Chapter 10
Social Capital and Health from Cradle to Grave

Social Capital and Health in Childhood and Adolescence

Epidemiological research has revealed a wide array of circumstances under which it can be expected that health conditions in childhood affect adult wellbeing, health outcomes, and survival. Economic, emotional and social adversities in childhood have been reported to associate with health outcomes and survival in adulthood, but the links have remained tentative. Consequently, no causal pathways from early social circumstances to later health outcomes have been established either. Figure 10.1 shows a hypothetical model of these relationships.

Research has shown that the quality of parenting has a greater effect than family income on the early development of children. A systematic review method used to explore social capital and children's wellbeing proved that social capital is – after poverty – the best predictor of children's welfare (Ferguson et al. 2006). Keeping this in mind, it is no wonder that recent population health studies have focused on social capital among potential social sources of children's well-being and health. The above mentioned comprehensive review covered literature on social capital and wellbeing up to the year 2001. It did not list epidemiological or health-related studies, but it included one qualitative study showing clearly that the views on social capital among children and youth aged 12–15 years are different from those of adults (Morrow 2000).

In addition to the sociological review by Ferguson and coworkers (2006), which discusses various important aspects of social capital measurements and operationalization, there is a more recent literature review that concerns social capital and mental health among children and youth (Almedom and Glandon 2008). Analyzing studies up to 2006, they showed that only one single study had distinguished the perceived neighborhood quality (as an indicator of social capital) from the researchers' view on the term (Drukker et al. 2003). The results of this longitudinal study showed that children living in "better" economic and social capital neighborhoods had better quality of life, better general and mental health, and they exhibited more pro-social behavior when they moved on into adolescence (Drukker et al. 2003). Multilevel analyses using both neighborhood-level and individual-level data on children aged 11–12 years showed that social capital and its effects can be measured and

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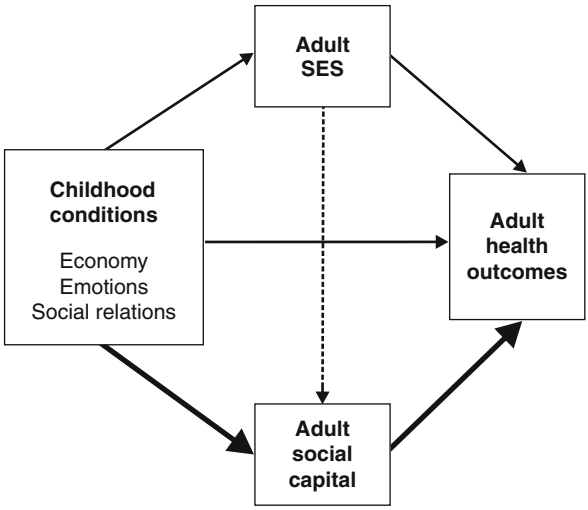

Fig. 10.1 Hypothetical model of the relationships between childhood conditions, social capital and adult health outcomes

interpreted across different subcultures (in Maastricht and Chicago). As indicators of social capital, higher levels of informal social control, social cohesion, and social trust were associated with higher levels of perceived health. Interestingly, the positive association was significant in both Maastricht and the Hispanic subsample in Chicago, but not in the non-Hispanic Chicago samples (Drukker et al. 2005). Apart from these two associational surveys, practically no reports have been published on social capital in early childhood and physical health in childhood or later in life. However, in many epidemiological surveys, young adults (15–25 years) have been included in larger population samples, but the role of childhood social capital has not been separately analyzed.

Neglectful parenting is one example of social adversities in early childhood. An anonymous telephone interview survey concerning child rearing was utilized in a study on social capital, family violence, and neglect. Calculated from the total number of eligible mothers ($N = 1{,}435$), the adjusted response rate was 52% (Zolotor and Runyan 2006). To assess social capital, the concepts of collective efficacy, neighborhood cohesion, and psychological sense of community were reduced to 22 questions. The survey also assessed parenting behavior, disciplinary practices, and family and community characteristics. The results showed that each 1-point increase in the 4-point social capital index was associated with a 30% decrease in the odds of neglectful parenting, psychologically harsh parenting, and domestic violence. Somewhat unexpectedly, social capital showed no association with harsh physical punishment. Another unexpected outcome was the relationship between very high church attendance and neglectful parenting. This seems to be a paradox, since regular churchgoing has been used as an indicator of communitarian social capital (Harpham 2008). On the other hand, very frenetic churchgoing may indicate fundamental sect, showing rather the dark side of social capital (Portes 1998, 2000, see also “Critical voices” in Chapter 2).

In a study conducted in the USA, multilevel modeling was employed to investigate associations between the state-level economic and social context and the physical activity and body mass index in adolescents aged 10–17 years ($N = 37{,}930$) (McKay et al. 2007). Social context was assessed by the aggregated means of responses to two indicators of social capital: mutual aid and social trust. State-level mutual aid and social trust were related to the odds of an adolescent having low physical activity and above-normal body mass index. Thus, as one form of collective community characteristics, social capital influences adolescents' health behavior and health. Similarly, a recent survey based on interview data from the National Longitudinal Study of Adolescent Health showed that connections in family and community contexts during adolescence promoted healthy youth development (Duke et al. 2009). The original sample of young adults ($N = 9{,}130$, aged 18–26 years in 1995) was examined 5–6 years later. The study provided longitudinal evidence for the beneficial role of social capital during adolescence, since shared activities with parent(s) and school connection during adolescence emerged as independent predictors of young adult civic engagement.

Very few studies have focused on the cultural (cognitive/psychological) dimension of social capital and its potential effect on children's or adolescents' health. Perceived neighborhood trust and safety were related to childhood psychopathology in a large survey of mental health in the UK. Children's perception of their neighborhood was assessed in terms of the trustworthiness or honesty of people living around, and the feeling of safety when walking alone. The results revealed that children's perception of their neighborhood was strongly associated with childhood psychopathology (Melzer et al. 2007). This allows for the conclusion that promotion of cultural (cognitive/psychological) social capital among children by supporting their positive perceptions of social trust, honesty, and neighborhood safety may have a positive effect on their health and well-being.

Both childhood and adult social resources, e.g., in the form of social capital, affect health in adulthood. Social disadvantages may exist throughout the course of life, and it has been empirically shown in several longitudinal epidemiological studies that early social disadvantages and adversities increase strongly the risk for unhealthy course of life. Previous surveys on inequalities in health have shown that the influence of social circumstances in early childhood is independent of SES in adulthood. Despite the fact that we have practically no longitudinal surveys on the effects of the early childhood social capital, we can, at least, hypothesize that the lack of social capital in early childhood is among the highest risks for unhealthy course of life and short-lasting life.

Social Capital in Working Life

There has been growing interest in applying the concept of social capital in inter-organizational productivity and quality of working life after it had become clear that industries may benefit from social capital. Social capital can also be considered a

reliable marker of social work collectivity that may affect employees' health. Two indicators of social capital, namely the security of one's employment contract and trust in co-worker support, and self-rated health status and psychological distress were assessed in a study involving public-sector employees in Finland (Liukkonen et al. 2004). A total of 6,442 full-time permanent employees replied to the initial survey, with a response rate of 67%. After a 4-year follow-up period, the cohort consisted of 3,998 initially permanent employees (response rate 81%) and 1,563 employees who had initially had a fixed-term contract (response rate 76%), and 467 subsidized employees (response rate 73%).

The results partially supported the authors' hypothesis that a low level of workplace social capital, or "social job capital", is associated with poor health, but this was true only in the age-adjusted model in women. After adjusting for baseline health differences and other confounders, however, the association became insignificant in both women and men. With these, rather meager results at hand, the authors questioned the appropriateness of using the security of one's employment contract and support from co-workers as indicators of social capital (Liukkonen et al. 2004).

Supposedly the answer was "no", since a new short measure of social capital at work was constructed and published by the same researchers. The psychometric characteristics (reliability and validity) of the new tool for the purpose of examining social capital at work were reported to be acceptable. The newly constructed measure of social capital at the work-unit level was shown to be associated with employees' self-rated health: a low level of workplace social capital was associated with a higher likelihood of poor self-rated health (Kouvonen et al. 2006).

A longitudinal multilevel study was conducted in a cohort of 9,524 initially healthy employees in a total of 1,522 work units; these employees had not changed their work unit between the years 2000 and 2004. The results of multilevel modeling analyses supported the role of workplace social job capital as a predictor of employees' self-rated health. Individual-level social capital at work was related to health: both a constantly low level of social capital and a decline in social capital were associated with poor self-rated health. Also, contextual social capital at the work-unit level, assessed by means of responses from co-workers, was independently associated with the risk of poor health (Oksanen et al. 2008). In another recent study in Finland, a significant association between individual-level social capital at work and cessation of smoking was observed in the high socio-economic group (odds ratio 1.63, 1.01–2.63) but not in the intermediate or low socio-economic groups. In contrast to individual-level social capital, contextual social capital at the work-unit level was not associated with smoking cessation (Kouvonen et al. 2008).

Social Capital and Aging-Related Health

Social capital has been acknowledged as one of the factors linked with health outcomes and survival among older people. In fact, it may play a very important role because the risk of losing social ties increases along with aging. Communities rich

in social capital may succeed better in promoting health, especially by opening up possibilities for assistance, by enhancing the feeling of social trust and security, and by increasing opportunities to be involved in diverse socio-cultural activities.

Literature on social capital and aging-related health outcomes has recently been reviewed (Cagney and Wen 2008). The authors pointed out that the social capital aspects related to old age have not gained so much attention as those related to the earlier stages of life course, and they reviewed both individual-level and community-level social capital in relation to older adults' well-being, health, and survival. The majority of previous studies in the field were based on the theory of social support, which may not be relevant from the social capital point of view. The authors argued that individual-level social capital extends beyond the concept of social support, and they prefer the concept of collective efficacy (see Sampson et al. 1997).

According to Cagney and Wen (2008), collective efficacy is distinct from social capital since social capital is about relationships whereas collective efficacy is about converting those relationships into action. Literature stemming from the notion of collective efficacy indicates that neighborhood (community) social resources affect the lives of older people. For instance, living in a cohesive community with close social control enhanced older peoples' survival after serious diseases. However, some unexpected but quite intriguing findings were also reported: for example, higher levels of community social network density predicted higher rates of mortality among older people. Finally, operationalizing the concept of collective efficacy as neighborhood social cohesion and solidarity and informal social control did not predict self-rated health of older people. The authors concluded that a life-course perspective, which takes into consideration the entire life span and the heterogeneity existing at later age, could enhance our understanding of the independent contribution of immediate social environment to health.

Social Capital and Health in Older Populations

Social capital or its dimensions and the various indicators of social capital have been associated with population health in cross-sectional and prospective studies (for references, see Kawachi et al. 2008a). As stated above, populations consisting of older people (persons aged 65+) have been studied and reported on scarcely. Only one single study among people aged over 65 was included in the comprehensive review covering social capital and physical health studies until 2006 (Kim et al. 2008). The largest and most representative surveys with elderly populations have been conducted in the Scandinavian and Northern European countries, perhaps due to their long tradition of population health surveys and epidemiological research, as well as due to the growing interest in the health care of older people in these countries.

In a cross-national investigation involving the population aged over 65 years in the United States and Germany, Pollack and von dem Knesebeck (2004) showed that lack of reciprocity was associated with poorer self-rated health in both countries. In

the US population sample ($N = 698$, response rate 57%), civic mistrust was a strong predictor of poor self-rated health. For depression, both lack of reciprocity and civic mistrust were significant predictors, while lack of social participation was not. In the German population sample ($N = 821$, response rate 62%), all three indicators of social capital were associated with self-rated health. Lack of reciprocity and lack of social participation were associated with depression, while civic mistrust was not.

Despite its three major limitations, namely the cross-sectional study setting, non-validated depression assessment, and intercultural problems of measuring social capital, this study provided important evidence on the association between individual-level social capital and population health of older people (Pollack and von dem Knesebeck 2004). It seemed that the effect of norms (reciprocity and social trust) is stronger in the USA than in Germany. It is no wonder that the meanings, measures and effects of social capital vary to an even higher extent between developed and developing countries. To put it simply: social capital is not only age-related but also culture-related (including gender differences).

In Finland, four combinations of social participation as the structural dimension of social capital, and generalized trust as the cultural (cognitive/psychological) dimension of social capital were explored in a population sample drawn from the National Population Register of Finland. The study sample consisted of 2,814 participants, response rate 66%, residing within the region of Päijät-Häme hospital district and aged between 52 and 76 years, thus representing different phases of later life (Nummela et al. 2008, 2009). For social participation, subjects were asked about their involvement in social leisure activities. Trust was assessed by a simple statement, "It is best not to trust anyone", with four alternative responses. The results showed that social participation and access to help from others are the most important indicators of social capital in relation to self-rated health among older people. High social participation was not a necessary prerequisite for high trust, and *vice versa*. However, the results also revealed that the highest rate of good self-rated health was reported by older people who belonged to the group with high social capital. Furthermore, after adjusting for several health-related confounders, high individual-level social capital was statistically significantly associated with good self-rated health in urban areas only. Overall, this cross-sectional study proved that different living areas incorporate varying external (demographic, social, psychological, and economical) characteristics that are associated with the health of older people (Nummela 2008).

To measure social capital and its association with functional ability and self-reported general and mental health among the oldest old, a study entitled the "Umeå 85+ Study" was conducted in Sweden, involving 253 individuals aged 85, 90, and 95 years or older (Nyqvist et al. 2006). Using principal component factor analysis, individual-level social capital was divided into the dimensions of attachment, social integration, and social network. The majority of the study participants (75%) lived in a house or an apartment, while 23% lived in service houses and a few individuals lived in nursing homes or in group dwellings. It may be due to the high age of the subjects and the type of their dwelling environments that this study did not succeed in proving the relationship between individual-level social capital

and health. However, the authors found that structural social capital may partially explain depressive symptoms, but not functional ability or self-rated general health. Social trust did not fit in their models at all; however, it is naturally difficult to study any dimension of social capital among the oldest old who are living in service houses or nursing homes.

Older people are not an homogenous group, which complicates any research on the association of social capital and health. A recent qualitative study, for instance, demonstrated that older people (65+) in rural communities represent a substantial economic and social resource being able to play a key role in ensuring social cohesion However, their sense of community and reciprocity were based on the longstanding relationships with neighbors and close family bonds (Heenam 2009). The finding does not fit well in the idea of the communitarian social capital (Putnam 1993, 2000).

Prospective Studies in Older Populations

In the majority of the earlier longitudinal surveys concerning social relations and survival in elderly populations, the authors substantiate their empirical studies on the theory of social support rather than on the theory of social capital. Many recent surveys have, however, shown that individuals' social network or social participation *per se* has a positive effect on their survival, whereas social support has a lesser impact. Due to the difference of the theoretical framework, only a few of the longitudinal surveys concerning the association between social network or social participation and mortality or survival will be discussed here. Also, they are reviewed here in so far as it is justified in explaining their findings regarding the theory of social capital.

Social and productive activities have been shown to be predictive for survival in a population of older people in the USA (Glass et al. 1999). The study was based on 2,761 men and women drawn from a random population sample of 2,812 community-dwelling persons aged 65 and older residing in the City of New Haven, CT. Before this study, little was known about predictors of survival among older people. Adjusted for several health-related factors, the results showed that social and productive activities were as effective as fitness activities in lowering the risk of death. Older people with more social and productive activities were less likely to die than the less active persons. The most interesting finding was the observation that activities involving no physical exertion may also be beneficial for survival: in the same statistical model, social activities (hazard ratio 0.88, $P = 0.024$) and productive activities (hazard ratio 0.81, $P < 0.001$) were independently significant predictors of survival, while fitness activities predicted survival only insignificantly. The authors suggested that social and productive activities reinforce relationships, as well as norms of reciprocity and mutuality; all these are important aspects of social capital, although the authors did not at all mention social capital (Glass et al. 1999). In line with the New Haven study, social and productive activities were found to be

related with happiness, reduced functional decline, and survival among the elderly population in Canada (Menec 2003). Enhanced social activities, including social participation, may help to increase the quality and length of life.

These two reports are important from the socio-gerontological point of view, conveying an important message to health policy makers. While older people are no longer capable of reaching the levels of physical or fitness activity required for health promotion, simple social and productive activities can be exploited as effective health promoting factors, substituting for lacking physical capabilities in older people and contributing to the quality of life and longevity.

In Finland, the first study on social ties and survival in an elderly community was published already two decades ago (Jylhä and Aro 1989). It showed that social participation was strongly associated with increased survival. The index of social participation reflected the comprehensiveness of participation rather that its intensity, in other words, it was an indicator of social networks but not an indicator of received social support. Another recent study from Finland confirmed the earlier findings (Teinonen et al. 2007). In this community study, engagement in family meetings was related to better survival in men, whereas in women, attendance in religious events was related to better survival as well.

Based on the Berkman-Syme social network index, Eng and co-workers were able to prove that religious service attendance and social group participation were protective against all-cause mortality in men in the USA (Eng et al. 2002). Attending religious services proved to be a significant predictor of lower mortality in older adults in the USA (Lutgendorf et al. 2004) and in China (Zhang 2008). In the USA, congregational participation, including religious service attendance, is one of the most important forms of sociability and indicates social capital. It is interesting that attending religious services predicts survival even in the secularized Chinese society. As previously cited, although customary church attendance has often been used as a proxy of the beneficial social capital, churchgoing can also associate with negative health consequences.

One of the latest prospective surveys among older persons was carried out in Sweden (Agahi 2008). The survey showed that participating in just a few leisure activities doubled mortality risk as compared to those with the highest participation levels, even after controlling for age, education, and health indicators. Interestingly, an earlier Swedish study had emphasized the role of solitary (non-social) activities instead of social activities for better survival of elderly people (Lennartsson and Silverstein 2001). The concept of social capital was not mentioned in these longitudinal studies dealing with social participation and survival.

A number of prospective studies have been published concerning the significance of leisure or social and productive activities for cognitive ability or risk of dementia in the elderly. The majority of these studies have shown that social participation in leisure activities is significantly associated with a reduced risk of dementia, even after controlling for the baseline cognitive status and several health-related factors and after exclusion of subjects with a possible preclinical dementia (e.g., Verghese et al. 2003, Glei et al. 2005). None of the above mentioned earlier studies and the related editorials concerning social interaction and cognitive function (Gallagher

et al. 2005, Rundek and Bennett 2006) discussed the possible role of social capital for the found associations. In light of current opinion, social capital offers an interesting novel approach to exploring the empirically proven links between social and productive activities and cognitive capacity. The often repeated motto about your brain – use it or loose it – may gain new momentum.

Okinawa Revisited

It has been suggested that productive activity is one of the keys to successful aging in Okinawa, the longest living community in the world. Older women working as weavers of *basho-fu* fabric were explored in their particular cultural context in order to find clues to explain their active long life (Willcox et al. 2007). As mentioned in Chapter 9, the life expectancy among women in Okinawa is one of the longest known. It has been speculated that the long-living Okinawans gain benefit from their special cultural traditions, social and productive activities, and favorable diet (Willcox et al. 2001). In a more recent report, the same study group argued that the middle-aged and older women weavers obtain symbolic capital (see Bourdieu 1979/1984) in the form of respect and honors for their socially participatory productive activity. Furthermore, the authors argue that participating in the traditional weaving groups helps older women to maintain an active engagement with life as healthy and productive members of society (Willcox et al. 2007).

In this context, it is worth noticing that while the life expectancy of men in Okinawa has been the longest in the world and significantly longer than in the other 47 prefectures of Japan, it appears to be shortening since 2005, when it was first time shorter among Okinawan men than among other Japanese men. The development may reflect a trend towards impairing population health due to the westernization of Okinawan culture and social life (Guy Bäckman, personal communication, see also http://www.okicent.org/). Is social capital declining in Okinawa, as has occurred in the USA (Putnam 2000)? Is the protective effect of social capital on population health fading in Okinawa? Moreover, can a similar trend take place also in Finland, among the Swedish-speaking minority community that is rich in social capital and has a very long active life? The latest reports have shown that Swedish-speakers in Finland still own abundant social capital (Nyqvist et al. 2008, Surakka et al. 2009, Surakka and Hyyppä, forthcoming 2010) and live longer than the Finnish-speakers (Finnäs 2007).