

Effects of Work Environment on Job Satisfaction and Spontaneity Care Workers at Social Welfare Facilities

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Abstract

Purpose - This purpose of this research is to verify the influence of the care workers' environment on their job satisfaction and on their voluntary behavior.

Research design, data, and methodology - Data were collected from care workers at elderly medical and home care facilities in Korea in Seoul and Kyung-ki. Of 367 total respondents, 285 responses were used. This study performed exploratory factor analysis in order to verify the validity and credibility of the data. Regression analysis was conducted to verify the influence of the working environment, which encompasses the worker's relationship with the agency and with the elderly, on job satisfaction.

Results - The hypothesis results were: First, from analyzing the influence of the working environment on the worker's job satisfaction, both relationship with the agency ($p < .001$) and relationship with the elderly ($p < .05$) positively affect job satisfaction; second, the exploratory analysis verifies the influence of the working environment on job satisfaction.

Conclusions - The results indicate that the relationship with the agency ($p < .001$) and relationship with the elderly ($p < .001$) both positively affect the voluntary behavior of the workers.

Keywords: Care Worker, Job Satisfaction, Voluntary Behavior, Working Environment.

JEL Classifications: C33, M11, N14.

1. Introduction

Social welfare system required in the modern society has different features from general companies and administrative organizations, in a regard that it should provide suitable service for families, communities as well as individual's social wants in

order to provide independent and satisfactory lives.

Social welfare organization is a system which provides intangible human services. Therefore, it needs voluntary act to emphasize cooperation among the members than any other organizations(Choi, 2007). Elderly care facilities run welfare programs and provide the recipients living convenience, nursing, physical therapy and etc. Thus, more voluntary service is needed overtime. Care worker is human resource who plays a key role in providing service directly to the recipients in the elderly care facilities. Their job satisfaction and voluntary service overtime have an effect on the image of the care facilities as well as the evaluation of the service. Therefore, studies on the environment which affect the care workers' sense and behavior towards them are needed.

Report of UN states that the aging society has more than 7% of elderly over 65 in the population, and the aged society has more than 14% of elderly over 65. Aging population is a global trend. However, Korea's low fertility rapidly led the country to become the aging society since 2000. Korea is expected to be the aged society in 2019, super-aged society in 2026 with more than 20% of the elderly in the population, and by 2050 it is expected to have the highest elderly population rate of 38.2%(National Statistical Office, 2008).

According to the recent future population projection from National Statistical Office, people of age 65 or older were 545 million(11%) in 2010, and among them, age over 85 of the population is expected to grow from 37 million(0.7%) to 448 million(10.2%) in 2060. Moreover, the aging population is expected to grow in annual average rate of 4% until 2020, and when baby-boomer generation approach the elderly stage in 2020~2028, the aging population will increase rapidly to annual average rate of 5% and slowdown from then(National Statistical Office, Future Population Projection, 2011).

Dividing the elderly into age category, age 65-74 will decrease from 62.4% in 2010 to 37.7% in 2060. Age 75-84 will increase from 30.8% in 2010 to 36.9% in 2060, and age over 85 will increase from 6.8% to 25.4% in 2060 by 3.7 times. Population ratio of each age category increases as the baby-boomer generation enters the elderly stage. Ratio of age 65-74 will increase from 57.6% in 2020 to 60.0% in 2030 and then decrease. Age 75-84 will increase from 29.6% in 2030 to 38.5% in 2040, and age over 85 will increase from 12.6% in

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2040 to 20.6% in 2050(National Statistical Office, Future Population Projection, 2011).

This means that the elderly who needs long-term recuperation increases due to the longer average life span. Thus, the government tries to solve the problems in elderly care by helping the care workers who provide care service by having enforced Elderly Long-Term Care Insurance System since July, 2008. After completing normal course of study, they can acquire geriatric care worker license and be hired by home care elderly facilities and elderly care facilities to take care of the seniors with long-term care benefits(Ministry of Health and Welfare, 2011).

The government has reviewed long-term care policy to prepare for the aging society since 2000. In September 2005, Elderly Care Insurance Act and Assuring Elderly Care Act were to be passed by the National Assembly. During the process, the word 'care' changed into 'long-term care' and the term 'Elderly long-term care' came into use, as Long-Term Elderly Care Insurance Act was passed in April, 2007. The term 'long-term care' has been used for a long time in gerontology study abroad, and means providing daily life service to the elderly who needs long-term care with chronic disease and disorder due to aging(Williams et al., 2013).

Moreover, staffing standard was reinforced as long-term care insurance system was enforced. It was to prepare for the change in residents who have severe geriatric illness. According to the standard for workers, 1 care worker should be placed for 2.5 residents in skilled nursing facility(Ministry for Health, Welfare and Family Affairs, 2008). However, in reality 1 care worker takes care of 10 residents(existing facilities, exemptions). The number of care facilities and elderly home care facilities increased explosively from 2,594 in 2007 to 9,541 in October, 2008. By the end of 2013, 15,704 private facilities flooded with problems of excessive competition over users, collusion between care facilities, waste of financial insurance by unfair insurance claim and etc. Inefficient management in excessive private facilities can cause deterioration in the quality of life of the elderly and wrong perception of social welfare. Therefore, proper human

resources training and placement should be made to provide the users appropriate service.

The rate of approving long-term care shows that by the end of 2013, 686,000 which is 11.1% of 6,190,000 elders over 65, applied for long-term care. Among them, 540,000 were evaluated and 378,000 elders were approved in rating(1-3 rating). Approving rate of the elderly population increased from 5.4% in 2009 to 6.1% in 2013. The causes are the increase of latter aging population and the appeasement policy of approving standard(Ministry of Health and Welfare, 2013; Statistical Yearbook of National Long-Term Care Insurance, 2014).

Long-term care insurance payment was 3,523.4 billion won by the end of 2013 according to yearly care payment(patient charge+corporation charge) of Long-term Care Insurance. Corporation charge was 3,830 billion won and the rate was 87.5%. Recipients' monthly payment for a person increased by 4.2% than 2012 with 996,714 won.

However, care workers in elderly home care service have difficulties in working 8 hours a day and part-time as well as getting low payment. Due to the excessive supply of visiting care facilities, care workers cannot receive fixed amount of income and thus get low payment(Ministry of Health and Welfare, 2009).

In this sense, job satisfaction and behavior of workers related with working environment is an important theme. The working conditions of care workers are poor. The treatments as low payment, excessive workload as well as job stress and dissatisfaction decrease the morale of care workers resulting in inadequate service. To solve this problem, this study sets up a purpose in proposing application plan for the strategic aspect of social welfare facilities and confirms the influence of working environment on care worker's job satisfaction and voluntary act through hypothesis testing with practical survey.

<Table 1> Elderly Welfare Facilities in Kind under Ministry of Health and Welfare

Subject	Form	Facilities in Kind		Department	Related statute
Elderly	Living	◦ Residence	• Nursing facilities, Senior congregate housing	Division of Long-term Care Insurance Management	Article 31, Welfare of the Aged Act
			• Elderly welfare housing		
		◦ Medical care	• Elderly nursing facilities		
			• Senior nursing congregate housing		
	Usage	◦ Home welfare	• Elderly home care facility(home care service, day and night care, short-term protection, visiting bathing service)	Division of Senior Policy	
		◦ Leisure	• Seniors Welfare Center		
			• senior citizen center, school for the elderly, rest center for the elderly		
		◦ Elder Protection Institution			

Source: Ministry of Health and Welfare (2014), partial amendment.

2. Theoretical Background

2.1. Social Welfare Facilities

Social welfare facility is an institution built for the purpose of "social welfare business" according to Social Welfare Services Act of Article 2 (Ministry of Health and Welfare 2012). An institution is defined as a social welfare facility according to whether or not it does practical social welfare business, not by subjective purpose of the operator. Social welfare facility is a business aiming volunteer activities, operating welfare facilities and support related to various welfare businesses.

This study investigates job satisfaction and voluntary behavior of care workers. Thus, care workers who work in elderly care facilities and elderly home care service facilities (visiting home care service, day and night care, short-term protection, visiting bathing service) are the subjects of the study. <Table 1> shows the categorization of the subjects among many kinds of elderly welfare facilities under Ministry of Health and Welfare.

Different from the categorization of social welfare facilities by Welfare of the Aged Act, the facilities established by Long-term Care Elderly Act are classified in its own way.

Regarding the current condition of long-term care facilities according to "2013 Statistical Yearbook of National Long-Term Elderly Care Insurance" by Ministry of Health and Welfare, there were 15,704 long-term care facilities, 11,056 home care service facilities (70.4%) and 4,648 facilities (29.6%) at the end of 2013.

The current situation of human resource in long-term care facilities by the end of 2013 shows that there are 252,663 standard care workers, which increased by 8.2% compared to the previous year. The number of social workers was 7,506 which increased by 11.2% than 2012, and the number of practical nurse was 7,552 which increased by 15.1% than 2012. Generally, the workers are increasing, but nurses decrease every year since 2009 (Ministry of Health and Welfare, 2014).

Care workers take up large part of the number of people among the employees in long-term care facilities. Their job satisfaction and service for the recipients influence not only the image of the facility but also the assessment of the service's quality. Thus, the research on the working environment which affects their sense and behavior towards the recipients is required.

2.2. Care Worker

Care workers are the people who give physical and mental social care to those who cannot live on their own and receive long-term care benefits by Senior Medical Welfare Facilities or Elderly Home Care Facility (Ministry of Health and Welfare, 2014). Since July, 2008 when Elderly Long-term Care Insurance System was executed, those who complete a set amount of course of study were given national license, in order to train advanced care workers with skill and knowledge. However, by the end of 2009, the standard became stricter for the care workers to get certified. The criteria is completing 240 hours of the

course (80 hours for theory, 80 hours for practical exercise, 80 hours for practice) and passing an examination.

Moreover, supplementary training became mandatory, and the education institution changed from reporting system to appointing system which created legal basis for the assessment and operating standard of the education institution.

Due to Elderly Long-term Care Insurance System, the government made recruitment of care workers compulsory according to Article 9 of the Senior Citizens Act revised in February, 2008.

According to Senior Citizens Act, Senior Medical Welfare Facilities (except geriatrics hospitals) have two categories: Elderly Care Facilities (more than 10 people), and Senior Nursing Congregate Housing (more than 5, less than 9 people). Elderly Care Facilities should appoint 1 care worker for 2.5 seniors and Senior Nursing Congregate Housing should appoint 1 care worker for 3 seniors. However, to point out, the criteria of workers have been strengthened after Long-term Care Insurance System was established. Furthermore, facilities established prior to 2008. 4. 4 were delayed for 5 years, but even those facilities should appoint 1 care worker for 2.5 recipients by 2013. 4. 3.

Geriatric Care Outline which is standardized teaching material for care workers in 2014 mentions that Care Service aims at improving physical function and quality of life of elderly over 65 or those who have senile disease under 65 by providing them planned and specialized service. The principle of the care service is that the care workers should improve or maintain patient's physical function and support their daily life needs and psychological, emotional needs, in a purpose for them to have a comfortable aged life (Ministry of Health and Welfare, 2014).

Thus, studies on creating working environment which leads job satisfaction and voluntary behavior of care workers are necessitated.

2.3. Working Environment

Working environment of a care worker is similar to that of a social worker, but getting certified as a care worker is relatively easier than as a social worker. As Senior Long-term Care Insurance System becomes effective, it strengthened staffing standard in elderly care facilities. It appointed 1 care worker for 2.5 recipients in skilled nursing facilities by preparing more workers, and 1 care worker for 4.3 recipients in visiting home care service facilities (Ministry of Health and Welfare, 2008).

2,594 care facilities and home care facilities in 2007 increased to 9,541 facilities in October, 2008 and flooded with 15,704 facilities by the end of 2013. Problems came up, such as excessive competition over users, collusion between care facilities, and etc. and inefficient operation of the facilities could lower the quality of seniors' life. Thus, the necessity of training the workers and assigning them to proper positions is suggested, for the problems may negatively influence the conception of social welfare. Home visiting care service facilities hire the care workers in temporary position to solve the financial distress which leads to employment instability and low wage. After adopting Senior Long-term Care Insurance System,

long-term care facilities increased, but the entrance rate is very low with 76.6% compared to 94.7% in Japan, 86.3% in US, and 94.4% in Australia. Reporting system when establishing elderly care facilities caused a big difference in quality between facilities and users have complaints about this. Thus, for the safety of the patients and satisfaction of customers, strengthening the licensing standard or imposing certification is needed(Lee & Mun, 2012).

3. Method of Research

3.1. The Setting of the Research Hypothesis

Herzberg et al. (1959) explored the job attitude of organizing members and the factors which affect it as well as the result. Job satisfaction depends on the specification factor and situational factor, and they work as the enhancement of satisfaction and restriction of dissatisfaction. A follow-up study(Herzberg et al., 1966) found that job factors which give satisfaction and those that give dissatisfaction are separate. Podsakoff et al.(2000) indicates that job satisfaction has been frequently studied as an antecedent of organizational citizenship behavior, defined as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (Organ, 1988); Rowden (2002) argued that it is an essential independent variable that may guide employees' behavior and affect the functioning of the organization. The popularity of this concept across research fields is also due to job satisfaction being related to a great number of important variables in the life of organizational members. Such variables include productivity, performance, absenteeism and turnover(Luthans, 2002). Job satisfaction is also closely-related to illnesses, such as burnout (Baruch-Feldman et al., 2002), which occur when the employee is dissatisfied.

Based on the theories above, this study sets up the following hypotheses.

<Hypothesis 1> Working environment of care worker will affect one's job satisfaction.

Study on voluntary behavior is about one's voluntary behavior to help the organization or the colleagues overtime and was first studied in US as Organizational Citizenship Behavior.

Bateman and Organ(1983) studied that the determinants of organizational citizenship behavior were job satisfaction and organizational commitment. Mackenzie et al.(1998) studied job satisfaction as a parameter of the feature of organization, job, and organizational citizenship behavior. It is hard to clearly distinguish the employee's in-role behavior and extra-role behavior(Van et al., 1994). The opinions of the researchers differ on whether to include voluntary behavior in the task role or not. That is, Organ(1977) and others considered voluntary behavior as extra-role behavior, and Van et al.(1994) and others considered voluntary behavior as in-role behavior.

Based on the former studies above, this research sets up hypotheses as follows.

<Hypothesis 2> Working Environment of care worker will affect one's voluntary behavior.

<Hypothesis 2-1> Working Environment of care worker will affect one's active behavior.

<Hypothesis 2-2> Working Environment of care worker can affect one's gentlemanlike behavior.

<Hypothesis 2-3> Working Environment of care worker will affect one's altruistic behavior.

<Hypothesis 2-4> Working Environment of care worker will affect one's conscientious behavior.

<Hypothesis 2-5> Working Environment of care worker will affect one's solicitude.

Rightness in distribution is an antecedent variable which affects the attitude and behavior of the members in organization((Moorman, 1991; Ramaswami & Singh, 2003). In addition it is related with calculated distribution of the organization. What people receive through the perception of actual reward or relative reward(Sweeney & McFarlin, 1993) are material, social interest, circumstance, opportunity, and role.

Perception of rightness in distribution affects one's attitude and behavior(Schminke, Ambrose & Noel, 1977). When one is satisfied more with fair result and fair working environment(Carrell & Dittrich, 1978), there is a high probability of positive change in one's attitude and behavior. Perception of rightness was proved to have meaningful relationship with job satisfaction in Moorman(1993)'s research. Significant relationship between rightness at work and job satisfaction was proved in Bettencourt and Brown(1997)'s research. However, there was no meaningful relationship between fairness and job satisfaction in Netemeyer et al.(1977)'s research. Therefore, this study established 3 hypotheses to confirm the relationship between fairness and job satisfaction.

<Hypothesis 3> Distributive rightness will affect care worker's job satisfaction.

<Hypothesis 3-1> Rightness in work will affect care worker's job satisfaction.

<Hypothesis 3-2> Rightness in compensation will affect care worker's job satisfaction.

3.2. Object

The objects of this study are care workers in elderly medical facilities and home care facilities in Seoul and Kyung-ki-do. The respondents' working term differs: less than 1 year are 12.5%, more than 1 less than 3 years are 19.2%, more than 3 years less than 5 years are 33.7%, and more than 5 years are 34.6%. Those of age less than 30 are 4.3%, more than 30 less than 40 are 13.5%, more than 40 less than 50 are 37.7%, more than 50 are 48.5% which is the highest percentage. This study analyzed 285 respondents among total of 367 respondents, excluding those who answered without sincerity.

3.3. The Measurement and Operation of Variable

3.3.1. Working Environment

To measure the working environment, this study readjusted the criterion in the research of Lee (2008) to be suitable for this study. The 9 questions are 'In the institution where I belong, people have dining together on a regular basis', 'Institution where I belong awards the employees for their efforts and encourage them', 'Institution where I belong accepts proposals or complaints actively', 'There are conferences for exchanging information and group discussions in the institution where I belong', 'My boss gives autonomy at work', 'Institution where I belong concerns a lot about my personal matters', 'Elderly, family, and those involved think the work of care worker is important', 'After I take care of the patient, his or her condition improves', 'I want to constantly keep in touch with the current patient.' The questions were measured with Likert's five-point scale 'Absolutely not likely'(1 point), 'Completely likely'(5 points).

3.3.2. Job Satisfaction

Job satisfaction is an attitude caused by emotional state in one's job or evaluation of job experience. The measurement of job satisfaction has 5 questions in the research of Judge & Watanabe(1993) 'I feel joy in my job', 'I am satisfied with my job', 'I am losing interest of my job', 'I often think my job is very fine', 'I often get tired about my job.' The questions were measured with Likert's five-point scale 'Absolutely not likely'(1 point), 'Completely likely'(5 points).

3.3.3. Voluntary Behavior

Voluntary behavior means individual discretionary activity which does not receive direct or explicit reward, but often promotes the effective functioning of the organization(Organ, 1988). To measure it, Organ(1988)'s research and development, and the verified criterion of Podsakoff et al.(1990) were rearranged to be suitable for this study and were used. The 20 questions are as follows: 'I work for the development of institution', 'I voluntarily help the elderly, even if it is not my work', 'I try not to fall behind in the change of institution', 'I voluntarily participate in gatherings of institution', 'I voluntarily help the elderly, even if it is not my work nor the elderly does not require.', 'I am willing to help a colleague who has a heavy workload', 'I help colleague's work when he or she is absent.', 'I help new employees to adapt to the institution', 'I spare my time willingly to help a colleague who struggles with the task.', 'I focus more on the negative aspects than positive aspects of a situation.', 'I often say that I want to quit working.', 'I see small problems during work as big ones and make them critical.', 'I complain a lot about trivial problems of institution or team', 'I do not take a break for a long time', 'I do not take a break more than fixed amount of time', 'I get to work on an appointed time, not being late', 'I do not defend agency's rules, regulations, and procedures even if no one sees', 'I do not infringe the rights of others', 'I try not to cause problems to colleague because of me',

'I speak to the boss before doing important things.' The questions were measured with Likert's five-point scale 'Absolutely not likely'(1 point), 'Completely likely'(5 points).

3.3.4. Distributive Rightness

Distributive rightness means rightness perceived by the employee about task and reward. To measure this, Price & Mueller(1986)'s research and development and 6 questions from Neihoff and Moorman(1993)'s research were used. The questions are as follows: 'Current workload is suitable for my ability', 'Current working hours is suitable for my living.', 'The organization pays just amount of reward for my workload', 'My payment is fair to my effort', 'Current salary of care workers is adequate compared to other jobs', 'The organization pays just amount of reward for my performance.' The questions were measured with Likert's five-point scale 'Absolutely not likely'(1 point), 'Completely likely'(5 points).

4. Analysis of Research

4.1. Verification of Validity and Reliability on Measurement Tool

This study performed an exploratory factor analysis in order to verify the validity and credibility of the variables.

Firstly, in KMO measurement(Kaiser-Meyer-Olkin), when standard value is 0.6(Garson, 2004 and shared value is over 0.4(Field, 2000)), it is estimated as a meaningful variable. Thus, analyzing main components for extraction of elements is an appropriate element capacity to show the degree of correlation among each variable. Acceptance criterion is normally over 0.4, and more than 0.5 shows very high significance. Therefore, this study set 0.4 as the standard and only analyzed the items which exceeded it(Field, 2000).

To measure the working environment of care workers, this study conducted an exploratory analysis on 9 factors and the result is presented in <Table 2>. In the result, the number of the factors over 1 eigenvalue is two. KMO measurement is 0.790, and by the result of Bartlett's test of Sphericity, $\chi^2=533,422$ (d.f.= 45, $p<.001$) it is proved to be significant. The whole dispersion of the factors is 48.643%.

The first factors are 'In the institution where I belong, people have dining together on a regular basis', 'Institution where I belong awards the employees for their efforts and encourage them', 'Institution where I belong accepts proposals or complaints actively', 'There are conferences for exchanging information and group discussions in the institution where I belong', 'My boss gives autonomy at work', 'Institution where I belong concerns a lot about my personal matters.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the factor as relationship with the agency(Cronbach $\alpha=.817$).

The second factors are 'Elderly, family, and those involved

think the work of care worker is important', 'After I take care of the patient, his or her condition improves', and 'I want to constantly keep in touch with the current patient'. The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the second factor as relationship with the elderly(Cronbach α =.630).

<Table 2> Analysis of Factors in Working Environment

Factor	Question	Commonality	Eigen value	Dispersion
1Factor Relationship with the Agency	In the institution where I belong, people have dining together on a regular basis.	.748	3.423	34.231
	Institution where I belong awards the employees for their efforts and encourage them	.713		
	Institution where I belong accepts proposals or complaints actively	.712		
	There are conferences for exchanging information and group discussions in the institution where I belong	.707		
	My boss gives autonomy at work	.640		
	Institution where I belong concerns a lot about my personal matters	.599		
2Factor Relationship with the Elderly	Elderly, family, and those involved think the work of care worker is important	.766	1.363	13.628
	After I take care of the patient, his or her condition improves	.724		
	I want to constantly keep in touch with the current patient	.604		

(Cronbach α =0.779)

To measure the voluntary behavior, this study conducted an exploratory analysis on 20 factors and the result is presented in <Table 3>. In the result, the number of the factors higher than 1 eigenvalue is five. KMO measurement is 0.850, and by result of Bartlett's test of Sphericity, $\chi^2=2301.405$ (d.f.= 210, $p<.001$) it is proved to be significant. The whole dispersion of the factors is 62.152%.

The first factors are 'I work for the development of institution.', 'I voluntarily help the elderly, even if it is not my work.', 'I try not to fall behind in the change of institution.', 'I voluntarily participate in gatherings of institution.', 'I voluntarily help the elderly, even if it is not my work nor the elderly does not require'. The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this

study named the factor as the active behavior(Cronbach α =0.870).

The second factors are 'I am willing to help a colleague who has a heavy workload.', 'I help colleague's work when he or she is absent.', 'I help new employees to adapt to the institution.', 'I spare my time willingly to help a colleague who struggles with the task.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the second factor as the altruistic behavior'(Cronbach α =0.880).

The third factors are 'I focus more on the negative aspects than positive aspects of a situation.', 'I often say that I want to quit working.', 'I see small problems during work as big ones and make them critical.', 'I complain a lot about trivial problems of institution or team.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the third factor as the gentleman-like behavior'(Cronbach α =0.765).

This study inversely coded the fourth factors before analyzing. The questions are 'I do not take a break for a long time.', 'I do not take a break more than fixed amount of time.', 'I get to work on an appointed time, not being late.', 'I do not offend agency's rules, regulations, and procedures even if no one sees.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the fourth factor as the conscientious behavior(Cronbach α =0.730).

The fifth factors are 'I do not infringe the rights of others.', 'I try not to cause problems to colleagues.', 'I speak to the boss before doing important things.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the fifth factor as the solicitude(Cronbach α =0.718).

<Table 3> Analysis of the Factor about Voluntary Behavior

Factor	Question	Commonality	Eigen value	Dispersion
Active behavior	I work for the development of institution.	.775	7.072	32.146
	I voluntarily help the elderly, even if it is not my work.	.766		
	I try not to fall behind in the change of institution.	.713		
	I voluntarily participate in gatherings of institution.	.693		
	I voluntarily help the elderly, even if it is not my work nor the elderly does not require.	.664		
Altruistic behavior	I am willing to help a colleague who has a heavy workload.	.855	2.248	10.219
	I help colleague's work when he or she is absent.	.824		

	I help new employees to adapt to the institution.	.801		
	I spare my time willingly to help a colleague who struggles with the task.	.798		
Gentlemanlike behavior	I focus more on the negative aspects than positive aspects of a situation.	.756	1.743	7.920
	I often say that I want to quit working.	.738		
	I see small problems during work as big ones and make them critical.	.729		
	I complain a lot about trivial problems of institution or team.	.724		
Conscientious behavior	I do not take a break for a long time.	.839	1.380	6.275
	I do not take a break more than fixed amount of time.	.762		
	I get to work on an appointed time, not being late.	.602		
	I do not offend agency's rules, regulations, and procedures even if no one sees.	.485		
Solicitude	I do not infringe the rights of others.	.781	1.230	5.592
	I try not to cause problems to colleagues.	.769		
	I speak to the boss before doing important things.	.543		

(Cronbach α =0.793)

To measure the distributive justice, this study conducted an exploratory analysis on 6 factors and the result is presented in <Table 4>. In the result, the number of the factors higher than 1 eigenvalue is two. KMO measurement is 0.774, and by result of Bartlett's test of Sphericity $\chi^2=663.942$ (d.f.= 15, $p<.001$) it proves to be significant. The whole dispersion of the factors is 48.643%.

The first factors are 'My salary is fair to my efforts.', 'The organization pays just amount of reward for my workload.', 'The organization pays just amount of reward for my performance.', 'Current salary of care workers is adequate, compared to other jobs.' The capacity of the factors exceeds the standard of 0.4, and commonality is higher than 0.4 as well. Therefore, this study named the factor as the justice in compensation(Cronbach α =0.865).

The second factors are 'Current workload is suitable for my ability', 'Current working hours is suitable for my living.' The capacity of the factors exceeds the standard of 0.4, and common-

ality is higher than 0.4 as well. Therefore, this study named the second factor as the fairness in work(Cronbach α =0.707).

<Table 4> Distributive Justice Factor Analysis

Factor	Question	Commonality	Eigen value	Dispersion
Justice in compensation	My salary is fair to my efforts.	.855	2.785	46.420
	The organization pays just amount of reward for my workload	.823		
	The organization pays just amount of reward for my performance.	.815		
	Current salary of care workers is adequate, compared to other jobs	.810		
Justice in work	Current workload is suitable for my ability	.887	1.655	27.581
	Current working hours is suitable for my living.	.831		

4.2. Verification of Hypothesis

4.2.1. Influence of Working Environment on Job Satisfaction

To verify the influence of the working environment which is relationship with the agency and the elderly on job satisfaction, an Enter Method of regression analysis was utilized. The result is presented in <Table 5>. In the result, description of regression model is 25.7% and regression equation is confirmed to be statistically significant($F=12.412$, $p<.001$). Therefore, relationship with the agency as an working environment($t=3.745$, $p<.001$) and relationship with the elderly($t=2.038$, $p<.05$) positively influence the job satisfaction.

<Table 5> Regression Analysis on Job Satisfaction in accordance with Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Job satisfaction	Relationship with the agency	.142	.038	.202	3.745 ***
	Relationship with the elderly	.086	.042	.110	2.038 *

* $p<.05$, ** $p<.01$, *** $p<.001$

4.2.2. Influence of Working Environment on Voluntary Behavior

This study conducted a regression analysis about hypothesis 2-1 to verify the influence of the working environment on care worker's job satisfaction. The result is presented in <Table 6>. In the result, description of regression model is 19.7% and regression equation is confirmed to be statistically significant($F=43.171$, $p<.001$). Therefore, relationship with the agency ($t=3.745$, $p<.001$) and relationship with the elderly($t=2.038$,

$p < .05$) positively influence the job satisfaction.

<Table 6> Regression Analysis on Active Behavior among Voluntary Behaviors in accordance with Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Active behavior	Relationship with the agency	.195	.048	.204	4.074***
	Relationship with the elderly	.361	.053	.339	6.780***

* $p < .05$, ** $p < .01$, *** $p < .001$

This study conducted a regression analysis about hypothesis 2-2 to verify the influence of the relationship with the agency and the relationship with the elderly on care worker's altruistic behavior. The result is presented in <Table 7>. In the result, description of regression model is 8.6% and regression equation is verified to be statistically significant($F=16.506$, $p < .001$). As a result, relationship with the elderly($t=4.686$, $p < .001$) positively influence altruistic behavior. However, relationship with the agency does not significantly affect the behavior.

<Table 7> Regression Analysis on Altruistic Behavior among Voluntary Behaviors according to Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Altruistic behavior	Relationship with the agency	.114	.064	.096	1.797
	Relationship with the elderly	.332	.071	.250	4.686***

* $p < .05$, ** $p < .01$, *** $p < .001$

This study conducted a regression analysis about hypothesis 2-3 to verify the influence of the relationship with the agency and the relationship with the elderly on care worker's gentlemanlike behavior among voluntary behavior. The result is presented in <Table 8>. In the result, description of regression model is 13.2% and regression equation is verified to be statistically significant($F=26.826$, $p < .001$). As a result, relationship with the elderly($t=-4.752$, $p < .001$) and relationship with the agency($t=-3.927$, $p < .001$) negatively influence gentlemanlike behavior.

<Table 8> Regression Analysis on Gentlemanlike Behavior among Voluntary Behaviors according to Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Gentleman like behavior	Relationship with the agency	-.226	.058	-.204	-3.927***
	Relationship with the elderly	-.305	.064	-.247	-4.752***

* $p < .05$, ** $p < .01$, *** $p < .001$

This study conducted a regression analysis about hypothesis 2-4 to verify the influence of the relationship with the agency and the relationship with the elderly on care worker's conscientious behavior among voluntary act. The result is presented in <Table 9>. In the result, description of regression model is 9.3% and regression equation is verified to be statistically significant($F=18.072$, $p < .001$). As a result, relationship with the elderly($t=4.590$, $p < .001$) positively influence conscientious behavior, but relationship with the agency does not significantly affect conscientious behavior.

<Table 9> Regression Analysis on Conscientious Behavior among Voluntary Behaviors according to Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Conscientious behavior	Relationship with the agency	.125	.053	.125	2.358
	Relationship with the elderly	.272	.059	.244	4.590***

* $p < .05$, ** $p < .01$, *** $p < .001$

This study conducted a regression analysis about hypothesis 2-5 to verify the influence of the relationship with the agency and the relationship with the elderly on care worker's solicitude among voluntary act. The result is presented in <Table 10>. In the result, description of regression model is 7.1% and regression equation is verified to be statistically significant($F=13.542$, $p < .001$). As a result, relationship with the elderly($t=4.230$, $p < .001$) positively influence solicitude, but relationship with the agency does not significantly affect conscientious behavior.

<Table 10> Regression Analysis on Solicitude among Voluntary Behaviors according to Working Environment

Dependent variable	Independent variable	Nonstandardized coefficient		Standardized coefficient	t
		B	Standard error	Beta	
Solicitude	Relationship with the agency	.087	.053	.089	1.650
	Relationship with the elderly	.248	.059	.227	4.230***

*p<.05, **p<.01, ***p<.001

4.2.3. Influence of Distributive Justice on Job Satisfaction

This study conducted a regression analysis about hypothesis 3 to verify the influence of the distributive Justice factors, which are Justice in compensation and Justice in work on job satisfaction. The result is presented in <Table 11>. Description of regression model is 10.8% and regression equation is confirmed to be statistically significant ($F=12.412$, $p<.001$). As a result, wage level and compensation level in Justice in compensation positively affect ($p<.001$) the job satisfaction. However, workload and task level of Justice in work do not significantly influence job satisfaction. Thus, to increase care worker's job satisfaction, fair compensation for their task accomplishment is needed.

<Table 11> Regression Analysis in Job Satisfaction according to Distributive Justice

Independent variable	Nonstandardized coefficient		Standardized coefficient	t
	B	Standard error	Beta	
Justice in work	-.009	.030	-.016	-.280
Justice in compensation	.128	.033	.212	3.811***

*p<.05, **p<.01, ***p<.001

5. Conclusion

This study has a purpose to verify the influence of working environment on care worker's job satisfaction and voluntary behavior, with a practical survey on care workers at elderly medical and home care facilities in Seoul and Kyung-ki.

Firstly, an exploratory analysis on 9 questions of working environment was conducted and 2 factors were found as a result: The first factor as relationship with the agency, and the second factor as the relationship with the elderly(recipient).

Next, to measure voluntary behavior of care workers, an exploratory analysis on 22 questions was conducted and 5 factors

were found: The first factor as active behavior, the second factor as gentlemanlike behavior, the third factor as altruistic behavior, the fourth factor as conscientious behavior, and the fifth factor as solicitude.

To sum up the results of hypothesis testing, firstly, as a result of analyzing the influence of working environment on the worker's job satisfaction, both relationship with the agency($p<.001$) and relationship with the elderly($p<.05$) positively affect job satisfaction.

In the relationship with the agency, regular dining, encouraging employees and reward their effort, active acceptance of complaint or dissatisfaction, conference for information exchange or group discussion, giving autonomy of task, head of an organization's interest, and etc. affect job satisfaction.

In the relationship with the elderly, human relationship, such as whether the family or those involved think the care worker's work important, regarding that the elderly improved in condition after one took care of the patient, and wanting to keep in touch constantly with the current recipient, affect job satisfaction.

Secondly, an exploratory analysis was conducted to verify the influence of working environment on job satisfaction. The result is that the relationship with the agency($p<.001$), and relationship with the elderly($p<.001$) both positively affect active behavior of the workers. The awareness that one works for the development of the facility, one helps the elderly voluntarily even though not requested, one makes efforts for the change of the facility affects job satisfaction. Hypothesis 2-2 verifies that working environment and altruistic behavior such as helping colleagues' overloaded task, helping those who are absent, helping new comers adjust to the facility, and willingness to spare time to help colleagues who struggle affects job satisfaction. This means that one's perception that he or she works as one of the members in the organization gives satisfaction.

Hypothesis 2-3 shows that both the relationship with the elderly and the agency negatively affect gentlemanlike behavior. The questions about the relationship with the agency were focusing on the negative side than the positive, saying often that one wants to quit the job, one sees a small problem at work as a big one and etc. These negative sides of problems negatively affect job satisfaction.

Hypothesis 2-4 is to verify how altruistic behavior affects job satisfaction. Detailed questions are 'I do not take a break for a long time', 'I do not take a break more than fixed amount of time', 'I get to work on an appointed time, not being late', 'I do not defend agency's rules, regulations, and procedures even if no one sees.' The relationship with the elderly($p<.001$) positively affected altruistic behavior, but the relationship with the agency does not significantly affect altruistic behavior.

Hypothesis 2-5 is to verify that relationship with the agency and the elderly affects solicitude, which means the willingness to help and take care of the elderly as a care worker. An exploratory analysis found out that relationship with the elderly($p<.001$) positively affects solicitude, but the relationship with the agency does not significantly affect solicitude.

Thirdly, exploratory analysis was conducted to verify the influence of distributive justice on job satisfaction. As a result, wage

level and compensation level among fairness in compensation positively affect($p<.001$) the satisfaction, but workload and task level of fairness in work does not significantly affect job satisfaction. Thus, to increase the care worker's job satisfaction, fair compensation for their task accomplishment is required.

The limitation and suggestion of this research is as follows: first, the objects were confined to facilities in a specific area, thus, the results are hard to be generalized. Studies on workers in facilities of various areas are needed. Secondly, due to the nature of the job, elderly caring service, it was hard to find male care workers as the objects. It suggests a need for more studies about how to improve the care service for the male seniors by training male care workers.

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