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How do hospital characteristics affect veteran patients' satisfaction in South Korea?

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Abstract

This study examined the impact of the characteristics of commissioned hospitals on the satisfaction of veterans by using the satisfaction survey data of Korean veterans. As a result of a regression analysis using departments, beds, and specialists as independent variables and satisfaction scores as dependent variables, it was found that there was a positive correlation between the number of specialists and satisfaction in general hospitals. However, in clinics and tertiary hospitals, the number of beds was found to have a negative effect on satisfaction. Additionally, the presence or absence of a Veterans Affairs hospital did not have a significant effect on satisfaction with the referral hospital. Despite limitations, such as using only one year of survey data, this study may provide selection criteria for the ministry of Patriots and Veterans Affairs in designating commissioned hospitals.

Executive Summary

Satisfaction of policy customer is an important factor in determining the success of a policy. This is because the original intent of the policy can only be achieved if the satisfaction factors experienced by veterans are utilized in the policy. Therefore, this study used the results of a satisfaction survey on commissioned hospitals conducted among veterans in Korea to statistically analyze the impact of the characteristics of commissioned hospitals on the satisfaction of veteran patients. The purpose of this study is to find out which factors among the medical facilities and location characteristics of commissioned hospitals affect veterans' satisfaction. Considering that the Korean Ministry of Patriots and Veterans Affairs (MPVA) continues to implement a policy to increase the number of commissioned hospitals, the results of this study may be reflected in the selection criteria for future commissioned hospitals.

The study was conducted through regression analysis with the number of medical departments, beds, and specialists as independent variables and the satisfaction score as the dependent variable. In order to minimize the impact of other hospital characteristics on satisfaction in addition to the independent variables, regression analysis was conducted separately according to the level of the hospital (clinic, general hospital, tertiary general hospital). In addition, given that commissioned hospitals are a system introduced to serve as a replacement for Veterans Hospitals, a t-test was used to analyze whether the presence or absence of a Veterans Hospital in the same region affected satisfaction.

The analysis results are as follows. As a result of regression analysis for all hospitals, no significant linear relationship between independent variables and dependent variables was found. In the analysis by hospital level, only the number of specialists had a positive correlation with

satisfaction at the general hospital level. In particular, it was confirmed that the number of beds was negatively correlated with satisfaction in clinic-level hospitals and tertiary hospitals. In other words, it can be seen that large-scale facilities actually have a negative effect on patient satisfaction. In other words, non-medical facility factors such as the friendliness of doctors, hospital services, and respect for veterans may have a greater impact on veteran patients' satisfaction with the hospital than how large the hospital's facilities are.

In addition, it was confirmed that there was no statistically significant difference in average satisfaction between the group with and without a Veterans Hospital in the region where the hospital was located. The presence or absence of a Veterans Hospital does not affect satisfaction with a commissioned hospital, and this appears to be because when veterans choose a hospital, they selectively use commissioned hospitals and Veterans Hospitals according to their own will, regardless of the presence or absence of a Veterans Hospital.

This study is significant in that it is the first study to use the results of a satisfaction survey of actual veterans and can be used when MPVA revises the requirements used to select new commissioned hospitals in the future. However, the fact that this study was conducted with only a one-year satisfaction survey and that the independent variables do not completely represent the hospital's facility factors remain limitations of this study. In the future, in addition to this study, there is a need to develop research using the results of multi-year satisfaction surveys and additional independent variables.

Introduction

The topic of this study is 'How do the characteristics of commissioned hospitals affect the

satisfaction of veteran patients in South Korea?'. The Ministry of Patriots and Veterans Affairs (MPVA) in south Korea allows veterans to use private hospitals (commissioned hospitals) in addition to the Veterans Hospitals they directly operate for convenience. Expanding the number of commissioned hospitals is one of MPVA's most important policies in recent years.

However, MPVA has so far focused only on increasing the number of commissioned hospitals and has not paid attention to whether veterans are satisfied with commissioned hospitals and what factors hospitals with high patient satisfaction have. Therefore, the purpose of my research is to examine factors that influence veterans' satisfaction with medical institutions. After reviewing existing papers related to satisfaction with medical services, I will conduct statistical analysis to investigate what factors that affect user. These factors include the number of medical departments, number of beds, number of specialists in each commissioned hospital, and whether or not there is a Veterans Affairs hospital in the area affect patient satisfaction. Through this, I would like to derive implications for future MPVA policies. If variables related to patient satisfaction are found to be significant, they may be useful to MPVA as they seek to expand healthcare for veterans. For example, if my results find that more specialists lead to higher patient satisfaction, MPVA may give a higher weight to the number of specialists in their review criteria.

I worked for two years (2020-2022) as the director of the Medical Department in charge of expansion of commissioned hospitals at MPVA. Although the satisfaction level of commissioned hospitals is measured every year, as far as I know there has been no research done so that the measured satisfaction level can be fed back to policy. In other words, this study will be the first to analyze the factors that determine satisfaction based on the results of an actual survey conducted on veterans.

Institutional Background

Korea has various types of patriots and veterans (hereafter referred to as veterans) while going through independence from Japanese imperialism, wars against communism (Korean War, Vietnam War), and democratization from dictatorship. About 840,000 veterans receive pensions, medical care, burial in national cemeteries, as well as other services from MPVA. More recently, as veterans age, the importance of healthcare has increased, and in turn MPVA has been expanding its health care services.

Table 1: Overview of Veterans Hospitals by region, as of 2021

Region	Seoul	Busan	Gwangju	Daegu	Daejeon	Incheon
Size	141,572㎡	48,234㎡	61,356㎡	37,623㎡	14,164㎡	12,711㎡
Beds	1,391	445	561	475	383	13
Medical Department	31	21	24	22	20	15
Employees	2,300	778	834	744	623	295
Treatments	2,156,737	1,420,323	886,735	844,029	573,229	462,975
Year of opening	1953	1984	1987	1993	1997	2018

Source: 2021 National Veterans Compensation Annual Report (MVPA) and 2021 Veteran medical statistics (KVHS)

As shown in Table 1, there are six Veterans Affairs hospitals directly operated by MPVA-affiliated public institutions (Korea Veterans Health Service, KVHS) in major cities in Korea. In the case of the Veterans Affairs Hospital, it is a public hospital at the level of a general hospital established by the government for veterans (in the case of the Seoul Veterans Affairs Hospital, it

is at the level of a tertiary general hospital). More than 90% of our patients are veterans, and we have departments and medical staff suitable for veterans. Disabled veterans receive full support for medical expenses, and veterans without disabilities and bereaved family of veterans receive reduced medical expenses at a rate of 30% to 90%.

On the other hand, a commissioned hospital is a private hospital established by an individual for profit, focusing on treating general patients and providing treatment for veterans on the side. MPVA introduced the commissioned hospital system in 1986 for the convenience of Veterans. At first, commissioned hospitals were designated mainly in island areas where access to Veterans Hospitals was limited, but after the 1990s, commissioned hospitals were contracted in metropolitan areas where Veterans Hospitals are located, as a way to meet the increasing medical demands. As a result, the number of commissioned hospitals, which were two in 1986, has expanded to 488 by 2021 (See Figure1 and Table 2). Commissioned hospitals are selected by comprehensively considering whether there is a Veterans Hospitals in the region, the number of departments, the number of specialists and beds, medical equipment, the appropriateness of drug use, and the appropriateness of medical expenses. Since the contract between MPVA and the commissioned hospital is for the treatment of veterans, once the veterans receive treatment at the hospital, MPVA pays the medical expenses later, and MPVA is not involved in the management and operation of the remaining hospital. Of course, MPVA has provisions that allow it to conduct periodic evaluations and reward excellent hospitals and terminate contracts for hospitals with low scores. However, there is little incentive to reward, so it is difficult to motivate hospitals, and the conditions for contract termination are strict, so the probability of terminating the contract is very low.

Figure 1 : Location of Veterans Hospital and Number of commissioned hospitals by year
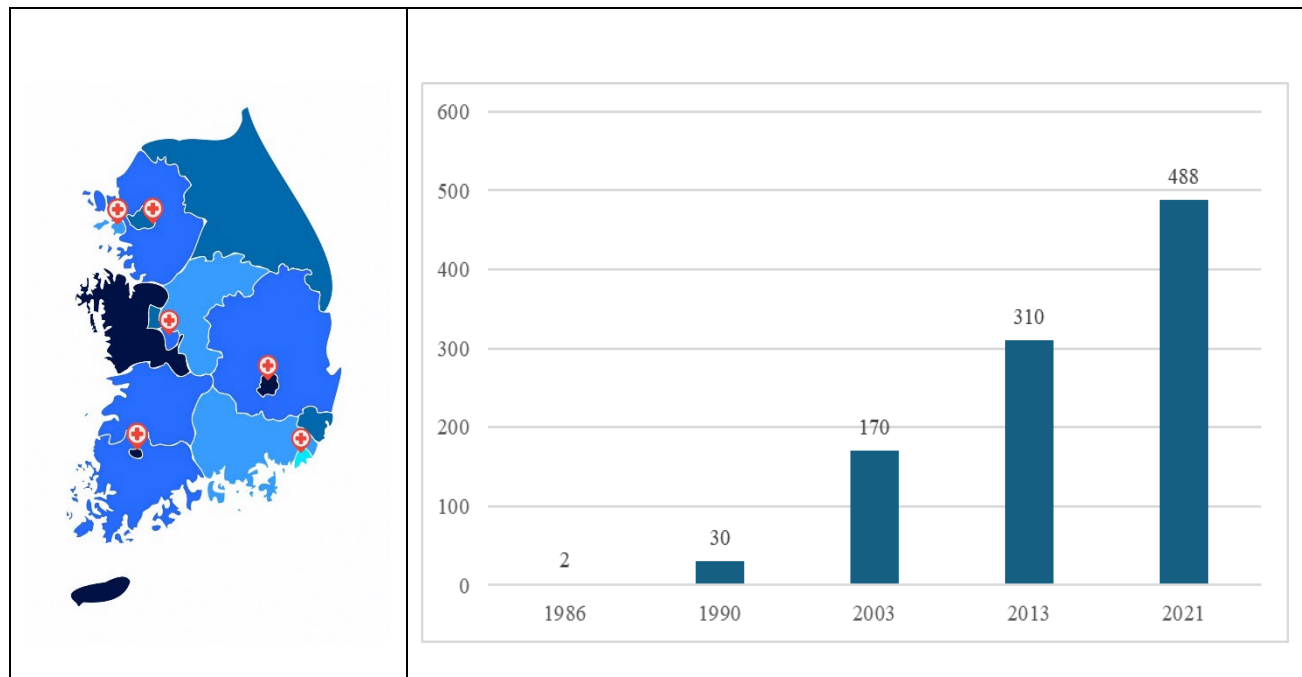

Table 2 : Commissioned Hospital Overview (2021)

	Total	Seoul area	Busan area	Gwangju area	Daegu area	Daejeon area	Incheon area
Total Hospitals	448	169	82	96	59	61	21
Tertiary Hospital	88	28	14	18	8	12	8
General Hospital	147	47	35	24	19	16	6
Clinic	253	94	33	54	32	33	7
Beds	50,533	15,835	11,717	9,069	5,955	5,903	2,053
Treatments (2019)	4,362,333 (Including Incheon)	1,993,666	1,023,818	557,186	473,823	313,840	-

Source: 2021 National Veterans Compensation Annual Report (MVPA) and 2021 Veteran medical statistics (KVHS)

As a way to ensure quality, KVHS randomly selects veterans who have used commissioned hospitals every year (3,532 people and 264 hospitals in 2021) and surveys satisfaction through phone interviews. The survey questions consist of quality of care (waiting for treatment, equipment, etc.), medical staff (kindness, etc.), and hospital environment. Satisfaction is on a 5-point scale (very satisfied - satisfied - average - dissatisfied - very dissatisfied). As a result of a recent survey, the average satisfaction score was 86.1 points, which is higher than 'satisfied', with the lowest score being 68.1 points and the highest score being 96.3 points. However, the results of this satisfaction survey were only used to award recognition to a small number of excellent hospitals and are not used as policy feedback, i.e., to inform future decisions about veterans healthcare.
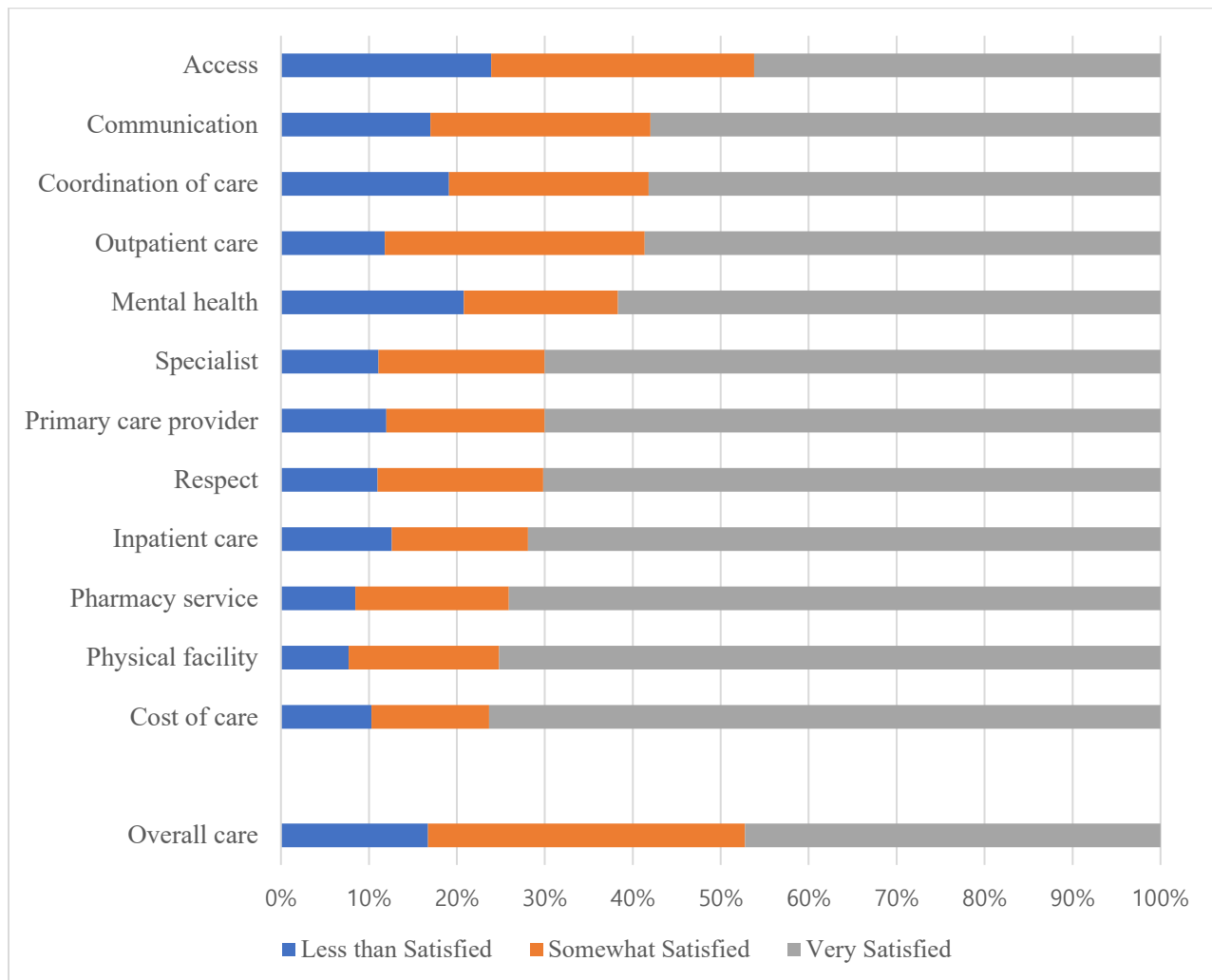
Literature Review

Kraska, Weigand, and Geraedts (2017) analyzed patient satisfaction data from more than 200,000 patients in 532 German hospitals. This study argued that characteristics such as the number of medical staff, and location of a hospital have a significant impact on patient satisfaction. Researchers found that more nurses per bed and more specialized departments were associated with higher patient satisfaction. Additionally, hospitals with better quality control and hospitals located in urban areas reported higher patient satisfaction.

However, Jo (2009) found that the main components that affect medical consumer satisfaction are the doctor's qualifications and attitude, such as friendliness, rather than medical factors such as facilities, equipment, and procedures. In addition, according to Kim, Cho, Ahn, Goh and Kim (2008), in large hospitals with a certain level of facilities, facility factors can not

affect patient satisfaction. In other words, once a certain level of facility requirements is achieved, hospital facilities no longer influence increasing patient satisfaction even if the facilities are improved beyond that level.

Meanwhile, Zickmund, Burkitt, and Gao (2018) analyzed data from a survey of satisfaction with U.S. Veterans Affairs hospital services among 1,196 U.S. veterans. They measured satisfaction with items such as "overall health care, outpatient and inpatient care, primary care, specialist and mental health providers, provider communication and respect, accessibility, cost of treatment, physical facilities, pharmacy, pain management. For reference, of the 1,196 respondents to the overall satisfaction survey with VA health care, 565 (47.2%) responded 'very satisfied' and 431 (36.0%) responded 'somewhat satisfied', indicating that users are satisfied with VA health care. This appears to be similar to 86.1 (somewhat satisfied), which is the satisfaction level of Korean veterans with commissioned hospitals. In addition, the satisfaction level was high in the order of treatment cost and physical facilities, and the lowest level of satisfaction was in terms of accessibility. In particular, considering that only 58% of respondents were 'very satisfied' in the communication category, it can be said that in addition to factors related to hospital facilities, non-facility factors are also factors in determining satisfaction among American veterans.

Figure 2 : Results of a satisfaction survey on US Veterans Affairs hospital services

Source: Racial, Ethnic, and Gender Equity in Veteran Satisfaction with Health Care in the Veterans Affairs Health Care System (2018).

As a result of the literature review, it was found that patients' satisfaction with the hospital was determined not only by the hospital's facility factors, such as the number of medical staff, but also by non-facility factors, such as friendly attitudes toward patients.

Research Question

My research question is "How do hospital characteristics affect veteran patients' satisfaction in Korea?'. The purpose of my research is to find out the factors that influence veterans' satisfaction with actual medical institutions. If variables related to patient satisfaction can be found through this, MPVA will be able to reflect research results in the screening criteria for selecting commissioned hospitals. For example, if more specialists lead to higher patient satisfaction, they may give higher weight to the number of specialists in their review criteria.

Data Plan

To analyze my research question, I need the following data, and the reasons and sources for needing it are as follows. All data is publicly available on the South Korean central government's website, and there is no data related to living individuals.

1. **Number of medical departments in commissioned hospital**

In general, the more diverse the number of medical departments, the better the size and facilities of the hospital are expected to be. Veterans will find it convenient to be able to receive treatment for multiple diseases at the same time at one hospital, so the number of medical departments is an important indicator.[1] MPVA discloses the status of commissioned hospitals

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[1] Korean veterans who had received hospital treatment for one year in 2020 had an average of 1.8 diseases, and 50.2% had two or more complex diseases. (Ministry of Patriots and Veterans Affairs & Korea Institute for Health and Social Affairs. (2022, July). *Research Report on the Results of a Survey on the Living Conditions of National Veterans.* Statistics Korea.)

every three months on the Korea Public Data Portal website. This status includes the number of medical departments in the commissioned hospital.

2. Number of beds in commissioned hospital

The number of hospital beds is also a representative indicator of the size and facilities of a hospital. In general, the more beds there are, the more convenient hospitalization is likely to be, which can have a positive impact on veteran satisfaction. On the other hand, since a large number of beds means a large hospital, treatment and hospitalization procedures are complicated, and satisfaction may decrease accordingly. As with the number of medical departments, the number of beds in the commissioned hospital is included in the status of commissioned hospitals that MPVA discloses every three months on the Korea Public Data Portal website.

3. Number of specialists in commissioned hospital

The number of specialists is a quantitative indicator that can measure a hospital's medical capabilities. In general, the greater the number of specialists, the more convenient treatment and surgery is likely to be, which will have an impact on veterans' satisfaction. The Hospital Evaluation Integrated Portal on the website of the Health Insurance Review and Assessment Service, a public institution under the Ministry of Health and Welfare (MOHW) of Korea, discloses data on the number of specialists in all hospitals in Korea. Anyone who knows the name and region of the hospital can search and check the information, so they can also find out the number of specialists at the commissioned hospital.

4. Region where the commissioned hospital is located and the level of the commissioned hospital

Commissioned hospitals have recently come to have the characteristics of a complement to Veterans Hospitals, but they are fundamentally introduced as a replacement system. Therefore, veterans' satisfaction may vary depending on whether there is a Veterans Hospital in the area where the commissioned hospital is located. For example, in areas where there is no Veterans Affairs hospital, satisfaction may be high because commissioned hospitals fill the medical gap. On the other hand, areas where a Veterans Affairs hospital is located may have relatively low satisfaction compared to the Veterans Affairs hospital.

Additionally, the grade of the commissioned (tertiary hospital, general hospital, clinic) is necessary to identify the characteristics of the hospital itself. In Korea, hospitals have differences depending on their level in terms of out-of-pocket costs, facility standards, equipment, specialized diseases, and hospital treatment atmosphere. Using this indicator will help reflect the capabilities and characteristics of the hospital itself.

The location and level of the hospital are included in the MPVA data mentioned in number 1 above.

5. Commissioned hospital patient satisfaction survey results

Korea Veterans Health Service, a public institution under MPVA, conducts a commissioned hospital user satisfaction survey every year and discloses the results on its website. This satisfaction survey was conducted according to a 5-point Likert scale (very satisfied - satisfied -

average - dissatisfied - very dissatisfied). The scores for individual hospitals were released until 2021, and the 2022 satisfaction survey results did not disclose the scores for individual hospitals, so I would like to analyze them using the 2021 data. For reference, in the satisfaction survey I used in this study, all information that could identify the respondents was anonymized. And I only used the final result score of the satisfaction survey in the analysis. Therefore, IRB review is not necessary for my research.

Research Design

My variables and research design are as follows.

1.   Independent variables

The number of departments (e.g., internal medicine, orthopedics, rehabilitation medicine, etc.) reported to MPVA of commissioned hospitals, ranging from 1 to 33 depending on the hospital.

The number of beds in commissioned hospitals is based on the number of beds reported to MPVA and varies from 0 to 866 depending on the hospital. The number of specialists in commissioned hospitals includes only specialists notified to the Health Insurance Review and Assessment Service, a public institution under the MOHW and excludes generalists and residents. There are 1 to 217 people.

The variable for whether there is a Veterans Hospital in the area where the commissioned hospital is located will be set as a dummy variable. Regions without a Veterans Hospital will be

assigned 0, and regions with one will be assigned 1.

2. Dependent variable

The dependent variable is satisfaction survey result scores for veterans who used commissioned hospitals in 2021. The KVHS annually surveys commissioned hospital satisfaction and discloses the results. A random sample of 3,532 people who used 269 commissioned hospitals was selected and phone interviews were conducted from September 3 to September 16, 2021. I use only the data of 264 hospitals in this analysis, excluding the 5 hospitals with inaccurate independent variables.[2] The survey items consisted of quality of care, friendliness, hospital environment, and public interest of hospitals.

3. Model

I will conduct a regression analysis with number of medical specialties, number of beds, and number of specialists as independent variables and patient satisfaction as the dependent variable. Also, I will repeat the regression analysis performed previously for each level of hospital (tertiary hospital, general hospital, clinic). Since the number of medical specialties, beds, and specialists varies greatly depending on the level of hospital, I believe it will be more statistically significant to separate them. I plan to use the Stata program and calculate their P-value to determine

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[2] Unable to determine number of specialists.

whether there is a significant linear relationship between the variables.

In addition, I would like to use t-test to find out whether the presence or absence of a Veterans Hospital affects the satisfaction of commissioned hospital by distinguishing regions with and without Veterans Hospitals.

Results

1. Relation of 'number of departments/beds/specialists' on 'patient satisfaction'

Figure 3: Predictors of patient satisfaction

	(1) point
departments	-0.0658
	(-0.82)
beds	-0.00341
	(-0.83)
specialist	0.0160
	(0.81)
_cons	87.13***
	(151.87)
N	264

t statistics in parentheses
$^{*} p < 0.05,$ $^{**} p < 0.01,$ $^{***} p < 0.001$

Figure 3 shows the results of regression analysis with 'number of departments/beds/specialists' as the independent variable and 'patient satisfaction' as the dependent variable. In this case, none of the independent variables have statistically significant

coefficients, as all their p-values are above 0.05. This means that there is no significant linear relationship between the department, bed, and specialist with satisfaction.

2. **Relationship between the number of departments/beds/specialists on patient satisfaction**

Figure 4: The result on the impact of each factor on patient satisfaction in clinics

	(1) point
departments	-0.0493
	(-0.27)
beds	-0.0997*
	(-2.35)
specialist	0.0440
	(0.17)
_cons	87.83***
	(84.13)
N	75

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 4 shows the results of the impact of each factor on patient satisfaction in a clinic-level hospital. In the case of the clinic, only the number of beds (p-value = 0.021) had a statistically significant relationship with satisfaction, and since the coefficient was a negative number, satisfaction decreased as the number of beds increased. In addition, the other independent variables, medical department and specialist, did not have a significant relationship with satisfaction.

Figure 5 : The result on the impact of each factor on patient satisfaction in general hospitals

| | (1) |
	point
departments	-0.265
	(-1.32)
beds	0.00125
	(0.18)
specialist	0.249^{**}
	(2.91)
_cons	85.81^{***}
	(68.12)
N	109

t statistics in parentheses
$^{*} p < 0.05, ^{**} p < 0.01, ^{***} p < 0.001$

Figure 5 shows the results of the impact of each factor on patient satisfaction in a general hospitals-level hospital. In the case of general hospitals, only the number of specialists (p-value = 0.004) had a statistically significant relationship with satisfaction, and since the coefficient was a positive number, the more specialists there were, the higher the satisfaction level. The other independent variables, the number of treatment departments and hospital beds, did not have a significant relationship with satisfaction.

Figure 6 : The result on the impact of each factor on patient satisfaction in tertiary hospitals

	(1)
	point
departments	0.0346
	(0.25)
beds	-0.0152*
	(-2.09)
specialist	0.0341
	(1.31)
_cons	88.31***
	(42.30)
N	80

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 6 shows the results of the impact of each factor on patient satisfaction in a tertiary hospitals-level hospital. In the case of tertiary hospitals, only the number of beds (p-value = 0.04) was statistically significant, and since the coefficient was negative, satisfaction decreased as the number of beds increased. The other independent variables, the number of departments and specialists, did not have a significant relationship with satisfaction.

As a result of the analysis according to the level of the hospital, a statistically significant coefficient was derived at each level. The results are summarized in Table 3.

Table 3: Summary of results

Level of hospital	Independent variables	P-value	Relationship with patient satisfaction	R-squared
All	Departments Beds specialists	0.413 0.406 0.420	- - -	0.0138
Clinic	Departments Beds specialists	0.792 0.021 0.869	- Negative -	0.0926
General hospital	Departments Beds specialists	0.189 0.854 0.004	- - Positive	0.0935
Tertiary hospital	Departments Beds specialists	0.807 0.040 0.193	- Negative -	0.0619

However, in all cases, R-squared is small, so it is difficult to say that the explanatory power of the model is high. However, what is interesting is that, contrary to expectations, the number of beds has a negative relationship with satisfaction in both clinics and tertiary hospitals. Although an additional study is needed, the reasons for this may be the possibility that the more beds there are, the higher the congestion, the lower the quality of service per individual, and the possibility of differences in treatment types (inpatient or outpatient). In particular, considering that most veterans in Korea are very elderly, they are likely to experience difficulties with crowded hospitals and complex medical procedures.

3. The relationship between the presence or absence of a Veterans Hospital on patient satisfaction

Figure 7 : The result of t-test to compare the average satisfaction

Group	Obs	Mean	Std. err.	Std. dev.	t-statistic
0	216	86.09724	.329768	4.846579	-
1	48	87.0465	.7028504	4.869491	-
diff	-	-.9492546	.7740315	-	-1.2264

Figure 7 shows the results of whether patient satisfaction at commissioned hospitals varies depending on the presence or absence of a Veterans Hospital. As a result of a t-test to compare the average satisfaction of two groups (region without Veterans Hospital: 0, region with Veterans Hospital: 1), the average difference between the two groups is -0.9492546 and the t-statistic is -1.2264.

"H_0" specifies the null hypothesis to assume that the difference between the means is zero. "H_A" specifies an alternative hypothesis that can be one-sided (diff < 0 or diff > 0) or two-sided (diff != 0). Because the one-sided p-value is greater than 0.05, I cannot reject the null hypothesis that there is no difference between the means of the two groups at the significance level of 0.05. In conclusion, therefore, there is no statistically significant difference between the two groups.

Conclusion and Policy implications

As a result of the analysis, regression analysis for all hospitals showed no significant linear relationship between the independent variables and dependent variables. In analysis by hospital level, the number of medical departments did not have a statistically significant effect on patient satisfaction at all levels of hospitals. And the number of specialists had a slight positive correlation with satisfaction only at the general hospital level. Lastly, the number of beds was found to have a slight negative correlation with satisfaction in clinic-level hospitals and tertiary general hospitals. This is a result that does not conform to the common sense that large hospitals, which can be represented by the number of departments, number of specialists, number of beds will increase patient satisfaction. In particular, in the case of hospital beds, it is necessary to pay attention to the fact that the more beds there are, the more it has a negative effect on patient satisfaction.

This means large-scale facilities may have a negative impact on patient satisfaction. In other words, non-facility factors such as the friendliness of doctors, hospital services, and respect for veterans may have a greater impact on veteran patients' satisfaction with the hospital than how large the hospital's facilities are.

This is similar to Jo's (2009) research finding that doctors' attitudes have a greater impact on medical consumer satisfaction than medical factors such as facilities examined in the literature review. This is also supported by the research results of Kim, Cho, Ahn, Goh and Kim (2008), who found that in hospitals with a certain level of facilities, facility factors can no longer affect patient satisfaction. In addition, veterans in South Korea have characteristics such as being vulnerable to

crowded environments due to their old age[3], having a higher percentage of chronic diseases requiring periodic prescriptions than severe diseases requiring high-level treatment compared to the public[4], and having a high desire to be respected as veterans. Considering the characteristics of veterans, it can be hypothesized that hospitality, customer-oriented service, preferential treatment, and respect for veterans may have a greater impact on satisfaction than the size or facilities of the hospital.

In addition, it was confirmed that there was no statistically significant difference in average satisfaction between the group with and without a veteran hospital in the region where the hospital was located. This result is different from the existing expectation that commissioned hospitals are substitutes for Veterans Hospitals, and that satisfaction with commissioned hospitals may vary depending on whether there is a Veterans Hospital or not. In other words, it can be said that veterans' satisfaction with commissioned hospitals is determined independently of the Veterans Hospital and it seems that veterans select and use the hospitals that suit them according to their needs in Veterans Hospitals and commissioned hospitals. Therefore, when designating a commissioned hospital, it is judged that the existence of a Veterans Hospital is not an important factor.

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[3] The average age of Korean veterans is 70 years old (Source: Ministry of Patriots and Veterans Affairs. (2022). *2021 National Veterans Compensation Annual Report.* Ministry of Patriots and Veterans Affairs.)

[4] In 2019, 29.5% of outpatients at the Veterans Hospital had chronic diseases, while the national average rate of patients with chronic diseases among the general public was 14.5% (Source: Korea Veterans health service. (2022). *2021 Veteran Medical Statistics.* Korea Veterans Health Service.)

In the future, when MPVA promotes policies to expand commissioned hospitals, it is necessary to revise the commissioned hospital designation requirements to increase the satisfaction experienced by policy targets. MPVA should consider non-facility factors such as hospitality in addition to existing facility aspects such as 'number of departments, beds, specialists and existence of Veterans Hospitals,'.

Limitations of this Study

I would like to mention that this study has several limitations. First, this study was conducted using only the results of a one-year satisfaction survey. Therefore, the volatility that may occur over time has not been taken into account, and the possibility that some extreme values may be included cannot be ruled out. And it's hard to say that the sample is large enough. When analyzing based on the hospital level, the sample size of the clinics was only 75, so it can be said that the sample size was not sufficient to have high statistical reliability.

Additionally, the independent variables used in this study cannot fully represent the hospital's medical facility factors. The number of medical departments, specialists, and hospital beds used in the study has the advantage of being an easily measurable and comparable indicator. However, even in hospitals of the same size, patient satisfaction can be very different depending on the hospital's construction age, whether it has expensive high-tech medical equipment, and the available area per patient.

However, this study is significant in that it is the first study to use actual veteran patient satisfaction results. Therefore, based on the results of this study, there is a need to develop research using satisfaction surveys and additional independent variables over the next several years.

References

Health Insurance Review and Assessment Service. Information about hospital. Hospital Evaluation Integrated Portal. https://khqa.kr/main

Jo, S. N. (2009). *The Influence of Doctors' Qualities and Attitudes on Medical Service Satisfaction. Korea journal of population studies*, 32(3), 21-41.

Kim, Y.-K., Cho, C.-H., Ahn, S.-K., Goh, I.-H., & Kim, H.-J. (2008). *A study on medical services quality and its influence upon value of care and patient satisfaction - Focusing upon outpatients in a large-sized hospital.* Total Quality Management & Business Excellence, 19(11), 1155–1171. https://doi.org/10.1080/14783360802323594

Kraska RA, Weigand M, Geraedts M. *Associations between hospital characteristics and patient satisfaction in Germany.* Health Expect. 2017 Aug;20(4):593-600. doi: 10.1111/hex.12485. Epub 2016 Jul 22. PMID: 27447595; PMCID: PMC5512999.

Korea Veterans health service. (2022). *2021 Veteran Medical Statistics.* Korea Veterans Health Service.

Korea Veterans Health Service. *Commissioned hospital patient satisfaction survey results.* Korea Veterans Health Service website. https://www.bohun.or.kr/030manage/manage0207_05.php?left=1&sDate=2021-11-13&eDate= 2023-11-13

Ministry of Patriots and Veterans Affairs. (2022). *2021 National Veterans Compensation Annual Report.* Ministry of Patriots and Veterans Affairs.

Ministry of Patriots and Veterans Affairs. (2021.12.20). *Status of hospitals commissioned for veterans.* Korea Public Data Portal.

https://www.data.go.kr/data/15081917/fileData.do#layer_data_infomation

Zickmund, S.L., Burkitt, K.H., Gao, S. et al. *Racial, Ethnic, and Gender Equity in Veteran Satisfaction with Health Care in the Veterans Affairs Health Care System*. J GEN INTERN MED **33**, 305–331 (2018).