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How the Factors of Hospital Choice of Cancer Patients Affect Customer Satisfaction

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Abstract

This research analyzed the effect that the factors of hospital choice of cancer patients have on customer satisfaction. For this study, a survey was conducted on 450 cancer patients who used hospitals in regional and Seoul metropolitan area from July, 1st to July 30th of 2014. The results of this study are as follows.

First, this research points out that human factors of the medical staff have the greatest influence on customer satisfaction for cancer patients such as the medical team's competence, friendliness, and detailed explanation. Second, the analysis indicates that physical factors also have positive influence on customer satisfaction such as latest medical equipment and hospital environment. Third, the data shows that the accessibility of the hospital does not have much effect on customer satisfaction for cancer patients.

This research demonstrates that the satisfaction rate of most critically-ill patients is directly linked to the two main elements: human factors—medical team's competence, detailed explanation, and friendliness; and physical factors—latest medical equipment, pleasant environment, and convenient facilities.

.***Keywords****: Cancer Patients, Hospital Choice Factors, Customer Satisfaction*

1. Introduction

Cancer has been the number one cause of death in Korea since 2000. Its rising death rates are: 23.7% in 2000, 26.7% in 2005, 28.3% in 2009[1]. Cancer incidence rate also increased from 214.1 cases per 100,000 people in 2000 to 361.9 cases per 100,000 people in 2008. The number of newly diagnosed cancer patients has also increased from 165,942 in 2007 to 178,816 in 2008 by 7.8%. The projected cancer incidence rate of 2015 gives an estimate of 270,809 patients, which is a 51.4% increase compared to 178,816 patients of 2008[1]. Cancer incidence and death rates are soaring rapidly due to various reasons: recent average lifespan increase, decrease in contagious disease, change in living environment, hereditary factors [2].

Also, the latest medical equipment and technology for cancer are improving, but the financial burdens on the patients and their family is deepening due to rising medical expenses, alternative and folk medicine expenses, indirect expenses, and nursing fees. The recent continuous growth of cancer patients and cancer-related hospitals increases the need for studies on the satisfaction rate of medical services. Recently, the government has launched a campaign against cancer, having sensed the urgent need to get it under control in response to the rising number of cancer patients. Moon, Jong-bum and Kim, byung-Goon comment that factors affecting cancer patients' hospital choice and satisfaction are superior medical staff, hospital reputation, latest medical equipment, hospital size, and convenient availability[3,4]. Also, Mayer contends that a detailed research on patients' satisfaction is necessary, research that takes into account the four elements for good

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medical services: medical treatment quality, persistency, efficiency, accessibility,

This research analyzed the effect that factors in cancer patients' choice of hospitals have on their satisfaction as customers, in order to present recommendations on how to increase the efficiency on using hospitals and the satisfaction of cancer patients utilizing our countries' medical institutions.

2. Materials and Methods

2.1 The Subject of the Study

Out of 450 cancer patients as the subjects of this research analysis, 218 people (48%) were male and 232 (52%) were female. Categorized according to their age, 127 people (30%) were in their 50s and 133 people (29%) were in their 60s. Categorized according to their income, 190 people (42%) had incomes that ranged from 2,000,000 to 3,990,000 won and 104 people (23%) from 4,000,000 to 5,990,000 won. Categorized according to their level of education, 222 people (49%) were high school graduates. Categorized according to their profession, 115 people (26%) were housewives, and 89 people (20%) were involved in technical, manufacturing business. The different types of cancer were stomach cancer 85(19%), liver cancer 63(14%), breast cancer 61(13%), and other types 152(34%).

Table 1. General Characteristics

Categories		Frequency	Percent (%)
Sex	Male	218	48
	Female	232	52
Ages	30s	63	14
	40s	117	27
	50s	137	30
	60s	133	29
Income	Below 2 million won	112	25
	2-4 million won	190	42
	4-6 million won	104	23
	6million won and more	44	10
Education	Middle school Graduates	72	16
	High school Graduates	222	49
	University Graduates	156	35
Job	Housewives	115	26
	Technicians	89	20
	Inoccupation	74	16
	Professions	67	15
	Service Jobs	59	13
	Others	46	10
Type of Cancer	Stomach Cancer	85	19
	Liver Cancer	63	14
	Breast Cancer	61	13
	Colorectal Cancer	49	11
	Lung Cancer	40	9
	Others	152	34
Total		450	100

2.2 Study Method

For this study, a survey was conducted on 450 cancer patients who underwent operations at different hospitals in the regional and Seoul metropolitan area for a 30 day period from July, 1st to July 30th of 2014. After recruiting and training surveyors, individual patients were counseled and given adequate explanation about the survey, and the patients or their caregivers filled out the questionnaire. The analysis of the data was done using SPSS 16,0 and the method was as follows.

First, the overall characteristics of the subjects were analyzed utilizing the hospital by studying the general characteristics and technical statistics of the patients. Second, the questions on the survey were checked for their reliability, validity, and factor analysis. Third, after analyzing the factors, correlation analysis was conducted, and the factors affecting patients' satisfaction were analyzed through regression analysis.

3. Results and Discussion

3.1 Reliability and Validity Analysis

The reliability and validity of the questions on the survey of this research were analyzed. The internal consistency of the questions were evaluated through Cronbach' s α coefficient to verify the reliability of the items in the questionnaire, and factor analysis was done to verify the validity, extracting factors that have factor loadage of 0.6 or higher.

In the reliability test, there were 5 sub-factors for human factors (Cronbach' s α 0.782). One of the 5 sub-factors in physical factor was removed (Cronbach' s α 0.773); one of the 5 sub-factors in accessibility factors was removed (Cronbach' s α 0.863); one of the 5 sub-factors in customer satisfaction was removed (Cronbach' s α 0.752). Since all of Cronbach's α coefficient are above 0.7, it was assumed that there were no issues with reliability.

Table 2. The Result of Reliability

Classification	First items	Choice	Cronbach's Alpha
Human factor	5	5	0.782
Physical factor	5	4	0.773
Accessibility factor	5	4	0.863
Customer satisfaction	5	4	0.752

KMO(Kaise-Meyer-Olkin measure of sampling adequacy) was conducted to confirm the supposition of proper correlativity among the measuring variables, which is basic supposition for factor analysis—the value was 0.831 higher than 0.5.

Also, the result of Bartlett test was below 0.001, which confirms the correlativity above the proper level of measuring variables. Factorial dispersion rates were 19.22% for human factors, 13.93% for physical factors, 12.54% for accessibility factors, and 9.64% for customer satisfaction. Factorial analysis was done on 20 items to measure the characteristics of factors, and four factors were extracted as shown below.

Table 3. Factor Analysis

Division / Survey items	Factor variables			
	Human factor	**Physical factor**	**Accessibility factor**	**Customer satisfaction**
Medical staff level	0.841			
No. of visits by medical staff	0.776			
Detailed explanation by medical staff	0.724			
Friendliness of medical staff	0.648			
Detailed explanation about nursing	0.621			
Patient-oriented medical facilities		0.752		
Latest medical equipment		0.736		
Quiet and pleasant environment		0.671		
Good convenient facilities		0.652		
Convenient administrative service		0.589		
Convenient transportation to the hospital			0.904	
Low transportation cost			0.867	
Living close to the hospital			0.835	
Relatively short waiting time			0.779	
Convenient hospitalization			0.558	
Speedy recovery after operation				0.780
Willing to revisit the hospital				0.761
Willing to recommend to others				0.682
Reasonable medical expenses				0.616
Good prospect on health before hospitalization				0.569
Eigen Value	3.94	2.67	2.54	1.94
Dispersion rate	19.22	13.93	12.54	9.64
Accumulated dispersion rate	19.22	33.15	45.69	55.33

KMO: .831, Bartlett's Test: <.001, % of Variance: 63.83

3.2 Correlation among Variables

Correlation analysis was conducted in order to find out the relationship between variables that affect the satisfaction level of cancer patients. Human factors are closely related to physical factors, accessibility factors, and customer satisfaction. Customer satisfaction shows noticeable relevance to physical factors and accessibility factors. The coefficients between all variables at the significant level of $p<0.01$ had a positive relationship.

Table 4. Correlation among Variables

	Human factor	Physical factor	Accessibility factor	Customer satisfaction
Human factor	1.00			
Physical factor	0.483**	1.00		
Accessibility factor	0.145**	-0.014	1.00	
Customer satisfaction	0.468**	0.455**	0.239**	1.00

* : p<.05, ** : p<.01

3.3. Findings

Regression analysis was conducted with human, physical, and accessibility factors as independent variables and customer satisfaction as a dependent variable in order to analyze the effect that cancer patients' hospital choice has. The analysis shows that the human factors have the most significant positive effect on customer satisfaction, and this was followed by physical factors with the similar positive effect. The data shows that accessibility factors also have a positive effect on patients' satisfaction level, but it was minimal statistically.

These results indicate that—since the patients' life depends on it—accessibility was less important than other factors: medical treatment quality, latest medical equipment, pleasant environment and facilities.

Table 5. Regression Analysis to Explain Customer Satisfaction

Division	Non-standardized Coefficient		Standardized coefficient	t	Significance Probability
	B	Standard error	β		
(constant)	.345	.074	-	4.420	.000
Human factor	.334	.054	.321	6.530	.000
Physical factor	.244	.040	.298	6.324	.002
Accessibility factor	.103	.026	.197	4.524	.071
Adjusted R^2			.308		
F-Value			63.132**		

*P < 0.05, **P < 0.01

4. Discussion and Results

The result of this research shows that human factors have the most influence on the satisfaction of cancer patients. This result is in agreement with what Jang Dong-min(1998) found out from his research as the most influential factors in the hospital selection of cancer patients and their satisfaction: superior medical staff and medical institution's reputation [5].

A research done at Korea Health Industry Development Institute (2006) agrees that regional patients utilize Seoul metropolitan area hospitals because of their superior medical staff and good treatment results[6]. This means that what affects the satisfaction level of cancer patients in our country most are the human factors: medical staff level, frequency of staff visit, detailed explanation by the medical staff, friendliness of the medical staff, and detailed explanation of the nursing process.

Physical factors in cancer patients' utilization of hospitals also exerted a considerable positive influence on the satisfaction level. This result corresponds with the research of Kim, Byung-Goon who contended that the biggest influences on the hospital choice of cancer patients and service satisfaction rate are superior medical facilities and equipment, medical skills of the staff, and recommendation of family and friends[5].

This also matches with the research of Kim, Jin-hyun that the most important reasons for utilizing hospitals in Seoul metropolitan area are latest medical facilities and equipment, and superior medical staff[7].

The next important factors after human factors in cancer patients' satisfaction of medical service are the physical factors: patient-centered medical facilities, latest medical equipment, quiet and pleasant environment, and convenient facilities.

This research found that the hospital accessibility for use had no considerable influence on customer satisfaction. This result is the opposite of the findings of the research on hospital choice of cancer patients and their satisfaction by Moon, Chong-bum (2008) who asserted that the accessibility of the hospitals has a positive influence on the service satisfaction level and hospital selection.

Also, the findings of this research do not correspond with the research who assert that general hospital patients are influenced most by accessibility of the hospital and actual consultation time with doctors, according to the study on factors that affect the selection of general hospital patients and their satisfaction [8, 9, 10]. The disparities between this research and previous researches may come from the fact that there is a difference in the utilization of medical service between common patients and cancer patients in our country.

Particularly, since cancer patients are critical patients whose life is on the line, hospital accessibility is important, but there are more crucial factors: medical treatment quality, latest medical equipment, pleasant surroundings after an operation or treatment, various convenient facilities.

The summary of the result of analyzing factors that affect the satisfaction level of cancer patients for their medical service is as follows. First, human factors in cancer patients' utilization of hospitals have the most considerable influence on their satisfaction. Second, the physical factors of the hospitals have a noticeable effect on customer satisfaction. Third, hospital accessibility factors for cancer patients have no considerable influence on customer satisfaction.

As most cancer patients have a life-threatening illness, human factors are more important than physical factors and hospital accessibility factors. As a conclusion of this research, the two factors that affect the satisfaction level of cancer patients in our nation are human factors and physical factors.

Particularly, hospital accessibility for cancer patients is important, but since most cancer patients are critically-ill, there are more crucial factors: medical staff competence, friendliness and kind consideration of the hospital, detailed explanation, latest medical equipment, pleasant surroundings, proper convenient facilities [11].

Active investment for securing superior medical staff is necessary for medical institutions to draw in a lot of patients. In addition, kindness training is a must since the medical staff has to explain in detail about operations, tests, and aftercare. Furthermore, medical institutions should put forth their efforts to increase the satisfaction of their service by introducing the latest medical equipment and providing patient-centered facilities and pleasant environment.

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