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Influence of Hospital Service Quality on the Satisfaction of Cancer Patients

Influência da Qualidade do Serviço Hospitalar Sobre a Satisfação de Pacientes Oncológicos

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RESUMO

The objective of this study was to investigate the satisfaction of cancer patients with the service quality of a Brazilian public hospital located in the city of Rio de Janeiro. The study is quantitative, based on application of a questionnaire to a sample composed of 245 outpatients of the hospital. The data were treated with structural equation modeling supported by partial least squares (PLS-SEM). The results indicated the patients place value on the quality of the service rendered by physicians, quality of the administrative service, quality of the hospital facilities and quality of the nursing service, in that order. The main theoretical contribution is the identification, in contrast to previous findings in the literature, that the cancer patients in our sample attributed little importance to the nursing service, even though nurses are the healthcare professionals who interact the most with patients.

Keywords: Service quality, patient satisfaction, cancer patient, public hospital, cancer.

RESUMO

O objetivo deste estudo foi investigar a satisfação de pacientes oncológicos com a qualidade do serviço de um hospital público brasileiro localizado na cidade do Rio de Janeiro. O estudo é quantitativo, baseado na aplicação de questionário a uma amostra composta por 245 pacientes ambulatoriais do hospital. Os dados foram tratados com modelagem de equações estruturais, calcada em mínimos quadrados parciais (PLS-SEM). Os resultados indicaram que os pacientes valorizam a qualidade do serviço prestado pelos médicos, a qualidade do serviço administrativo, a qualidade das instalações hospitalares e a qualidade do serviço de enfermagem, nesta ordem. A principal contribuição teórica é a identificação, em contraste com achados anteriores da literatura, de que os pacientes oncológicos da nossa amostra atribuíam pouca importância ao serviço de enfermagem, ainda que os enfermeiros sejam os profissionais de saúde que mais interagem com os pacientes.

Palavras-chave: Qualidade do serviço, satisfação do paciente, paciente oncológico, hospital público, câncer.

1 INTRODUCTION

The satisfaction of patients with the service rendered is of fundamental importance to hospitals, since satisfied patients not only remain loyal, they tend to express positive comments and recommend the hospital to other potential users. This helps solidify the hospital's image and expand its participation in the market (Jandavath & Byram, 2016; Silva, Ferreira & Daniel, 2018; Stefanini et al., 2019). Besides this, satisfaction tends to have positive psychological effects that can strengthen the immune system and increase motivation and discipline to follow the medical guidance and treatment regimen, in turn contributing to recovery (Dang et al., 2016; Gupta, Rodeghier & Lis, 2013).

In the oncological area, this positive psychological effect is even more important since the treatment of cancer is generally prolonged and debilitating, with many negative side effects, requiring strong motivation of patients to follow the orientations of the healthcare professionals. So, motivation can improve the efficacy of the treatment and the chances of recovery (Gupta, Rodeghier & Lis, 2013; Padmanabhan, Meskin & Haddad, 2017).

Any factor that can exert a positive influence on the efficacy of cancer treatment and the chances of recovery is highly relevant. Cancer is the second leading cause of death due to disease in the world, and the rates of incidence are rising in many countries. In 2018, approximately 18 million people were diagnosed with cancer in the world and 9 million people died of the disease (Büsselberg & Florea, 2017; Bray et al., 2018). In Brazil in 2018, cancer was responsible for 224,727 deaths, making it the country's second leading fatal disease. At current trends, about 625 thousand new cases will be diagnosed in 2021. Aggravating this situation are the high cost of treatment and the negative impact of the disease on the physical and emotional state of the patient (INCA, 2019a, 2019b).

Because of the high negative impact of cancer on the welfare of the Brazilian population (INCA, 2019a, 2019b) and the importance of the satisfaction of cancer patients to their adhesion to therapy and recovery (Dang et al., 2016; Gupta, Rodeghier & Lis, 2013), the aim of this study was to measure the satisfaction of cancer outpatients with the quality of the service provided by a Brazilian public hospital in the city of Rio de Janeiro, a theme that has not been widely investigated in the literature on outpatient oncological services.

2 LITERATURE REVIEW

This section is divided into two subsections. The first covers the concepts of patient satisfaction and the second the quality hospital services perceived by individuals, to propose a model to assess patient satisfaction according to their perception of the quality of the service rendered.

2.1 Patient satisfaction

In general, the satisfaction of consumers can be defined as their positive affective response after a consumption experience. It results from the conformity or disconformity of their expectations about a service rendered by a company (Oliver, 1980).

In the area of health care in particular, the expectations of the consumers of hospital services (patients) are directed at factors perceived as fundamental for their recovery and reduction of suffering, although they also value aspects that contribute to their physical and emotional comfort (Coutinho et al., 2019; Coutinho & Vieira, 2018; Jalil et al., 2017). Therefore, meeting or exceeding patients' expectations with the objective of eliciting their satisfaction with the hospital's services have great importance, both for the hospital and the patients themselves (Boakye et al., 2017; Gupta et al., 2013). The reason is that patients' satisfaction with a hospital's services has a positive impact on their loyalty and the likelihood they will express positive comments about the hospital and recommend it to others, thus improving the hospital's image (Boakye et al., 2017; La Fata, Lupo & Piazza, 2019; Silva, Ferreira & Daniel, 2018).

Good patient satisfaction is also a basic indicator for hospitals to obtain accreditation certificates and ranking as reference institutions in certain medical specializations, enabling them to obtain funding for research, staff training and to upgrade their quality, in a virtuous circle (Carlucci, Renna & Schiuma, 2013; Mahran & Nagshabandi, 2016).

Besides this, satisfied patients tend to experience positive psychological effects that strengthen their immunological system and their motivation to follow the orientations of healthcare professionals, which can have a positive effect on their recovery (Dang et al., 2016; Gupta, Rodeghier & Lis, 2013; Nezenega, Gacho & Tafere, 2013). Gupta, Rodeghier and Lis (2013), in a survey among American cancer patients, identified that those who were more satisfied with the service also had better health outcomes, which the authors attributed to

positive psychological effects that strengthen the immunity and motivation and discipline to adhere to the treatment regimen.

In turn, Dang et al. (2016) also identified that patient satisfaction with hospital service in the United States has a positive influence on adhesion to HIV therapy, contributing to the efficacy of the treatment. Similar results were found by Nezenega, Gacho and Tafere (2013) among Ethiopian tuberculosis patients.

2.2 Perceived quality of hospital services

Starting in the 1980s, the concept of perceived service quality became a topic for various studies, such as Grönroos (1988) and Parasuraman, Zeithaml and Berry (1988). The perception of individuals regarding the quality of a service is the result of their expectations about the service in question that will be rendered by a particular company. Consumers tend to have a positive perception when their expectations about the service are met or exceeded (Grönroos, 1984, 1988; Parasuraman, Zeithaml & Berry, 1985, 1988).

Parasuraman, Zeithaml and Berry (1988) identified that the quality of a service is composed of five dimensions: reliability, responsiveness, security, empathy and tangibility. In turn, Grönroos (1988) found that perceived quality is constituted of two dimensions: functional and technical. The functional dimension refers to the relationship between the service provider and consumer that occurs during consumption of the service, while the technical dimension involves the technical knowledge applied by the service provider to deliver the desired result to the consumer.

The two studies indicated above have influenced various investigations of the service quality perceived by patients in the health sector. The findings have indicated that patients' deposit their greatest expectations about the hospital service (cure and/or reduction of suffering) in the attending physician, generally with high expectations about the functional and technical quality of the service rendered by the doctor (Coutinho et al., 2019; Jalil et al., 2017; Jandavath & Byram, 2016).

The functional quality of the service provided by physicians (henceforth medical service) can be understood through various indicators inherent to the doctor's "bedside manner", such as: empathetic, respectful, courteous and welcoming attitude; time devoted to listening to and examining the patient; and concern with explaining the particularities of the disease and treatment. In turn, the technical quality of the medical service refers to the specialized knowledge of the doctor in performing clinical diagnoses; skill in interpreting

laboratory test results and preparing reports; choice and execution of the most suitable surgical technique; and prescription of the most effective drugs to treat the particular ailment (Coutinho & Vieira, 2018; Jandavath & Byram, 2016).

The functional dimension of the quality of the service provided by the physician can be easily perceived by patients, since they do not need specialized knowledge to assess the doctor's attitude and behavior. This does not hold regarding the perceived technical quality of the service, since patients as a rule do not have sufficient specialized technical knowledge to judge the doctor's decisions, so their evaluation mainly depends on their recovery and/or reduction of pain and physical limitations, aspects that are not always related with the technical quality of the medical service (Coutinho et al., 2019; Coutinho & Vieira, 2018; Jalil et al., 2017; Jandavath & Byram, 2016).

In this sense, these two dimensions of the quality of medical service are fundamental for hospitals, since they have a direct positive influence on patients' satisfaction with the services rendered (Coutinho et al., 2019; Coutinho & Vieira, 2018; Jalil et al., 2017).

The survey conducted by Jalil et al. (2017) among outpatients of a public hospital in Pakistan found that the functional quality of the service rendered by doctors was important for the satisfaction of patients, who mainly valued the explanation about the treatment and the time devoted to hear and examine the patient. The technical quality of the doctor was also considered important by patients, in terms of their recovery and alleviation of pain and suffering.

The studies carried out by Coutinho et al. (2019) and Coutinho and Vieira (2018) among outpatients of Brazil's National Cancer Institute also found quality of the medical service to be an important factor positively influencing patient satisfaction. In these studies, the patients stated they mainly valued the doctor's effort in helping them, the explanation about the therapy, the technical competence, the time devoted to hearing the patient and the coherence of the clinical diagnosis.

Various other studies have demonstrated that the quality of medical service has a positive impact on patient satisfaction with hospital services, such as the surveys conducted by Shabbir, Malik and Malik (2016) among patients of public hospitals in Pakistan; Giovanis et al. (2018) among hospital patients in Greece; and Sumaedi et al. (2016) with public hospital patients in Indonesia.

Therefore, our first hypothesis concerns the importance of the quality of medical service on patient satisfaction:

H1: The medical service quality (MSQ) has a direct positive effect on oncological patient satisfaction (OPS).

Another important factor that has a positive influence on patient satisfaction with hospital services is the quality of the nursing service, since on average nurses interact with patients more than any other category of healthcare professionals, and their services are keys to the efficacy of the medical treatment (Giovanis et al., 2018).

Patients, because of their condition of physical and emotional vulnerability, need to feel welcomed by healthcare professionals as well as receive technically correct treatment. Nurses are the main protagonists of the interaction with patients, often during intimate and delicate moments (Karaca & Durna, 2019).

The survey conducted by Giovanis et al. (2018) identified that the quality of the nursing service had a positive effect on the satisfaction of Greek hospital patients, who attributed significant importance to the empathy, professionalism and courtesy of nurses, along with their technical competence. Similar results were obtained in studies among hospital patients in various other countries, such as Turkey (Karaca & Durna, 2019); Indonesia (Sumaedi et al., 2016); China (Zineldin, 2015); and India (Naik & Bashir, 2015), leading to our second hypothesis:

H2: The nursing service quality (NSQ) has a direct positive effect on oncological patient satisfaction (OPS).

Besides the quality of the services rendered by doctors and nurses, patients also tend to attribute significant importance to the quality of the hospital's administrative service, such as the ease of scheduling appointments, waiting time for consultations and tests and the procedure to obtain medicines (Bentayeb, Lahrichi & Rousseau, 2019; Giovanis et al., 2018; Shabbir, Malik & Malik., 2016).

The studies performed by Giovanis et al. (2018), Shabbir, Malik and Malik (2016) and Durrah, Allil and Kahwaji (2015) found that the quality of the administrative service has a positive influence on patient satisfaction, leading to our third hypothesis:

H3: The administrative service quality (ASQ) has a direct positive effect on oncological patient satisfaction (OPS).

Patient satisfaction is also subject to the positive influence of the quality of the hospital installations, involving aspects like cleanliness, comfort, modernity, good signaling to facilitate internal navigation and esthetic beauty (Coutinho et al., 2019; Coutinho & Vieira, 2018; Deshwal & Bhuyan, 2018).

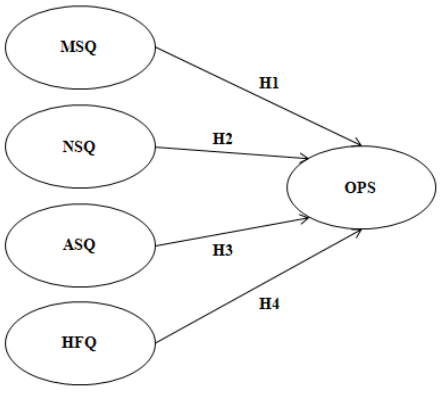
Various studies have found that the quality of hospital facilities has a positive influence on patient satisfaction. Coutinho et al. (2019) and Coutinho and Vieira (2018) identified comfort, good signage and esthetic attractiveness as factors for cancer patients' satisfaction. Deshwal and Bhuyan (2018) found that the decoration, cleanliness, comfort and modernity of equipment and furnishings have a positive impact on the satisfaction of cancer patients in India. The same results were found by Jandavath and Byram (2016) among Indian patients, as well as by Giovanis et al. (2018) among Greek patients and Shabbir, Malik and Malik (2016) among Pakistani patients.

Hence, there is ample evidence of the importance of hospital facilities on patient satisfaction, underpinning the following hypothesis:

H4: The hospital facilities quality (HFQ) has a direct positive effect on oncological patient satisfaction (OPS).

Figure 1 presents the proposed model and the respective hypotheses.

Figure 1 – Satisfaction-quality model.



Source: Own elaboration.

Next, we describe the methodology used to collect the data and the analysis of the results.

3 METHODOLOGY

In order to test the hypotheses formulated for the study, a cross-sectional survey was carried out (Parasuraman, Grewal, & Krishnan, 2006) with a non-probabilistic sample of the population of interest. The data processing for the hypotheses testing was done through structural equation modeling based on partial least squares (PLS-SEM) (Hair et al., 2017; Hair et al., 2014; Henseler, Hubona & Ray, 2016).

3.1 Population and sample

The population studied consisted of all cancer outpatients of a public hospital located in the city of Rio de Janeiro. The sample was non-probabilistic and was selected by convenience, composed of 245 patients. According to Hair et al. (2017), in studies that apply structural equation modeling based on partial least squares (PLS-SEM), it is recommended to employ at least 10 observations for each indicator of the model, and for the sample to be composed of at least 200 elements. Therefore, our sample of 245 respondents meets the quality parameters of the statistical tool used. Since the selection of the sample was not random, we decided to take a cautious stance and use more than 10 observations per observed variable, since the model proposed here has 18 indicators.

3.2 Collection and treatment of the data

The data were collected by means of a structured questionnaire, scored on a Likert scale with five options, ranging from 1 (totally disagree) to 5 (totally agree). The data were treated with PLS-SEM using the SmartPLS software, version 2.0 (Ringle, Wende & Will, 2005).

3.3 Variables of the model and items of the questionnaire

In structural equation modeling, the two most common types of variables are latent and observed. The latent variables, also denoted as constructs or factors, cannot be directly estimated, so they are measured via the observed variables, also called indicators (Hair et al., 2017).

The data collection instrument employed in this study was inspired by the questionnaires applied by Coutinho et al. (2019) and Coutinho and Vieira (2018), based on scales adapted from the literature for application in the context of outpatient cancer treatment. Besides this, we added indicators inherent to the quality of the administrative service to those used in the previous studies mentioned above, as can be seen in Table 1.

Table 1 – Oncology Patient Satisfaction Scale

Constructs	Indicators	Items of the Scale	References
Medical Service Quality (MSQ)	MSQ1	The doctor gives an explanation about the treatment of the disease.	Qin et al. (2014); Durrah, Allil and Kahwaji (2015); Juhana et al. (2015); Rahman and Osmangani (2015); Jandavath and Byram (2016); Sumaedi et al. (2016); Jalil et al. (2017); Coutinho and Vieira (2018); Coutinho et al. (2019).
	MSQ2	The doctor listens calmly to what the patient is feeling.	
	MSQ3	The doctor's diagnosis is coherent with what the patient is feeling.	
	MSQ4	The doctor tries hard to help the patient.	
	MSQ5	The doctor is competent.	
Nursing Service Quality (NSQ)	NSQ1	The nurse tries hard to help the patient.	
	NSQ2	The nurse attends the patient without haste.	
	NSQ3	The nurse is competent.	
Hospital Facilities Quality (HFQ)	HFQ1	The appearance of the hospital is agreeable.	
	HFQ2	The hospital has good signage so the patient can know where to go.	
	HFQ3	The hospital's physical facilities are comfortable.	
Administrative Service Quality (ASQ)	ASQ1	When the patient arrives at the hospital, he/she is received quickly.	Shabbir, Malik and Malik (2016); Giovanis et al. (2018).
	ASQ2	The patient can schedule consultations easily.	
	ASQ3	The hospital supplies the medicines necessary to treat the patient.	
Oncological Patient Satisfaction (OPS)	OPS1	I'm satisfied with the medical treatment.	Gupta, Rodeghier and Lis (2013); Qin et al. (2014); Durrah, Allil and Kahwaji (2015); Juhana et al. (2015); Sumaedi et al. (2016); Coutinho and Vieira (2018); Coutinho et al. (2019).
	OPS2	I'm satisfied with the administrative service of the hospital.	
	OPS3	I'm satisfied with my recovery.	
	OPS4	In general, I'm satisfied with the service provided by hospital.	

Source: Adapted from Coutinho and Vieira (2018) and Coutinho et al. (2019).

4 RESULTS

This section is divided into two subsections. The first characterizes the profile of the sample and the second analyzes the data by structural equation modeling based on partial least squares (PLS-SEM).

4.1 Profile of the sample

Table 2 describes the profile of the sample, composed of 245 respondents.

Table 2 – Profile of the sample

Gender	**Frequency**	**Percentage**
Male	148	60.41%
Female	97	39.59%
Total	**245**	**100%**
Age range	**Frequency**	**Percentage**
Between 26 and 35 years	13	5.31%
Between 36 and 50 years	39	15.92%
Between 51 and 65 years	101	41.22%
Over 65 years	92	37.55%
Total	**245**	**100%**
Schooling Level	**Frequency**	**Percentage**
Fundamental school incomplete	18	7.35%
Fundamental school complete	91	37.14%
Secondary school complete	114	46.53%
College complete	21	8.57%
Advanced specialization complete	1	0.41%
Total	**245**	**100%**

Source: Own elaboration.

As can be seen in Table 2, the majority of the respondents were males, and the majority (193, 78.77%) were over 50 years of age, reflecting the fact that cancer is more common in older people. The sample was also heavily skewed to patients with low schooling levels, since only (8.57%) had college degrees and only 1 (0.41%) had advanced specialization. This can be explained by the fact the hospital in question is part of the public health service, which mainly serves people with lower incomes because those with higher incomes typically have private health insurance.

4.2 Structural equation modeling

This subsection is divided into two parts. The first presents the analysis of the measurement model and the second evaluates the structural model (Hair et al., 2017).

4.2.1 Measurement model

The measurement model, also called the external model, refers to the relationship between the constructs and indicators. When applying PLS-SEM, it is suitable to evaluate the measurement model by calculating the internal reliability, convergent validity and discriminant validity of the latent variables (Hair et al., 2017; Hair et al., 2014; Henseler, 2018).

The internal reliability of the factors was evaluated by computing the composite reliability (CR) and Cronbach's alpha, which serve to verify if the sample, with adequate precision, has biases and whether the observed variables represent the data reliably. CR values above 0.70 are expected, but values greater than 0.90 are not desired. For Cronbach's alpha, values greater than 0.70 are considered adequate, although those greater than 0.60 are generally considered acceptable in the social sciences (Hair, Howard, & Nitzl, 2020).

The convergent validity of the factors was evaluated by examining the average variance extracted (AVE). An AVE value of a latent variable greater than 0.50 means that on average it explains more than 50% of the variance of its indicators, which is considered adequate.

As shown in Table 3, the constructs had suitable values of internal reliability and convergent validity.

Table 3 – Evaluation of the internal reliability and convergent validity of the constructs

Indicators	MSQ	NSQ	ASQ	HFQ	OPS
Composite reliability	0.920	0.915	0.790	0.844	0.879
Cronbach's alpha	0.891	0.861	0.616	0.726	0.816
Average variance extracted	0.696	0.783	0.557	0.643	0.646

Source: Own elaboration

With respect to the discriminant validity of the factors, it presented adequate results according to the criterion of Fornell and Larcker (1981) and analysis of the cross-loadings, as can be noted in Table 4. The Fornell-Larcker criterion correlates the square root of the AVE

of all the factors of the model, and for the model to have adequate discriminant validity, the square root of the AVE of each construct needs to be higher than the individual correlations with all the other factors of the model. In turn, the values of the cross-loadings evaluate the indicators individually, to verify their associations with all the constructs of the model via the factor loadings. This analysis serves to confirm how strongly the observed variables are associated with their respective factors (Hair et al., 2020).

Table 4 – Discriminant validity of the constructs

Criterion	Indicator	MSQ	NSQ	ASQ	HFQ	OPS	*p-value*
Fornell-Larcker criterion (1981)	**MSQ**	**(0.834)**					<0.001
	NSQ	0.607	**(0.885)**				<0.001
	ASQ	0.386	0.413	**(0.746)**			<0.001
	HFQ	0.418	0.428	0.549	**(0.802)**		<0.001
	OPS	0.702	0.563	0.488	0.498	**(0.804)**	<0.001
Analysis of the cross-loadings	**Indicator**	**MSQ**	**NSQ**	**ASQ**	**HFQ**	**OPS**	***p-value***
	MSQ1	**(0.832)**	0.434	0.313	0.294	0.577	<0.001
	MSQ2	**(0.866)**	0.477	0.366	0.397	0.599	<0.001
	MSQ3	**(0.810)**	0.588	0.325	0.337	0.519	<0.001
	MSQ4	**(0.837)**	0.475	0.270	0.329	0.601	<0.001
	MSQ5	**(0.824)**	0.566	0.337	0.382	0.622	<0.001
	NSQ1	0.584	**(0.854)**	0.336	0.369	0.523	<0.001
	NSQ2	0.491	**(0.879)**	0.400	0.396	0.455	<0.001
	NSQ3	0.529	**(0.920)**	0.363	0.373	0.511	<0.001
	ASQ1	0.269	0.211	**(0.696)**	0.448	0.318	<0.001
	ASQ2	0.275	0.359	**(0.754)**	0.443	0.284	<0.001
	ASQ3	0.314	0.349	**(0.785)**	0.366	0.451	<0.001
	HFQ1	0.381	0.444	0.395	**(0.804)**	0.435	<0.001
	HFQ2	0.249	0.173	0.363	**(0.764)**	0.311	<0.001
	HFQ3	0.355	0.368	0.546	**(0.836)**	0.432	<0.001
	OPS1	0.663	0.552	0.382	0.394	**(0.841)**	<0.001
	OPS2	0.428	0.444	0.452	0.564	**(0.742)**	<0.001
	OPS3	0.551	0.364	0.360	0.276	**(0.783)**	<0.001
	OPS4	0.596	0.433	0.380	0.373	**(0.844)**	<0.001

Source: Own elaboration.

Besides the aspects discussed above, the analysis of the cross-loadings allows identifying the most important observed variables for each latent variable, which are those that have a loading in a factor that is higher than the loadings of all the other variables associated with the same factor (Hair et al. 2017). For example, the main indicator of the factor MSQ (medical service quality) was MSQ2 (time given by the doctor to hearing the patient), while the most important indicator of the latent variable NSQ (nursing service

quality) was NSQ3 (technical competence of the nurse). Regarding the constructs ASQ (administrative service quality) and HFQ (hospital facilities quality), their principal indicators were ASQ3 (supply of medicine to the patient) and HFQ3 (comfort of the hospital facilities), respectively.

4.2.2 Structural model

The structural model refers to the relationship between the latent variables. Its evaluation mainly enables identifying the level of predictive accuracy of the model and the empirical support for the hypotheses. This involves calculating the Pearson coefficient of determination (R^2) and determining the strength and significance of the path coefficients (β). Furthermore, the evaluation of the structural model also involves verification of the effect size (f^2) and predictive relevance (Q^2) of the constructs (Hair et al., 2014, 2017).

The Pearson coefficient (R^2) measures the predictive accuracy of the model, by ascertaining to what extent the independent variables explain the variance of the dependent variables of the model. The values of R^2 range from 0 to 1, and the predictive accuracy is greater as the values of R^2 approach 1 (Hair et al., 2014, 2017).

In this study, the endogenous construct OPS had R^2 value of 0.575, meaning the exogenous constructs MSQ, NSQ, ASQ and HFQ explained 57.5% of the variance of the patients' satisfaction with the hospital service.

The indicators Q^2 and f^2 measure the model's fit. The indicator Q^2, also called the Stone-Geisser indicator, has the objective of evaluating the predictive relevance of the independent variables with respect to the model's dependent variables. Values of Q^2 greater than 0 are considered adequate, and the predictive quality of the model improves as Q^2 approaches 1. In turn, f^2, also called the Cohen indicator (1988), checks the effect size of the exogenous factors on the endogenous constructs. Values of f^2 near 0.02, 0.15 and 0.35 are considered to be small, medium and large, respectively (Hair et al., 2017).

In this study, the latent variable OPS had adequate predictive relevance, since the value of Q^2 was 0.355. With respect to the effect size of the exogenous constructs on the endogenous construct OPS, the latent variables HFQ, ASQ, NSQ and MSQ had respective f^2 values of 0.643, 0.558, 0.783 and 0.695. This means that all the model's exogenous constructs presented large effect sizes on the construct OPS.

Finally, the empirical support for the hypotheses proposed here was verified by the statistical significance of the path coefficients (β). A positive value of β indicates that the

independent variable exerts an influence on the dependent variable, and the causal relationship becomes negative when β is negative. These relations are only supported with statistical significance lower than 5% when the values of the Student t-test are greater than 1.96 (Hair et al., 2017).

In this study, the latent variable with the strongest positive impact on the factor OPS was MSQ, with β of 0.500, followed by the following constructs: ASQ, with β = 0.161; HFQ, with β = 0.145; and NSQ, with β = 0.131. Hence, all the hypotheses were supported, with H1 and H2 having statistical significance lower than 0.5%, H3 lower than 2.5%, and H4 lower than 0.1%, as reported in Table 5.

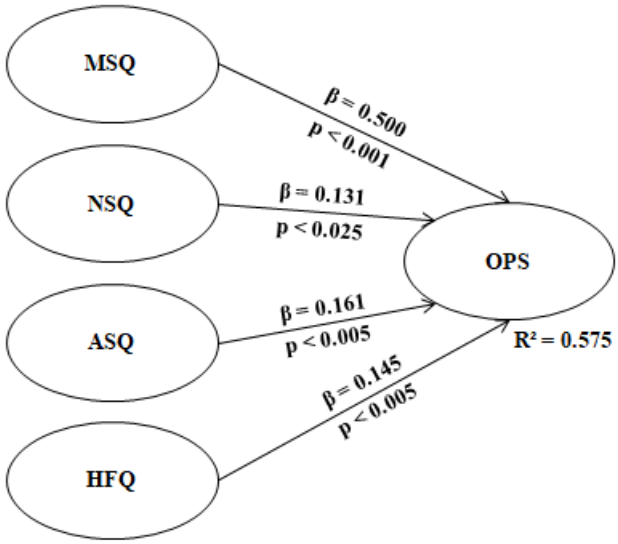
Table 5 – Empirical support of the hypotheses

Hypotheses	Path	(β)	*t*-value	*p*-value	Support
H1: MSQ has a direct positive effect on OPS	MSQ → OPS	0.500	8.911	<0.001	Yes
H2: NSQ has a direct positive effect on OPS	NSQ → OPS	0.131	2.248	<0.025	Yes
H3: ASQ has a direct positive effect on OPS	QSA → OPS	0.161	2.997	<0.005	Yes
H4: HFQ has a direct positive effect on OPS	QIH → OPS	0.145	2.909	<0.005	Yes

Source: Own elaboration.

Finally, all the hypothetical relations between the constructs are better depicted in Figure 2, which shows the path diagram with our main statistical results.

Figure 2 – Path diagram presenting the results



Source: Own elaboration.

5 DISCUSSION OF THE RESULTS

The results indicate that the quality of the medical service was the factor with strongest positive influence on the patient satisfaction, followed by the administrative service quality, hospital facilities quality and nursing service quality.

Patients tend to believe that only the attending physician is qualified to select the treatment with the greatest chance of cure and reduction of the resulting suffering. This explains the high importance attributed by the respondents to the medical service quality, corroborating the results obtained by Coutinho et al. (2019), Coutinho and Vieira (2018), Giovanis et al. (2018) and Shabbir, Malik and Malik (2016).

The patients in this study placed value on the indicators of medical service quality in the following order of importance: time devoted to hearing the patients; effort to help them; explanation about the treatment; technical competence; and coherence of the clinical diagnosis.

In these respects, the patients believe that the time devoted to listen to their descriptions of symptoms demonstrates the level of concern and enhances the quality of the clinical diagnosis and selection of the best treatment option. The effort to help them also is of great importance, since patients need to feel that the doctor really cares about their recovery and reducing their suffering, especially with a disease as serious as cancer. Indeed, it is a devastating disease, interpreted by a substantial portion of patients as a death sentence. Furthermore, oncological treatment is prolonged and debilitating, generating fears and anguish. For this reason, the doctor’s explanation of the therapy is highly relevant to patients, and the resulting clarification of doubts generally strengthens their motivation to stick to the treatment regimen, explaining why medical service quality in this survey was the factor valued the most by the patients.

Besides this, when the doctor shows empathy and courtesy, calmly listening to the patient, and makes a maximum effort to help them by explaining the treatment, the patient, devastated by the disease, feels more protected. This improves the patient’s frame of mind, which is extremely important to face the disease.

Finally, the patients also valued their positive perception of the technical competence of the doctor and the coherence of the clinical diagnosis, since these two factors convey to the patients the belief that the therapy is being guided by a professional with the technical qualifications to cure then and/or attenuate their suffering, thus enhancing their satisfaction with the hospital service.

The factor with the second-strongest positive impact on the patients' satisfaction was the quality of the hospital's administrative service, where the indicators had the following order of importance: 1) supply of the medicine necessary for treatment; 2) ease of scheduling consultations; and 3) waiting time to see the doctor. These findings corroborate the results reported by Giovanis et al. (2018) and Shabbir, Malik and Malik (2016).

The patients attributed great importance to the supply of the medicines prescribed, since public hospitals in Brazil are legally required to provide the drugs necessary for therapy. Delays in supplying drugs can interrupt treatment, since as a rule the patients of public hospitals do not have the financial wherewithal to purchase the (usually expensive) drugs to treat cancer. Interruption of treatment obviously has a negative effect on their recovery.

The outpatients also stated that the ease of scheduling medical consultations has great importance for their treatment, because this avoids delays that can negatively affect treatment and recovery. Once they arrive at the hospital, patients obviously want to be served quickly rather than having to sit for long periods in the waiting room in a climate of anxiety and discomfort.

The third most important factor for patient satisfaction was the quality of the hospital facilities, corroborating the results obtained by Coutinho et al. (2019), Coutinho and Vieira (2018) and Deshwal and Bhuyan (2018). The patients indicated that the comfort of the hospital installations is very important so as not to aggravate the already considerable physical discomfort caused by cancer. The patients also valued the esthetically attractive appearance of the hospital, since this tends to soften anxieties about the ailment and the therapy. Finally, good signage within the hospital was valued because it transmits the feeling that the hospital is well organized, thus improving the satisfaction with the service.

The respondents ranked the quality of the nursing service in fourth place of importance for satisfaction, in contrast with the results found by several other studies of patient satisfaction with hospital services, such as Giovanis et al. (2018), Sumaedi et al. (2016), Zineldin (2015) and Naik and Bashir (2015).

The patients considered the positive perception of the technical competence of the nurses to be the most important indicator of satisfaction with the service, followed by the time devoted by the nurses to hear them and the effort made to help them. Although patients did not express expectations of a direct effect of the nursing service on their recovery, they were aware that the good quality of this service increases the chance of efficacy of treatment, with a positive influence on their satisfaction with the hospital service.

In general, then, this study showed that the cancer outpatients surveyed were mainly concerned about cure of the disease and reduction of their suffering, so their satisfaction with the service was principally associated with quality attributes of the therapy, such as dedication of the physician, clarity of explanation about the treatment prescribed, supply of drugs by the hospital and the speed of service. In the final analysis, since cancer is a severe disease that causes psychological damages to patients, they have a strong need to feel welcome and protected by the healthcare professionals who serve them.

6 FINAL CONSIDERATIONS

The aim of this study was to measure the satisfaction of oncological outpatients with the quality of the services rendered by a public hospital in the city of Rio de Janeiro. The responses enabled identifying that patients mainly value the quality of the service rendered by the doctor, followed by the quality of the administrative service, quality of the hospital facilities and quality of the nursing service.

Although the literature on patient satisfaction with hospital services indicates that the quality of those services mainly involves the positive feeling conveyed to them by the healthcare professionals, where the work of nurses is fundamental (Batbaatar et al., 2017; Hussain et al., 2019; Poulton, 1996; Woodside, Frey & Daly, 1989), the results of this study demonstrated a distinct reality in the context of outpatient treatment of cancer patients. Thus, the principal conclusion of this study is that these patients, even though they are typically extremely anxious due to the severity of the disease, have a rational posture of prioritizing the quality attributes they consider to be most important for the efficacy of the therapy, i.e., the role of the doctor, more so than aspects that give emotional comfort, such as the physical setting and the work of nurses.

In this respect, the main theoretical contribution of this study was to identify that the oncological outpatients surveyed, unlike found in many other studies, attributed little importance to the nursing service quality, even though nurses are the healthcare professionals who interact the most with patients. A possible explanation for this result is that these patients channel their expectations mainly to the quality attributes they believe are most important to their recovery, causing them to classify the nursing service as relatively unimportant. Hence, they prioritize the quality of the medical service and administrative activities that directly affect the success of therapy, such as adequate supply of drugs and short waiting time for

consultations and tests. Furthermore, outpatients are less dependent on the care of nurses and have a less intimate and frequent relationship with them than hospitalized patients.

Besides the theoretical contribution, this work contains an instrument for collection of date that can be useful for better management of outpatient services and thus improved patient satisfaction, which is fundamental, since satisfied patients tend to make positive comments and remain loyal to the hospital. More importantly, satisfied patients present positive psychological reactions that enhance their discipline and motivation to adhere to the treatment regimen, contributing to recovery of their health.

In closing, the results reported in this study, although valid and reliable, cannot be generalized, since the sample was selected by convenience, classifying it as non-probabilistic. Hence, there are opportunities for future studies in other hospitals, both public and private, that treat outpatients suffering from cancer.

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2) análise e interpretação dos dados.	X	X
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