

Levels of Wellness, Health Literacy and Health Promoting Behavior Related Factors among Industrial Workers

So-Young Lee¹, Ju-Young Hong¹

¹Nursing Department, Kyungwoon University, Gumi, 39160, Korea

ABSTRACT

Background/Objectives: The aim of this comparative descriptive study is to identify in the characteristic and health promoting behavior of employees who work for the workplace.

Method/Statistical Analysis: The subjects were 142 industrial workers in D, K, U city. Questionnaires were used to measure wellness, levels of health literacy and health promoting behavior. The data were collected from April 15, 2018 to May 15, 2018. Regression analyses were carried out to study the relationship of wellness, health literacy and health promoting behavior with Industrial workers, data were analyzed t-test, ANOVA, Pearson Correlation Coefficient by SPSS win 21.0 program.

Findings: Among the participants in the study, 55% were in 40s and 56.3% were manufacturer worker. The mean score of Wellness was 2.86, Health literacy was 80.53, Health promoting behavior was 2.78. The ability to understand health information was 18 points in 3 areas and the average was 80.53 points when converted into 100 points. The factors that have significant relationships with wellness were age, working hours, next health literacy were educational, manufacturer worker and subjective health status. Health promoting behavior factors were age, smoking, shift work, night work, working hours, subjective health status and subjective safety status. Factors affecting the health promoting behavior were support from wellness ($\beta = .561$, $p < .001$) and night work ($\beta = .449$, $p = .002$). The explanatory power of these variables was 40.9%. The major factor influencing health promoting behavior intention was wellness and night work.

Improvements/Applications: These results suggest that wellness improvement programs should be focused on developments to improve the quality of Health promoting behavior.

Keywords: *Wellness, Health literacy, Health promoting behavior, Industrial workers, Education*

Introduction

Health is an important source supply to economic and social well-being^[1], decisive determinant factor of steady workforce participation, a lot of research shows that poor health often precedes early retirement^[2,3]. The health promotion behavior is a high level of health care process in the process of changing personal habits or circumstances^[4]. In particular, as many workers are taking a long time at the company, we need a way to induce diverse health promotion activities^[5]. Therefore,

many workers are under a lot of stress due to their various social roles and require care and need for medical services. Male workers are less aware of their own health than women workers because of the lack of practice of health management practices such as smoking cessation, stress management, and regular exercise^[6]. Especially male workers are bad socio-economic group, associated with poor health and high levels of chronic disease^[7]. Health promotion behavior refers to behavior actively responding to the environment in order to reach a high standard by lifestyle improvement, act to promote the level of well-being, self-achievement and self-realization^[8,9]. Also, it is important to investigate factors that affect workers health management improvement, these factors are physical, mental and spiritual integrity are organically integrated into health and made in a way that is optimal called Wellness^[10,11]. Because workers

Corresponding Author:

Ju-Young Hong
Professor, Nursing Department,
Kyungwoon University, Gumi Korea
Email: barn007@naver.com

wellness spend a lot of time at long-term task company, improvement in individual health and quality of life is improved, job satisfaction, reduction in absenteeism, reduction of enterprise productivity as we acquire it, worker wellness management is necessary^[12]. In other words, many workers should be able to lead a better way of life and health promotion activities. It is also necessary to have the ability to acquire, think, and understand health related information in order to make informed decision making when using various health services, and this is called health literacy^[13]. The acceptance of health information understanding ability plays a useful role in dialogue with medical personnel. As it was recognized by assets that can control health and social, environmental and health problems, it gained broad attention in the field of health promotion for individuals and society as a whole^[14].

The purpose of this study was to investigate the relationship between health information understanding ability and health information comprehension ability, and to utilize it as basic data to promote more effective health promotion behavior through development of correct health information cognition enhancement.

Materials and Method

The purpose of this study is to identify the wellness, health literacy and health promoting behaviors of industrial workers and to clarify the relationship among these variables.

1. Identify the degree of wellness, health literacy, and health promotion behavior of Industrial Workers
2. Identify differences in wellness, health literacy, and health promoting behavior according to general characteristics of industrial Workers

Design: This research is descriptive and seeks to understand the recognition of and related causes of wellness, health literacy and health promoting behavior of various industrial workers.

Sample: The subjects of this study were various industrial workers in D, K, U city. The number of subjects was estimated using G * power 3.12 program. 95 and significance level .05, respectively. A total of 142 subjects were studied considering the dropout rate.

Instruments

Wellness: The wellness consisted of 18 items that were revised of Worker Wellness Measurement Tool

developed by Choi et. al.^[15]. The subjects were Physical area, Emotional area, Social area, Cognitive area, Occupational area, and consisted of 5 points from 'not at all' to 'always'. The higher the score the higher the wellness. Cronbach's $\alpha = .91$ in Choi et al. study and Cronbach's $\alpha = .92$ in this study.

Health Literacy: Health literacy is the ability to acquire, process, and understand basic health information and services that individuals need to make the right health decisions in 2009, Health People 2010. In this study, Kang Su-jin^[16] was measured by Korean Health Literacy Instrument (KHLI) to measure functional, mutual and evaluative health literacy for adults. Cronbach's alpha = .82, and Cronbach's alpha = .709 in the present study.

Health Promoting Behaviors: The health promoting behaviors consisted of 26 items that were revised and supplemented by 40 items of Health Promoting Life Style(HPLP) developed by Walker et. al.^[17]. The subjects were positive self-image, self-realization, regular exercise, diet management, interpersonal support, stress management, and consisted of 4 points from 'not at all' to 'always'. The higher the score the higher the health promotion behavior. Cronbach's $\alpha = .84$ in the minimum LA(2006) study and Cronbach's $\alpha = .881$ in this study.

Data Collection

The data collection period was from April 15, 2018 to May 15, 2018 and explained the research background, purpose, and procedure at the time of data collection and voluntarily agreed, and explained that the questionnaire response can be discontinued at any time. Also, we explained that the records that can identify the subject are kept confidential and will be discarded after the end of the research. 153 of the total 160 were collected, and 142 of them were analyzed except for those who responded unfairly or were abandoned.

Data Analysis

The collected data were analyzed using SPSS 21.0 program. We analyzed the general characteristics of the subjects, wellness, health literacy and health promoting behaviors using descriptive statistics such as frequency, percentage, and mean standard deviation. The differences of the variables according to the general characteristics of the subjects were analyzed by t-test and ANOVA. Scheffe's test was used for the post test. Regression analyses were carried out to study the relationship of wellness, health literacy and health promoting behavior.

Results and Discussion

Results of study concerning demographic characteristics of the samples, demonstrated that out of 142 participating in the study, 100% them were male. In total, 78.2% them married, 38.7% of the workers were between 40 to 49 years old. Furthermore, 43.7% of the workers were high school graduation, 64.8% were alcohol drinking and 56.3% were smoking. A total of 70.4% of the workers shift pattern working and 71.1% had night working. Also, 56.3% of the workers in manufacturer worker. Of all the workers, 45.1% of them worker 8 hours a day and 26.1% of the workers had been under total working experience more than 26 years. It was subjective health status that most of them 48.6% had experienced normal status and 59.2% of them had been subjective safety status. Furthermore, 31.7% of the workers are salary from both 40 million won and 49 million won, 94.0% of them had no health problem[Table 1].

In terms of the general characteristics of the subjects, the wellness differed from the age(F=3.154, p>.016), working hours(F=11.653, p>.001). Scheffe`s test results were more meaning for 8 hours working

than 9-10 hours and 11hours or more. The health literacy varied according to education(F=9.080, p>.001), working setting(t=-2.627, p=.010), subjective health status(F=3.019, p=.020). And Health promoting behaviors showed differences in age(F=3.727, p=.007), smoking(t=0.394, p=.035),shift work(F=-2.448, p=.016), night work(t=-3.174, p=.002), subjective safety status(F=4.924, p=.009). Scheffe`s test results were more meaning for the higher self - conscious awareness, the more significant differences are seen with health promoting behaviors[Table1].

The wellness was 2.86 out of 5, health literacy was 80.53 out of 100, and health promoting behavior was 2.78 out of 4. Health promotion behaviors showed a statistically significant correlation with wellness(r= .595, p< .05), it did not correlate with health literacy[Table2].

Multiple regression indicated two predictors wellness and night work of health promoting behaviors in industrial workers[Table 3]. Health promoting behaviors showed that wellness(B = .441, S.E. = .054, t = 8.233, p < .001) and night work(B = .383, S.E. = .121, t = 3.170, p = .002) were significantly positively related. These variables explained 40.9% of the variance.

Table 1: Correlation between the Level Wellness, Health Literacy and Health Promoting Behavior (N = 142)

Characteristic	Categories	N(%)	Wellness		Health Literacy		Health Promoting Behavior	
			M ± SD	t/F (p)	M ± SD	t/F (p)	M ± SD	t/F (p)
Marital status	Unmarried	31(21.8)	2.89 ± .333	.544 (.588)	.529 ± .180	-.967 (.335)	2.78 ± .232	-.100 (.921)
	Married	111(78.2)	2.85 ± .528		.551 ± .153		2.78 ± .421	
Age	20-29	13(9.2)	2.91 ± .264	3.154 (.016)	.525 ± .178	.193 (.942)	2.84 ± .146	3.727 (.007)
	30-39	24(16.9)	2.55 ± .351		.555 ± .169		2.57 ± .387	
	40-49	55(38.7)	2.92 ± .512		.551 ± .160		2.74 ± .411	
	50-59	44(31.0)	2.93 ± .555		.531 ± .153		2.91 ± .371	
	≥ 60	6(4.2)	2.98 ± .169		.564 ± .158		2.96 ± .296	
Education	High school	62(43.7)	2.85 ± .481	.447 (.641)	.480 ± .159	9.080 (.000) a, b,c<d	2.75 ± .339	.388 (.679)
	College	31(21.8)	2.80 ± .490		.544 ± .132		2.80 ± .438	
	≥ university	49(34.5)	2.91 ± .511		.624 ± .140		2.81 ± .414	
Alcohol drinking	Yes	92(64.8)	2.82 ± .447	-.413 (.680)	.552 ± .147	.796 (.428)	2.76 ± .352	-.966 (.336)
	None	50(35.2)	2.88 ± .569		.528 ± .179		2.83 ± .445	
Smoking	Yes	62(43.7)	2.80 ± .426	-1.358 (.177)	.546 ± .154	.156 (.876)	2.70 ± .358	.394 (.035)
	None	80(56.3)	2.91 ± .535		.542 ± .164		2.84 ± .400	
Shift work	Shifting	42(29.6)	2.75 ± .544	-1.648 (.104)	.526 ± .168	-.859 (.392)	2.66 ± .377	-2.448 (.016)
	No shift	100(70.4)	2.91 ± .462		.551 ± .155		2.83 ± .382	

Conted...

Night work	Yes	41(28.9)	2.80 ± .510	-1.012	.532 ± .166	-.555	2.63 ± .349	-3.174
	None	101(71.1)	2.89 ± .484	(.313)	.549 ± .157	(.580)	2.85 ± .385	(.002)
Work setting	Manufacturer worker	80(56.3)	2.84 ± .549	-.650	.514 ± .168	-2.627	2.73 ± .411	-1.686
	Office job	62(43.7)	2.89 ± .408	(.517)	.582 ± .139	(.010)	2.84 ± .347	(.094)
Working duration (year)	1-10	41(28.9)	2.83 ± .578	.301 (.877)	.544 ± .157	.403 (.807)	2.88 ± .455	1.241 (.296)
	11-15	20(14.1)	2.97 ± .493		.525 ± .202		2.84 ± .373	
	16-20	20(14.1)	2.85 ± .473		.577 ± .152		2.73 ± .328	
	21-25	24(16.9)	2.86 ± .380		.523 ± .134		2.74 ± .303	
	≥26	37(26.1)	2.84 ± .478		.549 ± .159		2.70 ± .384	
Working hours (hr/day)	≤ 8	64(45.1)	3.05 ± .484	11.653	.537 ± .162	1.468	2.86 ± .372	3.005 (.053)
	9-10	37(26.1)	2.81 ± .435	(.000)	.581 ± .168	(.234)	2.76 ± .269	
	≥ 11	41(28.9)	2.61 ± .436	a>b, c	.521 ± .143		2.68 ± .472	
Salary (won)	≤ 3,000	47(33.1)	2.84 ± .486	1.528 (.210)	.540 ± .163	.093 (.964)	2.78 ± .391	.088 (.966)
	3,100-3,900	12(8.5)	2.70 ± .245		.560 ± .126		2.83 ± .297	
	4,000-4,900	45(31.7)	2.81 ± .511		.538 ± .170		2.77 ± .358	
	≥ 5,000	38(26.8)	2.99 ± .520		.551 ± .155		2.78 ± .448	
Subjective Health status	Very good	4(2.8)	3.16 ± .029	1.565 (.187)	.569 ± .027	3.019 (.020)	3.22 ± .257	3.960 (.005)
	Good	60(42.8)	2.92 ± .497		.500 ± .158		2.87 ± .273	
	Normal	69(48.6)	2.77 ± .485		.580 ± .160		2.68 ± .437	
	Bad	5(3.5)	2.95 ± .489		.633 ± .100		2.60 ± .310	
	Very bad	4(2.8)	3.17 ± .588		.444 ± .078		2.95 ± .557	
Health problem	Yes	48(33.8)	2.94 ± .461	1.365	.531 ± .190	-.628	2.86 ± .419	1.726
	No	94(66.2)	2.82 ± .504	(.174)	.550 ± .141	(.532)	2.74 ± .366	(.086)
Subjective safety status	Very high	9(6.3)	3.03 ± .408	2.994 (.053)	.561 ± .093	.183 (.833)	3.16 ± .301	4.924 (.009) a>b,c
	high	84(59.2)	2.92 ± .440		.537 ± .168		1.77 ± .362	
	Normal	49(34.5)	2.73 ± .564		.552 ± .154		2.74 ± .412	
	Low	-	-		-		-	
	Very low	-	-		-		-	

Table 2: Difference of Level Wellness, Health Literacy and Health Promoting Behavior according to demographic characteristics (N = 142)

	Wellness r(p)	Health Literacy r(p)	Health promoting behavior r(p)
Wellness r(p)	1		
Health Literacy r(p)	-.025(.764)	1	
Health promoting behavior r(p)	.595** (p<.05)	-.094(.264)	1

Table 3: Predictors of industrial workers Health Promoting Behaviors

Various	B	SE	β	t	p
(Constant)	1.271	.273		4.665	.000
Wellness	.441	.054	.561	8.233	.000
Health Literacy	-.194	.163	-.080	-1.189	.237
Night work	.383	.121	.449	3.170	.002
R ² =.447 Adjusted R ² =.409 F=11.834, p<.00, Durbin-Watson= 1.78					
*p< .05, **p<.01					

Conclusion

Considering the findings of the present study, and regarding of health promoting behaviors, wellness in industrial workers which impact on health promoting behaviors and quality of life these them, makes health promoting behaviors more comfortable. That is, the more increase in the level of wellness, the more adoption of health promoting behaviors in industrial workers. Therefore, given the role of wellness life style in improving health behaviors in industrial workers, it is important that healthcare providers adopt measures to improve their industrial workers positive health behavior and motivate them.

Health promoting behaviors play a key role in wellness and can enhance an individual's physical, social, and psychological satisfaction. Considering the findings of the present study, and regarding of health promoting behaviors, wellness in industrial workers which impact on health promoting behaviors and quality of life these them, makes health promoting behaviors more comfortable. That is, the more increase in the level of wellness, the more adoption of health promoting behaviors in industrial workers. Therefore, given the role of wellness life style in improving health behaviors in industrial workers, it is important that healthcare providers adopt measures to improve their industrial workers positive health behavior and motivate them. Health promoting behaviors play a key role in wellness and can enhance an individual's physical, social, and psychological satisfaction.

Namely point is that it should be approve that industrial workers with a longstanding health promotion behavior condition may adapt objectives and tasks of their job to their condition. Suggests that it is necessary to revise and supplement the tools to assess the ability of wellness to comply with the current situation of medical institutions, and to study the difference in wellness, health literacy, and health promoting behavior according to the night working.

Since this study did not focus on interventions, future studies need to focus on the exploration of the types of nursing care and health services that may be most effective in promoting healthy behaviors in industrial workers. This study suggests that it is necessary to revise and supplement the tools to assess the ability of wellness to comply with the current situation

of medical institutions, and to study the difference in wellness, health literacy, and health promoting behavior according to the night working. Since this study did not focus on interventions, future studies need to focus on the exploration of the types of nursing care and health services that may be most effective in promoting healthy behaviors in industrial workers.

Ethical Clearance: Not required

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