

Factors That Affect Health Professionals' Preparation of Advanced Directives in Korea

Byung Deog Hwang¹, Ryoung Choi² and Jae Woo Park³

¹ Department of HCM Catholic University of Pusan, 57 Oryundae-ro, Busan, Korea

² Department of Health Administration, Dongshin University, 185 Geonjae-ro, Naju, Korea

³ Department of HCM, Graduate School Catholic of University of Pusan, 57 Oryundae-ro, Busan, Korea

suamsam@naver.com, Choir33@naver.com, Jawoos486@naver.com

Abstract

A survey was conducted among medical professionals including hospices, nurses, and administrative personnel who often heard the concept of AD and had many chances to observe related medical occasions to grasp their attitudes toward the preparation of AD. The logistic regression analysis was conducted to examine whether the objects agreed upon preparation of the form of AD and its effect on decisions about meaningless life-prolonging treatment. Factors affecting decisions about the preparation of AD included religion and education in the case of hospices, income and education in the case of nurses, and marriage, income, working experience, legislative institutionalization, and education in the case of administrative personnel. Factors affecting the decision of rejecting meaningless life-prolonging treatment (life-prolonging equipment) included working experience and the one who would make out the form in the case of hospices, income, and working experience in the case of nurses, and income and working experience in the case of administrative personnels. Factors affecting the decision of rejecting meaningless life-prolonging treatment (artificial nutrient supply) included working experience and the one who would make the form in the case of hospices, working experience in the case of nurses, and income and working experience in the case of administrative personnel. It turned out that there was a difference in the recognition of AD and meaningless life-prolonging treatment among medical professionals. Hence, it is vital to deliver accurate information on Advanced Directives, reduce differences among the members, and form a social consensus so that patients' right of autonomous choice and dignity can be guaranteed.

Keywords: Advance Directive(AD), Health Professionals', Life-Prolonging Equipment, Artificial Nutrient Supply, Withdrawing Life-Sustaining Treatment

1. Introduction

The advancement of medical technology has caused a number of terminal patients, who have no chance of a recovery, to meaninglessly extend their lives in an unconscious state or fall into the lasting pain of life extension by relying on life-sustaining means such as medicines or an artificial ventilator[1].

When a patient loses decision-making abilities because his brain is damaged or his consciousness is lost, health care providers need to make a decision of treatment according to the guardian's request unless the patient leaves Advanced Directives(AD). However, there are often conflicts between a medical team and a patient's family in the face of an important decision such as life-prolonging treatment[2].

The culture of life ethics in Korean society is different from that of Western countries. The moral culture of Koreans has been affected by a variety of cultures such as Buddhism and Confucianism. In particular, Confucianism focuses on family values rather than individuals, and thus whether to accept life-prolonging treatment or not is decided not by the patient himself nor the medical team but mostly in consultation with the family. It is commonly accepted as being considerate to the patient that a medical team and the family do not inform the terminal patient of his disease and health condition. According to one survey on awareness of life-prolonging treatment in Korea [3], 82% of the doctors, 96% of the middle-aged and prime-aged respondents, and 91.4% of the elderly (65 years or older) answered that if they were critically ill, they would choose an easeful death rather than life-prolonging treatment. However, if it was the patient or a parent that was critically ill, only 70.5% of the doctors and 79.8% of the middle-aged and prime-aged respondents said that they would do so. 67% of the doctors said, "I would stay in my place or a hospice when facing death," but more than half responded that they could not frankly tell the patient the truth. This reflects well the cultural characteristics of the Korean society and its duplicity about life-prolonging treatment.

At present, the primary issue of discontinuance of life-prolonging treatment and death with dignity is that a patient may face death regardless of his own intent. As "AD" is suggested as the only solution to this problem, its importance has come to the fore. AD is defined as a written form through which a patient with an ability to make decisions decides in advance the medical treatments that he is going to receive according to his own values after being provided with sufficient medical information by a medical team[4]. In case that it is impossible for an individual to express his own intent or will regarding medical treatment, the types of medical behaviors that he wants or does not want are documented in this form [5]. It is noteworthy here that the subject of AD is not limited only to the patient himself but is expanded to his legal representatives[6]. Although there might be some difference in the applicable range of the subject of AD, the gist is the same in that the intent of a patient regarding medical treatment is made known in advance.

The current condition of AD is as follows: Recently, IRB sought the enactment of the discontinuance of meaningless life-prolonging treatment[7], making public the draft of the life-prolonging treatment act in an open hearing on November 28, 2013, held by the Ministry of Health and Welfare. This form states that medical treatments such as artificial ventilator, CPR, blood dialysis, and anticancer drugs will be discontinued if it is impossible for a patient to recover and near death makes clear his intent to stop life-prolonging treatment before falling into unconsciousness. In Korea, too, efforts are put forth into recognizing and institutionally establishing the right to make decisions on one's own treatment and to stop meaningless life-prolonging treatment although there has yet to be a social agreement because of various ethical issues and concerns, as well as prevalent social notions [8].

In the U.S., Physician Orders for Life-sustaining Treatment (POLST) is adopted to grasp the intent of a patient who is viewed by doctors as having no chance for survival and decide whether to take life-prolonging treatment. In other words, this arrangement is meant to establish medical plans in advance for patients in the face of imminent death.

In Europe, there had been no written law supporting AD until 1995 when the legislation committee proposed a law concerning the status of mental incompetence, which was followed by the Mental Capacity Act of 2005, which was established as a legal basis for AD. This was the written foundation of the AD, and it became possible to decide the rejection of life-prolonging treatment in advance. In Asia, the National Assembly of Singapore passed the Advance Medical Directive Act (AD Act) in May, 1996. In Taiwan, the Hospice-Palliative Care Act was established in 2000[8]. AD has been implemented in the U.S., Europe, etc. as a measure to reduce consuming arguments on life ethics, including the discontinuance of life-prolonging treatment and death with dignity in the

treatment of unrecoverable patients and to respect the patients' right to choose in the face of imminent death[9].

The system of AD is viewed as morally desirable because this respects the right of choice of patients. In the reality of domestic medical treatment, the intent of terminal patients, even with decision-making abilities, is often neglected and the doctors decide which treatment will be adopted only in consultation with the family. In this regard, the introduction of AD is expected to bring about positive effects on respecting the autonomous will of a patient before he loses decision-making abilities[10]. In particular, a terminal patient's autonomous will in selecting treatments must be respected, and thus medical treatment teams must provide patients with accurate and detailed information[11]. Hospices and nurses often see patients die a difficult death, and administrative personnel go through medical disputes due to unexpected medical incidents. Hence, as the legislation of AD is in progress, a medical personnel should clearly understand changing medical laws and ethics so that they can play a role in helping patients and families make the best choice. Accordingly, this study aims to investigate the attitudes toward the preparation of AD among medical professors including hospices, nurses, and administrative personnel who have often heard the concept of AD and have many chances to handle them and to comparatively analyze factors that may affect meaningless life-prolonging treatment, as well as AD. The findings will be fundamental data for its institutionalization.

2. Study Object

To analyze attitudes among medical professors toward AD and meaningless life-prolonging treatment, a survey was conducted as part of this study among 250 hospices, 280 nurses, and 270 administrative personnel working at 11 medical centers, including hospitals, located in Busan.

The survey was conducted after the participants agreed to the collection of personal information and the use of the completed questionnaires. Even while filling out the questionnaires, the respondents were informed that they could cancel what they agreed on regarding the survey. They were also informed that even after completing the survey, if individuals cancelled the agreement on the survey, the research data would not be used, and that their answers in the questionnaires would be kept strictly confidential by the researchers in accordance with related items specified in the privacy protection act. Among the 800 copies of the questionnaire distributed, 697 (collection rate: 87.1%) were collected, and among them, 208 were filled out by hospice volunteers, 230 by nurses, and 227 by administrative personnel. 665 in total (83.2% of the hospice, 82.14% of the nurses, and 84.07% of the administrative personnel completed the questionnaire) were used in the research. The survey was conducted for 27 days from January 3 to 29, 2014. In Korea, the Bioethics and Safety Act was initiated on February 2, 2013, and it went through the period of grace for 1 year, with the investigation of the IRB becoming obligated from February 2, 2014. Hence, this study is not subject to the investigation of the bioethics committee.

3. Variables

As for the questionnaire used in this research, the items used in the existing research of Sun[12], Park[13], and Koo[14] were revised according to the objective of this study. Prior to this survey, a pilot test was conducted among 40 individuals. Items were modified again, and then the questionnaire was finalized. The items included general characteristics (9 items) and attitudes toward AD(3 items).

3.1. Subordinate Variables

With regard to participants' agreement upon the preparation of a copy of AD, "1" indicated "Agree" and "2" "Disagree." Meaningless life-prolonging treatment methods included "life-prolonging equipment" and artificial nutrient supply by means of tubes, etc. and this was a multiple choice item. As for meaningless life-prolonging treatment through "life-prolonging equipment" and artificial nutrient supply by means of tubes, etc.," "1" indicates "Reject" and "2" "Select." Meaningless life-prolonging treatment methods are classified as follows [15].

3.1.1. Life-prolonging Equipment : For basic functions such as blood circulation and respiration by means of life-prolonging measures such as heart medicine, hypertensor, cardiopulmonary resuscitation, cardioverter, respirator, blood dialysis, extracorporeal circulation, etc.

3.1.2. Artificial Nutrient Supply by Means of Tubes, etc.: A tube is inserted into the stomach or intestines or nutrients are supplied through a tube lined to the blood vessels.

3.2. Independent Variables

As for gender, 1 indicates Male and 2 Female. As for age, 1= ≤ 39 , 2=40-49, 3= $50 \leq$. As for religion, 1 indicates No and 2 Yes. As for income, 1= ≤ 20 m won, 2= ≤ 30 m won, 3= ≤ 40 m won, and 4=40m won \leq . As for working years, 1= < 5 years, 2=5-10years, and 3=10years \leq . As for the one who fills in AD, 1 indicates Patient and 2=Patient+Family and 3=Patient+Family+Medical Team. As for the legislation of AD, 1=Disagree and 2=Agree. As for education on AD, 1=Not Necessary and 2=Necessary.

4. Data Analysis

An analysis of frequency was conducted by means of SPSS 21.0 to analyze the attitudes of medical professionals toward AD. Logistic regression analysis was conducted to examine whether respondents would agree upon making out AD and its effect on the use of meaningless life-prolonging treatment. The significance of all tests was determined on the basis of $p=0.05$, and the level of significance was set to a confidence interval of 95%.

5. Results

The factors affecting the preparation of AD were analyzed. As for religion, the rate of hospices and administrative personnel with religion who agreed upon making the form was higher than those without religion, while the rate of nurses was 1.115 times higher. As for marriage, the rate of single hospices was 2.280 times higher than married ones, and administrative personnel 10.513 times, while that of single nurses was higher than married ones. As for income, the rates of hospices, nurses, and administrative personnel with a lower level of income all were higher. As for working years, the rate of hospices with 10years experience was 3.541 higher than those with 5years experience, nurses with 5 to 10years experience 1.006 times, and those with 10years experience 1.095 higher than those with less than 5years experience. As for legislative institutionalization, the rate of hospices who agreed was 2.074 times higher than those who disagreed, the nurses 3.125 times, and the administrative personnel 29.205 times. As for education, the rate of hospices who considered it necessary was 30.929 times higher than those who considered it unnecessary, the nurses 7.301 times higher, and the administrative personnel 3.776 times higher.

**Table 1. Factors Affecting the Preparation of the Form of AD
(ref: agreed upon)**

Classification	Hospice		Nurse		Administrative Personnel	
	OR	95%CI	OR	95%CI	OR	95%CI
Gender						
Male	1		1		1	
Female	0.360	0.071-1.825	0.965	0.1543-6.071	0.608	0.158-2.341
Age						
≤39	1		1		1	
40-49	0.164	0.014-2.072	2.997	0.222-40.452	0.376	0.059-2.390
50≤	0.187	0.027-2.029	1.740	0.070-43.338	0.208	0.017-2.495
Religion						
No	1		1		1	
Yes	0.061**	0.009-0.394	1.115	0.337-3.697	0.468	0.158-1.382
Marriage						
Single	1		1		1	
Married	2.280	0.246-21.137	0.825	0.135-5.034	10.513*	1.391-79.475
Income						
≤20,000,000 KRW	1		1		1	
≤30,000,000 KRW	0.418	0.08-1.986	0.059***	0.013-0.276	0.051**	0.007-0.380
≤40,000,000 KRW	0.388	0.052-2.894	0.037**	0.005-0.284	0.024**	0.003-0.200
40,000,000 KRW<	0.114*	0.015-0.889	0.017***	0.002-0.117	0.064**	0.011-0.357
Working Years						
≤5 years	1		1		1	
5≤10 years	0.628	0.476-26.353	1.006	0.171-5.906	0.039*	0.002-0.644
10years≤	3.541	0.246-21.137	1.095	0.085-14.128	0.144	0.015-1.370
One who Makes the Form						
Patient	1		1		1	
Patient+Family	0.648	0.123-3.418	0.335	0.055-2.027	0.280	0.074-1.056
Patient+Family+Medical Team	1.184	0.236-5.941	0.876	0.230-3.338	0.571	0.185-1.760
Legislative Institutionalization						
Disagree	1		1		1	
Agree	2.074	0.489-8.804	3.125	0.790-12.365	29.205***	5.804-14.969
Education						
Not Necessary	1		1		1	
Necessary	30.929***	5.728-167.004	7.301**	1.707-31.223	3.776*	1.215-11.731

*P<.05, **P<.01, ***P<.001

As for factors that would affect rejection to life-prolonging equipment in the section of meaningless life-prolonging treatment, the rate of hospices with under 20m won income who agreed to making the form was 1.137 times higher than those with over 40m won, and those of nurses and administrative personnel with lower income were higher. As for working years, the rates of hospices, nurses, and administrative personnel with less working years were higher. As for the one who made the form, the rate of hospices who let the patient and family make it was 6.554 times higher than those who let the patient alone make it. Meanwhile, the rate of those who let the patient, family, and medical team was 8.895 times higher. The rate of nurses who let the patient and family make it was 2.341 times higher and the patient, family, and medical team 1.352 times higher than that of nurses who let the patient alone. The rate of administrative personnel who let the patient and family make it was 2.009 times higher and the patient, family, and medical team 1.475 times higher than those who let the patient alone make it.

Table 2. Factors Affecting Meaningless Life-prolonging Treatment (Life-prolonging Equipment) (ref: rejected)

Classification	Hospice		Nurse		Administrative Personnel	
	OR	95%CI	OR	95%CI	OR	95%CI
Gender						
Male	1		1		1	
Female	0.871	0.391-1.940	1.233	0.451-3.370	0.781	0.350-1.743
Age						
≤39	1		1		1	
40-49	1.354	0.351-5.224	1.751	0.336-9.134	2.346	0.594-9.271
50≤	1.447	0.402-5.209	2.432	0.321-18.429	0.697	0.063-7.711
Religion						
No	1		1		1	
Yes	0.920	0.226-3.741	1.642	0.838-3.216	1.378	0.652-2.909
Marriage						
Single	1		1		1	
Married	0.597	0.177-2.015	1.172	0.441-3.117	0.659	0.212-2.044
Income						
≤20,000,000 KRW	1		1		1	
≤30,000,000 KRW	0.886	0.351-2.232	0.078	0.006-1.046	0.170**	0.047-0.614
≤40,000,000 KRW	1.137	0.435-2.971	0.165	0.012-2.283	0.300	0.084-1.069
40,000,000 KRW<	0.702	0.307-1.607	0.067*	0.005-0.905	0.225*	0.071-0.716
Working Years						
≤5 years	1		1		1	
5-≤10 years	0.289*	0.114-0.733	0.748	0.285-1.958	0.525	0.187-1.476
10years≤	0.075**	0.016-0.363	0.134*	0.029-0.616	0.173*	0.044-0.677
One who Makes the Form						
Patient	1		1		1	
Patient+Family	6.554***	2.313-18.514	2.341	0.828-6.616	2.009	0.654-6.171
Patient+Family+Medical Team	8.895***	3.172-24.948	1.352	0.534-3.423	1.475	0.503-4.329
Legislative Institutionalization						
Disagree	1		1		1	
Agree	1.022	0.406-2.571	0.588	0.204-1.696	1.143	0.420-3.110
Education						
Not necessary	1		1		1	
Necessary	2.206	0.714-6.812	2.282	0.596-8.740	1.587	0.516-4.879

*P<.05, **P<.01, ***P<.001

As for meaningless life-prolonging treatment, the factors that would affect “rejection to artificial nutrient supply” were analyzed. The rates of hospices with less than 20m won income who agreed upon making out the form were 1.437 times higher and those with over 40m won income were 1.208 times higher than those with less than 20m won income. The rates of nurses and administrative personnel with lower income were higher. The rates of hospices, nurses, and administrative personnel with less working years were higher. The rates of hospices who let the patient and family make the form were 6.118 times higher and the patient, family, and medical team 6.061 times higher than those who let the patient only make it. The rates of administrative personnel who let the patient and family make the form were 1.0586 times higher and the patient, family, and medical team 1.181 times higher than those who let the patient only. The rate of nurses who let the patient only make the form was higher than others. The rate of nurses who viewed education as necessary was 1.305 times higher than the others, and that of administrative personnel who viewed it as necessary was 1.648 times higher. The rate of hospices who viewed it as unnecessary was higher.

Table 3. Factors that Affect Rejection to Meaningless Life-prolonging Treatment (Artificial Nutrient Supply) (ref: Rejected)

Classification	Hospice		Nurse		Administrative Personnel	
	OR	95%CI	OR	95%CI	OR	95%CI
Gender						
Male	1		1		1	
Female	1.378	0.579-3.281	1.906	0.739-4.919	1.134	0.495-2.596
Age						
≤39	1		1		1	
40-49	2.631	0.572-12.106	0.557	0.179-1.729	0.721	0.208-2.505
50≤	3.877	0.923-16.291	0.580	0.121-2.770	0.398	0.038-4.139
Religion						
No	1		1		1	
Yes	1.004	0.227-4.443	1.683	0.929-3.050	0.902	0.435-1.871
Marriage						
Single	1		1		1	
Married	0.597	0.177-2.014	0.990	0.408-2.404	1.819	0.639-5.179
Income						
≤20,000,000 KRW	1		1		1	
≤30,000,000 KRW	0.885	0.329-2.378	0.449	0.051-3.933	0.518	0.161-1.664
≤40,000,000 KRW	1.437	0.526-3.927	0.996	0.106-8.852	0.521	0.152-1.780
40,000,000 KRW<	1.208	0.511-2.854	0.772	0.089-6.683	0.264*	0.639-5.179
Working Years						
≤5 years	1		1		1	
5-≤10years	0.150**	0.067-0.967	0.294*	0.113-0.764	0.891	0.343-2.314
10years≤	0.254*	0.227-4.443	0.449	0.145-1.391	0.157**	0.042-0.594
One who Makes the Form						
Patient	1		1		1	
Patient+Family	6.118**	1.8767-20.044	0.742	0.299-1.837	1.586	0.538-4.676
Patient+Family+Medical Team	6.061**	1.851-19.850	0.768	0.350-1.686	1.181	0.418-3.332
Legislative Institutionalization						
Disagree	1		1		1	
Agree	0.795	0.291-2.176	0.688	0.296-1.600	1.779	0.661-4.782
Education						
Not Necessary	1		1		1	
Necessary	0.294*	0.092-0.935	1.305	0.450-3.786	1.648	0.541-5.017

*P<.05, **P<.01, ***P<.001

6. Investigation and Conclusion

Death with dignity means an act of artificially shortening the life of a hopeless, terminally ill patient in an unconscious status according to his own intent when he is conscious or according to the intent of the doctor or guardian if he is constantly unconscious so that he can die a humane death[16].

This concept regarding a patient's death basically implies discontinuance of meaningless life-prolonging treatment, but it has a limitation in that the patient himself is unable to make decisions on his own life. A patient should be given a chance to make decisions on his own life, especially regarding the treatment for a certain disease and a situation that lasts long, based on his own beliefs, values, and intent on death. The will and dignity of a patient need to be respected in pursuit of the best interests of the patient[17]. As the right to autonomous decision regarding the quality of life and dignified death with the top priority on a patient's dignity, the concept of advance decision-making is emphasized, and the necessity of preparing the form of AD is recognized more than ever before.

The findings of this study show that male hospices, nurses, and administrative personnel involved more factors that would affect the preparation of AD than female ones, and that married hospices and administrative personnel involved more than singles. This result corresponds to that of research conducted among hospices[16], a research

conducted among Hospices and Nurse[18] and a research on attitudes among common people toward brain death[19]. Hence, it is necessary to provide male medical professionals with sufficient information and education programs regarding AD for a change of recognition. As for working years, the rate of hospices with over 10 years working experience who agreed upon death with dignity was 3.541 times higher than that with less than 5 years experience, while the rate was higher than that of nurses and administrative personnel. This is because hospices had more experiences in helping terminally ill patients die a peaceful death with human dignity maintained and saw people facing death more often than others[16]. As for income, the rates of those with lower income were higher among hospices, nurses, and administrative personnel who agreed upon making the form. Rao et al. [20] presented the analysis result that the higher the income level, the higher the rates of agreeing to making the form of AD, which corresponds to this study. The subjects participating in the survey of this study have seen patients and families suffering from the tremendous amount of costs for meaningless life-prolonging treatment.

As for factors affecting the decision of rejecting life-prolonging equipment, hospices, nurses, and administrative personnel all would let the family and medical team make the form together. This result corresponds to the analysis conducted among patients[21], a research conducted among Hospices and Nurse[22] and common people[23]. As for factors affecting the decision of rejecting artificial nutrient supply, a higher rate of hospices and administrative personnel would let the patient, family, and medical team make the form while nurses said that they would let the patient decide. Choi et al. [24] reported that the rate of discontinuing life-prolonging treatment according to the patient's intent (69.0%) was higher than that according to the family or agent (50.5%). In the research of Kwon et al. [25], in contrast, the form was prepared mostly by families (95.2%). Hence, with regard to who should make the form of AD and make decisions about meaningless life-prolonging treatment, opinions need to be gathered sufficiently from the medical circles, academic circles, civil organizations, public, patients, and guardians.

As for legislative institutionalization among the factors that would affect the preparation of AD, the rate of hospices, nurses, and administrative personnel who agreed was higher than the others. This was because they would like the right to die a dignified death and their quality of life to be guaranteed for medically unrestorable, terminal patients[24]. In particular, the number of administrative personnel who agreed upon the use of this form was larger than that of hospices and nurses. As for factors that would affect the decision of rejecting life-prolonging equipment, larger percentages of the hospices and administrative personnel agreed upon legislative institutionalization, and as for the factors that would affect the decision of rejecting artificial nutrient supply, higher percentages of the administrative personnel only agreed upon the institutionalization. As administrative personnel would often have to handle medical disputes between a medical agency and a patient regarding an unexpected medical incident, it seems that they desire a clear legal standard for medical disputes between medical agencies and patients (families) regarding sensitive aspects such as preparation of AD and meaningless life-prolonging treatment. As for education, larger percentages of hospices, nurses, and administrative personnel all viewed it as necessary. The knowledge of AD and related experience are directly related to the recognition of AD[26][27]. Hence, it is necessary to provide medical professionals with systematic education programs on the major contents, objectives, and methods of AD.

The findings of this study show that there was difference in the awareness on AD and meaningless life-prolonging treatment among medical professionals (hospice, nurse, and administrative personnel). Thus, it is vital to deliver accurate information on AD, reduce differences among the members, and form a social consensus so that patients' right of autonomous choice and dignity can be guaranteed.

As for the limitations of this study, patients and guardians, who were major objects of AD, were not included in the survey but medical professionals in a certain region. Thus, close attention must be paid when the findings of this study are generalized as a common idea or expanded to other areas. Future study may comparatively analyze the opinions of patients, guardians, and the public with regard to the application of AD and meaningless life-prolonging treatment.

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Authors



Byung Deog Hwang

1991/02: Graduate School of Public Health Kyungpook National University Daegu, Korea(Master of Public Health).

2000/02: Department of Public Health Graduate School, Kyungpook National University Daegu, Korea(Ph. D.).

2009/03~: Department of HCM Catholic University of Pusan, Busan, Korea(Professor).

Interests: Health Policy, Health Management, Hospital Management



Ryoung Choi

2008/08: Graduate School of Public Health Kyungpook National University Daegu, Korea(Master of Public Health).

2013/08: Department of Public Health Graduate School, Kyungpook National University Daegu, Korea(Ph. D.).

2014/03~: Department of Health Administration, Dongshin University Naju, Korea(Assistant Professor).

Interests: Health Management, Health Administration, Hospital Management



Jae Woo Park

2014/02: Department of Hospital Management Graduate School of Catholic University of Pusan(Master of Public Health).

2014/03~: Department of Hospital Management Graduate School of Catholic University of Pusan(The doctor's course).

Interests: Health Management, Hospital Management