RESEARCH PAPER

Factors Related To Outpatient Satisfaction at Vietnam National University Hospital, Hanoi

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ABSTRACT

Research Objectives: To analyze and identify factors related to the satisfaction of outpatients visiting Vietnam National University Hospital, Hanoi in 2021. The findings aim to help relevant units develop strategies and make decisions regarding service provision.

Research Methods: A cross-sectional descriptive study. The research was conducted on patients aged 18 and older who received outpatient care at Vietnam National University Hospital, Hanoi, Vietnam, from January 2021 to July 2021.

Research Results: The overall satisfaction rate for medical services reached 80.8%. There is a correlation between satisfaction with accessibility and age group; specifically, the elderly group showed higher satisfaction than the younger group ($p < 0.05$). There is a correlation between satisfaction with facilities and age group; the elderly group had higher satisfaction than the younger group ($p < 0.05$). There is a correlation between overall satisfaction and age group (elderly group higher than younger group, $\$p < 0.05\$$), educational level (those with a high school education or below were 1.8 times more satisfied than those with education above high school level, $p < 0.05$), and Health Insurance usage (those not using health insurance were 11 times more satisfied than those using it, $p < 0.05$).

Conclusion: The overall satisfaction rate was 80.8%. Significant statistical differences were found showing that the elderly group had higher overall satisfaction and satisfaction with facilities compared to the younger group. Additionally, patients with a high school education or below, and those not using health insurance, exhibited higher levels of satisfaction.

Keywords: *Related factors, patient satisfaction, outpatient, hospital*

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INTRODUCTION

Nowadays, providing services that meet the needs and expectations of customers is a mark of success for healthcare (HC) service providers. The satisfaction of the research subjects regarding the hospital's outpatient examination and treatment services is evaluated through five groups of factors: **Accessibility**; **Information transparency**; **Facilities and equipment**; **Professional competence and attitude of medical staff**; and **Service delivery results**. Additionally, there is an evaluation of the subjects' demand to return to use services when visiting the hospital. Good quality healthcare is reflected in four aspects: effectiveness and scientific rigor; care must be performed according to established standards; appropriateness for the patient; safety without causing complications; and patients being able to access and accept it with satisfaction, at a lower cost compared to other treatment methods. Some global studies indicate that the factors patients are most dissatisfied with are **waiting times**, **service costs**, and the **attitude of medical staff**.

The hospital is developing according to a "Practice Hospital" model within a multidisciplinary, multi-field training system with high autonomy under Vietnam National University (VNU), Hanoi, which has been established and is currently growing. The human resources benefit from a team of staff including lecturers, researchers, and technicians with high degrees and expertise, as well as the moral character of educators, which are prerequisites for high-quality, sustainable development. Building and perfecting an advanced training hospital model is both the goal and the driving force to develop resources for training and research, combined with providing high-quality medical services to meet social needs.

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Therefore, we conducted this study with the main objective of analyzing and understanding the factors related to the satisfaction of outpatients visiting Vietnam National University Hospital, Hanoi in 2021, to provide units with a basis for building strategies and making decisions regarding service provision.

RESEARCH METHOD

Research design: Cross-sectional descriptive study.

Research subjects: Patients aged 18 and older visiting for outpatient examination at Vietnam National University Hospital, Hanoi, from January 2021 to July 2021.

Exclusion criteria: Patients who did not cooperate during the research process; those with insufficient mental or intellectual health; health conditions inadequate for answering interviews; and patients who did not give consent to participate in the study.

Sample Size and Sampling: The sample size was calculated based on the formula for estimating a proportion [4]:

$$n = \frac{Z^2_{1-\alpha/2} \times p \times (1-p)}{d^2}$$

In which: n is the sample size

(number of subjects interviewed); $Z^2_{1-\alpha/2}$ is the Z-value obtained from a table with a confidence level alpha = 0.05 (Z = 1.96); p is the estimated general satisfaction rate of patients, estimated at 0.5; q = 1 - p = 0.5; d is the desired margin of error, determined to be 0.05. Consequently, the minimum required sample size is n = 384. The researchers approached 410 people for examination; after data collection, 10 questionnaires were excluded for not meeting requirements, resulting in an actual study sample size of **400 subjects**.

Data Collection Tool: The Outpatient Satisfaction Survey issued by the Vietnam Ministry of Health. The questionnaire consists of 7 aspects and 33 items, including the **Accessibility:** 5 items; **Transparency of information and medical procedures:** 10 items; **Facilities and equipment:** 8 items; **Attitude and professional capacity of medical staff:** 4 items; **Service delivery results:** 4 items; **General assessment of how much expectations were met (%):** 1 item; **Need for medical examination:** 1 item.

Variables and Indicators: Independent variables including the Age group, gender, residence, education level, occupation, average income, distance to the hospital, and health insurance usage. **Dependent variables** including the Satisfaction with accessibility, transparency, facilities, staff capacity and attitude, service results, and general satisfaction with medical services.

Data Processing and Analysis: Data analysis was performed using SPSS 21.0 software. Descriptive statistics: Basic patient information is described using percentage (%), mean, and standard deviation. Analytical statistics: Statistical tests were used to compare mean satisfaction scores between independent variables. Likert Scale: Divided into 5 levels from 1 (Very Dissatisfied) to 5 (Very Satisfied). The Likert scale was coded into 2 groups: "Not satisfied" (< 4 points) and "Satisfied" (≥ 4 points) for each item, from which the patient satisfaction rate for each item was calculated. Correlation analysis: Calculation of Odds Ratio (OR), 95% CI, and p-value.

Research Ethics: The study was approved by the Ethics Committee and passed the proposal stage at Thang Long University, Vietnam. All personal information regarding the subjects is kept confidential. The collected data and information are used solely for research purposes and no other purpose.

RESEARCH RESULTS

Evaluation of overall satisfaction and the need to return for medical examination and treatment services

General satisfaction of subjects regarding the hospital's medical services (n=400), the results show the Satisfied is 80.8% and Not satisfied is 19.2%, this means the overall satisfaction rate of subjects regarding medical services reached 80.8%, while 19.2% were not satisfied.

Demand to return to use medical services (n=400), The results show the following the Definitely will not return is 0.5%, Will not return but have few other choices is 4.0%, Might return is 37.3%, Definitely will return or recommend to others is 58.0%, Other is 0.3%. The results show that nearly 60% of surveyed subjects stated they "Definitely will return or recommend to others," and very few (only 0.5%) stated they "Definitely will never return."

Factors related to satisfaction with medical services

Table 1: Factors related to satisfaction with accessibility (n=400)

Factors	Satisfaction with accessibility		OR (95% CI)	p
	Satisfied with accessibility (n, %)	Not satisfied (n, %)		
Gender				
Male	98 (78,4)	27 (21,6)	1,03 (0,6-1,7)	0,897
Female	214 (77,8)	61 (22,2)		
Age Group				
≥ 60	64 (86,5)	10 (13,5)	**2,4 (1,2 – 5,0)**	**0,02**
≥ 40 – 59	69 (87,3)	10 (12,7)	**2,6 (1,3 – 5,4)**	**0,01**
≥ 18 – 39	179 (72,5)	68 (27,5)		

Occupation				
Officials/Public Employees	46 (76,7)	14 (23,3)	0,9 (0,5 – 1,8)	0,787
Others	266 (78,2)	74 (21,8)		
Education level				
High school or below	162 (81,8)	36 (18,2)	1,6 (0,96 – 2,5)	0,068
Intermediate/College or higher	150 (74,3)	52 (25,7)		
Distance to Hospital				
< 5 km	186 (75,6)	60 (24,4)	0,7 (0,4 – 1,1)	0,145
≥ 5 km	126 (81,8)	28 (18,2)		
Use of Health Insurance				
Yes	276 (77,1)	82 (22,9)	0,6 (0,2 – 1,4)	0,202
No	36 (85,7)	6 (14,3)		

The results in Table 1 indicate a relationship between satisfaction with accessibility and specific factors: The **Over 60 year of age group** has a satisfaction level **2.4 times higher** than the Age 18 - 39 years group; The **Age 40 - 59 years group** has a satisfaction level **2.6 times higher** than the Age 18 – 39 years group, these differences are statistically significant with $p < 0.05$. No statistically significant relationship was found between gender, occupation, education level, distance to the hospital, or health insurance use and satisfaction with accessibility ($p > 0.05$).

Table 2: Factors related to satisfaction with information transparency (n=400)

Factors	satisfaction with information transparency		OR(95% CI)	p
	Satisfied	Not satisfied		
Gender				
Male	99 (79,2)	26 (20,8)	0,7 (0,4 – 1,3)	0,282
Female	230 (83,6)	45 (16,4)		
Age group				
≥ 18 – 39	199 (80,6)	48 (19,4)	0,8 (0,4 – 1,6)	0,378
≥ 40 – 59	68 (86,1)	11 (13,9)	1,2 (0,5 - 2,9)	0,499
≥ 60	62 (83,8)	12 (16,2)		
Occupation				
Civil servants/Employees	48 (80,0)	12 (20,0)	0,8 (0,4 – 1,7)	0,621
Others	281 (82,6)	59 (17,4)		
Education Level				
High school or below	166 (83,8)	32 (16,2)	1,3 (0,7 – 2,1)	0,411
Above high school	163 (80,7)	39 (19,3)		
Distance to Hospital				
< 5 km	202 (82,1)	44 (17,9)	0,98 (0,6 – 1,7)	0,928
≥ 5 km	127 (82,5)	27 (17,5)		
Health Insurance Use	293 (81,8)	65 (18,2)	0,8 (0,3 – 1,9)	0,535
Yes	36 (85,7)	6 (14,3)		
No				

The results (Table 2) indicate that no statistically significant relationship was found between gender, age group, occupation, education level, distance to the hospital, or health insurance use and satisfaction with information transparency (with $p > 0.05$).

Table 3: Factors related to satisfaction with facilities (n=400)

Factors	satisfaction with facilities		OR (95% CI)	p
	Satisfied	Not satisfied		
Gender				
Male	91 (72,8)	34 (27,2)	0,8 (0,5 – 1,3)	0,445
Female	210 (76,4)	65 (23,6)		
Age group				
≥ 60	62 (83,8)	12 (16,2)	**2,04 (1,03 – 4,0)**	**0,02**
≥ 40 – 59	62 (78,5)	17 (21,5)	1,4 (0,8 – 2,6)	0,3
≥ 18 – 39	177 (71,7)	70 (28,3)		

Occupation				
Civil servants/Employees	42 (70,0)	18 (30,0)	0,7 (0,4 – 1,3)	0,307
Others	259 (76,2)	81 (23,8)		
Education Level				
High school or below	150 (75,8)	48 (24,2)	1,1 (0,7 – 1,7)	0,816
Above high school	151 (74,8)	51 (25,3)		
Distance to Hospital				
< 5 km	180 (73,2)	66 (26,8)	0,7 (0,4 – 1,2)	0,224
≥ 5 km	121 (78,6)	33 (21,4)		
Health Insurance Use				
Yes	266 (74,3)	92 (25,7)	0,6 (0,2 – 1,4)	0,200
No	35 (83,3)	7 (16,7)		

The research results (Table 3) show a relationship between satisfaction with facilities and age group, indicating that the over 60 age group has a 2.04 times higher satisfaction rate than the 18 - 39 age group; this difference is statistically significant with $p < 0.05$. No statistically significant relationship was found between gender, occupation, education level, distance to the hospital, or health insurance use and satisfaction with accessibility (with $p > 0.05$).

Table 4: Factors associated with satisfaction regarding professional capacity and behavior of medical staff (n=400)

Factors	Satisfaction regarding professional capacity and behavior of medical staff		OR (95% CI)	p
	Satisfied	**Not satisfied**		
Gender				
Male	106 (84,8)	19 (15,2)	0,7 (0,4 – 1,4)	0,322
Female	243 (88,4)	32 (11,6)		
Age group				
≥ 18 – 39	219 (88,7)	28 (11,3)	1,2 (0,6 – 2,7)	0,483
≥ 40 – 59	66 (83,5)	13 (16,5)	0,8 (0,3 – 1,9)	0,439
≥ 60	64 (86,5)	10 (13,5)		
Occupation				
Office workers/Staff	52 (86,7)	8 (13,3)	0,9 (0,4 – 2,1)	0,883
Others	297 (87,4)	43 (12,7)		
Education Level				
High school or below	173 (87,4)	25 (12,6)	1,02 (0,6 – 1,8)	0,942
High school and above	176 (87,1)	26 (12,9)		
Distance to Hospital				
< 5 km	211 (85,8)	35 (14,2)	0,7 (0,4 – 1,3)	0,263
≥ 5 km	138 (89,6)	16 (10,4)		
Health Insurance Use				
Yes	313 (87,4)	45 (12,6)	1,2 (0,5 – 2,9)	0,753
No	36 (85,7)	6 (14,3)		

Results **(Table 4)** indicate that no statistically significant association was found between gender, age group, occupation, education level, distance to the hospital, or health insurance use and satisfaction with the professional capacity and behavior of staff (with $p > 0.05$).

Table 5: Factors associated with satisfaction regarding service delivery results (n=400)

Factors	General satisfaction with service		OR (95% CI)	p
	Satisfied	**Not satisfied**		
Gender				
Male	105 (84,0)	20 (16,0)	0,9 (0,5 – 1,6)	0,706
Female	235 (85,5)	40 (14,6)		
Age Group				
≥ 18 – 39	210 (85,0)	37 (15,0)	1,1 (0,5 – 2,2)	0,924
≥ 40 – 59	68 (86,1)	11 (13,9)	1,2 (0,5 – 2,9)	0,866
≥ 60	62 (83,8)	12 (16,2)		
Occupation				
Civil servants/Employees	50 (83,3)	10 (16,7)	0,8 (0,4 – 1,8)	0,695
Others	290 (85,3)	50 (14,7)		

Education Level				
High school or below	165 (83,3)	33 (16,7)	0,8 (0,4 - 1,3)	0,356
Above high school	175 (86,6)	27 (13,4)		
Distance to Hospital				
< 5 km	211 (85,8)	35 (14,2)	1,2 (0,7 – 2,0)	0,585
≥ 5 km	129 (83,8)	25 (16,2)		
Health Insurance Use				
Yes	304 (84,9)	54 (15,1)	0,9 (0,4 – 2,3)	0,891
No	36 (85,7)	6 (14,3)		

Results **(Table 5)** indicate that no statistically significant association was found between gender, age group, occupation, education level, distance to the hospital, or health insurance use and satisfaction with service delivery results (with $p > 0.05$).

Table 6: Factors related to general satisfaction with medical examination services (n=400)

Factors	General satisfaction with service		OR (95% CI)	p
	Satisfied	Not Satisfied		
Gender				
Male	97 (77,6)	28 (22,4)	0,8 (0,4 – 1,3)	0,282
Female	226 (82,2)	49 (17,8)		
Age group				
≥ 60	65 (87,8)	9 (12,2)	**2,3 (1,1 – 4,8)**	**0,04**
≥ 40 – 59	70 (88,6)	9 (11,4)	**2,4 (1,2 – 5,2)**	**0,02**
≥ 18 – 39	188 (76,1)	59 (23,9)		
Occupation				
Civil servants/Employees	47 (78,3)	13 (21,7)	0,8 (0,4 – 1,6)	0,607
Others	276 (81,2)	64 (18,8)		
Education Level				
High school or below	169 (85,3)	29 (14,7)	**1,8 (1,1 – 3,0)**	**0,02**
Above high school	154 (76,2)	48 (23,7)		
Distance to Hospital				
< 5 km	201 (81,7)	45 (18,3)		
≥ 5 km	122 (79,2)	32 (20,8)	1,2 (0,7 – 1,9)	0,540
Health Insurance Use				
No	41 (97,6)	1 (2,4)		
Yes	282 (78,8)	76 (21,2)	**11 (1,5 – 81,6)**	**0,006**

The results in Table 6 indicate a relationship between general satisfaction with medical examination services and specific factors: the **age group (over 60 age)** had a satisfaction rate 2.3 times higher than the age group (18 – 39); the **age group (40 – 59)** was 2.4 times more satisfied than the (18 – 39) group; the **high school or below** education group was 1.8 times more satisfied than the group with education above high school; and **those not using health insurance** were 11 times more satisfied than those using health insurance. These differences are statistically significant with $p < 0.05$. No statistically significant relationship was found between gender or distance to the hospital and general satisfaction ($p > 0.05$).

DISCUSSION

Patient satisfaction from the perspective of outpatient medical services

Patient satisfaction is an important metric reflecting the development of the health sector and each specific medical facility. According to the survey, the research results show that the overall satisfaction rate of the subjects regarding medical services reached **80.8%**. The results show that the majority of surveyed subjects stated they "Definitely will return or could possibly return," accounting for **58.0%**. Satisfaction is considered the result of the relationship between the buyer and the seller in the service sector. Therefore, Vietnam National University Hospital needs to pay more attention to services to attract customers to return and recommend them to others.

Factors Related to Outpatient Satisfaction

The study results show a correlation between **satisfaction with accessibility** and specific factors: the age group (over 60 years) had a satisfaction level **2.4 times higher** than the group (18 – 39 years); the age group (40 – 59 years) had a satisfaction level **2.6 times higher** than the group (18 – 39 years). These differences are statistically significant with $p < 0.05$. No statistically significant correlation was found between gender, occupation, education level, distance to the hospital, or use of Health Insurance and satisfaction with accessibility (with $p > 0.05$).

The research results indicate a correlation between **satisfaction with facilities** and age groups. Specifically, the age group (over 60 years) was **2.04 times more satisfied** than the group (age 18 – 39 years), a difference

that is statistically significant with $p < 0.05$. No statistically significant correlation was found between gender, occupation, education level, distance to hospital, or use of Health Insurance and satisfaction with accessibility (with $p > 0.05$). The study highlights a significant relationship between facility satisfaction and age; those over 60 have higher satisfaction rates than those aged 18-39. This result is consistent with other studies showing that older age groups tend to have higher satisfaction rates. This could be explained by the fact that those over 60 are often retired, so long wait times at the hospital are not as bothersome as they are for those of working or school age who must take time off for a check-up.

There is a correlation between overall satisfaction with medical services and specific factors:

- **Age:** The group (age 60 years) is **2.3 times** more satisfied, and the group (age 40 – 59 years) is **2.4 times** more satisfied than the group (age 18 – 39 years).
- **Education:** Those with a High School education or lower were **1.8 times** more satisfied than those with education above High School level.
- **Insurance:** Interestingly, those **not using Health Insurance** were **11 times** more satisfied than those using it.

These differences are statistically significant with $p < 0.05$. No significant correlation was found regarding gender or distance to the hospital (with $p > 0.05$). Research results show that those with lower education levels have higher overall satisfaction rates than those with higher education. A 2001 study by Tenligi moglu et al. at Tankara Hospital also showed varying satisfaction across different education levels [10]. As socio-economics develop and public awareness increases, higher demands for medical care are reasonable.

The group without Health Insurance cards had higher satisfaction scores for medical services than the group with Health Insurance cards. This result differs from several other studies.

Analysis of Patient Satisfaction Factors

Results indicate that no statistically significant correlation was found between gender, age group, occupation, education level, distance to the hospital, or the use of Health Insurance and **satisfaction with information transparency** (with $p > 0.05$). The relationship between distance traveled and satisfaction with the transparency of information and service procedures has not been fully proven in research; while some studies support this link, others have shown opposite results. This may result from the hospital performing well in this aspect, meeting high expectations and thus increasing satisfaction scores. Alternatively, it could be due to socio-demographic and anthropological differences between patients living far and near in the provider-customer relationship. Specifically, those living within 1km may be influenced by negative information from the local residential environment, leading to a tendency toward lower satisfaction regarding transparency and procedures.

The assessment of **professional expertise and the attitude of medical staff** toward patients is critical, as these factors directly influence customer expectations. Therefore, all medical service facilities must implement training, inspection, and improvement activities for staff to provide services that receive higher ratings from customers.

Overall, the factor perceived to have the greatest impact on customer satisfaction remains **trust in the quality of professional medical services**. This factor also influences other satisfaction assessments as Vietnamese people traditionally hold a view of hospitals that prioritizes expertise.

While subjects in this study had high requirements for other aspects, treatment results remained the top priority. Through the research process and data analysis, I observed that quality assessments across all aspects included overall satisfaction levels. Leadership should implement training and skill-testing for counseling and situational handling, supplement missing essential facilities, and improve service quality to avoid regrettable incidents that could lead to misinformation.

This study on service satisfaction at the **National University Hospital** has identified differences compared to studies at other medical facilities. Based on this, more in-depth research and evaluations are needed to propose appropriate interventions and promptly address factors that patients are dissatisfied with Due to limited resources and time, evaluating patient satisfaction through direct observation and measurement could not be performed; the study relied primarily on the **positive survey responses** of the research subjects.

Discussion on Information Transparency and Staff Attitude

Results show that no statistically significant correlation was found between gender, age group, occupation, education level, distance to the hospital, or the use of Health Insurance and **satisfaction with information transparency** ($p > 0.05$). The relationship between distance traveled and satisfaction with information transparency and service procedures has not been fully proven in research; while some studies support this link, others have shown opposite results. This may be because the hospital has performed well in this area, meeting high expectations and thus increasing satisfaction scores. Alternatively, it could be due to socio-demographic differences between patients living far versus near. Specifically, those living within 1km may be influenced by negative information from the local community, leading to a tendency toward lower satisfaction regarding transparency and procedures.

The assessment of **professional expertise and staff attitude** is critical, as these factors directly influence

customer expectations. Therefore, medical facilities must implement training, inspection, and improvement activities for staff to provide services that receive higher ratings from customers.

Overall, the factor with the greatest impact on customer satisfaction remains **trust in the quality of professional medical services**. This factor influences other satisfaction assessments as Vietnamese people traditionally prioritize medical expertise. While subjects in this study had high requirements for other aspects, treatment results remained the top priority. Hospital leadership should implement training for counseling and situational handling, supplement missing essential facilities, and improve service quality to avoid incidents that could lead to misinformation.

CONCLUSION

Through the analysis of factors related to the satisfaction of outpatients at Vietnam National University Hospital, Hanoi, the study finds:

Overall Satisfaction Rate: The overall satisfaction rate for medical services reached **80.8%**.

Accessibility: There is a correlation between satisfaction with accessibility and age: the older age group has a higher satisfaction level than the younger group ($p < 0.05$).

Facilities: There is a correlation between satisfaction with facilities and age: the older age group has a higher satisfaction level than the younger group ($p < 0.05$).

Overall Service: There is a correlation between overall satisfaction and the following factors including **the age, education and inssurance**; Older groups are more satisfied than younger groups ($p < 0.05$); Those with a High School education or lower have a satisfaction level **1.8 times higher** than those with education above High School level ($p < 0.05$); Those **not using Health Insurance** have a satisfaction level **11 times higher** than those using it ($p < 0.05$).

Recommendations: Based on our research results, we have several recommendations to further improve the quality of medical examinations and patient satisfaction regarding outpatient services at the **Vietnam National University Hospital**:

Website & Appointments: Provide comprehensive information on the hospital's website and facilitate easier appointment booking via telephone to help patients save time upon arrival.

Process Improvement: Improve the medical examination process to ensure procedures are simple and convenient for customers.

Waiting Area Amenities: The waiting room should be equipped with additional entertainment and facilities such as televisions, artwork, and drinking water.

Professional Training: The hospital should focus on advanced professional training for medical staff and doctors to build trust with patients.

Future Research: There is a need for further research to evaluate the satisfaction of inpatients and to fully understand all factors affecting patient satisfaction. Timely resolution of existing issues will further enhance the quality of medical care.

STUDY LIMITATIONS: The first, **Methodology:** Due to limited resources and time, evaluating satisfaction through direct observation and measurement could not be performed; the study relied primarily on the positive survey responses of the subjects. The Second, **Design:** This is a cross-sectional study that only reflects the status at a single point in time, making it impossible to analyze trends over a long period. The third, **Scope:** The research was conducted at a single hospital, so the results cannot be generalized to other hospitals. The fourth, **Perspective:** The study only focused on service users (patients) and did not include the perspectives of service providers or managers, which prevents a fully objective and comprehensive view.

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