

An Epidemiological Study for Desirable Health Habits Affecting Workers' Health Status

Myung-Sun Lee

*Department of Health Education, School of Education,
 Ewha Womans University, Seoul, Korea*

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I. Introduction

Korea has achieved a remarkable economic growth by successfully implementing a series of five-year development plans. In the past, nevertheless, the main emphasis was placed only on raising productivity, and largely, industrial workers' health care was made light of view. Now, industrial workers' health care gradually starts to be recognized as an important economic and social issue. Moreover, according to the total number of industrial workers who take part in the national economic activities occupies over the majority of the total population, industrial workers' health care is connected directly with the national health care.

While the worksite was a place that imposes danger upon workers, it could also be a place to maintain and improve their health status if the danger was efficiently managed by health care. And now, in order to provide, more adequately, workers' health care services, in terms of human beings' basic rights, social justice, and health care efficiency, the existent management system of industrial health must be changed into the comprehensive health care system. The worksite can be used as very effective place to establish this health status improving plan for workers.

Today, health management to improve workers' health status is being changed from an approach of the medical care for disease prevention and treatment into another

approach focusing on the change of individuals' health habit. More concretely, according as a new health science concept - which tries to improve workers' health, taking them as subjects, by having them change their health habits into the direction of decreasing disease - is gradually formed, many studies on workers' health habits are actively conducted (Belloc and Breslow, 1971; Eberhard, 1983; Babara, 1988; McQueen, 1993, Cohen, 1998; Huurre & Aro, 2002).

As an example of a typical study on health habit and disease or death, Belloc and Breslow's epidemiological study (1972) was carried out through follow-up survey of health habit and health status to the 7,000 local community residents in Alameda County, California in the United States in 1965. In this study, it was found that an individual's health habits were connected with his or her death rate through the follow-up observation of 7 health habits and death rate. The 7 health habits in this study were as follows: 1. Eating breakfast regularly; 2. sleeping for 7~8 hours per day; 3. maintaining a normal body mass (Body Mass Index, BMI); 4. abstaining from eating a snack between meals; 5. abstaining from smoking; 6. drinking a little bit; 7. doing exercise regularly. The findings of Belloc and Breslow (1972) show that the person, who are rich in terms of these 7 health habits, has a lower death rate than the person who does not do so.

Also, according to a cohort study on these health habits carried out for 9.5 years until 1974 to 45 years-old men, when 33.1 years - the average expectation life span of the man, who had 6~7 health habits is compared with 21.6 years - that of the man, who had good health habits less than 3, the average expectation life span of the former was more than 11 years longer. Compared with only 3.3 years - the average expectation life span increased for 20 years from 1970 until 1990, in case of US white men, health habits can be said to have a considerable factors to the extension of the average expectation life span (Breslow & Enstrom, 1980).

According to research about health habits, it is well documented that an individual's health status and health habit work as primary factors to his or her health maintenance or disease rate (Roberts and Lee, 1980; Wiley and Camacho, 1980; Wilson and Elinson, 1981; Fredrick, 1988). Metzner(1983) reported that coronary heart disease, high blood pressure, and chronic bronchitis was related with health habits, such as eating habit, sleeping, smoking, drinking, exercise, and BMI. And the follow-up study reported that the better the health habits individuals had, the lower the death rate they had.

Based on these study results as well as the change of disease perspective in modern society, a lot of countries in the world are searching the updated-change of her industrial

health policy. In particular, well-organized research on health habits should be conducted. Significance of more systematic research for health improvement becomes large more and more. However, most of the studies on health habits which examined workers' health status were limited to measuring health status, identifying the related factors, and examining the relationship between working environment and health status. Furthermore, the studies on health habit and health state rarely examined other health habits except smoking and drinking. Thus, it is essentially necessary to clearly identify causes and effects of health habits in relation to health status to develop health education program for improving health status of working population.

In summary, health habits is related with all the elements of social, political, and cultural factors. Among diverse health habits, this study focused on sleeping hours, obesity (BMI), eating breakfast, eating snack between meals, smoking, drinking, and exercise, which are found to be closely related with health status among daily health habits (Belloc and Breslow, 1972) and examined the association between health habits and health status.

The purposes of this study were: the first, to describe workers' demographic characteristics, health habit characteristics, and health status characteristics, secondly, to identify the association between demographic

characteristics, health habits, and health status, and the third to determine the effects of workers' demographic characteristics and health habits on health status.

II. Methods

1. Participants and Study Design

This study was conducted to 998 workers employed in 58 companies in Buchon. The 58 companies were selected by a systematic random sampling method, every third companies among 174 companies in Buchon City and having less than 50 persons. Then, The 998 workers underwent the health screening test in 2000 and participated in the self-administered questionnaire survey for this study. Among them, 33 responses were excluded from the analysis because 21 workers who did not complete a substantial portion of questionnaire and 12 workers's responses were patterned or unreliable. Finally, 965 responses were used the analysis.

In order to obtain the health status grades diagnosed by medical doctors during the workers' health screening test, this study used the individual health screening record kept in each companies. The individual health screening record was tracked down with the industry name and the name of the survey participant workers' names written on the survey materials (Fig 1). Pilot survey was

conducted four times and the questionnaire was revised and complemented its arrangement, form, some wording and so on. And the main survey was carried out for 15 days from June 24 until July, 8, 2001.

2. Selection of Variables

1) Dependent Variables

For dependent variables, based upon the health grades (A, B, C, D1, D2) for workers' health status finally judged by the doctor and recorded on the individual health screening record during 2000 regular health screening

test for industrial workers' health status, this study classified health grades into health group (A, B) and unhealth or disease group (C, D1, and D2) The health grade judgement standards for health status were as shown in (Table 1).

2) Independent Variables

For independent variables, this study tried to select the variables to represent each characteristics well, and largely organized them into the demographic variables and the health habit variables (Table 2).

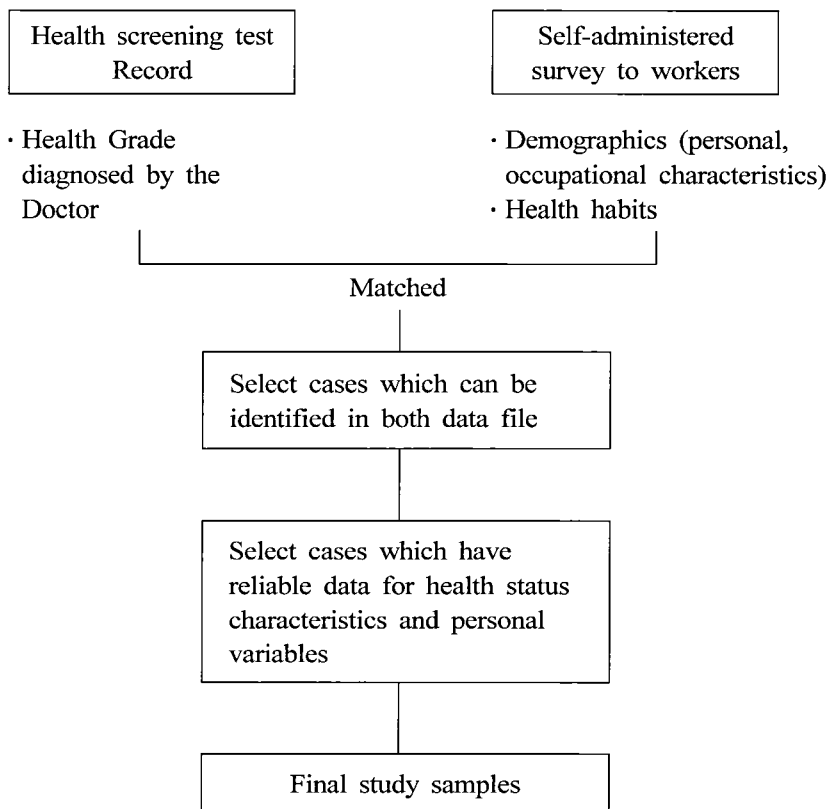


Fig 1. The Flow of Data Cleaning

Table 1. Criteria of Health Status Used by Screening Test

Health status	Criteria
Healthy Group	A excellently healthy worker
	B healthy worker
Unhealthy Group	C premature healthy worker
	D1 workers with occupational disease
	D2 workers with non-occupational disease

Table 2. Description of Variables

Characteristics	Variables
Dependent variable	Health status by screening test
Independent variables	
Demographic characteristics	Age, Gender, Marital status, Education, Duration of work
Health habits	Smoking Exercise Hours of sleep Eating between meals Eating breakfast Alcohol consumption BMI(Body Mass Index)

For workers' socioeconomic and demographic variables were age, gender, academic career, marital status, income, and duration of work were selected; for health habit variables, smoking, exercise, sleeping time, snack, breakfast, drinking, and fatness degree were employed in this study from Belloc and Breslow's study (1982).

3. Method of Analysis

In order to understand and review the socioeconomic and demographic factors and the health habit factors influencing the health status, which were investigated, based upon the year 2000 health screening test record, this study tried to make an analysis through three steps and the used frame is as follows (Fig. 2).

1) The Analysis of the 1st Step

This study tried to make a descriptive analysis on the distribution characteristics of study subject workers' socioeconomic and demographic variables, health habit variables, and health state variables.

2) The Analysis of the 2nd Step

In order to select the significant variables, which influenced health status, among socioeconomic and demographic variables and health habit variables, this study tried to do χ^2 -test.

3) The Analysis of the 3rd Step

In order to make the model explaining health status from the significant variables from the 1st step analysis results, this study tried to do a multiple logistic analysis.

The multiple regression model uses the minimum involution method of finding out the regression line to minimize the total sum

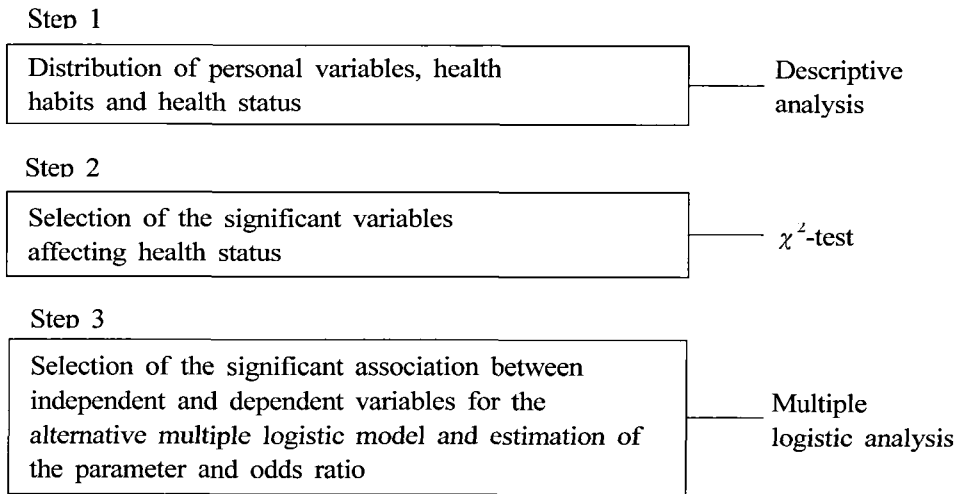


Fig 2. A Framework of Analysis

of error squares of observation values and expectation values, while the multiple logistic analysis uses the maximum-likelihood method for dichotomous dependent variables. Thus, this analysis was to find the line making expectation value most predictable. To represent the logistic analysis as a formula, it is as follows.

That is, when the likelihood of an individual's belonging to the unhealthy group is called "P" and this likelihood can be decided as 2 independent variables (Z_1, Z_2), P can be represented as Formula (1) (Anderson et al., 1980; Cohen & Cohen, 1983).

$$P = \frac{\exp(\beta_0 + \beta_1 Z_1 + \beta_2 Z_2)}{1 + \exp(\beta_0 + \beta_1 Z_1 + \beta_2 Z_2)} \dots\dots\dots(1)$$

β_i : coefficient of multiple logistic analysis (i = 1, 2)
 Z_i : the value of i-th independent variable (i = 1, 2)

At this time, the model, which uses the logistic transformation, is like the Formula (2) (Allison, 1984; Norusis, 1997).

$$\log \frac{P}{1 - P} = \beta_0 + \beta_1 Z_1 + \beta_2 Z_2 \dots\dots\dots(2)$$

β_i : coefficient of multiple logistic analysis (i = 1, 2)
 Z_i : the value of i-th independent variable (i = 1, 2)

In Formula (1), β_1 and β_2 are regression coefficients; in Formula (2), β_1 and β_2 indicate log odds (relative changes of dependent variables) when the values of Z_1 and Z_2 increase one unit (Allison, 1984).

III. Results & Discussion

1. Distributions of Demographic Characteristics, Health Habits, and Health Status

1) Distributions of Demographic Characteristics

Table 3 shows distribution of participants' demographic characteristics. Participants consisted of 82.4% of men and 17.6% of women. In case of age, 44.5% of workers were in the 30s between 30 to 39 years old, and

the percentage of the 30s was higher than the other age categories. Married workers were more than unmarried workers. Unmarried workers occupied 30.8% and married workers occupied 67.4%. The workers who graduated from the primary school were 1.4%, the workers who graduated from the middle school were 15.5%, the workers who graduated from the high school were 64.9%, and the workers who had college education or higher were 16.2%. Thus, most of study participants had high school or higher education.

Table 3. Distributions of Demographic Characteristics

Variable	Value	No.	%
Gender	Men	795	82.4
	Women	170	17.6
Age	yr < 20	44	4.6
	20 ≤ yr < 30	300	31.1
	30 ≤ yr < 40	429	44.5
	40 ≤ yr < 50	157	16.3
	50 ≤ yr	34	3.5
Marital status	Single	297	30.8
	Married	650	67.4
	No response	17	1.8
Education	Elementary school	13	1.4
	Middle school	150	15.5
	High school	626	64.9
	University	156	16.2
	No response	19	2.0
Duration of work	yr < 1	92	9.5
	1 ≤ yr < 5	374	38.8
	5 ≤ yr < 10	237	24.6
	10 ≤ yr < 15	172	17.8
	15 ≤ yr	79	8.2
	No response	11	1.1
	Total	965	100.0

Concerning duration of work, the workers whose duration of work in the present company was 1 and longer and shorter than 5 years were 38.8%, the workers whose duration of work was between 5 and longer and shorter than 10 years were 24.6%, the workers whose duration of work was between 10 and longer and shorter than 15 years occupied 17.8%, the workers who worked in the present company for longer than 15 years occupied 8.2%, and the workers whose service term was shorter than 1 year occupied 9.5%. The duration of 1 and longer and shorter than 5 years was the largest work duration category in this study.

2) Distributions of Health Habits

Employing the health habits used in Belloc and Breslow's study (1982) - smoking, exercise, sleeping hours, snack, breakfast, drinking, and BMI - this study examined workers' health habits. Table 4 presents numbers and percentages of participants' health habits.

The workers who currently smoked were 52.8%, the workers who was ex-smokers occupied 16.8%, and the workers who never smoked occupied 29.8%. In case of exercise, 28.5% of workers answered that they were regularly exercising and 71.5% of workers answered that they did not exercise. This means that although regular exercise is necessary for the workers who performed

simple jobs everyday, most of them were not accustomed to a regular exercise habit. In case of sleeping hours, regarding 7~8 hours per day as the most desirable sleeping hours, 71.4% of workers were within this boundary. The workers who answered that they regularly ate breakfast everyday occupied 8.8%; which was small percentage.

In case of eating between meals-snack, 46.5% of workers answered that they had snack almost everyday. In case of drinking, 14.2% of workers answered that they drank more than 3~4 times per week, 32.6% of workers answered that they drank roughly 1~2 times per week, and 52.7% of workers answered that they drank once per month or at a special time, or rarely drank. And, in case of workers' obesity, this study estimated BMI values using height and weight. Over 90% of workers came to the normal group, and 9.3% of workers were categorized to the obesity group (Table 4).

3) Distributions of Health Status

In case of the health grades diagnosed by medical doctors in the health screening test, this study classified them into two groups: the healthy group comprised the workers whose health grade A or B and they did not need the follow-up care like work conversion. The unhealthy group comprised workers who had health grade C, D1, or D2 and they needed the follow-up care. The

Table 4. Distributions of Health Habits

Variable	Value	No.	%
Smoking	Currently	510	52.8
	Formerly	162	16.8
	Never	288	29.8
	No response	6	0.6
Exercise	Never	690	71.5
	Regularly	275	28.5
Hours of sleep	6 hr or less	249	25.8
	7 ~ 8 hr	689	71.4
	9 hr or more	16	1.7
	No response	11	1.1
Eating between meals	Almost every day	449	46.5
	Rarely or occasionally	511	53.0
	No response	5	0.5
Eating breakfast	Almost every day	85	8.8
	Rarely or never	845	87.6
Alcohol consumption (times/wk)	3 ~ 4 drinks or more	137	14.2
	1 ~ 2 drinks	314	32.6
BMI [†]	Obesity	90	9.3
	Normal	875	90.7
Total		965	100.0

$$^{\dagger} \text{BMI} = \frac{\text{Weight (kg)}}{\text{Height}^2 \text{ (m)}}$$

Table 5. Distribution of Health Status

Variable	Value	No.	%
Health status	Healthy group (A,B)	780	80.8
	Unhealthy group (C,D1,D2)	185	19.2
Total		965	100.0

workers with health grade A and B, the healthy group were 80.8%, and 19.2% of

workers occupied the unhealthy group with health grade C, D1, and D2 (Table 5).

2. Relationships of Health Status With Demographic Characteristics and Health Habits

Health status by demographic characteristics and health habits were examined by Chi-square analysis with odd ratios. To identify relationships of health status with demographic characteristics and health habits, variables were transformed from continuous scales to binomial dummy scales (Table 6).

Table 6. Variables and Descriptions

Variable	Code	Description
Gender	0	Women
	1	Men
Education	0	High school and above
	1	below than high school
Marital status	0	Single
	1	Married
Age	0	below than 30 yrs
	1	30 yrs and above
Duration of work	0	below than 5 yrs
	1	5 yrs and above
Smoking	0	Never
	1	Currently, Formerly
Hours of sleep	0	7~8 hr
	1	6 hr or less, 9 hr or more
Eating breakfast	0	Almost every day
	1	Rarely or never
Eating between meals	0	Rarely or occasionally
	1	Almost every day
Exercise	0	Regularly
	1	Never
Alcohol consumption	0	Moderate or no use
	1	1 times/wk and over
BMI	0	Normal
	1	Obesity

1) Health Status By Demographic Characteristics

Table 7 presents health status by demographic characteristics based on the results of Chi-square analysis. Among the unhealthy group, men's health status was lower than woman's health status. Male workers occupied 21.5% and female workers occupied 12.7%. ($\chi^2=5.98$, $p<0.05$, Odds ratio=2.54). In case of age, compared with less than 30 years old workers, the workers whose ages were more than 30 years were 2.99 times more likely to be the unhealthy group ($p<0.01$). In case of marital status, compared with unmarried workers, married workers occupied higher percentage of the unhealthy group ($\chi^2=36.56$, $p<0.001$).

In terms of educational status, the workers who experienced lower education than high school occupied 28.7% of the unhealthy group and the workers who had the high school education or higher were 14.6%. The workers who were graduated from the high school or above occupied higher percentage in the unhealthy group ($\chi^2=12.44$, $p<0.01$). Compared with the workers whose duration of work was shorter than 5 years, the workers whose service term was longer than 5 years were 2.45 times more likely to be in the unhealthy group and the difference was statistically significant ($\chi^2=18.95$, $p<0.01$).

Table 7. Health Status by Demographic Characteristics

Variables	Unit: person (%)				
	Unhealthy Group	Healthy Group	Total	Odds ratio	χ^2
Gender					
Men	171(21.5)	624(78.5)	795(100.0)	2.54	5.98*
Women	20(12.7)	138(87.3)	170(100.0)		
Age					
30yrs and above	152(24.5)	468(75.5)	621(100.0)	2.99	36.56***
below than 30yrs	30(8.8)	314(91.2)	344(100.0)		
Marital status					
Married	153(23.5)	497(76.5)	650(100.0)	3.02	24.67***
Single	22(7.4)	275(92.6)	297(100.0)		
Education					
below than high school	47(28.7)	116(71.3)	163(100.0)	1.65	12.44**
High school and above	114(14.6)	668(85.4)	782(100.0)		
Duration of work					
5yrs and above	125(26.8)	341(73.2)	466(100.0)	2.45	18.95**
below than 5yrs	77(15.7)	411(84.3)	488(100.0)		

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

2) Health Status by Health Habits

Table 8 shows the Chi-square analysis results of health status by 7 health habits. There were significant differences in health status by smoking, breakfast, drinking, and BMI level; however, there was no significant difference in health status by exercise, hours of sleep, and eating between meals. In case of smoking, the workers who were current smokers or ex-smokers had a risk to be diagnosed as the unhealthy group 1.98 times greater than the worker who never smoked ($\chi^2=3.49$, $p<0.1$). In terms of breakfast, compared with the workers who had regular breakfast everyday, the workers who rarely

had breakfast had 2.96 times higher risk to be the unhealthy group ($\chi^2=4.98$, $p<0.001$). The workers who drank more than 1 time per week were 1.56 times higher to be diagnosed as the unhealthy ($\chi^2=3.91$, $p<0.05$). Concerning obesity, compared with the workers who belonged to the normal BMI group, the workers who were in the obesity group had about 2.45 times higher risk to be the unhealthy ($\chi^2=4.23$, $p<0.05$).

Accordingly, the workers who had regular breakfast, who drank a little bit or never drank, and who had a normal body weight based on BMI were more likely to belong to the healthy group (Table 8).

Table 8. Health Status by Health Habits

Variables	Unit: person (%)				
	Unhealthy Group	Healthy Group	Total	Odds ratio	χ^2
Smoking	130(19.4)	542(80.6)	672(100.0)	1.98	3.49*
Currently, Formerly	34(11.8)	254(88.2)	288(100.0)		
Never					
Exercise	134(19.4)	556(88.2)	690(100.0)	1.13	1.65
Never	56(20.5)	219(79.5)	275(100.0)		
Regularly					
Hours of sleep	47(18.8)	202(81.2)	249(100.0)	1.27	0.30
~6hr , 9hr ~	123(17.9)	566(82.1)	689(100.0)		
7hr ~ 8hr					
Eating between meals	84(18.8)	375(81.2)	449(100.0)	1.16	0.18
Almost every day	92(18.1)	419(81.9)	511(100.0)		
Rarely or occasionally					
Eating breakfast	158(18.7)	687(81.3)	845(100.0)	2.96	4.98***
Rarely or never	7(7.9)	78(92.1)	85(100.0)		
Almost every day					
Alcohol consumption	79(17.6)	372(82.4)	451(100.0)	1.56	3.91**
1 times/wk and above	99(19.4)	410(80.6)	509(100.0)		
Moderate or no use					
BMI	29(32.5)	61(67.5)	90(100.0)	2.45	4.23**
Obesity	144(16.4)	731(83.6)	875(100.0)		
Normal					

* p<0.1 ** p<0.05 *** p<0.001

The relationships between health habits and health status in this study were similar to the results in Metzner's study (1983). He examined health habits and health status to the 35~39 year-old adults dwelling in Tecumseh, the United States. Metzner (1983) reported that the coronary arterial heart disease had a high relationship with exercise and smoking habits, high blood pressure had a high relationship with obesity level, and

chronic bronchitis had a close relationship with snacking, exercise, smoking, and drinking habits. Huurre and Aro (2002) reported that even light smoking habit was significantly related to poor psychological well-being, allergy, migraine, and diabetes among young adults in Finish urban areas. They conducted a epidemiological follow-up with a case-control design to 16-32 young adults (N=697) and they recommended

counseling approach to encourage young adults to have desirable health habits.

Summing up the scores of 7 health habits based upon Table 6, I obtained the general health habit score ranging 0 to 7 points. The workers who had 5~7 points which came under a good health habit occupied 18.8%, and the workers who had 0~4 points which came under a bad health habit were about 81.2% (Table 9). Comparing with the result of Breslow and Enstrom's research (1980) about health habits among the adults dwelling in Alameda County, California, it was found that the persons who had 0~3 points occupied 16.2%, the persons who had 4~5 points were 53.8%, and the persons who had 6~7 points were 30.7%. That is, compared with the workers in this study, they had 5~15 times better health habits.

The result of this study that the participants did not show desirable levels of health habits was also found in Lee's research (1993). She examined 5 health habits (drinking, smoking, obesity, exercise, and sleeping habits) in the national survey of health awareness & behavior. In Lee's (1993) research, it was found that the workers who had 0~2 points of health habits were 37.5%, the workers who had 3 points were 38.6%, and the workers who had 4~5 points 23.8%. That is, workers who had good health habits were only under 25%.

Table 9. Distributions of General Health Habit Scores

Health score	No.	%
0 ~ 4	784	81.2
5 ~ 7	181	18.8
Total	965	100.0

3. General Health Habit and Demographic Characteristics Affecting Health Status

Table 10 shows the result of logistic regression analysis with health status as the dependent variable and age, marital status, duration of work, and general health practice points as independent variables. These independent variables were statistically significant in the Chi-square analysis shown in Table 7 and 8. If antilog is applied to this logistic regression coefficient, the values of log odds indicate relative risk to belong to the unhealthy group (Cohen & Cohen, 1983). Compared with the workers who got a good health habit, the workers whose health habit score was low who had a bad health habit had 2.08 times log odds to become the unhealthy group when the influence of other variables on health status was controlled ($p < 0.05$). Compared with the workers whose duration of work were less than 5 years, the workers whose service term were more than 5 years had 1.63 time higher log odds to belong to the unhealthy group ($p < 0.05$).

From the results of Logistic analysis of

this study, general health habits were primary factors predicting health status. Huurre and Aro (2002) also reported that poor health habits affected life-long health status in an epidemiological study about young adults' health habit and disease incidence. They indicated that the effects of chronic poor health habits affected not only physical health status but also psychological well-being. For health habit improvement, Chernof and colleagues (1999) suggested that counseling approach to guide and encourage community adults to positively change their health habits. In their study on counseling intervention to walk-in patients in a hospital, the people who took counseling hours with experts had 67% lower acute health problems than the people who did not took the counseling hours.

IV. Conclusion

This study identified the health habits affecting health status of industrial workers. Data was collected from 965 workers in 58 companies at Buchon. The research conducted a self-administered questionnaire survey and obtained the workers' health examination records. The results were as follows:

1. Among 965 respondents, men were 82.4%, women were 17.6%, 44.5% were of the 30~40 age group, the married were 67.4%, the single were 30.8%, high school graduates were 81.1% and 38.8% were of people who worked between 1 and 5 years
2. As far as the seven health habits, current

Table 10. Estimated Logistic Regression Coefficient of Health Habits Predicting Health Status

Variables	Coefficient(β)	Standard Error	EXP(β)
Constant	-2.9965	0.2894	
General health habit score			
5~7	0.7635	0.3347	2.0788*
0~4			
Age			
below than 30yrs	0.3144	0.3657	1.3469
30yrs and above			
Marital status			
Single	0.4876	0.3374	1.8995
Married			
Duration of work			
below than 5yrs	0.4476	0.3208	1.6334*
5yrs and above			

* $p < 0.05$

smokers were 52.8%, people who regularly exercise was 28.5%, 7~8 hour of sleep, on the average were 71.4%, people eating breakfast nearly every day were 8.8%, and people eating between meals almost every day were 46.5%. Heavy drinkers who drink 3~4 times or more per week were 14.2%, 1~2 times per week were 32.6% and the obese were 9.3%.

3. Health status of A and B, estimated by doctors in the health examination were 80.8% and C, D1, D2, the unhealthy were 19.2%. For men, those who reported more than women in unhealthy groups and the results regarding health status reflects those for gender, educational level and age. That is to say that, lower educational level group and over 30 years of age group perceive their health to be worse than the higher educational level and under 30 age group. And these differences were statistically significant.
4. The relationship between health habits and health status were examined based on the odds ratio. Current smokers had a consistently worse health status than a non smokers with a 1.98 odds ratio. The workers who reported eating breakfast rarely or never were more associated with the unhealthy group than the regular breakfast eating group with a 2.96 odds ratio. One or more drink per week had a

worse health status than a never or a little drinker with a 1.56 odds ratio.

5. General health habit score and duration of work were selected as significant factors influencing health status from the result of logistic regression analysis. According to the results of this model, the odds ratio of good health status was 2.08 for good health habit score, 1.63 for workers who worked five years or more duration at work.

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ABSTRACT

This study identified the health habits affecting health status of industrial workers. Data was collected from 965 workers in 58 companies at Buchon. The research conducted a self-administered questionnaire survey and obtained the workers' health examination records. The results were as follows:

1. Among 965 respondents, men were 82.4%, women were 17.6%, 44.5% were of the 30~40 age group, the married were 67.4%, the single were 30.8%, high school graduates were 81.1% and 38.8% were of people who worked between 1 and 5 years

2. As far as the seven health habits, current smokers were 52.8%, people who regularly exercise was 28.5%, 7~8 hour of sleep, on the average were 71.4%, people eating breakfast nearly every day were 8.8%, and people eating between meals almost every day were 46.5%. Heavy drinkers who drink 3~4 times or more per week were 14.2%, 1~2 times per week were 32.6% and the obese were 9.3%.

3. Health status of A and B, estimated by doctors in the health examination were 80.8% and C, D1, D2, the unhealthy were 19.2%. For men, those who reported more than women in unhealthy groups and the results regarding health status reflects those for gender, educational level and age. That is to say that, lower educational level group and over 30 years of age group perceive their health to be worse than the higher educational level and under 30 age group. And these differences were statistically significant.

4. The relationship between health habits and health status were examined based on the odds ratio. Current smokers had a consistently worse health status than a non smokers with a 1.98 odds ratio. The workers who reported eating breakfast rarely or never were more associated with the unhealthy group than the regular breakfast eating group with a 2.96 odds ratio. One or more drink per week had a worse health status than a never or a little drinker with a 1.56 odds ratio.

5. General health habit score and duration of work were selected as significant factors influencing health status from the result of logistic regression analysis. According to the results of this model, the odds ratio of good health status was 2.08 for good health habit score, 1.63 for workers who worked five years or more duration at work.

In summary, good health habits were associated with good health status. In particular, the workers who had 5 or more desirable health habits had a significantly better health status than the workers who had 4 or less than 4 good health habits. Therefore, in order to provide the health promotion programs to workers it is necessary to organize clear health management plans based on effective health education and health service perspective. If further research examines health habits and health status using a prospective study design, More precise findings for health promotion program development in the worksite and worksite health management planning.

Key Words : Health status, Health habits, Industrial workers