



FACTORS AFFECTING THE SATISFACTION OF OUTPATIENTS ON THE QUALITY OF HEALTHCARE SERVICES AT LAM DONG GENERAL HOSPITAL II

Các yếu tố tác động đến sự hài lòng của bệnh nhân đối với chất lượng dịch vụ khám chữa bệnh ngoại trú tại bệnh viện đa khoa II Lâm Đồng

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TÓM TẮT: Ngành Y tế giữ vai trò quan trọng trong sự phát triển kinh tế – xã hội, trong đó việc nâng cao chất lượng dịch vụ y tế và đảm bảo công bằng trong chăm sóc sức khỏe hiện đang là vấn đề còn nhiều thách thức và được quan tâm đặc biệt. Nghiên cứu nhằm xác định và đo lường các yếu tố tác động đến sự hài lòng của bệnh nhân đối với chất lượng dịch vụ khám chữa bệnh ngoại trú tại Bệnh viện Đa khoa II Lâm Đồng, là cơ sở để cải thiện chất lượng dịch vụ y tế, đáp ứng sự hài lòng và công bằng chăm sóc sức khỏe cho bệnh nhân vùng sâu vùng xa và người dân tộc thiểu số tại phía nam tỉnh Lâm Đồng. Nghiên cứu được thực hiện bằng phương pháp mô tả cắt ngang trên 360 bệnh nhân gồm người Kinh và người dân tộc thiểu số theo tỷ lệ 1:1. Kết quả nghiên cứu cho thấy có 05 nhân tố chất lượng dịch vụ tác động đến sự hài lòng của bệnh nhân theo mức độ giảm dần bao gồm: (1) Năng lực phục vụ, (2) Sự đáp ứng, (3) Sự cảm thông, (4) Sự tin cậy và (5) Phương tiện hữu hình. Ngoài ra, khám phá yếu tố dân tộc và một số yếu tố nhân khẩu học cũng như đặc điểm khám chữa bệnh khác có tác động có ý nghĩa thống kê đến mức độ đánh giá sự hài lòng của những bệnh nhân được khảo sát.

TỪ KHOÁ: Chất lượng dịch vụ y tế, Sự hài lòng, Bệnh nhân ngoại trú, Dân tộc thiểu số, Bệnh viện Lâm Đồng

ABSTRACT: The health sector plays a vital role in socio-economic development as well as improving the quality of health services; and ensuring equity in health care has been a challenging issue for a long time. The study aims to identify and measure factors affecting the satisfaction of patients in the quality of outpatient services at Lam Dong General Hospital II to provide basis recommendations for improving the quality of health services, meeting satisfaction and equity of health care services for disadvantaged and ethnic minority patients in the southern part of Lam Dong province. The study was conducted by a cross-sectional descriptive study of 360 patients, including Kinh and ethnic minorities, in a 1:1 ratio. The results showed five service quality factors affecting patient satisfaction in descending order: (1) Assurance, (2) Responsiveness, (3) Empathy, (4) Reliability, and (5) Tangible. Besides, some demographic and clinical characteristics that had statistically significant impacts on the level of satisfaction of the surveyed patients were also indicated.

KEYWORDS: Quality of health-care services; Satisfaction; Outpatient; Ethnic minority; Lamdong hospital

1. INTRODUCTION

These days, patient satisfaction about the quality of medical services is increasingly being worried, becoming the top concern of patients as well as healthcare providers and the government. In recent years, although the quality of medical examination and treatment at hospitals has been improved compared to the past, the results have not been commensurate with the people's healthcare needs.

In the Decree 43/2006/ND-CP of the government, it stipulates the autonomy and self-responsibility for the performance of tasks, organizational structure, payroll, and finance for public non-business units as well as the policy of socialization of health. This decree has created conditions for a series of healthcare services to be established and developed, meeting the supply and demand rules of the healthcare "market" as well as ensuring competitive advantages of public hospitals to other health facilities more critical than ever.

On the other hand, Lam Dong is a multi-ethnic province, belonging to one of the five provinces in the Central Highlands. At the discussion session of the Government's report on the implementation of the national goals of equality at the fourth session, the 14th National Assembly (November 2017), many deputies commented that there

have been plenty of difficulties and challenges, especially for people in remote, isolated and ethnic minority areas, including medical and healthcare services.

Therefore, this study is conducted to improve the quality of healthcare services by assuring medical fairness as well as the satisfaction of patients using medical examination and treatment services in public hospitals.

2. THEORETICAL AND CONCEPTUAL FRAMEWORK

According to Zeithaml and Bitner (2000), customer satisfaction is the evaluation of customers on a product or service that meets their needs and expectations [9].

According to Parasuraman, Zeithaml, and Berry (1985, 1988), service quality is the distance between perceptions and expectations of customers when using the service [8].

In the field of health, Dansky and Miles (1997) claimed that the satisfaction of patients with health care services would help health facilities to detect weaknesses and shortcomings in the process of providing services,

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thereby controlling risks that can lead to dissatisfaction. Customer satisfaction when using medical services greatly depends on the results of medical examination and treatment, and on the relationships arising in the course of medical examination and treatment. Therefore, the assessment of customer satisfaction, in this case, is essentially an assessment of the quality of health services [6].

In addition, many other previous studies also confirmed a positive relationship between healthcare service quality and patient satisfaction (Khanchitpol and William, 2013; Zamil et al., 2012) [4].

Through the theoretical foundation and previous studies, the proposed research model is the model of Cronin and Taylor (1992) [1], in which variables and scales are adjusted to fit in the context, characteristics of the field as well as area and subjects of the study. Therefore, this proposed research model is as follows with 06 scales:

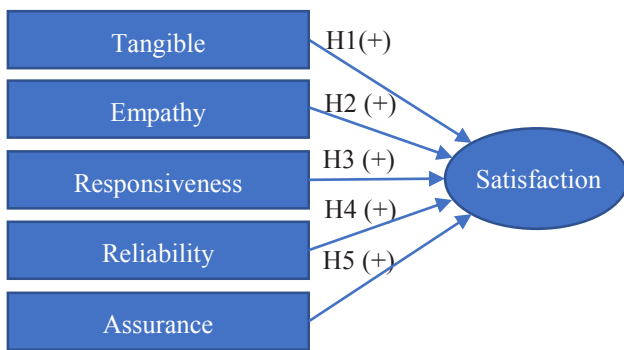


Figure 1. The proposed research model
(Source: Summary of author)

From the proposed model, the hypotheses about the relationship between concepts in the research topic are formed as follows:

- H1: Tangible positively affects patient satisfaction;
- H2: Empathy positively affects patient satisfaction;
- H3: Responsiveness positively affects patient satisfaction;
- H4: Reliability positively affects patient satisfaction;
- H5: Assurance positively affects patient satisfaction.

3. RESEARCH METHODS

Regarding the development and testing of patient satisfaction scales, the study carried out a cross-sectional description method combining qualitative and quantitative research, sample description, and verification of scales.

In which, the original scale was built based on the SERVPERF model questionnaire and the inheritance of some previous studies. After that, conducting in-depth interviews with 08 experts from diverse fields to increase the rigor and value. Then following by a trial interview of 20 patients representing two groups of subjects to adjust the words appropriately and easy to understand.

Quantitative research data was collected by a convenient non-probability sampling method, interviewed based on the questionnaires with the sample size of 180 Kinh and 180 ethnic minority patients within 05 weeks from March to May 2018 at Outpatient Examination Area in Lam Dong II General Hospital.

The collected data were input/digitalized using Microsoft Excel 2010, coded and processed by SPSS (Statistical Package for the Social Sciences) software for Windows version 20.0; then, they were turned into

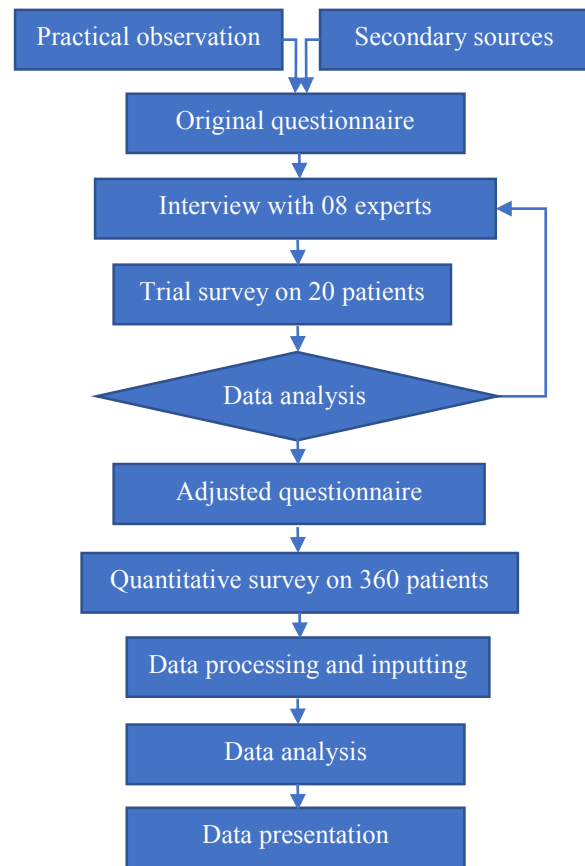


Figure 2. Research process flowchart
(Source: Authors' summary)

Cronbach's Alpha analysis, EFA discovery factor, and Pearson correlation to test the scales.

In terms of measuring the impact of service quality factors on patient satisfaction, the study built a multiple-linear regression model to identify which factors are significant and which factors have no significance for statistically increasing the satisfaction of the surveyed subjects, assessing the differences in the level of the influence of factors on patient satisfaction.

For testing differences in assessing patient satisfaction, the study analyzes the differences of characteristics according to descriptive statistical methods with criteria such as gender, age, ethnicity, occupation, times examination, service type, through Anova one-way in-depth analysis (Post-Hoc One-way Anova) and independent-samples T-test.

4. RESULTS AND DISCUSSION

4.1 Developing and testing the scale

4.1.1 Qualitative research

Complete the scale and adjust the questionnaires of satisfaction of outpatient patients at Lam Dong General Hospital II, including 06 components: (1) Tangible, (2) Empathy, (3) Responsiveness, (4) Reliability, (5) Assurance, (6) Satisfaction. From 29 observed variables, 07 nonconforming variables were removed due to non-standard in the initial data analysis or inconsonant in the hospital research context as agreed by the authors and interviewing experts. In addition, the meaning of terms and content for 22 remain official observed variables are also confirmed by authors and members participating in the

discussion group. Thereafter, the scale continues to be used in quantitative research for evaluation.

4.1.2 Quantitative research

Analysis of the characteristics of the surveyed sample shows that: The proportion of women is more significant than men (53.9% and 46.1%), the majority of the interviewees are those aged 31 and older (64.4% of the total number), 95% of the ethnic minority sample are Co Ho and Ma people, most of them have education levels below high school (78.9%) and main occupation is farmer (78.3%). Regarding the place of residence, the percentage of patients coming from Bao Loc City, where the hospital is located, and from other districts is 1:3 (25% and 75%). Most patients have health insurance (98.9%), the majority of patients often visit the hospital more than three times within a year (71.7%), 53.3% of patients have to wait more than three hours to complete the latest examination process.

4.1.3 Data processing and scale verification

Firstly, the study is conducted to assess the reliability of the scale through Cronbach’s Alpha coefficient. The calculation of the Alpha coefficient is presented in Table 1 shows that no observed variables were excluded from the scale because the Alpha coefficients were in the range [0.8; 0.9], and if removing a variable from the scale does not increase the reliability coefficient as well as in terms of content, the observed variable can be conserved.

Table 1. Analyzing reliability of scale by Cronbach’s Alpha coefficient

Factor	Number of Items	Cronbach’s Alpha
Tangible	04	0.876
Empathy	04	0.867
Responsiveness	03	0.846
Reliability	04	0.871
Assurance	03	0.831
Satisfaction	04	0.860
Accepted value		> 0.6

(Source: Authors’ analysis)

The outcome of the reliability analysis of the scale shows that 22 observed variables meet the standards and are put into the performing EFA discovery factor analysis using the Principal Components extraction method and Varimax rotation to detect the structure and assessment of convergence of observed variables by components.

The factor analysis is first conducted with 18 observed variables of the independent variables, resulting in 05 convergence factors, analysis results on 04 observed variables of the dependent variable for one convergent factor only.

Table 2. Summary of EFA analysis results

Variables	KMO statistic	Barlett’s Sig.	Cumulative %
Independent	0.853	0.000	78.918
Dependent	0.778	0.000	71.814
Accepted value	$0.5 \leq KMO \leq 1$	< 0.05	> 50%

(Source: Authors’ analysis)

The results of two analyses show that the KMO index of the independent and dependent variables, respectively, are 0.713 and 0.753, greater than 0.5, indicating that the data used for factor analysis are appropriate.

Barlett’s test results with the Sig. significance level = $0.000 < 0.05$ (reject hypothesis H_0 : observed variables are not correlated with each other in the whole), so the hypothesis of correlation matrix between variables is a homogeneous matrix is rejected, which means variables are correlated with each other and satisfied factor analysis.

Pearson correlation analysis results show Sig. Values between independent variables and the dependent variable meeting the requirements ($0.000 < 0.05$). It is possible to conclude that independent variables are correlated with the dependent variable, so it can be included in the model to explain the dependent variable.

4.2 Measure the impact of factors on patient satisfaction

Multivariate linear regression analysis is performed by the overall regression method of variables with SPSS 20.0 software to determine the specific weight of each component affecting patient satisfaction, the results are:

Table 3. Assess the suitability of linear regression model

MODEL PARAMETERS					
Model	R	R2	Adjusted R2	Std. Error	Durbin-Watson
1	0.954	0.911	0.910	0.17731	1.897
ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	113.996	5	22.799	725.219	0.000
Residual	11.129	354	0.031		
Total	125.125	359			

(Source: Authors’ analysis)

The above analysis results show that the adjusted R^2 coefficient = 0.919 is high, proving that this linear regression model is consistent with the sample data set at 91.9%, that is, the independent variables explained 91.9% variation of the satisfaction variable (SAT). With the hypothesis $H_0: R^2 = 0$, the ANOVA analysis results for $F = 409.278$ with $Sig. = 0.000$. Therefore, the conclusion that the linear regression model built is consistent with the overall.

Table 4. Statistics in the regression model by the Enter method

Model	Unstandardized Coefficients		Std. Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	β			Tolerance	VIF
(Constant)	-0.105	0.072		-1.453	0.147		
1	TAN	0.117	0.021	0.124	5.460	0.000	0.491 2.038
	EMP	0.207	0.020	0.209	10.102	0.000	0.585 1.710
	RES	0.284	0.021	0.316	13.682	0.000	0.472 2.117
	REL	0.149	0.023	0.151	6.440	0.000	0.458 2.183
	ASSU	0.292	0.016	0.382	18.350	0.000	0.581 1.722

(Source: Authors’ analysis)

The above results show that the model does not violate the multicollinearity phenomenon because the variance inflation factor (VIF) is less than 3 [3].

The analysis also shows that all five factors are statistically significant (Sig. < 0.05), confirming the two-sided test significance level, and these independent variables all affect the satisfaction level of patients with 95% confidence.

Additionally, the standardized regression coefficients are nonzero and have positive values (>0) which show that overall, Tangible (TAN), Empathy (EMP), Responsiveness (RES), Reliability (REL), Assurance (ASSU) variables have a positive impact on Satisfaction (SAT) variable. Since then, testing hypotheses of the research model and giving multiple linear regression equations as follows:

$$SAT = -0.105 + 0.117 * TAN + 0.207 * EMP + 0.284 * RES + 0.149 * REL + 0.292 * ASSU$$

Thus, in the context of other unchanged variables, every 1% increases in the Tangible (TAN) variable will increase 0.117% in the Satisfaction (SAT) variable of outpatients at General Hospital II Lam Dong. Similarly, Empathy (EMP), Responsiveness (RES), Reliability (REL) and Assurance (ASSU) variable will have the SAT of 0.207%, 0.284%, 0.149% and 0.292%, respectively.

4.3 Testing differences in assessing patient satisfaction

Differences in satisfaction level by sex characteristics and living places of patients through Independent Samples T-Test showed that there are statistically significant relationships between sex, ethnic group and living place factors to the overall satisfaction of a patient with the quality of outpatient care at Lam Dong General Hospital II (Sig. < 0.05). In particular, the average satisfaction level of:

- The female patients (3.8952) is higher than the male counterparts (3.6810);
- The ethnic minority patients (4.1111) is higher than the Kinh patients (3.4722);
- The patients living in other districts (4.0304) is higher than the patients living in Bao Loc City (3.5503).

To determine the differences in the satisfaction in terms of patients' age, education level, occupation, number of visits, total waiting time, date and types of examination, authors conducted ANOVA analysis. The results show that the patients' average values of satisfaction are:

- Slight fluctuations among age groups, the average value of the group from 31 to 50 years old (3.7095) is lower and analytically different to patients aged 18 to 30 years (3.9116) (Post-Hoc Sig. = 0.013);
- Decreasing by educational level, in which the average value of satisfaction of the primary and illiterate group is highest (4.2653), followed by the secondary group (3.9766), the group of upper secondary education and above is the lowest (3.4421) (Post-Hoc Sig. = 0.000);
- Strong fluctuations among occupational groups, the average satisfaction level of the two groups farmers (4.0866) and workers (3.8426) are the highest, of the two groups officers (3.2900) and retirement (3.2125) are the lowest (Welch Sig. = 0.000);
- Gradually declining according to the total time patients wait to complete their examinations, the group of patients who completed medical care within two hours assessed their average satisfaction level (4.0800) higher than that of patients waiting for two to three hours (3.7628) and patients waiting for longer than three hours (3.7312);
- Varies dependent on the visit day, patients who visit on Mondays have a low average satisfaction value (3.6250), which is statistically different to those patients who visit on

Tuesdays (3.8719; Post-Hoc Sig. = 0.008), Wednesdays (3.8672; Sig. = 0.014), Thursdays (3.8993; Sig. = 0.004);

- There are no statistically significant differences between groups of patients with different amount of visits as well as between patients registering with health insurance or services.

4.4 Comparing the impact of service quality factors on patient satisfaction by ethnic group

For ethnic characteristics, authors continued to conduct Pearson correlation analysis separately for the majority ethnic group (the Kinh) and the minority ethnic group to consider the suitability of putting service quality components into two separate regression models. Multivariate regression analysis results are used to compare the level of impact of service quality factors on patient satisfaction by two ethnic groups.

Pearson correlation analysis results show Sig. Values between independent variables and the dependent variable are satisfactory (0.000 < 0.05) so it can be concluded that independent variables (TAN, EMP, RES, REL, ASSU) are correlated with dependent variable. Therefore, it is possible to put them into the model for explaining the dependent variable (SAT).

Authors conducted multivariate linear regressions with 05 independent variables (1) TAN, (2) EMP, (3) RES, (4) REL, (5) ASSU, and an SAT to determine the specific weights of each component affecting the satisfaction of the two patient groups. The analysis is performed by the general regression method of variables (Enter) with SPSS 20.0 software. The analysis results show that Adjusted R² samples of the two models are high (0.851 and 0.915), proving that this linear regression model is suitable for the data set of Kinh and ethnic minority sample groups at 85.1% and 91.5%, respectively.

With the hypothesis H₀: R² overall = 0, ANOVA analysis results give us Sig. = 0.000. Therefore, the hypothesis H₀ is rejected, and the linear regression model built is consistent with the whole.

Table 5. Statistics in regression model by the Enter method

Group	Model	Standardized	Sig. (p_value)	VIF
		Coefficients β		
Kinh	(Constant)		0.726	
	TAN	0.109	0.003	1.566
	EMP	0.109	0.006	1.805
	RES	0.290	0.000	1.807
	REL	0.148	0.001	2.517
	ASSU	0.529	0.000	1.651
Ethnic minorities	(Constant)		0.565	
	TAN	0.191	0.000	1.833
	EMP	0.325	0.000	1.457
	RES	0.367	0.000	2.119
	REL	0.064	0.015	1.455
	ASSU	0.302	0.000	1.398

(Source: Authors' analysis)

Regression analysis results for the Sig. are less than 0.05, confirming the two-sided test significance level between the independent variables and the dependent variable are both qualified, so these independent variables

have impacts on patient satisfaction with the confidence of 95 %.

Therefore, two multivariate regression equations with the standardized Beta coefficient for the two ethnic groups are formulated as follows:

$$SAT_{Kinh} = 0.109 * TAN + 0.109 * EMP + 0.290 * RES + 0.148 * REL + 0.529 * ASSU$$

$$SAT_{EM} = 0.191 * TAN + 0.325 * EMP + 0.367 * RES + 0.064 * REL + 0.302 * ASSU$$

Therein,

SAT_{Kinh} and SAT_{EM}: General satisfaction of Kinh ethnic patients and general satisfaction of ethnic minority patients about outpatient medical examination and treatment service at Lam Dong II General Hospital;

TAN: Tangible; EMP: Empathy; RES: Responsiveness; REL: Reliability; ASSU: Assurance.

From two linear regression equations above, authors summarises the following table (95% confidence level):

Table 6. Comparing the impact of service quality factors on patient satisfaction by two ethnic groups

Impact level	Kinh		Ethnic minorities	
	Factor	Standardized Coefficients β		Factor
Strongest ↓ Weakest	Assurance	0.529	0.367	Reliability
	Responsiveness	0.290	0.325	Empathy
	Reliability	0.148	0.302	Assurance
	Tangible và Empathy	0.109	0.191	Tangible
			0.064	Responsiveness

(Source: Authors' analysis)

Therefore, there is a statistically significant difference in the level of satisfaction assessment of outpatient medical care services at Lam Dong General Hospital II between two groups of Kinh patients and ethnic minority patients. Analysis of two corresponding linear regression models showed that all 05 service quality factors studied have positive effects on patient satisfaction.

However, for the Kinh group, the factor "Assurance" has an outstanding high impact (0.529) compared to the remaining four factors, the two factors with the weakest impact level are "Tangible" and "Sympathy" (0.109). For ethnic minority patients, the three most potent factors have a similarly close impact, namely "Responsiveness" (0.367), "Empathy" (0.325) and "Assurance" (0.302); the factor "Reliability" has the smallest impact coefficient (0.064).

In general, the above results show that the impact of the factor "Tangible" is less varied between the two groups. However, the greater difference in impact levels of the remaining 4 factors may due to the difference in expectation trends of service quality or the service quality factors are have not been equally responded between the two target groups. In detail:

- The Kinh group with higher average educational and income levels sets higher expectations for the quick and less waiting time for medical examination (Assurance); expertise and careful examination by physicians (Responsiveness);

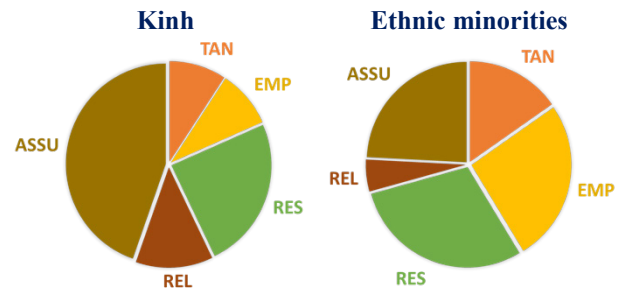


Figure 3. The impact rate of service quality factors on patient satisfaction by ethnic group

(Source: Authors' analysis)

- Ethnic minorities group with lower average educational and income levels, more different in language and culture sets higher expectations for accurate results as well as simple and transparent medical examination procedures (Reliability); the decent, friendly and equal treatment (Sympathy).

5. CONCLUSION

Regarding the construction and testing of scales for patient satisfaction with outpatient medical service quality at Lam Dong General Hospital II:

The study tests a built-up scale consisting of 22 observed variables over 360 collected questionnaires and shows that the scale reached a standard level of reliability and is suitable to impose on subsequent analyzes.

Regarding the impact measurement of the quality of healthcare services on outpatient satisfaction at Lam Dong General Hospital II:

The results of linear regression analysis indicate 05 service quality factors affecting the satisfaction of patients when having outpatient medical examination and treatment at Lam Dong General Hospital II including: Assurance, Responsiveness, Empathy, Reliability and Tangible. The study result is also similar to the study of the authors D. Lalitha Rani and Yeshiemebe Demissie (2017) [2], Ho Bach Nhat (2015) [7] and the authors Le Tan Phung and Gerard FitzGerald (2014) [5]. In particular, two factors of Assurance and Responsiveness have the strongest impact, following by Empathy; Reliability and Tangible factors have less impact on patient satisfaction.

Regarding testing the difference in assessing the satisfaction of patients' healthcare service quality according to a number of demographic factors, medical examination types and treatment characteristics:

T-Test and ANOVA test results show that the factors of ethnic group, gender, age, place of residence, educational level, occupation and waiting time for examination are statistically significant to patient's satisfaction with outpatient healthcare services quality at Lam Dong General Hospital II.

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