

Assessing patient satisfaction with the quality of healthcare service in public hospitals. Evidence of a country with a primarily public healthcare system

Satisfacción de los pacientes con la calidad percibida del servicio de salud en hospitales públicos. Evidencia de un país con un sistema de salud mayoritariamente público

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Abstract

Introduction: Patient assessment of service quality is a very important component in evaluating the quality of healthcare services in a medical center. This study aims to identify and assess the factors that affect overall patient satisfaction with healthcare quality provided by medical centers in Albania.

Method: The study used empirical research to identify previously validated scales of service quality evaluation. From March to June 2022, 300 hospitalized patients participated in the study. The most relevant factors influencing patient satisfaction variation are identified using multiple regression and factor analysis. A structured questionnaire was used as a tool for assessing healthcare quality.

Results: There is a statistically significant relationship between patient education level ($F_{4;247} = 2.990$, Sig = 0.02) and income level ($F_{3;247} = 2.259$ and Sig = 0.042,) with overall patient satisfaction. Four of the five quality dimensions demonstrated a statistically significant relationship with overall satisfaction, explaining 60.5% ($R^2 = .605$) of the variation values of patient satisfaction. Patient satisfaction was significantly impacted by Tangibles ($\beta = .291$, Sig=.000), Reliability ($\beta = .212$, Sig=.003); Assurance ($\beta = .253$, Sig=.000); Empathy ($\beta = .141$, Sig=.018), while Responsiveness did not influence patient satisfaction ($\beta = .028$, Sig=.674).

Conclusions: The study proposes a validated conceptual model for the health sector detailing the relationships between the factors that influence patient satisfaction with the quality of medical healthcare services in the Albanian context. The findings have important implications for decision-makers in health care institutions in their continuous effort to improve healthcare services quality.

Key words: Quality of healthcare, patient satisfaction, sociodemographic factors.

Resumen

Introducción: La evaluación de la calidad del servicio por parte del paciente es un componente esencial en la evaluación de la calidad de los servicios de salud en un centro médico. Este estudio tiene como objetivo identificar y evaluar los factores que afectan la satisfacción general del paciente con la calidad de la atención médica brindada por los centros médicos en Albania.

Método: El estudio utilizó investigación empírica para identificar escalas previamente validadas de evaluación de la calidad del servicio. De marzo a junio de 2022 participaron en el estudio 300 pacientes hospitalizados. Los factores más relevantes que influyen en la variación de la satisfacción del paciente se identifican mediante regresión múltiple y análisis factorial. Se utilizó un cuestionario estructurado como herramienta para evaluar la calidad asistencial.

Resultados: Existe una relación estadísticamente significativa entre el nivel de educación del paciente ($F_{4;247} = 2,990$, Sig = 0,02) y el nivel de ingresos ($F_{3;247} = 2,259$ y Sig = 0,042) con la satisfacción general del paciente. Cuatro de las cinco dimensiones de calidad demostraron una relación estadísticamente significativa con la satisfacción general, explicando el 60,5% ($R^2 = 0,605$) de los valores de variación de la satisfacción del paciente. La satisfacción del paciente se vio significativamente afectada por Tangibles ($\beta = .291$, Sig=.000), Confiabilidad ($\beta = .212$, Sig=.003); Garantía ($\beta = .253$, Sig=.000); Empatía ($\beta = .141$, Sig=.018). La capacidad de respuesta no influyó en la satisfacción del paciente ($\beta = .028$, Sig=.674).

Conclusiones: El estudio propone un modelo conceptual validado para el sector de la salud que detalla las relaciones entre los factores que influyen en la satisfacción del paciente con la calidad de los servicios de atención médica en el contexto albanés. Los hallazgos tienen implicaciones importantes para los tomadores de decisiones en las instituciones de atención médica en su esfuerzo continuo por mejorar la calidad de los servicios de atención médica.

Palabras clave: Calidad asistencial, satisfacción del paciente, factores sociodemográficos.

Introduction

Linder-Pelz¹ emphasizes the importance of the patient's perspective when assessing the quality of health care. This concept has attracted the attention of service providers since the early 1970's in developed countries who became aware of the importance of patient satisfaction as well as researchers who strongly believed that the quality of health care should be studied from the patient's perspective^{2,3}. Patients provide valuable and unique information about the quality of care^{4,5} and it is even believed that the main indicator of health care is patient satisfaction and not health status.

To ensure quality, evaluating patients has the potential to be an educational process, identifying those moments or situations where improvements are possible, identifying best practices, and establishing a set of standards that include and incorporate potential patients⁶. Patient satisfaction studies are important for the success of health organizations because they must build and rely on mechanisms to enable changes based on consumer needs. Hall et al.⁷, reiterated that on the one hand studies regarding patient perspective are very important and on the other hand this very important issue was often ignored by service providers. The importance of service quality has been recognized long ago and its implementation has been and remains vital for organizations to increase organizational performance, customer satisfaction and loyalty⁸. One of the main concerns of any healthcare unit is to achieve a high level of patient satisfaction through the provision of better - quality services^{9,10}. Patient assessment is an essential determinant of the quality of health care provided by each hospital institution^{11,12}. Patient satisfaction analysis is also important in health care providers' decision-making regarding the management, planning, management, and control of services as part of the management process^{13,14}. According to a review of the literature, patient characteristics such as age, gender, education, or monthly income are likely to influence a patient's evaluation of the medical center's performance in providing health care¹⁵. Studies about age confirm that older respondents are more satisfied¹⁶ perhaps because they are more social and accepting than younger people or are more likely to regard and respect more the health care professionals. Studies show that male patients are more satisfied than female patients¹⁷. The education level was also found to be significantly associated with level of satisfaction of patients. It was noted that less educated patients were more satisfied as compared with high educated persons that is the mean satisfaction level was comparatively less in patients who were graduate or post-graduate¹⁸.

From the literature review it is noticed that the number of researchers who are using the SERVPERF instrument¹⁹, is increasing day by day²⁰⁻²². SERVPERF instrument is specifically proposed for use in patients in relation to the

quality of health care²³, and used also as an instrument in many studies to measure and evaluate quality²⁴⁻²⁶. Further, based on a meta-analytical summary of 17 years of research work on all five continents, Carrillat et al.,²⁷ concluded that SERVPERF is an appropriate and equally valuable predictor for assessing the quality of general service. While Adil et al.²⁸, in his study concluded that the SERVPERF instrument is more accurate for measuring service quality and can explain the greatest variance in the overall level of service quality.

Improving the quality of patient healthcare in medical centers is both a necessary and a vital activity. To obtain patient satisfaction, it is necessary to first identify those important factors that are responsible for or have a direct impact on influencing the level of patient satisfaction, as well as to demonstrate the significance of their relevance in improving the quality of services provided in public health care sector. In transition countries, public hospitals continue to be the primary and most important providers of health care, meeting the needs of the population for health care. The government faces daily challenges not only in finding new resources to finance high costs, but also in maximizing the use of existing resources. As a result, this study concentrated on public hospital centers and aims to: a) assess patient satisfaction with public hospital healthcare services; b) identify the variables that affect overall satisfaction with healthcare quality, ranking these variables according to the priorities of the patients themselves; c) provide additional recommendations for all types of health care centers and the respective decision makers; and d) generate a conceptual model and data that can assist managers and medical center staff in identifying factors that influence patient satisfaction levels;

Methods

The primary goal of this cross-sectional study is to assess the quality of health care services provided by Public Hospitals, from the perspective of the patients. Within a period of 4 months during March -June 2022 this survey had over 300 hospitalized patients' respondents. The final database only contains the answers of 247 because the rest did not have the necessary information to be included in the survey. An official request and an approval from the head of medical center is obtained. Data was collected face-to-face using structured questionnaires, and the questionnaires were self-administered from the patients. Participants were informed of the study's purpose and provided written consent confirming their voluntary participation and the right to withdraw at any time.

The primary research instrument is a structured questionnaire with two main parts. The first section collects socio-demographic information such as age, gender, educational level, Income level of respondents. The second section includes statements about health

care quality dimensions and patient overall satisfaction. The quality dimensions, as independent variables, according to SERVPERF: Tangibles (4 questions), Reliability (5 questions), Responsiveness (4 questions), Assurance (4 questions), Empathy (3 questions).

The research focuses on two main research questions:

- Do sociodemographic factors affect satisfaction levels with the quality of medical healthcare services?
- What healthcare quality dimensions impact patients' perceived satisfaction with the quality of health care services provided by medical centers?

Data analysis was performed through the Statistical Package for the Social Sciences SPSS 25 with a statistical significance 0.05. A series of statistical tests such as, ANOVA, Pearson Correlation, Multiple Regression, R^2 , Factor Analysis, VIF, was performed.

According to Cronin and Taylor¹⁹, their performance-based scale (SERVPERF) is a method of assessing service quality with total reliability variation between 0.884 and 0.964, depending on the type of industry. Referring to our case study, the reliability coefficient for all items together has coefficient value α of 0.892, which indicates a very high reliability value of these items (variables) that assess the quality of health care. Concerning the possibility of collinearity or factor interaction, the analysis shows that the correlation values are within the allowed norms and that there is no interaction between them to cause distortion of the results as indicated by the low VIF values (Variance Inflation Factor). A VIF greater than 4 or a tolerance less than 0.25 indicates multicollinearity (the inverse of VIF). Tolerance values in this case study range from 1.491-3.096. As a result, there is no collinearity between the factors that could lead to distorted study results.

Results

Patient sociodemographic factors and overall satisfaction with health care quality

Evaluating patient satisfaction is difficult because satisfaction is a complex concept influenced by a variety of factors, including patient sociodemographic characteristics.

The sociodemographic factors, considered in this study as control variables, are age, gender, educational level, and income level:

Age –Out of 247 interviewees, 33.6% were patients between the ages of 45 and 60, 26.7% were between the ages of 30-45, 23.5% were over 60, and 16.2% were between the ages of 16 and 30. There are no differences between different age groups of patients in terms of satisfaction with healthcare services $F_{3; 247} = 0.052$, $Sig = 0.984 > 0.05$.

This conclusion was reported also by O'Holleran²⁹ and K. Miles, et al.³⁰, according to whom the relationship between age and patient satisfaction is complex and cannot be evaluated simply as two isolated variables that affect each other.

Gender -49.8% of the respondents were female patients and the rest 50.2% were male. It seems patient gender does not affect the overall satisfaction with the health care quality. A value of $F_{1; 247} = 0.210$, $Sig = 0.647$ mean that there are no statistically significant differences between overall patient satisfaction and the patient gender. Same result is stated by Ayranci³¹.

Education -While regarding the level of education, the variable is divided in groups. Most of the patients in the study (44.5%) have a secondary education, followed by those with a university degree (27.5%). The analysis of variance shows that there is statistically significant relationship between patient education level and overall reported satisfaction, $F_{4; 247} = 2.990$, $Sig = 0.02$. Education and overall patient satisfaction were found to have a statistically significant linear negative relationship ($r = -.167$, $Sig = .000$). The reason behind this conclusion may be related to the greater amount of information that these patients have and consequently make them not only more demanding, but also being more involved. So, the more educated and informed, the higher the expectations for the quality of healthcare services³².

Income level - In terms of income, more than half of the respondents (52.7%) say their monthly income is up to 30,000 Albanian Lek (ALL), another third declares their monthly income ranges from 30,000 to 50,000 ALL, 10% say their income ranges from 50,000 to 70,000 ALL and only 5.3% say their income exceeds 70,000 ALL. The same conclusion for the income level variable as the value of Fisher $F_{3; 247} = 2.259$ and $Sig = 0.042$, show that the level of satisfaction is different in patients with different income levels. Overall patient satisfaction and the income level were found to have a statistically significant positive linear relationship ($r = .154$, $Sig = .000$) Patients with higher incomes are more likely to report lower levels of overall satisfaction with health care quality. Numerous studies have shown that there is a negative relation between income level and overall satisfaction, where low-income people are likely to be less satisfied³³.

Patient overall satisfaction and quality health care dimensions

This further analysis is related to the other research question of determining the relationship between quality health care service dimensions with the overall satisfaction. Multiple regression is used to analyze the relationship between patient satisfaction as a dependent variable and quality dimensions as independent variables.

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Referring to the regression analysis it was found out the five-quality dimension have a significant statistical relation with overall satisfaction, explaining 60.5% ($R^2=.605$) of the variation values of this satisfaction. These factors are statistically significant according to ANOVA, where $F_{5,247}=76.381$, $Sig = 0.000$. All the coefficients (β) are positive, indicating that increasing the values of the factors leads to an increase in patient satisfaction with the health care services quality.

The multiple linear regression equation (as shown below in **table I**) takes the form:

$$\text{Patient satisfaction} = 0.231 + 0.291 \text{ Tangibles} + 0.212 \text{ Reliability} + 0.253 \text{ Assurance} + 0.141 \text{ Empathy.}$$

The factor loadings are examined using Principal Component Analysis to identify the element that has the

greatest impact on each dimension, highlighting areas that require effort and concrete suggestions for improvement. Factor loadings are the Pearson correlations, measure the strength of the linear relationship between the items and the components. More specifically, the latest are shown in **table II** below. Every item's factor loading for a proven item should be 0.6 or greater³⁴. Facilities, contemporary equipment, and service-related materials, which make up three of this variable's four components, are shown to have a significant impact on the tangible variable aspects. As a result, these factors should be considered to raise the perceived quality of the health care services offered.

Since all five factors for the variable "reliability" have factor loadings greater than 0.6, they are significant in determining the quality of medical care, especially the factor that has the highest value and is closely related to patient-medical center reliability: the provision of medical care as promised by the medical center. For the elements of the other two variables Assurance and Empathy, the data show that for the variable Assurance, all 4 of its constituent elements are important as the factor loadings

Table I: Patient satisfaction with the quality of hospital healthcare service.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	.231	.161		1.429	.154
Tangibles	.291	.050	.284	5.800	.000
Reliability	.212	.069	.215	3.054	.003
Responsiveness	.028	.066	.027	.421	.674
Assurance	.253	.068	.259	3.699	.000
Empathy	.141	.059	.152	2.382	.018

Dependent variable: Patient Satisfaction; p value lower than 0.05 was considered statistically significant ($p < 0.05$)
Method: Multiple Regression Analysis

Table II: Healthcare quality dimensions factor loadings.

Quality Dimension	Factor Loading
Tangibles	
T1. The Medical Center facilities are visually appealing	.728
T2. The Medical Center has modern equipment	.724
T3. Service-related materials (such as pamphlets, signs, etc.) are visually appealing	.713
T4. The Medical Center staff is regular in appearance	.272
Reliability	
R1. When the Medical Center promises to do something, he does it when he promised to do it	.748
R2. The Medical Center offers its services at the time / schedule as promised	.733
R3. When you have a problem, the Medical Center shows a sincere interest in solving it	.691
R4. The Medical Center insists on maintaining, processing / distributing accurate and error-free data	.614
R5 The Medical Center does the right thing from the first time / attempt	.699
Assurance	
A1. The behavior of the staff builds trust in you	.783
A2. You feel safe in all actions you perform with the hospital	.743
A3. The Medical Center staff is always polite to you	.669
A4. The Medical Center staff has the right knowledge to answer all your questions	.655
Empathy	
E1. Medical Center staff give you individual attention	.780
E2. The Medical Center has at its center individual attention for each patient	.825
E3. The service delivery schedule it is a convenient one	.604

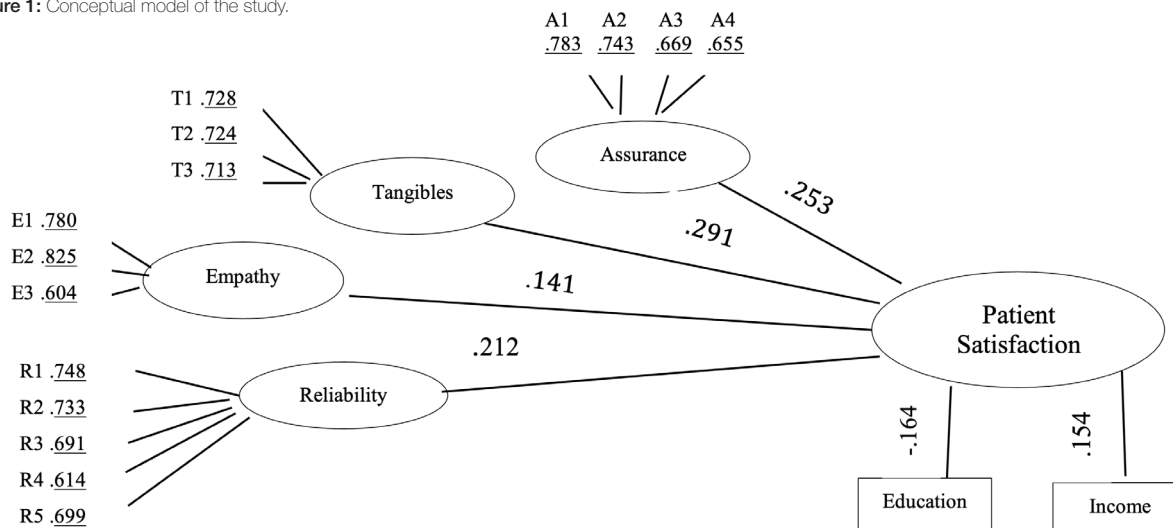
Method: Principal Component Analysis. Factor loadings greater than 0.6 are considered significant in determining the quality of health care services.

exceed the value 0.6 where among them stands out the first one with the highest value. This result is some what expected as the patient's life is entrusted to the professional skills and competencies of the medical staff. As for the dimension of empathy, the 3 elements are significant, where the perception of the patient as being

in the center of the medical center and the individual attention paid to each patient are among the most important of all the factors considered.

Finally, based on the preceding analysis and findings, the proposed conceptual model is presented in **figure 1**.

Figure 1: Conceptual model of the study.



Discussion

The study showed that patient satisfaction is a complex concept and it vary from health care related quality dimensions as by patient related sociodemographic factors.

According to the study, patient satisfaction appears to be significantly influenced by two sociodemographic factors: the degree of education and the level of income. These two variables, performing as control variables, have an impact on the correlation between patient satisfaction with health care quality. The negative statistical correlation between education level and general satisfaction is particularly noteworthy. Thus, it is likely that the more educated patients are, the better informed they are, the higher their expectations of health care, and the more demanding they are of staff, which may justify and explain the existence of a negative correlation with levels of overall satisfaction. In terms of incomes, it is noticed that individuals with incomes rated as average declare higher levels of satisfaction in relation to the two extremes. This is probably because individuals with lower incomes not being able to pay more, receive perhaps more limited service and thus declare somewhat lower levels of satisfaction. On the other hand, it is likely that these individuals, not being part of the public insurance schemes, will have to bear a large part of the expenses themselves because public hospitals provide health care only for the insured patients. Uninsured and unemployed

patients seem to be the category of patients who are forced to pay bills with fees set for services near public medical centers, the amount of which is considerable and burdens their economies. From the analysis of the study, it can be evidenced that the overall satisfaction regarding the quality of health care services measured according to the quality dimensions of SERVPERF is mostly influenced by: Tangibles, Reliability, Reliability, Empathy. These factors identified as the most important in determining patient satisfaction based on the dimensions of overall health care quality explain 60.5% of the values of variation of the overall satisfaction. These quality dimensions are statistically significant $F_{5; 247} = 76.381$, Sig = 0.000, indicating that increasing the values of the factors leads to an increase in patient satisfaction with the health care services quality. The study results expand and broaden comprehension of how patient satisfaction is impacted by many aspects of health care service quality. The model's output can assist managers in determining the areas where interventions can be addressed most effectively in terms of raising health care quality and increase patient satisfaction.

Conflicts of interest

The authors have no potential conflicts of interest to report in connection with this article.

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