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Factors of Working Hours on the Quality of Health-related Life of Coronary Arterial Diseases in Korea: National Health and Nutrition Survey data from the Korea Centers for Disease Control and Prevention (2013-2017)

Eunhee Jo, Soo Jin Lee, Soon-jung Hwang

Vision College of Jeonju, Department of Nursing, CheonJam-ro 235, Wansan-gu, Jeonju-si South Korea.

ABSTRACT

Introduction: Risk factors for coronary artery disease vary, but among them, factors that can be controlled by improving lifestyles include obesity, alcohol, smoking, lack of physical activity, stress, high blood pressure, diabetes, and hyperlipidemia.

Objective: This study is a secondary data analysis study to identify the factors affecting working hours on health-related quality of life for people with coronary artery disease. The raw data is the National Health and Nutrition Survey (KNHANES) surveyed by the Korea Centers for Disease Control and Prevention from 2013 to 2017.

Method: The subjects were 10,133 adults aged 19 or older who answered questions from doctors about whether to diagnose myocardial infarction or angina. EQ-5D was used as a tool for quality of life. The collected data were analyzed by using the SPSS WIN 25.0 program, using a stratified sample analysis method using stratification, colonization, and weighting. In the case of more than 40 hours per week and less than 50 hours, the subject's quality of life score was high ($p < .05$).

Results: The composite sample linear regression analysis, showed that males, the younger the age, the higher the quality of life, and the poorer the subjective health status, the lower the quality of life when the working hours per week exceed 60 hours. As a result of this study, to improve the quality of life of patients with coronary artery disease, it is necessary to develop a multidimensional nursing education program that includes physical, mental, and social aspects, including observing stable working hours.

Key Words: Working hours, Cardiovascular disease, Health-related quality of life, EQ-5D

INTRODUCTION

From the provided facts, it seems that the number of deaths from heart disease in 2018 is not correct, according to the latest WHO data published in 2018 Coronary Heart Disease Deaths in South Korea reached 26,172 or 10.56% of total deaths. The age-adjusted Death Rate is 30.29 per 100,000 population ranks South Korea at 183 in the world. Coronary artery disease is the number one major cause of death in the world,^{1,2} and as social costs due to coronary artery disease increase, we are trying to come up with and implement policies for prevention and management not only in Korea but also around the world.

Risk factors for coronary artery disease vary, but among them, factors that can be controlled by improving lifestyles include obesity, alcohol, smoking, lack of physical activity,

stress, high blood pressure, diabetes, and hyperlipidemia.³ To reduce controllable risk factors for coronary artery disease, the American College of Cardiology and the American Heart Association have developed practical guidelines to improve lifestyle habits including diet and physical activity. It was recommended to develop and practice measures to reduce the risk of coronary artery disease by improving professional management.⁴

The Republic of Korea is included in the developed countries, but along with economic development, the average life expectancy has been extended, and the westernization of eating habits and lifestyles has led to an increase in instant and meat intake due to past vegetarian diets, resulting in increased stress. Lifestyles are changing due to a decrease in the amount of exercise, and coronary artery disease is increasing.⁵

Corresponding Author:

Soon-jung Hwang, Associate Professor, 55069 Vision College of Jeonju, Department of nursing, CheonJam-ro 235, Wansan-gu, Jeonju-si South Korea; Email: hoang12@naver.com

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Therefore, to reduce the risk of coronary artery disease, efforts to change lifestyle, such as active physical activity in daily life and improvement of healthy eating, are important. To practice health promotion through lifestyle changes, individual will and efforts are important, but time is essential. Looking at the working hours of the Republic of Korea, according to Article 50 of the Labor Standards Act, work exceeding 40 hours a week is prohibited, and even if the parties agree in Article 53, overtime work is allowed only up to 12 hours a week. Therefore, the longest working hours per week permitted by the current laws of the Republic of Korea is 52 hours. Despite the reduction of working hours by presenting legal working hours in the Labor Standards Act, Korea's 2018 working hours based on OECD statistics (data.oecd.org) were 1,993 hours, the second largest among OECD countries after Mexico (2,148 hours). Compared to the average annual working hours of 2,228 hours in 2008 of the last Korean workers, it decreased by 10.5%, but compared to the OECD average of 1,734 hours, it was found that they were working an average of 259 hours more.⁶

An extension of working hours, such as overtime, makes it difficult to have personal time to improve health,⁶ leading to overwork or work stress, causing blood pressure to rise and coronary artery disease.⁷ Overtime is also a factor that increases the incidence of coronary artery disease as a cause of overwork for workers.^{8,9}

Therefore, it is necessary to maintain proper working hours to reduce the incidence of coronary artery disease. Securing adequate working hours gives coronary artery disease patients time to improve their lifestyle, such as physical activity, to reduce risk factors for heart disease and improve quality of life.¹⁰

Therefore, it is necessary to maintain appropriate working hours to reduce the occurrence of coronary artery disease. Securing appropriate working hours gives coronary artery disease patients time to improve lifestyle habits such as physical activity, thereby reducing risk factors for heart disease and improving quality of life.¹⁰ Quality of life is a comprehensive concept that reflects all areas related to human well-being and is a subjective indicator of self-awareness from a subjective perspective such as one's social function, role, symptom, physical function and emotional state.¹¹ Health-related quality of life implies not only the level of health and disease but also the comprehensive meaning of physical, mental and social quality of life affected by motor skills, self-care, daily life, pain and discomfort, anxiety and depression.^{12,13}

In a study of public officials in the UK, the risk of developing heart disease was 1.6 times higher than those who worked 7-8 hours after 3-4 hours of overtime working a day.¹⁴ In a study involving people who visited the hospital, the risk of acute myocardial infarction was doubled when the weekly

working hours exceeded 61 hours compared to those who worked less than 40 hours.¹⁵ Besides, as a result of estimating how the reduction of legal working hours in France affects health-related changes, the reduction of working hours had a significant effect on positive health status and changes in health behaviour.¹⁶

Many factors affect the quality of life-related to health. The higher the education level, the better the working conditions, such as income and appropriate working hours, so you can spend time on activities to improve lifestyles with time to get better health. Status,¹⁷ and occupation also reflects personal income and working hours as one of the socioeconomic indicators that affect health.^{18,19} Therefore, working hours have a significant effect on health behavior changes as a health-related indicator. It is necessary to analyze the factors affecting the health-related quality of life of people with coronary artery disease.

In addition, the role of nurses is increasing as local health care personnel who can play an important role in the reality of the importance of health-related quality of life, and it will be necessary to check how working hours are related to coronary diseases in order to establish various health coaching nursing strategies for the management of coronary artery diseases, one of the chronic diseases.

In this study, it is expected that working hours will be a practical basis for nursing arbitration and national policy to identify factors affecting the quality of life related to the health of coronary diseases and come up with measures to improve the quality of life related to health.

MATERIALS AND METHODS

Study design

This study is a secondary data analysis study to understand the factors that influence working hours on health-related quality of life for people with coronary artery disease. The raw data is the National Health and Nutrition Survey (KNHANES) surveyed by the Korea Centers for Disease Control and Prevention from 2013 to 2017

Research subject

This study is 19 years of age or older out of the 27,224 people who responded with yes' or no' to the medical team for myocardial infarction and angina out of 39,225 subjects of the Korea Centers for Disease Control and Prevention from 2013 to 2017. 10,133 subjects with no missing values in the variable were analyzed.

The target population of the National Health and Nutrition Survey is citizens residing in the Republic of Korea, and the sampling frame was based on the data from the most

recent population and housing survey available at the time of sampling design. The National Health and Nutrition Survey consists of national health surveys, screening surveys, and nutrition surveys, and the sampling method used a two-stage stratified sampling method with the surveying district and household as the first and second extraction units.

Research tools

General characteristics

Sex, age, subjective health, stress cognition, activity limit, and working hours per week were used to understand the general characteristics of the subjects of this study. Subjective health was reclassified as 'very good', 'good' to 'good', 'moderate' to 'moderate' and 'bad', and 'very bad' to 'bad'. Stress cognition was reclassified as 'very much feeling', into 'much' 'feeling a little' into 'moderate', and 'little feeling' into 'little'. limit on activities were made using the data 'Yes' and 'No'. As for the working hours per week, the average working hours per week was categorized into 'less than 40', 'Greater than or equal to 40 hours and less than 50', 'Greater than 50 hours and less than 60', and 'Greater than or equal to 60'.

Characteristics of health behaviour

The health-related characteristics of the subjects of this study were analyzed using smoking, alcohol and depression. Smoking was reclassified as "daily smoking" as smoking and "smoking in the past, but not currently smoking" as non-smoking. Drinking frequency was used for 1 year. 'No drinking at all in the last year' was reclassified as 'no' and 'less than once a month-more than 4 times a week' as 'yes'. For depression, data that responded with 'yes' and 'no' were used in the variables of the depression doctor group.

Health related quality of life

The health-related quality of life of this study subject was analyzed using the EQ-5D (EuroQol-5 dimension). EQ-5D is a health-related quality of life measurement tool that was developed to measure overall health and is composed of multiple-choice questions in five areas: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each question is answered in one of three levels: 'no problems', 'some problem', and 'very problem', and if the items answered from 5 questions are combined, a total of $3^5 = 243$ health conditions can be measured. I can. The EQ-5D index was calculated by applying a quality weight to the measured value of the EQ-5D item. The higher the score, the higher the health-related quality of life.

Data collection and analysis method

In this study, the research results calculated from the sample data of the Korea Centers for Disease Control and Prevention from 2013 to 2017 represent the whole of Korea, and

weights, stratification variables, and colony variables were considered to obtain unbiased estimation results. To calculate the analysis results considering complex sample factors such as strata, colony, and weight, SPSS/WIN 25.0 program was used and analyzed by the complex sample analysis method. The general characteristics and health-related characteristics of the subjects according to the diagnosis of coronary artery disease were analyzed by the composite sample frequency and percentage, and the difference between them was analyzed using Rao_Scott χ^2 -test. For the health-related quality of life score according to the working hours of coronary artery disease patients, composite sample descriptive statistics were used and the difference was analyzed by t-test. A complex sample general linear model multiple regression analysis was performed to identify the factors affecting the subject's health-related quality of life.

Ethical considerations

The raw data of KNHANES, the data of this study, are government-designated statistics based on Article 17 of the Statistical Act (approval number 117002) as a legal investigation conducted based on Article 16 of the National Health Promotion Act from 2013 to 2017 as a National Health and Nutrition Survey. KNHANES is a research conducted by the state directly for public welfare according to Article 2, No. 1 of the Bioethics Act and the Enforcement Rule of the same Act, Article 2, No. 2, No. After familiarizing yourself with, it was approved by e-mail and downloaded and analyzed. The KNHANES raw data was conducted after receiving approval of the use of the raw data from the National Health and Nutrition Survey and the confirmation of exemption from IRB deliberation [P01-202006-21-016] from the National Health and Nutrition Survey website according to the procedure for use.

RESULTS

Differences in coronary artery disease according to the general characteristics of the subject

The number of patients diagnosed with coronary artery disease was male, 92.7% (318), and the male was significantly higher than female (Rao_Scott $\chi^2=8.40$, $p=0.001$). In terms of age, 67.3% (270 people) were over 60 years old, and those over 60 were significantly higher than those between 19-39 and 40-59 years old (Rao_Scott $\chi^2=374.43$, $p<0.001$). Working hours per week was the highest with 52.6% (194 workers) for greater than or equal to 60 hours, 27.0% (87 workers) for less than 40 hours, 12.0% (38 workers) for greater than 50 hours and less than 60, and greater than 50 hours and less than 60 hours Was significantly higher in the order of 8.4% (26 patients) (Rao_Scott $\chi^2=73.80$, $p<0.001$) (Table 1).

Table 1: Cardiovascular Disease according to the General Characteristics of the Subject (N=10,133)

Characteristics		Cardiovascular disease		Rao_Scott χ^2	p-value
		Yes	No		
		n(%)	n(%)		
Sex	Male	318(92.7)	8,288(86.2)	8.40	0.001
	Female	27(7.3)	1,500(13.8)		
Age	19-39	2(1.2)	2,889(37.8)	374.43	0.000
	40-59	73(31.5)	3,894(43.5)		
	≥60	270(67.3)	3,005(18.7)		
Working hours per week	Greater than or equal to 60	194(52.6)	3,117(27.7)	73.80	0.000
	Greater than 50 hours and less than 60	26(8.4)	1,262(14.5)		
	Greater than or equal to 40 hours and less than 50	38(12.0)	1,996(22.4)		
	Less than 40	87(27.0)	3,413(35.4)		

Differences in coronary artery disease according to the subject's health-related characteristics

In the subjects who were diagnosed with coronary artery disease, 80.7% (276 patients) showed no activity limit in terms of activity limit, which was significantly higher than that (Rao_Scott $\chi^2=62.95$, $p<0.001$). In the subjective health status, bad was 43.2% (154), moderate was 42.8% (147), good was 14.0% (44), and bad was significantly higher (Rao_Scott $\chi^2=122.39$, $p<0.001$). In stress cognition, the moderate cognition was 53.1% (190 people), the little cognition 23.8% (84 people), the much cognition 23.1% (71 people) in order, and the average cognition was significantly higher (Rao_Scott $\chi^2=22.24$, $p<0.001$). The number of diagnosed depression was 92.0% (318 patients), and it was significantly higher than not diagnosed (Rao_Scott $\chi^2=15.48$, $p<0.001$). In terms of smoking status, non-smokers were 65.7% (229 people), which was significantly higher than smoking (Rao_Scott $\chi^2=31.95$, $p<0.001$). There were 79.8% (267 people) of drinking experience in the last year, and it was significantly higher than none (Rao_Scott $\chi^2=22.13$, $p<0.001$) (Table 2).

Table 2: Coronary Artery Disease according to the Subject's Health-related Characteristics (N=10,133)

Characteristics		Cardiovascular disease		Rao_Scott χ^2	p-value
		Yes	No		
		n(%)	n(%)		
Activity limit	Yes	69(19.3)	760(6.4)	62.95	<0.001
	No	276(80.7)	9,028(93.6)		
Subjective health Status	Bad	154(43.2)	1,756(16.7)	122.39	<0.001
	Moderate	147(42.8)	5,089(52.1)		
	Good	44(14.0)	2,943(31.2)		
Stress cognition	Much	71(23.1)	2,673(29.3)	22.24	<0.001
	Moderate	190(53.1)	5,535(57.2)		
	Little	84(23.8)	1,580(13.5)		
Depression diagnosis	Yes	318(92.0)	9,464(96.6)	15.48	<0.001
	No	27(8.0)	324(3.4)		
Smoking	Yes	116(34.3)	4,693(52.6)	31.95	<0.001
	No	229(65.7)	5,095(47.4)		
Recent 1 year drinking experience	Yes	267(79.8)	8,492(89.4)	22.13	<0.001
	No	78(20.2)	1,296(10.6)		

Factors influencing the subject's health-related quality of life

To analyze the factors affecting the subject's health-related quality of life, multiple regression analysis was performed by selecting the general characteristics and health-related

characteristics variables that were significant in the crossover analysis as independent variables. The factors that have a significant influence on the health-related quality of life of the subjects were male ($p=0.042$), lower age ($p=0.008$), higher quality of life than female, and poorer subjective

health status, the higher the quality of life. ($p < 0.001$), activity limit ($p < 0.001$), and work hours per week of greater than or equal to 60 hours ($p = 0.002$) showed a decrease in

quality of life. The F value representing the fit of the model was 13.02 ($p < 0.001$), and this model was suitable, and the explanatory power of the model was 39.1% (Table 3).

Table 3: Factors Affecting the Quality of Life of the Subject (N=345)

Characteristics		B	SE	t	p-value
(constant)		0.89	0.04	20.04	<0.001
Sex	Male	0.08	0.04	2.04	0.042
	Female	reference			
Age	19-39	0.07	0.02	2.77	0.008
	40-59	0.03	0.02	1.34	
	60≥	reference			
Subjective health	Bad	-0.07	0.02	-4.45	<0.001
	Moderate	0.00	0.01	0.010	
	Good	reference			
Stress cognition	Much	-0.03	0.02	-1.28	0.245
	Moderate	0.00	0.02	0.21	
	Little	reference			
Smoking	Yes	-0.02	0.02	-1.56	0.099
	No	reference			
Activity limit	Yes	-0.12	0.03	-3.78	<0.001
	No	reference			
Working hours per week	Greater than or equal to 60	-0.04	0.02	-1.91	0.002
	Greater than 50 hours and less than 60	0.00	0.03	.01	
	Greater than or equal to 40 hours and less than 50	0.03	0.01	2.49	
	Less than 40	reference			
Depression diagnosis	Yes	0.00	0.04	0.08	0.933
	No	reference			
Recent 1 year drinking experience	Yes	0.02	0.02	1.29	0.197
	No	reference			

$R^2 = 39.1$, $F = 13.02$, $p < 0.001$

Differences in quality of life according to the subject's working hours per week

In the difference in the quality of life according to the working hours per week of the subjects, the quality of life score was found to be higher greater than or equal to 40 hours and less than 50 per week and was statistically significant ($t = 73.99$, $p < 0.001$). Differences in the quality of life ac-

ording to the EQ-5D subgroup were mobility ($t = 26.92$, $p < 0.001$), self-care ($t = 30.72$, $p < 0.001$), and usual activities ($t = 25.03$, $p < 0.001$), pain/discomfort ($t = 21.73$, $p < 0.001$) showed the high quality of life scores greater than or equal to 40 hours and less than 50, and anxiety/depression ($t = 16.55$, $p < 0.001$) was found that the quality of life score was high when the greater than or equal to 60 (Table 4).

Table 4: Quality of Life according to Working Hours per Week (EQ-5D Subgroups) (N=345)

Characteristics	40≤		40.1-50		50.1-60		60.1>	
	M±SD	t(p)	M±SD	t(p)	M±SD	t(p)	M±SD	t(p)
EQ-5D index	0.94±0.01	82.44(<0.001)	0.97±0.01	73.99(<0.001)	0.91±0.04	24.51(<0.001)	0.86±0.01	65.53(<0.001)
Mobility	1.19±0.04	31.42(<0.001)	1.06±0.04	26.92(<0.001)	1.17±0.09	14.35(<0.001)	1.39±0.04	32.55(<0.001)
Self-care	1.05±0.02	63.21(<0.001)	1.03±0.03	30.72(<0.001)	1.28±0.15	8.29(<0.001)	1.17±0.03	36.50(<0.001)
Usual activities	1.13±0.05	22.49(<0.001)	1.07±0.04	25.03(<0.001)	1.18±0.11	10.25(<0.001)	1.32±0.04	31.29(<0.001)
Pain/discomfort	1.21±0.05	25.14(<0.001)	1.10±0.05	21.73(<0.001)	1.20±0.09	12.88(<0.001)	1.56±0.06	28.70(<0.001)
Anxiety/depression	1.12±0.04	26.24(<0.001)	1.11±0.06	19.43(<0.001)	1.10±0.07	16.55(<0.001)	1.22±0.04	32.91(<0.001)

DISCUSSION

Health-related quality of life is directly related to individual health, and considering the multidimensional aspects of not only the level of health and disease, but also physical, mental, and social quality of life,^{12,13} the life of people with coronary artery disease. To improve the quality, it is necessary to confirm the effect of working hours to consider physical and social factors. Therefore, this study is a secondary analysis study using KNHANES data from the Korea Centers for Disease Control and Prevention to examine the factors that influence the quality of life related to the health of people with coronary artery disease.

As a result of this study, as factors influencing the health-related quality of life of the subjects, males compared to females, and younger ages resulted in a higher quality of life. The poorer subjective health status, activity restrictions, and more than 60 working hours per week. It was found that the quality of life decreased. Besides, in terms of the quality of life according to the subject's working hours per week, it was found that the quality of life score was higher in the range of more than 40 hours per week and less than 50 hours.

As a result of this study, men compared to women and the younger their age, the higher the quality of life. The result of this study was that men with coronary artery disease showed a higher quality of life compared to women. It is the same result.^{20,21} As can be seen from a study that reported that women had a low physical function, vitality, and general health,²² as physical function and vitality are related to health-related quality of life, women's social activities are increasing more than in the past. Until now, the reality is insufficient, and there is a difference between men and women in the change according to age.²⁰ Women are less active than men as their age increases, so they spend more time at home, so their subjective health status is bad, they perceive that their health status is worse, they experience more depression and stress, and various chronic diseases are more common. It was found to be high, and the confidence inactivity was much lower than

that of men.²³ Therefore, to improve the quality of life-related to health, it is necessary to understand the characteristics of men and women by differentiating them and to prepare a plan that considers gender.

The reason for the lower quality of life as the age increases is that as the age increases, complex problems such as functional disorders, fatigue, sleep problems, and an increase in the prevalence of chronic diseases reduce the quality of life-related to health.²⁴ In particular, since coronary artery disease, is one of the chronic diseases and social costs increase, a strategy is needed to continuously plan and promote health management information and policies for health management in the community so that health management can be better managed with age.

As a result of this study, the poorer the subjective health status and the limiting activity were, the lower the quality of life. In previous studies, the poorer the subjective health status is, the lower the health-related quality of life and the higher the activity restriction, the lower the quality of life.^{25,26} Subjective health status was evaluated in terms of physical, mental and socio-psychological aspects of one's health, so previous studies also suggested that it was related to depression and physical activity.²⁷ Therefore, active support and interest are needed for the development and activation of a nursing intervention program that considers even psychosocial psychological aspects that can improve subjective health status.

If subjective health status is poor or there are activity restrictions, social activities can be restricted, and social activities are closely related to economic income, which is essential for maintaining basic life and affects health-related quality of life.²⁸ Therefore, it is necessary to develop a variety of self-directed health competency improvement educational programs according to the level of activity so that appropriate social activities can be performed. You need a foundation.

As a result of this study, the quality of life was low when working hours per week exceeded 60 hours in factors affect-

ing the quality of life of people with coronary artery disease, and in the quality of life according to working hours per week, quality of life was higher than greater than or equal to 40 hours and less than 50 hours. The score was high, and in the EQ-5D subgroup, the quality of life score was high in mobility, self-care, usual activities, and pain/discomfort greater than or equal to 40 hours and less than 50 hours, and anxiety/depression in greater than 50 hours and less 60 hours. The quality score was high.

In previous studies, the risk of acute myocardial infarction was doubled when the working hours per week exceeded 61 hours compared to the case of 40 hours or less.⁶ Compared to the 40-hour weekly working hours group, the minimum was 1.99 times and the maximum was 2.09 times.²⁹ The reason that working hours per week affects coronary artery disease is that long-term working hours cause overwork and also affect sleep. Lack of sleep increases stress⁹) and causes blood pressure to rise. By improving the morbidity of coronary artery disease, the quality of life of individuals decreases.^{6,7}

As can be seen from the results of this study and previous studies, the reason why appropriate working hours affects the health and quality of life of people with coronary artery disease is that long-term working hours affect sleep and cause stress in people with coronary artery disease. It is believed that the improvement of lifestyle habits such as physical activity is an essential factor for this, and long-term working hours impose time restrictions so that lifestyle habits cannot be improved. Besides, long-term working hours for people with coronary artery disease increase the risk of disease, affecting the economical part and increasing social costs. The quality is very important.

In the results of this study, in the EQ-5D subgroup, the quality of life score was higher for self-care, usual activities, and pain/discomfort beyond 40 hours and less than 50 hours. There is currently no previous study that analyzed the quality of life of people with coronary artery disease according to working hours using the EQ-5D tool, so there is a limitation in comparing and analyzing the results of this study with previous studies. However, in the results of this study, in the EQ-5D subgroup, the quality of life score was higher in the range of more than 40 hours and less than 50 hours in exercise capacity self-care, usual activities, and pain/discomfort excluding anxiety/depression. Therefore, it was confirmed that the proper working hours affected the quality of life of people with coronary artery disease. In the future, repeated studies are needed to confirm and compare the quality of life of people with coronary artery disease according to working hours using the EQ-5D tool.

As a result of this study, appropriate working hours are essential for the health management of people with coronary artery disease, so that they can manage their health in life by improving their lifestyle habits, maintain the lives of peo-

ple with coronary artery disease, and improve the quality of life-related to health. It can be seen that it is a very important factor.

Therefore, to reduce coronary artery disease based on the results of this study, it is necessary to develop a national policy that considers appropriate working hours. Besides, there is a need to establish a differentiated strategy through communication and reinforcement of links to available resources within the community that can improve the self-health management competency of coronary artery disease patients.

This study is a cross-sectional study using secondary data using the National Health and Nutrition Survey of Korea, and it has limitations that are difficult to confirm the causal relationship between variables and does not include a wide range of variables that affect health-related quality of life. However, this study is a study to confirm the factors affecting the health-related quality of life of people with coronary artery disease by working hours, including general characteristics and health-related characteristics, using large-scale national data called the Korean National Health and Nutrition Survey.

CONCLUSION AND SUGGESTIONS

This research analyzed the factors that affect the health-related quality of life of coronary artery patients using the National Health and Nutrition Survey data of the Centers for Disease Control from 2013 to 2017. He then presented an arbitration proposal to improve the quality of life of coronary artery patients. The results of the study confirmed that men's quality of life is affected by the health-related quality of life as compared to women's and that the younger they are, the higher their quality of life is, the worse their subjective health condition, and the lower their quality of life is when working 60 hours or more per week. Therefore, it was confirmed that the quality of life-related to health can be improved by promoting subjective health and activity and maintaining appropriate working hours. Based on the results of this study, to improve the quality of life of people with coronary artery disease, it is necessary to develop and operate self-nursing ability nursing education programs as well as active support and interest mainly in the community to actively conduct self-health management based on appropriate working hours and improve lifestyle habits. In the future, it is necessary to grasp the changes in quality of life by carrying out a longitudinal study on the factors affecting the quality of life of people with coronary artery disease, including various eccentricities. In addition, it is necessary to institutionally expand the policy base so that appropriate working hours can be maintained. In addition, I think it is necessary to explore the factors that affect the quality of life not only of working hours, but also the actual income and GDP of the young, middle-aged and elderly.

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