa across various measures of health. SoCa seemed less useful in explaining the health status of Canadians.
Westin & Westerling, 2007	Nationwide Swedish survey of parents with children in the age range of 4-16 years, 2003; N=1589, 64% response rate; cross-sectional	Self-rated health	Civic and social participation	A low level of SoCa (social participation and trust), when adjusted for social support, socioeconomic and sociodemographic variables, was associated with less than good self-rated health.

Appendix B

Individual-level studies of social capital and self-rated health

Table B1

Study	Setting, design, sample size	Self-rated health	Treatment of age in analysis	Methods of analysis
Veenstra, 2000	Saskatchewan, Canada, 1997; 18 year of age or older; N=534, 40% response rate; cross-sectional	“How would you describe your state of health compared to other persons of your age: Excellent, good, fair and poor”. Two dichotomizations were used: one that separated excellent/good from fair/poor and another that separated excellent from good/fair/poor.	The analysis were done separately for the age groups 18-39 years, 39 to 65 years and 65 years or older.	Logistic regression
Veenstra et al., 2005	Four neighborhoods in Hamilton, Canada, 2001 and 2002; N=1504, 60% response rate; cross-sectional	“In general, compared to other people your age, would you say your health is excellent, very good, good, fair or poor?”. SRH was dichotomized by distinguishing fair and poor health from other responses.	Age (continuous) was treated as a control variable.	Logistic regression

Hyyppä & Mäki, 2001b	Swedish- and Finnish-speakers in bilingual communities in Ostrobothnia, Finland; 16 years of age or older; N=1284, 64.2% response rate; cross-sectional	“Would you say that in general your health at the present is good, almost good, fair, poor, or bad”. SRH was dichotomized good (almost good, fair, poor) or bad.	Age (continuous) was treated as a control variable.	Logistic regression
Hyyppä & Mäki, 2003	As above	As above	Age (continuous) was treated as a control variable.	Logistic regression
Bolin et al., 2003	Swedish survey of living conditions, for the years 1980/81, 1988/89, and 1996/97; aged 16-84 years; about 3800 individuals; panel study	The respondent was asked to report his or her health status as one of three categories: 1, 2 or 3.	Age was one of the explanatory variables.	Ordered probit models
Smith & Polanyi, 2003	The World Value Survey, Australia, United States, Sweden and Norway, 1995-97; N=5096; cross-sectional	Respondents were asked to rate their health on a five-point scale. This response was dichotomized into two levels (good health (very good or good) and poor health (fair, poor or very poor)).	The models were adjusted for age.	Logistic regression

Carlson, 2004	The World Value Survey, in 18 European countries, 1995-97; aged 18-90, N=21878; cross-sectional	The respondent was asked to estimate her/his health according to a five-point scale. SRH was dichotomized into good health (very good and good) and poor health (satisfactory, poor and very poor). An alternative dichotomization was carried out (not shown). Those with fair health were defined as having "good" health.	Age (continuous) was treated as a control variable	Logistic regression
Chavez et al., 2004	Two disadvantaged neighborhoods in south western Sydney, Australia; 213 adults (aged 18 or over) from one neighborhood and 308 from the other neighborhood; 63.9% and 60.3% response rate; household level and cross-sectional	"In general would you say your health is excellent, very good, good, fair or poor".	Age was included in one of the models.	Standard multiple regression
Helliwell & Putnam, 2004	Three different sources of survey data: World Value Survey (WVS) of the years 1980, 1991-1992 and 1995-1997, roughly 84 000 observations; Social Capital Benchmark Survey in the US, about 29000 observations,	Self-assessed health status was measured on a five-point scale.	Age groups: 18-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, and 65 years or over.	Survey linear estimations (linear regression)

Lindström, 2004	and the Canadian survey, about 7500 observations The public health survey in Scania, Southern Sweden, 1999-2000; aged 18-80; N=13715, 59% response rate; cross-sectional	Self-reported health was assessed by an item consisting of seven alternatives (bad- couldn't be worse, bad, somewhat bad, "neutral alternative", somewhat good, good and good-couldn't be better). SRH was dichotomized into bad (the first three alternatives) and good (the four latter alternatives).	Age groups were divided into the age groups born in 1919-1929, 1930-1939, 1940-1949, 1950-1959, 1969-1969 and 1970-1981. The model was adjusted for the age groups.	Logistic regression
Liukkonen et al., 2004	Eight Finnish towns involved in the 10-Town Study and the Temporaries in Municipal Jobs Study, Finland, in 1997; full-time permanent public sector employees in 1997; N=6028, follow-up	Self-rated health was the respondents' overall assessment of their health on a 5-point scale (poor, rather poor, average, rather good and good). SRH was dichotomized by grouping poor, rather poor and average health into one category (poor SRH) and rather good and good health into one category (good SRH).	Age (continuous) was treated as a control variable.	Logistic regression

Andrew, 2005	The Health Survey for England, (HSE), 2000; aged 65 years of age or older; N=4190: 1677 community dwellers and 2493 care home residents; nation-wide and cross-sectional	Respondents were asked to rate their overall health compared with others their own age on a five-point scale (very good, good, fair, poor, very poor). Responses were collapsed into three groups (good, fair, poor)	The models were adjusted for age.	Ordinal logistic regression (proportional odds model)
Rojas & Carlson, 2006	The Taganrog survey of 1998, Russia; aged 20 years and older, N=1795; 81% response rate; cross-sectional	Self-rated health was measured on a five-point scale indicating whether the respondent rates his/her health as "very good", "good", "average", "poor" or "very poor".	Age was included as one of the background variables.	Multiple regression (OLS)
Nakhaie et al., 2007	National Population Health Survey (NPHS), Canada, 1996-1997; aged 25 years or older; N=44986, 95.6 % response rate; cross-sectional	Self-rated health ranged from excellent, very good, good, fair to poor.	Age in five-year categories.	Ordinal logit analysis
Westin & Westerling, 2007	Nationwide Swedish survey of parents with children in the age range of 4-16 years, 2003; N=1589, 64% response rate; cross-sectional	Self-rated health was measured on a five-point scale (very good, good, neither good nor poor, poor, very poor). Health was dichotomized into either good (very good or good) or less than good (neither good nor poor, poor, very poor).	The models were adjusted for age.	Logistic regression

Sammanfattning

Avhandlingens titel lyder på svenska socialt kapital och hälsa: variationer, samband och utmaningar. Avhandlingen består av fem artiklar som har publicerats i vetenskapliga tidskrifter. Avhandlingen innehåller även en sammanställning där de olika delstudiernas resultat har knutits samman. Sammanfattningen lyfter fram de centrala delarna från varje avsnitt.

Inledning

Individens hälsa är beroende av en rad olika bestämningsfaktorer såsom sociodemografiska faktorer och hälsoriskfaktorer. Förutom att hälsan påverkas av ålder, socioekonomisk status, civilstånd och hälsobeteende kan variationer i hälsan kopplas till psykosociala faktorer. Psykosociala faktorer såsom socialt stöd och sociala nätverk har visat sig ha en stor betydelse för hälsan. På senare tid har det närliggande begreppet socialt kapital i allt större utsträckning kopplats ihop med både fysisk och psykisk hälsa. Socialt kapital kan förenklat beskrivas som en resurs som blir tillgänglig genom sociala relationer inom familjen, bland vänner och grannar samt i föreningslivet.

Socialt kapital är en populär ansats i hälsoforskningen, vilket märks på antalet vetenskapliga publikationer som årligen ökar. Detta är inte förvånande med tanke på att forskningen i allmänhet visar på ett positivt samband med hälsa, det vill säga ju mera socialt kapital desto bättre hälsa. En närmare granskning av tidigare studier visar emellertid på flera oklarheter när det gäller den empiriska forskningen. Exempelvis är det oklart hur socialt kapital ska mätas i olika kontexter och om möjliga samband mellan olika aspekter av socialt kapital och hälsa. Det övergripande syftet med avhandlingen är således att öka kunskapen om socialt kapital och hälsa samt att bidra till att utveckla forskningen genom att lyfta fram flera metodologiska utmaningar. Fokus i den här avhandlingen läggs på de allra äldsta, dvs. på personer 85 år eller äldre, samt på svensk- och finskspråkiga i Finland.

Teorier om socialt kapital

De tre stora centrala teoretikerna inom socialt kapital är statsvetaren Robert Putnam, sociologerna Pierre Bourdieu och James Coleman. En gemensam utgångspunkt för dessa tre är att de ser sociala nätverk som en resurs, men de tre har även varierande forskningsintressen och synsätt på socialt kapital. I den hälsovetenskapliga litteraturen används framförallt Putnams teori. Likaså är Putnams definition av socialt kapital central för den här avhandlingen. För Putnam består socialt kapital av sociala nätverk och normer som uttrycker social ömsesidighet och tillit. Till skillnad från Bourdieu och Coleman lyfter Putnam i huvudsak fram socialt kapital som en kollektiv resurs där alla medborgare i samhället kan dra nytta av det existerande sociala kapitalet utan att nödvändigtvis delta i själva skapandeprocessen.

Putnams definition består i grunden av två beståndsdelar – strukturellt och kognitivt socialt kapital. I strukturellt kapital ingår deltagande i frivilliga nätverk och organisationer medan det kognitiva sociala kapitalet utgörs av ömsesidighet och mellanmänsklig tillit. Putnam gör även en åtskillnad mellan sammanbindande och överbryggande socialt kapital. Det sammanbindande sociala kapitalet finns bland individer som står varandra nära och har en liknande bakgrund, medan det överbryggande sociala kapitalet finns bland individer med heterogen bakgrund och anses vara inkluderande till sin karaktär. En ytterligare form av socialt kapital – nivå-länkande – beskriver de band som finns mellan olika individer med olika positioner vad gäller makt, status och förmögenhet. I avhandlingen ligger fokus på det strukturella och kognitiva sociala kapitalet.

Tidigare forskning

I avhandlingens sammanställning finns en översikt över den aktuella forskningen om socialt kapital och hälsa. Fokus är på studier som analyserar det sociala kapitalet med hjälp av individdata. I översikten separeras det strukturella och kognitiva sociala kapitalet om det är möjligt. Det framgår tydligt att det inte finns ett entydigt eller gemensamt mått på socialt kapital men att de flesta studier verkar utgå från Putnams definition. Majoriteten av studierna inkluderar både strukturellt och kognitivt socialt kapital eller kombinerar högt respektive lågt socialt deltagande med hög och låg tillit i olika kombinationer. Ett mindre antal studier separerar sammanbindande,

överbryggande och nivåänkande socialt kapital och på vilket sätt dessa påverkar hälsan.

Översikten visar i allmänhet ett positivt samband mellan socialt kapital och hälsa, och speciellt starkt samband verkar finnas mellan det kognitiva sociala kapitalet och psykisk hälsa. Några studier finner inget samband mellan socialt kapital och hälsa, speciellt då man kontrollerar för alternativa förklaringar. Där flera dimensioner av hälsa inkluderas inom samma studie kan betydelsen av socialt kapital vara olika beroende på utfallsvariabeln. Exempelvis kan socialt kapital ha ett signifikant samband med psykisk hälsa men inte med fysisk hälsa.

Det är fortfarande oklart varför och på vilket sätt socialt kapital påverkar hälsan. Det är även oklart om mekanismerna mellan socialt kapital och hälsa varierar beroende på hälsomåttet. Är exempelvis mekanismen mellan tillit och mental hälsa annorlunda än mellan sociala aktiviteter och mortalitet? Forskningen visar att ett väl utvecklat socialt kapital gör det lättare att sprida hälsoförebyggande information och att den informella kontrollen av ett negativt hälsobeteende är mera effektivt. En hög nivå av socialt kapital kan därtill påverka tillgången till tjänster och serviceformer, eftersom det sociala kapitalet ökar intresset för att uppnå gemensamma mål och strävanden. Ytterligare kan socialt kapital fungera som en skydd mot stressrelaterade händelser som utgör en av bestämningsfaktorerna för mental ohälsa.

Några utmaningar vid studier av socialt kapital och hälsa

Det finns några centrala utmaningar vid studier av socialt kapital och hälsa som lyfts fram i sammanställningen. Den empiriska forskningen har brister framförallt när det gäller mätningen av socialt kapital. Det råder delade meningar inom hälsoforskningen om huruvida Putnams definition av socialt kapital – som främst ses som en samhällelig resurs – kan mätas med att fråga individen om hans eller hennes sociala kontakter och sociala aktiviteter. Det finns även brister när det gäller kunskap om orsakssamband och om de negativa sidorna med socialt kapital. Dessutom är det en stor utmaning att analysera hälsa. Hälsa är liksom socialt kapital ett mångfacetterat och mångdimensionellt begrepp och uppfattningen om vad som behöver mätas är delad. Ofta mäter man individens självupplevda psykiska och fysiska hälsa eller den subjektiva hälsan, och ett vanligt

förekommande mått på självupplevd hälsa är en enkel fråga där individen gör en bedömning av det egna hälsotillståndet. Antalet svarskategorier varierar men på en femgradig skala (gott, tämligen gott, medelmåttigt, tämligen dåligt eller dåligt) förläggs delningspunkten i analysen vanligen mellan medelmåttigt och tämligen gott. Att slå ihop en femgradig skala till ett binärt utfall antyder att viktig information kan gå förlorad i analysen. Dessutom är självskattad hälsa åldersberoende och ifall de förklarande variablerna även är åldersberoende kan det skapa problem vid tolkningen av resultaten.

Syftet

Syftet med avhandlingen är att studera:

- 1) skillnader i socialt kapital mellan svensk- och finskspråkiga
- 2) skillnader i självupplevd hälsa mellan svensk- och finskspråkiga
- 3) sambandet mellan socialt kapital och hälsa
- 4) metodologiska utmaningar vid analyser av socialt kapital och hälsa.

Material och metod

Datamaterialen består av Umeå 85+-studien och Hälsa 2000-undersökningen. Umeå 85+ är en tvärvetenskaplig studie av ett representativt urval av 85-åringar, 90-åringar samt 95-åringar och äldre i Umeå kommun i Sverige. Studien omfattar 163 äldre. Umeå 85+-studien används för en av delstudierna (II). Hälsa 2000-undersökningen är en landsomfattande tvärvetenskapligt undersökning av ett representativt urval av finländare (N=8028) över 30 år. Hälsa 2000-undersökningen används för tre delstudier (III–V).

Olika indikatorer på strukturellt och kognitivt socialt kapital samt hälsa används i de olika delstudierna. Umeå 85+-materialet analyseras med faktor- och variansanalyser, medan Hälsa 2000-materialet analyseras med logistisk regressionsanalys.

Resultat

Tidigare forskning har visat att den svenskspråkiga minoriteten i Finland i allmänhet har en fördelaktigare livssituation än den finskspråkiga majoritetsbefolkningen. Resultaten visar liknande positiva tendenser när det gäller det sociala kapitalet. Svenskspråkiga har mera kognitivt och strukturellt socialt kapital jämfört med finskspråkiga även då man kontrollerat för alternativa förklaringar. Likaså tenderar de svenskspråkiga att ha en aning bättre självupplevd hälsa än finskspråkiga. Hälsoskillnaderna kvarstår även då man kontrollerat effekten av sociodemografiska variabler. Det är emellertid viktigt att notera att hälsoskillnaderna är små och mindre självklara jämfört med skillnaderna i förekomsten av socialt kapital.

Resultaten visar att socialt kapital ofta har ett samband med hälsa. Det sociala kapitalets samband med hälsa tenderar att vara beroende av olika mått på såväl socialt kapital som hälsa. Detta märks tydligt i delstudien bland de allra äldsta där enbart förekomsten av depression har ett samband med socialt kapital. Analysen som gjordes på Hälsa 2000-datamaterialet visar i sin tur att den kognitiva dimensionen av socialt kapital, d.v.s. tillit och känsla av trygghet, har ett samband med självskattad och psykisk hälsa medan den strukturella dimensionen av socialt kapital som socialt deltagande och sociala kontakter har en mindre betydelse för hälsan. Resultaten visar även att det studerade sociala kapitalet är kopplat till skillnader i hälsa mellan svensk- och finskspråkiga och speciellt när det gäller den psykiska hälsan hos män.

De metodologiska utmaningarna som aktualiseras i de olika delstudierna handlar främst om operationaliseringen av socialt kapital. Hur mäter man socialt kapital bland de allra äldsta? Kan man studera samma frågor som hos en yngre åldersgrupp? Svaret pekar på att större hänsyn bör tas till undersökningsgruppen och vilka förhållanden som råder just för den specifika åldersgruppen. En annan central utmaning handlar om att undersöka och mäta socialt kapital hos de svensk- och finskspråkiga. Räcker det exempelvis enbart med att studera strukturellt och kognitivt socialt kapital? Det sammanbindande sociala kapitalet anses i allmänhet vara viktigt för att bevara och upprätthålla en minoritetskultur och denna aspekt av socialt kapital tillsammans med det överbryggande och nivåänkande sociala kapitalet bör studeras i framtida studier.

Resultaten visar slutligen att större vikt bör fästas vid de statistiska analyserna av självskattad hälsa, speciellt ifall hälsa studeras i breda åldersintervall. Problematiken illustreras med att analysera två olika

dikotomiseringar av självskattad hälsa och att använda två åldersberoende förklarande variabler som civilstånd och utbildningsnivå. Resultaten antyder att då hela åldersintervallet analyseras med logistisk regression spelar valet av dikotomiseringpunkt av hälsa en mindre roll för resultatet. Ifall man delar upp åldersintervallet i tre mindre åldersgrupper visar det sig att effekten av civilstånd och utbildningsnivå är åldersberoende. Speciellt tydliga blir åldersskillnaderna då man analyserar dem med dålig och tämligen dålig hälsa.

Sammanfattande diskussion

Med den här avhandlingen har det ännu en gång bekräftats att det är viktigt att inkludera socialt kapital när man studerar hälsoskillnader mellan svensk- och finskspråkiga. Resultaten antyder även att socialt kapital har en betydelse för hälsan hos de allra äldsta. Hälsa och socialt kapital varierar med ålder och språkgrupp och avhandlingen visar på att betydelsen av att beakta olika minoriteter samt olika åldersgrupper i forskningen för att öka kunskapen om det sociala kapitalets betydelse för hälsan.

Till datamaterialens starka sidor hör den höga svarsprocenten och att materialen innehåller centrala hälsoindikatorer. Till svagheter hör att varken Umeå 85+-studien eller Hälsa 2000-undersökningen på ett medvetet sätt inkluderat studiet av socialt kapital. Metodologiskt framstår en analys av socialt kapital med individdata som mera stabilt jämfört med att analysera socialt kapital som en kollektiv resurs, vilket inte betyder att det senare är mindre viktigt eller kan förbigås i framtida studier. Ytterligare är det svårt att bedöma orsakssamband. Man kan mycket väl tänka sig att god hälsa förbättrar det sociala kapitalet snarare än det motsatta.

Socialt kapital är ett komplicerat begrepp att studera, vilket accentueras när det handlar om att förklara och förstå hälsan. Socialt kapital och hälsa är båda mångdimensionella begrepp och olika mått på såväl socialt kapital som hälsa försvårar generaliseringen av resultaten. Trots stora metodologiska utmaningar är socialt kapital ett intressant begrepp vars popularitet ständigt ökar. Hälsa kan inte enbart förstås utifrån individuella bestämningsfaktorer utan måste förstås i ett större socialt sammanhang där socialt kapital kan ha en viktig funktion.

To understand individual health, there is an increasing recognition that one must look into the individuals' environment such as family and friendship relationships, relationships within more formal institutions and trust between individuals or into the level of social capital. Although social capital has been extensively studied during the last decade, there are still open issues in current empirical research. These concern for instance the measurement of the concept in different contexts, as well as the association between different types of social capital and different dimensions of health.

The present thesis addresses these questions. This research promotes the understanding of social capital and health in different population groups and contributes to the discussion on methodological issues in social capital and health research. The focus in present thesis is on social capital and health among people aged 85 and above and among Swedish- and Finnish-speakers in Finland.