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Research on the Impacts of Preventive Health Behaviors Using the Health Assessment Big Data

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Abstract

In the way of personal health assessment is a subjective health evaluation and objective evaluation of this study affect health behavior practices to target a sample of a national scale in order to mitigate the limitations with the existing research on each of the subjective health evaluation, objective health assessment the correlation between health behavior practices impact relationships, behavioral health practice in subjective health evaluation among health assessment and health practices and determine the impact of actions related to objective health assessment to confirm.

This research was to find the association preventive health practice behavior using big data to health assessment. Of the preventive health behavior practices we studied, adequate sleep and regular exercise positively influenced self-rated health (SRH), whereas attempts to quit or restrict drinking negatively influenced it. And, of the preventive health behavior practices, the habit of eating breakfast and regular health check-up positively influenced a disease prevalence rate, i.e., an objective assessment of health. The findings suggest that people who make more efforts to quit or restrict drinking are more likely to assess their own health as poor.

The finding that a disease prevalence rate increased with such preventive health behavior practices as eating breakfast and getting regular health check-up can be interpreted as showing that those behaviors were required by the physician instruction and the use of medication. The study shows that preventive health behavior practices can have a positive or negative relationship with SRH and also with objective health assessment.

Keywords*: Health Behavior, Heath Assessment, Big Data, SRH(self-rated health), Practices.*

1. Introduction

Health is an important factor in determining the conditions of life of all people. Besides riding the recent well-being (well-being) wind of the interest in the health of the people it was greatly increased. Health had appeared as major concern of the people; we can see that the health in various places and times mentioned [1].

The average life span of humans to the development of modern medical technology has become a means of measuring the effectiveness of health care. In addition, recently it developed a standardized method of measuring the self-reported health status and general method for using them had a remarkable development in the medical monitoring result [2-3].

In such a way as to measure the health status may be classified into subjective assessment and objective assessment. Is a very diverse range of measures to determine the general health level for objective health assessments such as physical examination and

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biochemical tests, imaging, there are difficulties. If the person to identify the most sensitive to changes in the body considering that person to apply the method on subjective evaluation health of the individual health status measures it may be more important. [4].

Self-rated health (SRH) is a concept related to such effort, and also a health measurement to indicate the subjective assessment of overall health, typically based on individuals' response measured on a 4- or 5-point scale. Self-rated health is also known as self-assessed health or self-perceived health [5-6]. Controversy exists as to whether self-rated health reflects the objective assessment of health [7]. But, a favorable opinion of self-rated health has continuously increased in the areas of demographics and public health, and it has been recognized as a powerful predictor of mortality [8].

Subjective health status is a factor based on a subjective judgment about the health of their subjective experience as the sum of the acute and chronic fatal or non-fatal diseases. This can be said as one of the variables compelling factors to evaluate the health because it is also likely to be affected by inherent health objective indicators such as medical examination [9-12].

Subjective health level measure but a subjective aspect than the objectively measured clinical tests has been widely used as an accurate and reliable enough indicator for measuring the health status of the population because of close association with death [9-10].

Actually it is shown that the physical health high on the person to recognize that their health is healthy [4], there is a mortality rate related ill health status by subjective evaluation [11], chronic disease self-assessment of health, such as high blood pressure the apparent predictability has been reported for the [12]. Therefore, due to the health level self-assessment it is very important high enough to be comparable to the health level assessment by objective measurement in medical institutions.

Health level by self-assessment is to determine the health status so in accordance with the attitudes and beliefs that individuals are recognized universally used to assess health level and have been made continuously since 2000 for related research. Self-Assessment health level of sex, age, education level and demographic factors such as marital status, life satisfaction degree, hold illness, economic level, showing the influence [12-15], health is better the high degree of health promotion actions carried out, it is confirmed that the main predictor of health-promoting lifestyle [13,15]. Individuals seem through the perception of their health status form an attitude towards the health and lifestyles that affect the practice of health promotion lifestyle through it [17].

So far, numerous studies on health assessment have been conducted with the elderly, women, college students, and employees. Research on the relationship between self-rated health and health behavior of college students showed that a difference existed between groups , and that they had lower levels of preventive attitude toward or interest in diseases developing from poor lifestyle habits and regular health check-up, and also had undesirable health behavior and recognition [18-19].

Studies with women demonstrated that health assessment was correlated with health behavior, and that the more they practiced health behaviors, the better self-rated health [20-21]. Studies on health assessment among the elderly have been mainly conducted to study elderly people living in a city, farming village, or fishing village, and showed association between health assessment and health behavior practices, and a between-group difference. Additionally, the studies also found that a majority of the elderly did not exercise [22-23].

Lastly, studies on health assessment among employees reported that health assessment differed depending on socioeconomic status (income, education, *etc*.) and health behavior. The pattern was gender-specific. The studies suggested a need to address depression and stress according to job type [24-25].

In the present study, we aimed to investigate the effects of health behavior practices on subjective and objective health assessments, respectively, by using a nationwide sample to overcome the limitations of existing studies.

An existing studies to date is the identifying medical conditions according to evaluate, on a center to targeted and comparative analysis with respect to influencing the studies have been made to determine the impact factor as health status is displayed variable study is difficult browse .

The specific study objectives were as follows.

First, to examine the correlational relationship between health assessment and preventive health behavior practices.

Second, to investigate the effect of preventive health behavior practices on self-rated health.

Third, to investigate the effect of preventive health behavior practices on objective health assessment.

2. Methodology

2.1. Subjects

We used the data from the 2014 Social Survey conducted by Koran Statistical Information Service (KOSIS). The statistical data were collected between May 14 and 30, 2014 from a stratified sample representative of the cities and the provinces in Korea. Specifically, the survey items regarding health assessment, health behavior practices, and demographic characteristics were included in the analysis for the present study.

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2.2. Study Design

The study utilized secondary data available from KOSIS to investigate the relationship between self-rated health and health behavior practices of the Korean population. The data were cross-sectional and concerning respondents' behaviors over the past 1 year from the time of survey administration.

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2.3. Study Tools

2.3.1. Health Assessment: The self-rated health variable was, as described above, the subjective assessment of overall health status, measured in the survey item with the following response categories: “Very good, Good, On average, Poor, and Very poor.” The objective health assessment variable was estimated disease duration based on an illness or pain caused by an accident. The survey item used for this variable was "In the last 2 weeks, have you been sick because of a disease or an accident? If you have, please write down how many days you were ill, and how many days you had to stay in bed more than half a day (including hospital stay)."

2.3.2. Health Behavior Practices: The variables for health behavior practice captured behaviors people typically practice to manage their health. The following survey items were used for health behavior practice variables: “Do you usually practice each of the items below? Eating breakfast, Adequate sleep (6–8 hours), Regular exercise, and Regular health-check.” The response categories were "I do, and I do not.” Additionally, survey items regarding attempts to quit smoking, quit drinking, and restrict drinking were included in the analysis. The latter items had 2 response categories of "yes and no".

2.3.3. Demographic Characteristics: Survey items regarding demographic characteristics include gender, age, education level, marital status, household income, and

type of submunicipality they lived in (neighborhood vs. town/township). They have been confirmed as useful variables by previous research on health assessment.

Table 1. Demographic Characteristics of Respondents

Variables	Categories	Frequency	Percentage
Sex	Male	20,511	47.9
	Female	22,270	52.1
Age	Teenager	9,320	21.8
	Twenties	4,044	9.5
	Thirties	5,826	13.6
	Forties	6,947	16.2
	Fifties	6,783	15.9
	Sixties and more	9,861	23.0
Education	E. S. and less	7,867	18.4
	M. S.	5,218	12.2
	H. S.	12.936	30.2
	Univ. and more	11,222	26.2
Monthly income	less than 1000 thous.	6,532	15.3
	1000-1999 thous.	8,605	20.1
	2000-2999 thous.	9,198	21.5
	3000-3999 thous.	7,087	16.6
	4000-4999 thous.	5,130	12.0
	5000-5999 thous.	2,668	6.2
	6000 thous. or more	3,561	8.3
Residence	Town	34,066	79.6
	Community	8,715	20.4
Marital status	Bachelor	9,574	22.4
	The married	22,789	53.3
	Bereavement	3,356	7.8
	Divorce	1,524	3.6

2.4. Data Analysis Methods

Various types of statistical methods were used to analyze the health assessment data. Descriptive statistics were computed to examine the demographic characteristics of the study sample, and additionally correlational analysis was performed to examine the relationship between health assessment and health behavior practices. Finally, analysis was performed to investigate causal relationships based on a model in which independent variables were preventive health behavior practices, and dependent variable was either SRH or objective health assessment.

3. Results and Discussion

3.1. Demographic Characteristics of Study Subjects

There were a total 42,781 subjects in the study sample, and their demographic characteristics are summarized in [Table 1].

Gender male 47.9%, female was found in 52.9%, age less than 20 years old and 21.8%, 20s 9.5%, 30s 9.5% and 40's 16.2%, 50s 15.9%, more than 60 is 23.0% It was. Education was found to have 18.4% lower than primary, junior high school graduation is 12.2%, 30.2% are high school graduates, college graduates more than 23.2%. One month's revenue was 20.1% in the less than 200 million won, 200-299 million won 21.5%, 16.6% 300-399 million won, 400-499 million won 12.0%, 14.5%, is more than 500 million yuan. Living in the city is 79.9%, rural 20.4%, and most appeared to live in this city. Marriage forms appeared single in 22.4%, marriage in 53.3% and diversion in 3.6%.

Table 2. Correlation between Components

Classification	1	2	3	4	5	6	7	8	Mean	S.D.
Self-rated health 1	1								3.3538	.95391
Objective health 2	-.273**	1							9.38	5.260
Breakfast 3	-.050**	.168**	1						.7332	.44227
Proper sleeping 4	.100**	.026**	.228**	1					.7727	.41912
Regular exercise 5	.149**	-.009	.174**	.171**	1				.3683	.48235
Regular screening 6	-.075**	.129**	.223**	.139**	.217**	1			.6079	.48822
Smoking cessation 7	-.007	-.069**	.037**	.005	.071**	.054**	1		.4729	.49930
Drinking cessation 8	-.053**	-.079**	.026*	-.008	.043**	.045**	.292**	1	.2518	.43405

3.2. Correlations between Health Assessment and Health Behavior Practices

[Table 2] shows the correlation coefficients calculated between health assessment and health behavior practices. Self-rated health was negatively correlated with objective health assessment, the habit of eating breakfast, regular health check-up, and attempt to quit drinking, and positively correlated with adequate sleep and regular exercise. Finally, SRH was not significantly correlated with attempt to quit smoking.

Look through the health assessment and relevance to health behaviors practiced subjective health evaluation to individuals aware of the health it showed an objective health assessment and reverse relationships such as hospital visits recovered or medical expenses, which more recognized that my health is less hospital visits It may be said to show that.

Also, the more often recognize that your health do not eat breakfast, we had to take a proper sleep is more aware that healthy, regular exercise was carried out. And the more I was sure that appeared to be regular health checkups number is shrinking, drinking appeared to be relatively increased. Smoking is the subjective health evaluation and Nana was irrelevant.

3.3. Causal Relationships between Health Behavior Practices and SRH

The results of the analysis performed to investigate the effects of health behavior practices on self-rated health are shown in [Table 3]. Of the health behavior practices, adequate sleep and regular exercise had significant positive effects on self-rated health, whereas attempts to quit and restrict drinking had significant negative effects. However, the effects of the habit of eating breakfast, regular health check-up, and attempt to quit smoking on self-rated health did not reach statistical significance.

This assessment of the health of your perception if you are performing regular exercise and adequate sleep in daily life activities means that high. Also it means that health practice behavior, such as high this week if it deems unhealthy.

Table 3. The Effects of Health Behavior Practices on Subjective Self-rated Health

Variables	B	SE B	β
Breakfast	-.032	.029	-.018
Proper sleeping	.216	.031	.114**
Regular exercise	.343	.031	.180**
Regular screening	-.029	.028	-.017
Smoking cessation	.042	.028	.025
Drinking cessation	-.161	.032	-.082**

Note: ** $p<0.01$

3.4. Causal Relationships between Health Behavior Practices and Objective Health Assessment

[Table 4] shows the results from the analysis on the effects of health behavior practices on objective health assessment. Of the health behavior practices, the habit of eating breakfast and regular health check-up had significant positive effects on objective health assessment, indicating that such preventive health behavior practices as eating breakfast and regular health check-up affect a disease prevalence rate, i.e., the objective health assessment used in the study. The findings can be conversely interpreted as suggesting that the likelihood of eating breakfast and getting regular health check-up increases, as a disease prevalence rate is higher. It could be said that these preventive health behavior practices reflect patients' compliance to physician instructions to take medication with a

meal and get followed up on a regular basis. No other preventive health behavior practice showed a statistically significant effect on objective health assessment.

Table 4. The Effects of Health Behavior Practices on Objective Health

Variables	B	SE B	β
Breakfast	1.982	.435	.172**
Proper sleeping	-.093	.437	-.008
Regular exercise	-.694	.438	-.057
Regular screening	1.415	.403	.128**
Smoking cessation	-.653	.389	-.061
Drinking cessation	-.427	.429	-036

Note: ** $p<0.01$

4. Summary and Conclusions

In the way of personal health assessment is a subjective health evaluation and objective evaluation of this study affect health behavior practices to target a sample of a national scale in order to mitigate the limitations with the existing research on each of the subjective health evaluation, objective health assessment the correlation between health behavior practices impact relationships, behavioral health practice in subjective health evaluation among health assessment and health practices and determine the impact of actions related to objective health assessment to confirm.

The present study was conducted to investigate the effects of health behavior practices on SRH and objective health assessment, respectively, by using the data from the 2014 Social Survey conducted by KOSIS.

Look through the health assessment and relevance to health behaviors practiced subjective health evaluation to individuals aware of the health it showed an objective health assessment and reverse relationships such as hospital visits recovered or medical expenses, which more recognized that my health is less hospital visits It may be said to show that.

This assessment of the health of your perception if you are performing regular exercise and adequate sleep in daily life activities means that high. Also it means that health practice behavior, such as high this week if it deems unhealthy.

The result showed that people whose subjective assessment of health was good were more likely to manage their health by getting an adequate amount of sleep and exercising regularly. Additionally, those whose health was good in an objective assessment were more likely to eat breakfast and get regular health check-up. The study suggests that subjective and objective health assessments are useful indexes in reflecting people's behavioral characteristics.

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