Analysis of Socio-demographics, Self-rated Health, Social Capital, and Happiness in a Medium-Sized Healthy City, Republic of Korea

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Background: This study explores the relationships between social capital, self-rated health, and happiness and suggests ways to improve the happiness level of a community.

Methods: The survey was conducted with 445 people using stratified random sampling in a medium-sized city in Korea. Collected information included socio-demographic characteristics, social capital, self-rated health, and happiness.

Results: Among the demographic characteristics, age had a statistically significant association with happiness level. People in their 40s (OR = 0.33, 95% CI = 0.13-0.88) and 50s (OR = 0.19, 95% CI = 0.06-0.57) were less happy than people of other ages. Married people (OR = 4.58, CI = 1.99-10.53) were more likely to have a high happiness level compared to unmarried people. Cognitive social capital (OR = 1.34, CI = 1.19-1.51) and self-rated health (OR = 2.22, CI = 1.59-3.09) were positively associated with happiness.

Conclusion: The results suggest that social capital and level of health are determinants of subjective happiness. Public policies and programs for improving social capital are needed to support happiness among community residents.

Key Words: Happiness, Social capital, Health, Republic of Korea

INTRODUCTION

Happiness, considered to be one of the highest ideal pursuits of a human being, is defined as "a state of mind or emotion characterized by satisfaction, love, desire fulfillment, pleasure or joy" (Cambridge Advanced Learner's Dictionary).

With the interest in human happiness increasing all over the world, recent studies have explored the concepts, levels, and determinant factors of happiness. Such increased interest is due to the increased recognition that an increase in economic level does not always increase life satisfaction and happiness. Happiness is regarded not as a one-dimensional concept determined by economic level alone, but as a multi-dimensional concept that consists of income, health, education, environment, cultural life, safety, equity, etc. There have been many attempts to evaluate these multilateral aspects.

There has also been recent interest in the influence of physical and social environmental factors on subjective happiness. In other words, subjective happiness may be affected by the recognition that social and physical environments influence a person's local community [1].

As Aristotle said, we are social animals, and humans do not exist as individuals but continuously create relationships with others. In the opinion of the Dalai Lama, relationships with others are important for happiness [2]. Therefore, we can think of happiness in terms of relationships with others. The majority of researchers argue that those who experience face-to-face social interactions are happier than those who do not interact their friends and families, except for special circumstances such as mental illness. [3]. Social capital is a way of describing such social relationships within societies or groups of people [4].

In this context, social capital is considered to have an influence on happiness. According to Bjornskov [5], social capital is a strong factor that explains why some countries are happier than others. Social capital is an aggregation of the resources that are created through trust and cooperation among social members [6]. It is a mechanism that allows sustainable social and economic development on the basis of a reasonable and trustworthy public system and norms of voluntary civil organizations. Based on networking, social capital is an aggregation of networks, social support, trust, and reciprocity and is a multi-dimensional concept. Cooperative networks, based on trust in modern society and defined according to diverse relations, not only share community values, but also greatly contribute to personal subjective happiness.

The factors and concepts that comprise social capital exist at various levels but ultimately are categorized into either cognitive or structural social capital. Structural social capital refers to the relationships between people of similar socio-economic backgrounds or groups. Cognitive social capital refers to the relationships with others outside of one's social group [7].

The Republic of Korea has experienced drastic industrialization and economic growth over the past decades. However, there is increased uncertainty and distrust in society as a whole among Korean people. Public interest has therefore been focused on social capital in the course of seeking alternatives due to deprivation and a decrease in subjective happiness in Korea. In 2009, Korea ranked 25th (0.475 points) in the well-being index list of the world's 30 major countries, using the OECD's National Index of Well-being (NIW) [8]. Compared to its 12th highest eco-nomic level, Korea was low in level of happiness.

There have been studies on social capital and suicide impulses [9,10], social capital and self-rated health [11], and the impact of health in Seoul [12]; however, there have been no empirical studies on the relationship between social capital and subjective happiness in Korea. Therefore, this study's objective is to determine the happiness level of community residents and further explain the relationships between cognitive and structural social capital and happiness in order to find ways to improve the happiness of community residents.

MATERIALS AND METHODS

1. Subjects and survey methods

The survey was conducted in a medium-sized city with a population around 242,000 located in Gyeonggi province, Republic of Korea. According to the stratified systematic random sampling, 445 subjects were recruited, and this accounted for 0.2% of the 242,339 people aged 20 years or older who resided in the 5 Dongs (administrative districts) of the city. Results based on the sample had an error range of ± 0.033 based on a 95% confidence interval (CI).

Surveyors asked subjects to fill out self-administered questionnaires while they simultaneously conducted face-to-face interviews at the subjects' homes. The surveyors filled out the questionnaires for persons who were illiterate or unable to complete the questionnaires on their own for any reason. To encourage subjects to respond to the survey, official notifications were sent to potential participants prior to the date of the survey. Also, the surveyors were sent to Dong offices and homes in order to make it easy for surveyors to visit the households of subjects. If subjects were absent, surveyors visited them up to three times. For eight days from November 20 to 27, 2007, the interview survey was conducted by 6 professional surveyors who had previously performed community health surveys for the Korea National Health and Nutrition Examination Survey and Community Health Plan.

2. Measurements

In this study, the dependent variable was subjective happiness, which was measured on a five-point Likert scale ("Very happy" (5), "Happy" (4), "So-so" (3), "Unhappy"

(2), "Very unhappy" (1)), using the question "Are you happy now?" as seen in Camfield et al. [13].

Socio-demographic variables included gender, age, education level, marital status, and monthly household income (unit was KRW, and 1,000 KRW = 0.86 USD).

As a health characteristic variable, subjective health was measured on a five-point Likert scale ("Very healthy" (5), "Healthy" (4), "So-so" (3), "Unhealthy" (2), "Very unhealthy" (1)).

Social capital was measured using cognitive and structural constructs. Cognitive social capital variables, including trust, greeting, sense of belonging, giving help, and receiving help, were measured on a five-point Likert scale. Structural social capital was measured in terms of participation, religious activities, and volunteering activities. The categorization of cognitive and structural social capital factors was confirmed by factor analysis (Table 1).

3. Statistical analysis

Frequency analysis and factor analysis were performed to explore the data. We compared the means of the happiness group and the unhappiness group using the χ^2-test and t-test. The associations between happiness and socio-demographic characteristics and between happiness and social capital were examined using logistic regression. We used SPSS 17.0 for statistical analysis.

RESULTS

1. Socio-demographic characteristics and self-rated health

A frequency analysis was conducted to determine the respondents' baseline information (Table 2). Females accounted for 59.5% of the subjects (180 males and 264 females). The majority of subjects were in their 20s and 30s, and the average age was 44 years. In terms of education level, there were fewer middle school graduates. With regard to marital status, there were more married people than any other group. The highest monthly average household income was 200 to 299 million KRW. For self-rated health level, 80% of the subjects answered with either "So-so" or "Healthy."

2. Difference analysis of socio-demographics and self-rated health by happiness

Table 3 provides information on the social capital items. The subjective social capital variable was measured on a five-point Likert scale (1: "Absolutely not"; 5: "absolutely"). The average scores were 3.43, 3.50, 3.47, 3.41, and 3.48 for trust in neighbors, greeting with neighbors, providing help to neighbors, a sense of belonging in a residential area, and help from neighbors, respectively. For the objective social capital variable, 146 (33.2%), 207 (46.7%), and 139 (33.2%) respondents participated in local gatherings

Table 1. Factor analysis on social capital variables

Social Capital Item	Coding	Factor	
		1	2
Cognitive			
(Trust) Do you trust most people around you?	1 = absolutely not	.652	
(Greeting) Do you exchange friendly greetings with your neighbors?	2 = no	.604	
(Sense of belonging) Do you feel a sense of belonging in your residential community?	3 = so-so	.569	
(Receiving help) Do you think you could easily receive help from people when you need them?	4 = yes	.599	
(Giving help) Do you willingly help other people when they need help?	5 = absolutely	.606	
Structural			
(Participation) Do you participate in local gatherings or organizations, such as young adult groups, senior groups, women groups, parent-teacher associations, fire departments, or political organizations?	0 = no, 1 = yes		.813
(Religious activities) Do you participate in religious activities?	0 = no, 1 = yes		.663
(Volunteering activities) Do you participate in volunteering activities?	0 = no, 1 = yes in the past, 2 = yes, currently		.695

Table 2. Frequency analysis of socio-demographic variables, self-rated health, and social capital

Variable	Category	Frequency (person)	Ratio (%)
Sex (N = 444)	Male	180	40.5
	Female	264	59.5
Age range (years) (N = 444)	20-29	69	15.6
	30-39	136	30.6
	40-49	107	24.1
	50-59	64	14.4
	≥60	68	15.3
Education level (N = 416)	Middle school	86	20.7
	High school	155	37.2
	College	175	42.1
Marital status (N = 422)	Single	76	18.0
	Married	305	72.3
	Widowed, divorced, or separated	41	9.7
Household income (N = 386)	<1 mil. KRW	57	14.8
	1-1.99 mil. KRW	85	22.0
	2-2.99 mil. KRW	103	26.7
	3-3.99 mil. KRW	70	18.1
	≥4 mil. KRW	71	18.4
Self-rated health (N = 441)	Very unhealthy	14	3.2
	Unhealthy	52	11.8
	So-so	205	46.5
	Healthy	148	33.5
	Very healthy	22	5.0

Classification	Variables	Mean	SD	Frequency (persons)
Cognitive	Trust	3.43	0.67	441
	Greeting	3.50	0.78	440
	Sense of belonging	3.41	0.83	434
	Giving help	3.48	0.84	438
	Receiving help	3.47	0.76	441

Classification	Variables		Frequency (persons)	Ratio (%)
Structural	Participation	Yes	146	33.2
		No	294	66.8
	Religious activities	Yes	207	46.7
		No	236	53.3
	Volunteering activities	Yes	139	33.2
		No	280	66.8

or organizations, religious activities, and social voluntary activities, respectively.

The levels of happiness were measured on a five-point scale, and two groups were created to analyze the relationships in terms of socio-demographics and self-rated health characteristics. In this case, "Very happy" and "Happy" were classified as the "happiness" group. "So-so," "Unhappy," and "Very unhappy" were classified as the "Unhappiness" group (Table 4). In terms of age, the majority of participants were in their 30 s, followed by those in their 20 s and 40 s (p < 0.05). In terms of educational level, participants with a higher academic background were happier (p < 0.001). In terms of marital status, married participants were happier (p < 0.001). In terms of monthly average household income, participants with higher income were happier (p < 0.01). In terms of health, healthier participants were happier (p < 0.001).

3. Difference analysis of social capital by happiness

A correlation analysis of social capital and happiness was

Table 3. Difference analysis of socio-demographics and self-rated health variables by happiness

Category		Happiness Level		
		Unhappy	Happy	
Gender	Male	80 (44.9)	98 (55.1)	0.142
	Female	113 (43.1)	149 (56.9)	
Age range (years)	20 s	28 (41.2)	40 (58.8)	18.905*
	30 s	47 (34.8)	88 (65.2)	
	40 s	45 (42.4)	61 (57.6)	
	50 s	35 (55.6)	28 (44.4)	
	60 s and older	38 (55.9)	30 (44.1)	
Education level	Middle school or lower	49 (57.6)	36 (42.4)	13.955[†]
	High school	69 (45.4)	83 (54.6)	
	Junior college, college and higher	59 (33.7)	116 (66.3)	
Marital status	Single	39 (52.7)	35 (47.3)	14.237[†]
	Married	116 (38.3)	187 (61.7)	
	Widowed, divorced, or separated	27 (65.8)	14 (34.2)	
Household income	<1 mil. KRW	31 (54.4)	26 (45.6)	16.269[†]
	1-1.99 mil. KRW	45 (52.9)	40 (47.1)	
	2-2.99 mil. KRW	44 (43.6)	57 (56.4)	
	3-3.99 mil. KRW	24 (34.3)	46 (65.7)	
	≥4 mil. KRW	19 (26.8)	52 (73.2)	
Self-rated health	Very unhealthy	9 (64.3)	5 (35.7)	51.483[†]
	Unhealthy	33 (63.5)	19 (36.5)	
	So-so	111 (54.1)	94 (45.9)	
	Healthy	36 (24.8)	109 (75.2)	
	Very healthy	2 (9.1)	20 (90.9)	

*$p < 0.05$, [†]$p < 0.01$, [†]$p < 0.001$.

Table 4. Difference analysis of social capital by happiness

Classification	Variables	Frequency	$\overline{X} \pm S.D.$	t
Cognitive	Trust	Happiness (N = 246)	3.54 ± 0.67	4.08[†]
		Unhappiness (N = 192)	3.28 ± 0.65	
	Greeting	Happiness (N = 245)	3.61 ± 0.76	3.28[†]
		Unhappiness (N = 192)	3.36 ± 0.79	
	Sense of belonging	Happiness (N = 241)	3.57 ± 0.85	4.09[†]
		Unhappiness (N = 190)	3.22 ± 0.74	
	Receiving help	Happiness (N = 246)	3.60 ± 0.78	4.66[†]
		Unhappiness (N = 192)	3.31 ± 0.70	
	Giving help	Happiness (N = 243)	3.68 ± 0.83	5.85[†]
		Unhappiness (N = 193)	3.23 ± 0.78	

Classification	Variables		Happiness		X^2
			Happiness (rate)	Unhappiness (rate)	
Structural	Participation	Yes	52 (35.9)	93 (64.1)	5.12*
		No	138 (47.3)	154 (52.7)	
	Religious activities	Yes	87 (42.2)	119 (57.8)	0.42
		No	106 (45.3)	128 (54.7)	
	Volunteering activities	Yes	50 (36.0)	89 (64.0)	4.99*
		No	132 (47.5)	146 (52.5)	

*$p < 0.05$, [†]$p < 0.01$, [†]$p < 0.001$.

carried out (Table 4). To confirm the relationship between cognitive social capital and happiness, a t-test was used. Happiness was statistically significant when level of trust, greeting, feeling of belonging, helping, and being helped were high. To confirm the relationship between organizational social capital and happiness, a chi-square test was used. Happiness increased with participation in regional meetings or organizations (p < 0.05) and with volunteer activities (p < 0.05), but the relationship between religion and happiness was not statistically significant.

4. Factors influencing happiness

After correcting for the confounding factors of age, edu-

Table 5. Logistic regression of happiness level

Variable	Odds Ratio (95% CI)	
	OR	95% CI
Trust	1.29	(0.88, 1.90)
Greeting	1.25	(0.88, 1.77)
Sense of belonging	1.43	(1.03, 1.97)
Giving help	1.40	(1.02, 1.92)
Receiving help	1.33	(0.93, 1.90)
Participation		
Yes	1.00	
No	0.91	(0.52, 1.58)
Volunteering activities		
Yes	1.00	
No	1.20	(0.69, 2.07)
Age		
20 s	1.00	
30 s	0.66	(0.28, 1.52)
40 s	0.33	(0.13, 0.88)
50 s	0.19	(0.06, 0.57)
60 s and older	0.35	(0.10, 1.18)
Education level		
Middle School or lower	1.00	
High school	0.66	(0.27, 1.63)
Junior college, university, or higher	0.76	(0.28, 2.08)
Marital status		
Single	1.00	
Married	4.58	(1.99, 10.53)
Widowed, divorced, or separated	1.98	(0.58, 6.74)
Household income*		
<100	1.00	
100-200	0.42	(0.16, 1.11)
200-300	0.67	(0.25, 1.80)
300-400	0.94	(0.33, 2.65)
≥400	1.13	(0.38, 3.35)
Self-rated health	2.21	(1.58, 3.09)

*Unit: mil. KRW.

cation level, marriage, income, and the religion factor that did not show a significant relationship with happiness, an odds ratio of happiness level was calculated according to the social capital factor. The findings showed that higher cognitive social capital led to higher levels of happiness by 1.34 times (95% CI: 1.19-1.51), but organizational social capital did not have a significant effect on happiness level (Table 5). In addition to social capital, the factors that showed statistically significant effects on happiness were marriage, age, and subjective health. Married participants had 4.4 times (95% CI: 1.93-10.04) higher levels of happiness than singles, while better subjective health led to 2.2 times (95% CI: 1.59-3.09) higher levels of happiness. The odds ratio of happiness level by age showed that happiness was significantly lower among participants in their 40s (95% CI: 0.13-0.86) and 50s (95% CI: 0.06-0.56).

DISCUSSION

This study examined the effects of socio-demographic characteristics, social capital, and self-rated health on happiness using a representative sample from a medium-sized city of 242,000 people.

Among the socio-demographic characteristics, married persons were 4.58 times as happy as unmarried ones. This is because having a spouse is considered one of the factors that have an important influence on happiness [14,15]. In terms of age, those in their 50s had the lowest level of happiness, followed by those in their 40s [3,16]. Middle age might be considered a dreaded period because of worry about economic problems, work, and family responsibility [17]. The results did not show an increased happiness level for those in their 60s, which was different from a previous study [18]. This result implies that welfare policies and income support for the elderly after retirement are needed. Gender did not significantly affect happiness, which corresponds with previous findings [19,20] that there is no difference in the general sense of happiness between males and females.

Participants with higher self-rated health levels were 2.21 times happier than those with lower rated health levels. Health was regarded as one of the preferential factors of happiness among Koreans [8,21,23]. Also, health was pos-

itively and cumulatively affected by satisfaction with family relations, trust in organizations, and citizen participation, among others in Korea [11].

This study showed that those with a higher cognitive social capital were happier than those with a lower one. On the other hand, structural social capital did not show a statistically significant relationship with happiness. There have not been any previous studies that classified social capital into cognitive and structural types to examine them in relation to happiness, which makes it difficult to compare the results of this study with others. We instead examined the individual cognitive or structural factors that comprised social capital in other studies and compared them to our study. A study with 249 people in an Australian community classified 36 social capital questions into proactivity in a social context, feelings of trust and safety, tolerance of diversity, value of life, family and friends, neighborhood connections, and participation in local community to analyze their relationships with happiness. Among these, the findings regarding factors that affect happiness were similar to our study, including the value of life, feelings of trust, and safety in cognitive social capital [24].

A Taiwanese study that examined the relationship between social capital and happiness divided social capital variables into membership, social activities participating, community, volunteering, and trust. When these variables were reclassified into either cognitive or structural groups, trust was treated as a cognitive factor, and the rest were structural. Findings revealed that all of the social capital factors other than social showed a positive relationship with happiness. In other words, both cognitive and structural social capital factors affected happiness, which was slightly different from the findings of our study. In the Taiwanese study, structural social capital-membership and social volunteering- was measured as the total number of organizations in which respondents participated, and the density of structural social capital was measured with an index to partially reflect it. The simple existence of structural social capital was evaluated in addition to the quality differences, which is a fundamental difference between this study and others [25].

Choi investigated the relationships between happiness and social capital, consisting of relations with neighbors (trust, greeting, and receiving help) and physical and social environmental factors (local safety, healthcare institutions, sense of belonging to a region, and residential satisfaction); the findings suggest that happiness was in proportion to the positive cognition [26]. According to Moon (2010), with regard to social capital and self-rated health in a local community, self-rated health was rated highly among residents who trusted their neighbors, participated in volunteer activities, and helped others. These findings indicate that improvement of social capital may involve self-rated health and happiness [12].

This study shows that organized efforts in a community can improve the subjective happiness of the residents. Therefore, residents will be happier if there are various events that promote their sense of belonging, a system for ethical efforts to help members, and health-promotion projects.

The findings of this study suggest that happiness can be increased through social capital and health, so as to build an environment in which residents have a sense of belonging. These include organizing and operating sports groups through which the concept of social capital can be incorporated into the health promotion programs and to enable residents to feel supported through programs such as smoking prevention and other self-help groups.

This study has several limitations. First, the study was limited to one city of 242,000 people. Thus, one needs to be careful in generalizing the characteristics of local residents in this study to those of other residents. Second, we applied a subjective definition of "happiness." This happiness is short-lived and is an expression of emotions in different situations. On the other hand, measuring the subjective satisfaction of life (another expression of happiness) is more long-term and may be more stable [27]. Therefore, happiness must be measured in the long-term. In addition, measuring social capital using simple questions based on an index did not allow for an in-depth analysis. In particular, structural social capital was not measured in a qualitative aspect or in terms of strength, which may have limited our results. Despite these limitations, this study is significant in that happiness was measured with a representative sample recruited from a community, and social capital factors were taken into consideration.

Finally, future studies may wish to investigate happiness levels with consideration of the density of structural social capital. In addition, further research is needed to adapt the idea of social capital to fit the Korean situation, rather than applying indexes developed in the West.

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