

Social Capital and Health in South Korea: Considering Socio-economic Factors and Health-related Lifestyles

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I. Introduction

Social capital is generated mainly from life environments, such as homes, schools, workplaces, and local communities, in which people may form intimate relationships (Australian Bureau of Statistics, 2002). A home is the most basic source of social capital (Bubolz, 2001) and is the center where people learn and develop social roles. Therefore, essential values, such as trust and cooperation, tend to be learned in homes. Also, marriage (Teachman, Paasch, and Carver, 1997) places people in a larger network, thereby allowing for greater networking.

Studies of social capital or social environment have been previously conducted. Some researchers have revealed that social capital at the levels of individuals and communities has a positive influence on various aspects of health, including diseases, mental health, and self-rated health (Fujisawa, Hamano, and Takegawa, 2009; Hyypä and Mäki, 2001^b; Lofors and Sundquist, 2007; Seo, 2006). In Korea, Seo's study (2006) using data from the 6th

wave of the Korean Labor and Income Panel Study showed that social capital was a resource improving the health status of the elderly but didn't show for the young. After that, a study (Song and Nam, 2009) using regression analysis showed that social capital and health behaviors positively affect health level, but did not reveal the relationships among those variables. Another research (Shin and Cho, 2007) for Seoul Metropolitan residents, analyzing data from the 2005 Seoul Health Indicators Survey and the Seoul Survey, presented that suicidal impulse is little attributable to the social capital but mainly to the individual characteristics. However, in Korea, studies of the relationship between social capital and health are still infrequent.

In relation to the mechanisms through which socioeconomic level influences health, concrete studies have not been performed. House (2002) said that socioeconomic level may cause individuals to be exposed to dangerous factors resulting in a social inequality of health. Also health-related behaviors are significantly related to health status, and these health-related habits are affected by the social

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environment. A study (Kim, Kim, and Bae, 2009) Gyeonggi Province, Korea showed that social capital had a positive effect on physical activity.

As described above, several studies have been conducted regarding the influence of social capital, socioeconomic factors, and health-related behavior on health, but the relationships among these factors have not yet been studied in depth. On the other hand, 'The Establishment of the New Health Plan of 2010' (Ministry of Health and Welfare Korean Institute for Health and Social Affairs, 2006) set goals of improving everyone's health level and health-related behavior and of reducing the difference in health level among the social classes. In this context, this research intended to examine the relationships among social capital, socioeconomic factors, and health-related lifestyles and the effect of these factors on self-rated health in the Republic of Korea.

II. Methods

1. Study participants

This paper analyzed data of the nationally representative Social Statistics Survey conducted by the Korean National Statistical Office 2006. In the Social Statistics Survey, a systematic sampling method was applied, and this survey was conducted on about 70,000 people who were over 15 years old from 33,000 households. The probability of being sampled was about 1/440. From the data set, this paper sampled 37,928 people who were married and were between the ages of 25 and 59. This paper was restricted to people between the ages of 25 and 59 because most people below the age of 25 have been in school for most of their lives, so their education level has changed continuously and the actual value

of education has been different as time goes by.

2. Model and variables

The models presented by House (2002) and Carpiano (2007) were referred to for the factors and channels influencing the social inequality of health and for the effect of social capital on health, respectively. House's model (2002) had shown socio-economic position as a principle factor affecting health, and socio-psychological factor, including health behavior and social support/relationships, as a mediating factor. The social capital model (Carpiano, 2007) had presented concretely the effects on individual health of preceding factors, such as socio-economic conditions, and of related factors, such as social capital (support, participation, etc.) and health behaviors. An analysis model was then determined.

Health. Previous studies (Health Canada, 1999; Idler and Benyamini, 1997; Chandola and Jenkinson, 2000) have revealed that self-rated health is a profit indicator showing the objectively measured health status, such as diseases, mortality, etc. Therefore, it is usually used in many official surveys as a general health indicator. This paper set self-rated health as a dependent variable that indicates respondent's health level. Self-rated health reflects the level of overall health as gauged by the respondents' perceptions, which were measured at: 1 for 'Very good', 2 for 'Good', 3 for 'Average', 4 for 'Bad', and 5 for 'Very bad'. Scores of 1~3 were grouped into 'Good' (coded as 1), while scores of 4~5 were grouped into 'Bad' (coded as 0).

Health-related lifestyle. Exercise, refrain from smoking, and abstinence from alcohol were used as variables of a health-related lifestyle. Exercise (Lim

et al., 2007) was measured by the question, 'Do you practice 'this item' for promoting your health?' For this question, the item 'exercise regularly' was shown; the answer is divided into 'Yes, I do'(coded as 1) and 'No, I don't' (coded as 0). Refrain from smoking (Poortinga, 2006; Siahpush et al., 2006; Szaflarski, 2001) was measured by the question, 'Do you smoke tobacco now?'. The responses 'I smoked before, but I quit smoking' or 'I never smoked', were grouped into 'Don't smoke' (coded as 1). However, the answer 'Yes, I smoke', was grouped into 'Smoke' (coded as 0). Abstinence from alcohol (Lim et al., 2007) was estimated by the question, 'Have you consumed more than one glass of alcohol in the last year?' For this question, responses of 'No, I don't drink', 'No, but I drank more than one year ago', and 'No, I never have been drunk', were grouped into 'Don't drink' (coded as 1). The answer, 'Yes, I drink', was grouped into 'Drink' (coded as 0).

Social capital. Social capital could be classified into structural social capital and cognitive social capital (Fujisawa et al., 2009). Structural social capital could be measured objectively and meant what people do (e.g., social networks, frequency of interactions, etc.). Cognitive social capital could be subjectively verified and meant what people feel (e.g., reciprocity, social trust, cohesion, etc.). However, various social capital indicators could be used and new social capital variables could be developed to accomplish study objects, because social capital related circumstances might be changed continuously at times and places (Australian Bureau of Statistics, 2002).

In the present study, we define social capital as 'social cohesion by the relationships among people or organizations, and a process constructing social trust, norms, and networks for mutual benefits, and stimulating coordination and cooperation'. We use

marriage, economic support, service, citizen's participation, and religious activity as structural social capital variables, and satisfaction with family relationships and reliability of institutions as cognitive social capital variables. However, some social capital variables, such as social norms could not be included because of data limitations.

Referring to previous social capital studies, the following terms were used as social capital variables. Marriage (Bolin et al., 2003; Carpiano, 2007; Lofors and Sundquist, 2007) describes the person has a crucial problem on the relationship with spouse, such as separation by death and divorce, or not. This relationship could affect the other social relationships as well. It was measured by 'Have a spouse', 'Separation by death', and 'Divorced'. 'Separation by death' and 'Divorced' were grouped together because these are problems occurring after marriage. Therefore marriage was divided into 'Separation by death/Divorced' (coded as 0) and 'Have a spouse' (coded as 1). Satisfaction with family relationships (Ferguson, 2006) refers to individual's overall relationships with family members. It was evaluated by: 1 for 'Very satisfied', 2 for 'Satisfied', 3 for 'Average', 4 for 'Dissatisfied', and 5 for 'Very dissatisfied'. Those who rated family relationships 1~3 were grouped as 'Satisfied' (coded as 1) while scores 4~5 were grouped as 'Dissatisfied' (coded as 0).

The reliability of institutions (Holtgrave and Crosby, 2003; Hyypä and Mäki, 2001^b; Kim and Kawachi, 2006), which describes the satisfaction that respondents had with civil service provided by public institutions, such as the district-office, city hall, and gun-office, was scaled from 1 to 5. 'Very satisfied', 'Satisfied', and 'Average' were grouped into 'Satisfied' (coded as 1), while 'Dissatisfied' and 'Very dissatisfied' were grouped into 'Dissatisfied'

(coded as 0). In relation to economic support (Andrew, 2005; Brabec et al., 2007; Poortinga, 2006), it reflects that the people donated money or items to charity. The annual average frequency of it was measured and used. In addition, the service variable (Brabec et al., 2007; Holtgrave and Crosby, 2003; Kim and Kawachi, 2006) means that the respondents rendered public service, and the frequency of it during the last year was measured. The citizens' participation variable (Holtgrave and Crosby, 2003; Hyyppä and Mäki, 2001^b; Kim and Kawachi, 2006) reflects how actively the individual participate in the activities of society. It was measured as the number of organizations that the respondents joined. The religious activity variable (Helliwell, 2006; Hyyppä and Mäki, 2001^b; Kim and Kawachi, 2006) describes that the respondent take part in the activity of religious organizations. It was measured as whether the respondent joined a religious organization (coded as 1) or not (coded as 0) was measured as.

Socioeconomic factor. As the independent variables, this paper evaluated education and subjective class, which indicate the socioeconomic factor. The respondents' education, based on graduation, was graded at the elementary school, middle school, high school, college, university, and graduate school levels. The subjective class indicated the socioeconomic position that the respondents report themselves to be in, which was measured at six positions ranging from 'Low Low' to 'High High'.

Control variable. This paper set the gender and age of the respondents as control variables.

3. Data analysis

The socioeconomic factor was set as the factor

having influence on self-rated health, and social capital and health-related lifestyle were set as the factors having intermediary influence. Path analysis was performed with AMOS 15.0 to examine the relationships among social capital, socioeconomic factors, and health-related lifestyle and the influence of these factors on self-rated health.

III. Results

In relation to the overall influences of socioeconomic factors, social capital, and health-related lifestyle on self-rated health, the following factors had a significant positive total effect: ① education, subjective class, ② marriage, satisfaction with family relationships, reliability of institutions, citizens' participation, ③ exercise, and refrain from smoking. However, abstinence from alcohol had a negative total effect on self-rated health. It was found that education (0.138) had the greatest total effect, followed by subjective class (0.137), and then by satisfaction with family relationships (0.087). In every case, the direct effect was larger than the indirect effect, and socioeconomic factors indirectly affected self-rated health through social capital and health lifestyle. As a result of examining the model fit, the NFI (Normed Fit Index) was 0.904, and the RMSEA (Root Mean Squared Error of Approximation) was 0.076.

1. The influence of socioeconomic level on social capital, health-related behavior, and self-rated health

Regarding the influence on social capital of the socioeconomic factor, education and subjective class both had a positive direct effect on economic

Table 1. Overall influence of socio-economic factor, social capital, and health-related lifestyle on self-rated health

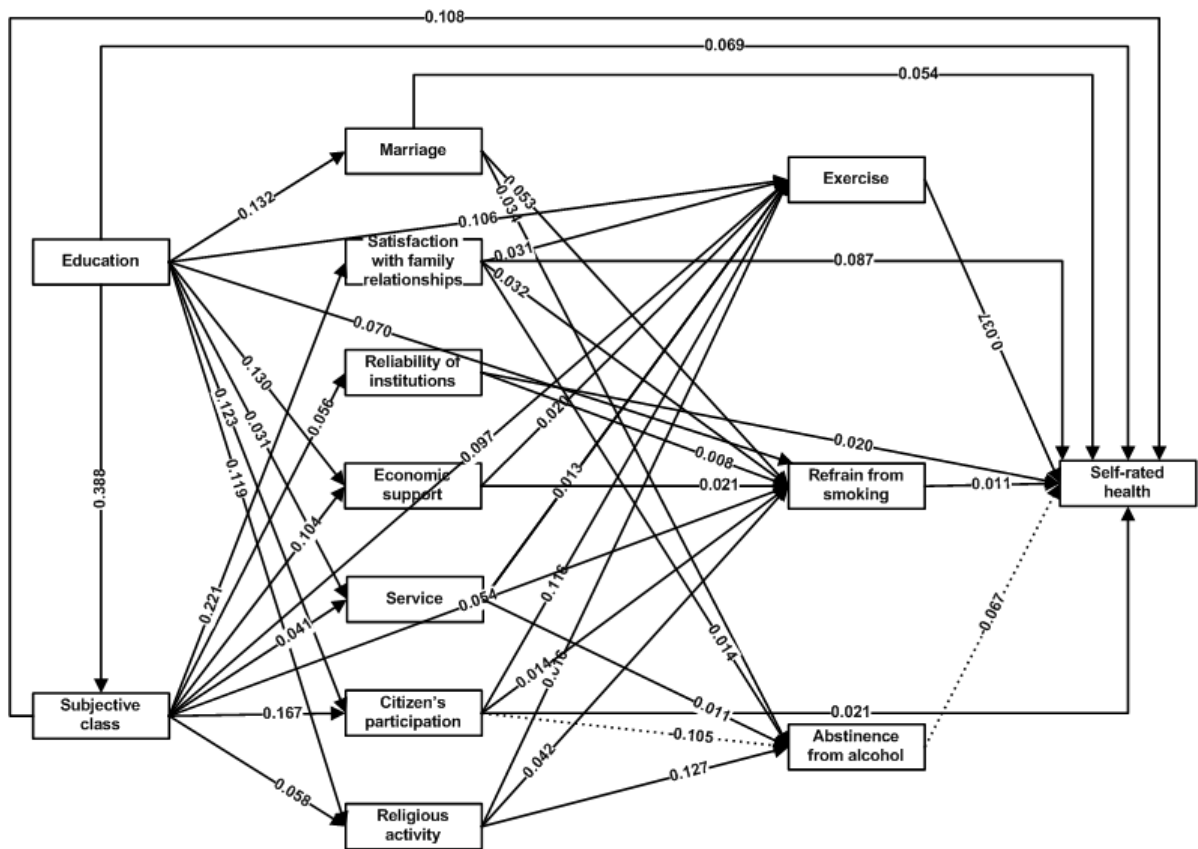
Variable	Direct	Indirect											Total
		Marriage	Satisfaction with family relationships	Reliability of institutions	Economic support	Service	Citizen's participation	Religious activity	Exercise	Refrain from smoking	Abstinence from alcohol	Self-rated health	
<i>Socio-economic factor</i>													
Education	0.069*	0	0.086**	0.022*	0.040**	0.016*	0.065*	0.022**	0.068*	0.043**	0.004	0.069*	0.138*
Subjective class	0.108*	0	0	0	0	0	0	0	0.030**	0.014*	-0.006**	0.030**	0.137*
<i>Social capital</i>													
Marriage	0.054*	-	-	-	-	-	-	-	0	0	0	-0.002*	0.052*
Satisfaction with family relationship	0.087**	-	-	-	-	-	-	-	0	0	0	0.001	0.087**
Reliability of institutions	0.020*	-	-	-	-	-	-	-	0	0	0	0	0.020*
Economic support	-0.007	-	-	-	-	-	-	-	0	0	0	0	-0.006
Service	0.001	-	-	-	-	-	-	-	0	0	0	0	0.001
Citizen's participation	0.021**	-	-	-	-	-	-	-	0	0	0	0.011*	0.032**
Religious activity	0.008	-	-	-	-	-	-	-	0	0	0	-0.007*	0
<i>Health-related lifestyle</i>													
Exercise	0.037*	-	-	-	-	-	-	-	-	-	-	-	0.037*
Refrain from smoking	0.011*	-	-	-	-	-	-	-	-	-	-	-	0.011*
Abstinence from alcohol	-0.067*	-	-	-	-	-	-	-	-	-	-	-	-0.067*

* p<0.05, ** p<0.01, *** p<0.001

support, service, citizen's participation, and religious activity. Education had a positive direct effect on marriage, and subjective class had a positive direct effect on satisfaction with family relationships and reliability of institutions. Considering the direct effect of the socioeconomic factor on health-related lifestyle, it was found that education and subjective class both had a positive influence on exercise and refrain from alcohol; this influence was statistically significant. In relation to the influence of socioeconomic factors on self-rated health, education and subjective class had a significant positive direct effect.

2. The influence of social capital on health-related behavior and self-rated health

Satisfaction with family relationships and religious activity had a positive influence on all health-related lifestyles, such as exercise, refrain from smoking, and abstinence from alcohol. Citizens' participation had a negative influence on abstinence from alcohol. This might be because of Korean social culture, in which people who join many institutions have more opportunities for social drinking. However, this should be researched



Remarks: → Significant positive effect ···· Significant negative effect

Figure 1. The influence of socio-economic factor, social capital, and health-related lifestyle on self-rated health

further. In relation to the influence of social capital on self-rated health, marriage, satisfaction with family relationships, reliability of institutions, citizens' participation had a significant positive direct effect.

3. The influence of health-related behavior on self-rated health

In relation to the influence of health-related lifestyle on self-rated health, exercise and refrain from smoking had a significant positive direct effect. However, abstinence from alcohol had a negative direct effect on self-rated health.

IV. Discussion

1. Relationship between socioeconomic level and social capital

Several studies have shown that the level of socioeconomic status may have a positive effect on social capital. Education is the foundation of the basic values of social capital, such as participation, reciprocity, trust, and cooperation (Australian Bureau of Statistics, 2002). Through participating in the education process, a person's social network would be generated and strengthened (Coleman and Hofer, 1987), and in various ways, such as

affecting the sociopsychological environment (Sun and Stewart, 2007), education could strengthen social capital. Previous studies have shown that parents who have a higher education level have more resources than others and invest these resources in their children (Coleman, 1988). Therefore, those who have higher education level have more social capital, so it seems that social capital is stratified by education, and that education has positive effects on social capital (Rojas and Carlson, 2006). In addition, another study showed that (Das, 2004) temporary manual workers have insufficient time and money to invest in social capital compared to those of high level officials. Consequently, the study indicates that there is a social gap in the necessary resources required to build social capital.

2. Relationship between socioeconomic level and health-related lifestyle

From the aspect of health, relative social standing is more important than absolute standing (Kawachi and Kennedy, 2002). Societies with a high level of inequality might have more unhealthy policies that could negatively affect health promotion (Coleman, 1988). The gap among groups has a negative effect on social capital (Kaplan et al., 1996; Lynch and Kaplan, 1997; Wilkinson, 1994). Inequality could make people feel stress and frustration, which might yield a harmful effect on health-related behavior and health (Kawachi, Kennedy, and Wilkinson, 1999). A study (Lindström, Hanson, and Östergren, 2001) using the data from a prospective cohort study including inhabitants in Malmö, Sweden was conducted and showed that manual workers have a higher risk for low physical activity than non-manual workers, which implies

people in a higher social class may have better exercise habits than those of other classes.

3. Relationship between socioeconomic level and health

Many studies have already revealed that socioeconomic factors influence health, including many kinds of diseases, death, and subjective health (Holtgrave and Crosby, 2003; Kawachi et al., 1997; Lantz et al., 1998). The results of several studies imply that better health status is more prevalent in those who are in better socioeconomic condition (Crosby and Holtgrave, 2006; Siahpush et al., 2006). Veenstra (2000) examined the relationship between socioeconomic status and health, using survey data collected in Saskatchewan, Canada. Socioeconomic status was measured by two items, education and income. The analysis results showed that socioeconomic status was positively related to health status, and the association was stronger among the old than the young. Self-rated health status of the elderly in Wonju was associated with household income, education, bereavement, adequate sleep, daily and social life being affected by poor health status, mobility, and anxiety and depression (Nam et al., 2008).

4. Relationships between social capital and health-related lifestyles and between social capital and health

Several previous studies have described how social capital influences health lifestyle and health (Coleman, 1988). Social capital could reduce the harmful effect of stress (Poortinga, 2006) and allow for the improved distribution of health-related information among social relations. Also social

capital not only promotes health-related lifestyle, but also limits harmful habits. One study (Youngblade et al., 2006) showed that higher levels of social capital predicted lower levels of unhealthy lifestyle, as well as lower health care expenditures.

Marriage serves to connect a person with other people, resulting in a larger network (Teachman et al., 1997). Losing a spouse by divorce or death could yield financial difficulties for a person and their children. Because of such a hardship, their relationships with other people could become estranged, followed by a decrease in social capital (Bolin et al., 2003; Sohn, 2004; Waldron, Weiss, and Hughes, 1997). According to this, those who have lost a spouse show a decreased health level.

Trust is a basic element in social capital (Lyon, 2000). Institutions, not only guarantee trust among individuals, but also sustain public order, as the asset of whole social system, might have provided the basis of trust. Institutional trust is a sort of trust that individuals have about various social institutions and reflects confidence about the ability of institutions to adequately perform their duties. Trust might have positive effects on health by strengthening cooperation in the social system (Hyypä and Mäki, 2001^a; Kim and Kawachi, 2006; Mohseni and Lindstrom, 2007). Lindström and Janzon (2007), using data from a 2004 public-health survey in Scania, Sweden, found that institutional trust in the healthcare system was significantly associated with lower odds of smoking and higher odds of having quit smoking.

In addition to the above studies, others have shown that participation in several community groups, such as religious groups, has positive effects on health and social capital (Andrew, 2005; Hyypä and Mäki, 2001b; Kim and Kawachi, 2006). Previously, a study (Kim et al., 2009) analyzed the

effect of social capital on the change of physical activity stages of Kyeonggi resident's in South Korea and demonstrated that for those with a high level of societal participation, social network, and solidarity, physical activity also increased.

Unlike other social capital variables, citizens' participation had a negative influence on abstinence from alcohol, which seems to be the result of the socio-cultural influence on drinking. That is, in Korean society, drinking often becomes an intermediary for people's social gatherings, which is consistent with the result of Carpiano's research (2007). Carpiano analyzed the data obtained by the Los Angeles Family and Neighborhood Survey and found that those who had high social harmony drank more than those who did not.

However, these results could be changed by altering the way in which drinking is measured. In the above studies, just whether the person drink alcohol or not is measured, but in the case of using other drinking variable, such as high risk drinking, people with higher level of social capital are less likely to have high risk drinking than the others. Weitzman and Kawachi (2000) have examined the relation between social capital and drinking, using a nationally representative sample of college students and measuring social capital as an individual's average time volunteering. As a result, students with a higher level of social capital were more likely to have risky drinking habits than others.

5. Relationship between health-related lifestyles and health

Several studies on the relationship between health lifestyle and health (Cheng et al., 2002; Hampson et al., 2007; Lim et al., 2007) have reported that participation in exercise and refrain

from smoking yield a high level of health. However, in this study, abstinence from alcohol had a negative effect on health. Previous studies (Bondy and Rehm, 1998; San José et al., 2000) on the relationship between alcohol drinking and health status reported that drinking pattern might affect health status. Overall, moderate alcohol drinking might decrease health risk (Stranges et al., 2006), while heavy alcohol drinking could have harmful effects on health. This finding is consistent with the result of other studies.

V. Conclusion

Works for maintaining and improving social capital should be considered in all aspects of society. In other words, not only health policy but also every public policy should be made with regard to promote community integrity and social cohesion. Social capital had a positive influence on health, but the consciousness or the consideration of social capital has not been fully achieved. Therefore, if social capital is considered, it would help to improve overall health.

Social capital should be considered when carrying out health promotion projects as well, and through it, positive changes in lifestyle habits might be more effectively achieved. Particularly the project promoting drinking moderation needs to be considered by society as a whole. Because it was found that those who frequented social gatherings with others tended to drink often, so the project promoting drinking moderation should focus on gradually making the general social culture healthy, especially drinking culture, rather than focusing on individuals. In South Korea, the drinking rate has been increasing, so it would be beneficial to

consider this aspect when making health promotion policies.

Also considering social capital might be necessary when developing Korea Health Plan 2020. Because Korea Health Plan 2010 was made without any consideration of social capital. In the future a further research of the more detail relationships between alcohol consumption and social capital, concretely considering the amount of alcohol intake, is needed.

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ABSTRACT

Objectives: This research intended to examine the relationships among social capital, socioeconomic factors, and health-related lifestyles and the effect of these factors on self-rated health in the Republic of Korea.

Methods: The data of the social statistics survey that the Korea National Statistical Office conducted in 2006 were chosen and 37,928 people from them, who were 25~59 years old were sampled. This paper made path analysis to examine the relationships among social capital, socioeconomic factors, and health-related lifestyle and the influence of these factors on self-rated health.

Results: In relation to the overall influences of socioeconomic factors, social capital, and health-related lifestyle on self-rated health, the following factors had a significant positive direct effect: education(0.069), subjective class(0.108), marriage(0.054), satisfaction with family relationships(0.087), reliability of institutions(0.020), citizens' participation(0.021), exercise(0.037), and refrain from smoking(0.011). However, abstinence from alcohol(-0.067) had a negative direct effect on self-rated health.

Conclusion: Based on the results, this paper can suggest that the plan of keeping and building up social capital should be considered in the whole aspects of the society and the project promoting drinking moderation is required to consider social culture than individuals.

Key Words: Social capital, Socio-economic factor, Health-related lifestyle

〈국문초록〉

한국인의 사회자본과 건강:
사회경제적 요인 및 건강 관련 생활습관을 중심으로 한 분석

목적: 이 연구는 사회자본, 사회경제적 요인, 건강행동의 관계, 그리고 이 요인들이 한국인의 주관적 건강에 미치는 영향을 파악하고자 시도되었다.

방법: 통계청의 2006년 사회통계조사 원자료를 사용하여 분석하였다. 사회통계조사는 표본규모 33,000 가구내 15세 이상 가구원 약 7만명을 대상으로 수행되었다. 이 연구에서는 이 가운데에서 25세 이상 59세 이하 인구중 결혼 경험이 있는 37,928명을 추출하여 분석하였다. 사회자본, 사회경제적 요인, 건강행동의 관계, 그리고 이 요인들이 주관적 건강에 미치는 영향을 파악하고자 경로분석을 실시하였다.

결과: 교육(0.069), 주관적 계층(0.108), 결혼(0.054), 가족관계 만족도(0.087), 기관신뢰(0.020), 시민참여(0.021), 운동(0.037), 그리고 금연(0.011)이 주관적 건강에 긍정적인 직접효과를 미치는 것으로 분석되었다. 그러나 절주(-0.067)는 직접효과가 부정적인 것으로 나타났다.

결론: 사회자본이 건강에 긍정적 영향을 주는 것이 분명한 만큼, 건강증진사업 개발시 사회자본을 고려하여, 이의 유지 및 증진을 통해 건강수준의 긍정적인 변화를 유도하는 것이 필요하다. 특히 절주사업에서는 개인을 대상으로 하는 사업 이외에, 전반적인 사회 음주문화의 변화를 이끌어내는 사회적 문화에 대한 고려가 필요할 것으로 생각된다.

주제어: 사회자본, 사회경제적 요인, 건강 관련 생활습관