SURVEY

On Patient Satisfaction: Total Quality Management and Perceived Service Quality.

Thi Le Ha Nguyen[1]

Keywords: Total quality management, perceived service quality, patient satisfaction, loyalty

International Healthcare Review (online)

eISSN: 2795-5567

How to Cite

Nguyen, T. L. H. On Patient Satisfaction: Total Quality Management and Perceived Service Quality. International Healthcare Review (online). https://doi.org/10.56226/55

Published online: July 2023

Corresponding Author:

Thi Le Ha Nguyen
VNU University of Medicine and Pharmacy,
Vietnam National University,
Hanoi, Vietnam

ng.leha72@yahoo.com

ABSTRACT

Background:
Patient satisfaction is a tool assessing the service quality of the provider that evaluated based on the measurement of perceived quality by the customer on aspects of service. This study aims to examine the relationships between various factors in the integrated model which included total quality management, perceived service quality, patient satisfaction, and patient loyalty.

Methods:
A conducted questionnaire was distributed to inpatients who were treated at a tertiary-level hospital in Vietnam during April 2018. The data analysis was used the Statistical Package of Social Sciences version 25.0 and Amos 25.0 for structural equation modeling.

Results:
The findings showed that all hypotheses were supported. Total quality management has a positive influence on perceived service quality and patient satisfaction, perceived service quality on patient satisfaction, and patient satisfaction on patient loyalty.

Practice implications:
Our model was used to measure patient satisfaction and loyalty. Findings indicate that total quality management and perceived service quality are the main factors that directly influence on patient satisfaction. This study has implications for managers who should consider total quality management and perceived service quality as the main factors that directly influence on patient satisfaction and thus increase customer loyalty.

Authors' Affiliations:

[1] VNU University of Medicine and Pharmacy, Vietnam National University, Hanoi, Vietnam

What do we already know about this topic?

This study aims to examine the relationships between various factors in the integrated model which included total quality management, perceived service quality, patient satisfaction, and patient loyalty. A conducted questionnaire was distributed to inpatients who were treated at a tertiary-level hospital in Vietnam in April 2018. The data analysis used the Statistical Package of Social Sciences version 25.0 and Amos 25.0 for structural equation modeling. The results showed that all hypotheses were supported. Total quality management has a positive influence on perceived service quality and patient satisfaction, perceived service quality on patient satisfaction, and patient satisfaction on patient loyalty.

What is the main contribution to Evidence-Based Practice from this article?

Based on practice, the article supports the body of evidence on the relevance of Patient Satisfaction for health professionals' continuous improvement in their activity.

What are your research's implications towards theory, practice, or policy?

Our model was used to measure customer satisfaction and loyalty. This study has practice implications for managers who should consider total quality management and perceived service quality as the main factors that directly influence customer satisfaction and thus increase customer loyalty

Authors' Contributions Statement:

The Author developed the design and implementation of the research, the analysis of the results, and the writing of the manuscript

INTRODUCTION

Our study aims to examine how total quality management (TQM) influences customers and their loyalty. The authors focus on the key factors that should be considered when aiming to improve the quality of services offered by a provider, including process, interaction, and environmental quality. Customer satisfaction is a useful tool for measuring service quality in healthcare organizations (Chien and Chi, 2019). Thus, to retain customer satisfaction, service companies need to endeavor to improve the service quality that contributes to customer satisfaction, and thus establish loyalty (Rita et al., 2019).

Over the past decades, the growth and development of service industries has contributed to gross domestic product (GDP) (Lei et al., 2012; Romero et al., 2018) and the healthcare service sector has attracted considerable attention (Fazaeli et al., 2015). The healthcare sector is a service industry in which customers demand high-quality services (Duarte et al.,2020). Medical errors that occur during the service process are a major concern in service organizations; they contribute to patients' harm and even mortality (Musafiri and Daniels, 2020). Therefore, service quality is increasingly considered a critical factor in the survival of service organizations (Zhong and Moon, 2020).

There is also increasing pressure to ensure that service quality affects product quality, product process quality, and service quality (ISO 9000, 2015; ISO 9001, 2015), which focuses on customer satisfaction (ISO 10001, 2007). Researchers have measured perceived service quality (PSQ) from the consumers' perspective (Gilavand and Maraghi, 2019). Customer satisfaction is a useful metric for measuring the quality of service organizations in which service quality should fulfill customer expectations (Rita et al., 2019). PSQ is a key factor in customer satisfaction (Zhong and Moon, 2020). PSQ has been correlated with customer satisfaction, which has a positive influence on behavioral intention (Lin et al., 2019).

In the healthcare industry, measuring service quality is increasingly considered a critical factor in service organizations (Aljaberi et al., 2018). It is based on measuring customer satisfaction with an organization's reliability, responsiveness, assurance, and empathy (Konerding et al., 2019). Service quality can be improved according to an evaluation process wherein customers compare their expectations with their perceptions of the service quality received (Tavakoli et al., 2019). While most of the existing literature concentrates on perceived quality and satisfaction with services, our study considers the impact of TQM, PSQ, satisfaction, and loyalty on a service organization.

This study investigates an integrated model that includes TQM, PSQ, patient satisfaction (PS), and patient loyalty (PL). TQM consists of three factors: process, interaction, and environmental quality. PSQ refers to tangibility, reliability, and responsiveness. PS and PL measure service quality. These factors

contribute to our understanding of the key elements of service quality that affect customer satisfaction.

LITERATURE REVIEW

In this section, the authors present related literature and outline the scope of this study. As mentioned, this study examines an integrated model focused on the following four factors: TQM, PSQ, patient satisfaction, and patient loyalty.

Total Quality Management (TQM)

TQM is a leadership tool that requires a process approach; it enables an organization to plan its processes and interactions (ISO 9001, 2015). This process focuses on measuring customer satisfaction as the key to improving service quality (ISO 10001, 2007). Factors measured are based on customers' PSQ and include tangibility, reliability, responsiveness, assurance, and empathy (Barbino Junior et al., 2019). Measuring and evaluating customer satisfaction in terms of service is a crucial step in assessing customers' PSQ (Mohammadi-Sardo and Salehi, 2019). Customer satisfaction can be improved by meeting customers' expectations regarding various aspects of the service (Rita et al., 2019). Therefore, service companies should consider improving the quality of their services to increase customer satisfaction (Gilavand and Maraghi, 2019). There are five core factors in customer satisfaction: process quality, interaction quality, environmental quality, price, and trust (Zarei et al., 2015a; Zarei et al., 2015b). In this study, the authors selected three factors of the process: interaction and environmental quality. The study was conducted with the participation of patients at a research hospital in Vietnam with a sample size of about 500 participants, following the factor loading of the model.

Perceived service quality (PSQ)

PSQ is measured to assess the service quality of the provider by comparing the gap between expectations and perceptions of service quality (Gregorio et al., 2016). The interaction process between customers and service organizations considers tangibility, including the physical facilities, equipment, staff, and communication materials perceived by the five human senses. Reliability refers to a firm's ability to deliver safe and reliable services. Responsiveness is the staff's willingness to cooperate with and assist the customer. Empathy refers to the staff's ability to understand a customer's mood and feelings. Assurance refers to the ability of a firm to instill a sense of competence and confidence in their customers (Fan et al., 2017). Therefore, perceived quality and customer expectations of service quality are closely related (Lin et al., 2009). PSQ has a positive influence on customer satisfaction and repurchase intentions (Lin et al., 2019). It is an important factor in retaining customer loyalty (Lin et al., 2009) and plays a mediating role as it indirectly affects customer loyalty through customer satisfaction (Aljaberi et al., 2018).

Patient satisfaction (PS)

Today, high-quality service is key to a sustainable competitive environment; firms need to show continual improvements that increase customer satisfaction (Álvarez-García et al., 2019). Service quality has improved according to an evaluation process wherein customers compare their expectations with their perceptions of the quality of the service received (Tavakoli et al., 2019). Measures of satisfaction have included the perceived quality of the service organization and customer expectations about service (Andrade et al., 2019). Customer satisfaction mediates both service quality and behavioral intention (Aljaberi et al., 2018). Perceived value positively influences customer satisfaction and loyalty through satisfaction as a mediating role (Shahsavar and Sudzina, 2017). Thus, customer satisfaction is an indispensable factor when assessing service providers' service processes (ISO 10001, 2007).

Patient loyalty (PL)

Customer loyalty is a core factor in assessing a provider's service quality (Aljaberi et al., 2018). Service organizations have attracted customers by fulfilling their demands for service quality that then contributes to repurchase intention (Rita et al., 2019).

Customer expectations and perceived service quality were measured as they relate to customer loyalty (Lin et al., 2009). Customer satisfaction with the service quality of an organization predicts behavioral intention and plays a mediating role between perceived quality and loyalty (Lin et al., 2019). Service quality, trust, and satisfaction are related to word-of-mouth and re-purchasing (Rita et al., 2019).

Research hypotheses

Service firms have focused on service quality in a bid to enhance customer satisfaction and loyalty and to

develop their core competence (Chien and Chi, 2019). Perceived quality is measured with respect to various aspects of service quality (Zhong and Moon, 2020); it is a key predictor of satisfaction (Konerding et al., 2019) and loyalty (Lin et al., 2009). Service quality is measured by the assessment process of the customer, where the customer compares expectations with the perception of service quality (Gregório et al., 2016). However, perceived quality may fall short of expectations (Tavakoli et al., 2019). Service providers may improve perceived quality to increase customers' expectations (Marimon et al., 2019). Service quality competition is related to perceived quality and consumer satisfaction (Alvarez-Garica et al., 2019). Based on these discussions, the following hypothesis is proposed. H1: Total quality management (TQM) has a positive influence on perceived service quality (PSQ).

TQM has been used to improve customer satisfaction for service organizations (ISO 10001, 2007). Customer satisfaction is a key metric of service quality (Konerding et al., 2019). Aspects of TQM affected by PSQ include process, interaction, and environmental quality, as well as cost and trust, which improve customer satisfaction (Zarei et al., 2015a; Zarei et al., 2015b). In one study, service quality was improved according to a measurement process in which customers compared their expectations with their perceptions of the quality of service received (Fan et al., 2017). Thus, the second hypothesis is as follows. H2: Total quality management (TQM) has a positive influence on patient satisfaction (PS).

PSQ is closely related to customer satisfaction, in which customer expectations are higher than perceived quality (Andrade et al., 2019). The relationship between perceived quality and expectations was considered to assess service quality (Marimon et al., 2019) and customer loyalty (Lin et al, 2009). Measurement and evaluation of service quality by insights into the gap between perceived quality and expectations (Tavakoli et al., 2019). Perceived quality is a core factor in customer satisfaction (Lin et al., 2019) and loyalty (Lin et al., 2009). Considering these findings, we propose the following hypothesis H3: Perceived service quality (PSQ) has a positive influence on patient satisfaction (PS).

A service firm that fulfills customer expectations maintains user satisfaction (Marimon et al., 2019) and consumer loyalty (Lin et al., 2009). Service quality is improved by meeting customer expectations and the perceived quality of service aspects (Andrade et al., 2019). Therefore, the fulfillment of consumer satisfaction and expectations has a significant influence on service outcomes (Marimon et al., 2019). Perceived quality is directly related to consumer satisfaction (Aljaberi et al., 2018) and indirectly to loyalty through satisfaction playing a mediating role (Lin et al., 2009). Therefore, the following hypothesis is proposed. H4: Patient satisfaction (PS) has a positive influence on patient loyalty (PL).

DATA AND METHODOLOGY

Participants were recruited for research prior to data collection. They were trained on one day for the purpose of the study. Information sheets, consent forms, and data were collected using a self-administered questionnaire. Research assistants confirmed that patients completed the questionnaire as required.

Participants were randomly selected from the inpatient lists of 39 clinical departments in a hospital that treats around 2,500 inpatients per day treats and cancer specialist medical fields in Ha Noi, Viet Nam. A sample size of 20% of the total number of inpatients was set at 500 respondents based on the work of Wolf et al. (2013) for structural equation modeling (SEM). Finally, 550 participants were recruited for this survey after compensating for incomplete questionnaires.

The research instrument was a structured questionnaire that included 38 questions in two main parts. In the first part, the socio-demographic factors included six questions concerning age, sex, marital status, educational level, occupation, and method of paying hospital fees. In the second part, 32 questions focused on TQM factors, PSQ, patient satisfaction (PS), and patient loyalty (PL). Twelve questions specifically concerned TQM factors and included four questions relating to process quality (TQM1–TQM4), five questions related to interaction quality (TQM5–TQM9), and three questions related to environmental quality (TQM10–TQM12). The content of these questions was based on the study of Zarei et al. (2015a, 2015b), which was modified for compatibility with the research hospital context. For the PSQ factor, we used fourteen questions with five concerning tangibility (PSQ13–PSQ17), five concerning reliability (PSQ18–PSQ22), and four concerning responsiveness (PSQ23–PSQ26). These questions were based on previous research (Aman and Abbas, 2016). The PS factor was addressed

using three questions (PS27–PS29). Finally, the PL factor included three questions (PL30–PL32). Responses were recorded using a Likert scale ranging from one to five.

The data analysis was performed using the Statistical Package of Social Sciences (SPSS) version 25.0, for descriptive statistics of respondents' socio-demographic characteristics. Next, confirmatory factor analysis (CFA) was used to support the issues of dimensionality, convergent validity, and discriminant validity. Finally, the SEM tested the validity of the proposed model and the hypotheses using AMOS 25.0.

RESULTS AND DISCUSSION

Reliability statistics

All questions in this study used a Likert scale ranging from 'very strongly agree' (5) to 'very strongly disagree' (1). Data analysis was performed using SPSS 25.0. Cronbach's alpha coefficient was used to assess the construct reliability and validity of the scale using SPSS version 25.0, which considers the extent to which a set of indicators consistently and steadily reflects a given construct. The results are presented in Table 1.

All Cronbach's alpha values were over 0.70 for all latent variables, which indicated that the scales were adequately internally consistent. In particular, the Cronbach's alpha value of the TQM factor ranged from 0.823 to 0.896, that of PSQ was between 0.845 and 0.873, that of patient satisfaction was 0.792, and that of patient loyalty was 0.800 (Table 1). In addition, of the 32 original items, one item was omitted to ensure sufficient reliability of the scales.

Confirmatory factor analysis (CFA).

To assess the construct and correct assignment of variables, SEM was conducted using CFA to examine each variable (Hair Jr et al., 2013, p. 602). Our research model was examined in terms of standardized regression weights, composite reliabilities (CR), and average variance extracted (AVE) (Hair et al., 2013, p. 605), as shown in Table 2.

As Table 2 shows, the standardized coefficients of all items ranged from 0.63 to 0.86, which exceeded the required threshold of 0.5. The AVE values were between 0.51 and 0.67, which exceeded the cut-off of 0.50, thereby showing that a large part of the variances was supported by our constructs. The AVE values exceeded the squared correlations between any pair of constructs, indicating high discriminant validity (Hair et al., 2013, p. 605). The CR values for all constructs were around 0.80 to 0.94, which exceeded the cut-off value of 0.70, for adequate internal consistency. Thus, our findings indicated that the model was acceptable.

Model Goodness-of-fit

The fit of the research model is shown in Table 2. In particular, the ratio of $\chi 2$ to the degrees of freedom was 2.765 (P = 0.000), which is known to be sensitive to the sample size, and the fit indices used confirmed that the confirmatory factor model was a good fit to the data, such as [GFI] = 0.869 [cut-off= 0.80; normalized fit index [NFI] = 0.904 [requirement = value of 0–1]; root mean squared error of approximation [RMSEA] = 0.059 [requirement = value from 0.05–0.08]; comparative fit index [CFI] = 0.936; adjusted goodness of fit index [AGFI] = 0.844 [cut-off=0.80]; and Tucker-Lewis index [TLI] = 0.929 [cut-off = 0.9] (Hair Jr et al., 2013, p. 630). Therefore, our research model met the reliability and validity requirements.

Hypotheses testing

Our hypotheses are shown by the path, standardized coefficients, and significance (sig) in Table Hypothesis H1: TQM has a positive influence on PSQ. The path coefficient (TQM--->PSQ) for H1 was statistically significant at 0.903 (p = 0.001), which shows that TQM is related to PSQ. The PSQ in our study was measured based on service quality, including tangibility, reliability, and responsiveness. Previous scholars have supported the idea that PSQ is measured from customers' insights (Mohammadi-Sardo and Soheil Salehi, 2019). Improvement of quality was considered to improve perceived quality and ultimately increase customer satisfaction (Álvarez-García et al., 2019) and customer loyalty (Lin et al., 2009). In addition, measuring and evaluating aspects of service quality depend on the gap between user expectations and perceptions (Andrade et al., 2019).

Hypothesis H2: TQM has a positive influence on PS. Hypothesis H2 is illustrated by the coefficient of the path (TQM---> PS) that was statistically significant at 0.224 (p = 0.039), which indicates this hypothesis was accepted which TQM has a positive influence on PS. Similarly, service quality improvement is a key factor in maintaining customer satisfaction and repurchase intention (Rita et al., 2019). Perceived quality was used to measure the overall service quality of a service organization (Álvarez-García et al., 2019). It directly

affects customer satisfaction and behavioral intention (Lin et al., 2019) or may be indirect to loyalty through satisfaction playing a mediating role (Aljaberi et al., 2018).

Hypothesis H3: PSQ has a positive influence on PS. Hypothesis H3 was shown by the coefficient of the path (PSQ---> PS) at 0.583 statistical significance ($p = 0.001$), which supported PSQ being directly related to PS. This finding also supports the results of Aljaberi et al. (2018) and Lin et al. (2019). The findings revealed that service organizations should consider improving PSQ to increase customer satisfaction and loyalty (Lin et al., 2019). Perceived quality is directly related to customer satisfaction and loyalty (Shahsavar and Sudzina, 2017) or indirectly related to loyalty through satisfaction is a mediating factor (Zhong and Moon, 2020). In addition, service providers should develop strategic plans to improve perceived quality by developing TQM to maintain customer satisfaction and loyalty.

Hypothesis H4: PS has a positive influence on PL. Hypothesis H4 was shown by the coefficient of the path (PS--->PL) with a statistical significance of 0.643 ($p = 0.001$), which suggested that the hypothesis was supported that PS has a direct influence on PL. Similarly, satisfaction has a positive influence on loyalty (Aljaberi et al., 2018; Shahsavar and Sudzina, 2017), and satisfaction plays a mediating role between service quality and repurchase intention (Lin et al., 2019; Rita et al., 2019).

CONCLUDING COMMENTS

Our study aimed to examine the effect of TQM and PSQ on patient satisfaction and loyalty. The instrument of study was constructed on a self-administered questionnaire carried out at a tertiary-level hospital in Vietnam in April 2018, with 550 respondents. A total of 516 respondents returned the documents that were analyzed. Confirmatory factor analysis was used to confirm the dimensionality and convergent and discriminant validity of the model, and structural equation modeling was used to test the validity of the proposed hypotheses model. All hypotheses were supported. TQM has a significant effect on PSQ and PS; and PSQ on satisfaction, PS on patient loyalty (PL). TQM and PSQ were shown to be closely related to PS and PL, respectively. Therefore, service providers should focus on TQM and PSQ when considering aspects of service quality, including tangibility, reliability, and responsiveness, to ensure user satisfaction. Management teams should consider these factors in strategic planning to improve customer satisfaction and loyalty.

Our study has revealed several implications for service management on consumer satisfaction, verifying that high client satisfaction leads to repurchase intention. Our findings contribute to the development of policies aimed at improving service quality by providing information that could be used when developing strategic plans aimed at increasing companies' profitability and advancing sustainability. The key factors that should be considered when aiming to improve the quality of services offered by service organizations include process, interaction, and environmental quality. Healthcare companies should consider managing TQM and PS to increase and maintain customer satisfaction. In addition, the study also enhances our understanding of how the various factors that pertain to service quality influence consumer satisfaction.

A limitation of this study is that it only focused on inpatients; therefore, the views of outpatients were not measured. Further research to holistically assess healthcare service quality could measure both outpatients' and inpatients' satisfaction.

TABLE 1

Reliability statistics

Constructs	Items	Cronbach's Alpha
TQM		
Process quality	4	0.896
Interaction quality	5	0.890
Environment quality	3	0.823
PSQ		
Tangibility	5	0.873
Reliability	5	0.854
Responsiveness	4	0.845
Patient Satisfaction	3	0.792
Patient Loyalty	2	0.800

TABLE 2

Confirmatory factor analysis results and model goodness-of-fit

Construct measures	Standardized coefficients	Average variance extracted (AVE)	Composite reliability (CR)
Total Quality Management (TQM)		0.600	0.943
TQM1<---TQM	0.821		
TQM2<---TQM	0.738		
TQM3<---TQM	0.791		
TQM4<---TQM	0.829		
TQM5<---TQM	0.824		
TQM6<---TQM	0.795		
TQM7<---TQM	0.783		
TQM8<---TQM	0.791		
TQM9<---TQM	0.694		
TQM10<---TQM	0.737		
TQM12<---TQM	0.700		
PSQ (PSQ)		0.509	0.935
PSQ13<---PSQ	0.626		

PSQ14<---PSQ	0.664		
PSQ15<---PSQ	0.709		
PSQ16<---PSQ	0.754		
PSQ17<---PSQ	0.684		
PSQ18<---PSQ	0.703		
PSQ19<---PSQ	0.731		
PSQ20<---PSQ	0.734		
PSQ21<---PSQ	0.748		
PSQ22<---PSQ	0.696		
PSQ23<---PSQ	0.779		
PSQ24<---PSQ	0.737		
PSQ25<---PSQ	0.746		
PSQ26<---PSQ	0.661		
Patient Satisfaction (PS)		0.570	0.798
PS27 <---PS	0.780		
PS28 <---PS	0.790		
PS29 <---PS	0.690		
Patient Loyalty (PL)		0.670	0.802
PL30 <---PL	0.861		
PL31 <---PL	0.774		

Chi-square (CMIN/DF)=2.765; CMIN= 1078.159; DF= 390; P=0.000
GFI=0.869; AGFI=0.844; CFI=0.936; TLI= 0.929; NFI= 0.904; RMSEA= 0.059

TABLE 3

Hypothesis test results

Hypothesis	Path	Standardized coefficients	Sig.	Results
H1	TQM--->PSQ	0.903	***	Accepted
H2	TQM--->PS	0.224	0.039	Accepted
H3	PSQ--->PS	0.583	***	Accepted
H4	PS--->PL	0.643	***	Accepted

*Hypotheses were evaluated using standardized coefficients and path coefficients with significance (sig.) less than 0.05. Symbol *** represents (sig. = 0.001). Acronyms are total quality management (TQM), PSQ (PSQ), patient satisfaction (PS), and patient loyalty (PL).*

APPENDIX

Questionnaire

On Patient Satisfaction: Total Quality Management and Perceived Service Quality

Your responses will be used solely for research purposes. The information that you provide will help to improve the quality of healthcare services.

Serial No: ……..

Date of completion……

Please write your response in the blank column or mark the box provided.

1. What is your age? ……years

2. What is your sex?

1. Male
2. Female

3.What is your marital status?

1. Single
2. Married
3. Divorced
4. Widowed

4.What is your educational level?

1. No school
2. Primary school
3. Secondary school
4. High school
5. Bachelor's degree
6. Postgraduate degree

5.What is your occupation?

1. Govt. employee
2. Non-govt. employee
3. Unemployed
4. Agriculture
5. General labour
6. Retired

6.Method of paying hospital fees

1. Insurance 2. Personal payment

Please place a cross in the box corresponding to the level of your agreement/disagreement with each of the following statements.

1. Very strongly disagree, 2. Strongly disagree, 3. Agree, 4. Strongly agree, 5. Very strongly agree

Total Quality Management (TQM)

	Statement/Item	1	2	3	4	5
Process quality						
TQM1	Services were provided on time					
TQM2	I was informed when services would be performed					
TQM3	Staff were available when needed					
TQM4	Medical and non-medical services were provided promptly					
Interaction quality						
TQM5	Round-the-clock services were available					
TQM6	Staff were polite and friendly					
TQM7	Staff had my best interests at heart					
TQM8	Staff understood my specific needs					
TQM9	Staff were knowledgeable when answering my questions					
Environment quality						
TQM10	Hospital environment was clean and comfortable					
TQM11	Employees were well dressed and neatly presented					
TQM12	Equipment was up-to-date					

Perceived service quality (PSQ)

	Statement/Item	1	2	3	4	5
Tangibility						
PSQ13	Hospital was conveniently located					
PSQ14	Direction signs were clear					
PSQ15	Wards were designed with easy access and were comfortable					
PSQ16	Staff were professional					
PSQ17	Free medicine was available					
Reliability						
PSQ18	The admission process was fast and straightforward					
PSQ19	Staff responded immediately when called					
PSQ20	Staff showed genuine interest in attending to my problems					
PSQ21	Staff were reliable in handling my problems					
PSQ22	Hospital treatment was error-free					
Responsiveness						
PSQ23	Admissions staff were friendly and courteous					
PSQ24	Staff responded promptly to my requests					
PSQ25	I was provided with adequate information about my health condition					
PSQ26	I was prescribed affordable medicines					

Patient Satisfaction (PS)

	Statement/Item	1	2	3	4	5
PS27	I am satisfied with the results of my recovery					
PS28	The quality of service I received met my expectations					
PS29	I am satisfied with my selection of this hospital to provide me with healthcare					

Patient Loyalty (PL)

	Statement/Item	1	2	3	4	5
PL30	I would return to this hospital if I required healthcare in the future					
PL31	I would recommend this hospital to others					
PL32	I do not want to use other healthcare service providers					

RECEIVED:: 28 December 2022 ● ACCEPTED: 10 May 2023 ● TYPE: Survey ● FUNDING: The author received no financial support for the research, authorship, and/or publication of this article. ● FUNDING: The author received no financial support for the research, authorship, and/or publication of this article ● DECLARATION OF CONFLICTING INTERESTS: The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. ●

References:

Aljaberi, M. A., Juni, M. H., Al-Maqtari, R. A., Lye, M. S., Saeed, M. A., Al-Dubai, S. A. R., & Shahar, H. K. 2018. Relationships among perceived quality of healthcare services, satisfaction and behavioural intentions of international students in Kuala Lumpur, Malyasia: a cross-sectioanl study. *BMJ, 8*: 1-14. https://bmjopen.bmj.com/content/8/9/e021180.

Álvarez-García, J., González-Vázquez, E., Del Río-Rama, M. C. D., & Durán-Sánchez, A. 2019. Quality in customer service and its relationship with satisfaction: an innovation and competitiveness tool in sport and health centers. *International Journal of Environmental Research and Public Health, 16*(20): 1-17. https://pubmed.ncbi.nlm.nih.gov/31623254/

Aman, B., & Abbas, F. 2016. Patient's perceptions about the service quality of public hospitals located at District Kohat. *JPMA. the Journal of the Pakistan Medical Association, 66*(1): 72-75. https://pubmed.ncbi.nlm.nih.gov/26712186/

Andrade, L. A. F., Salazar, P. E. L., Leopoldino, K. D. M., & Montenegro, C. B. 2019. Primary health care quality assessment according to the level of satisfaction of elderly users. *Resista Gaucha de Enfermagem. Revista Gaucha de Enfermagem, 40*: 1-10. https://pubmed.ncbi.nlm.nih.gov/31389478/

Antunes, V. (2022). On Nursing Research and Evidence-Based Practice: Topics for researchers and practitioners. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.12

Antunes, V. (2022). On Nursing Research and Evidence-Based Practice: Topics for researchers and practitioners. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.12

Chen, S., & Qin, Y. (2023). On Ethics, Biomedical Education and Health Promotion: International and Chinese Perspectives. International Healthcare Review (online). https://doi.org/10.56226/46

Chen, Y., Moreira, P., Liu, W., Monachino, M., Nguyen, T. L. H., & Wang, A. (2022). Is there a gap between artificial intelligence applications and priorities in health care and nursing management? Journal of Nursing Management, 1–7. https://doi.org/10.1111/jonm.13851

Chien, L., & Chi, S. 2019. Corporate image as a mediator between service quality and customer satisfaction: difference across categorized exhibitors. *Heliyon, 5*(3): e01307. https://pubmed.ncbi.nlm.nih.gov/31016259/

Dsouza B, Prabhu R, Unnikrishnan B, Ballal S, Mundkur SC, Chandra Sekaran V, Shetty A, and Moreira, Paulo. (2023) Effect of Educational Intervention on Knowledge and Level of Adherence among Hemodialysis Patients: A Randomized Controlled Trial. Glob Health Epidemiol Genom. 2023 Mar 31;2023:4295613. doi: 10.1155/2023/4295613. PMID: 37033597; PMCID: PMC10081894. https://ops.hindawi.com/author/4295613/

Dsouza, B. (2022). On Sustainable Health Systems: A Research Emergency in Pandemic times. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.7

Duarte, S. D. C. M., Azevedo, S. S., Muinck, G. D. C., Costa, T. F. D., Cardoso, M. M. V. N., & Moraes, J. R. M. M. 2020. Best safety practices in nursing care in Neonatal intensive therapy. *Revista Brasileira de Enfermagem, 73*(2): e20180482. http://dx.doi.org/10.1590/0034-7167-2018-0482
EPSI methodology. *Plos One, 12*(12): 1-18. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0189576

Fan, L. H., Gao, L., Liu, X., Zhao, S. H., Mu, H. T., Li, Z., Lou, F. G. 2017. Patients' perceptions of service quality in China: an investigation using the SERVQUAL model. *PLOS ONE, 12*(12): e0190123. https://doi.org/10.1371/journal.pone.0190123

Fazaeli, A. A., Ghaderi, H., Salehi, M., & Fazaeli, A. R. 2015. Health care expenditure and GDP in oil exporting countries: evidence from OPEC data, 1995-2012. *Global Journal of Health Science, 8*(2): 93-98. http://dx.doi.org/10.5539/gjhs.v8n2p93

Gilavand, A. G., & Maraghi, E. 2019. Assessing the quality of educational services of Iranian universities of medical sciences based on the SERVQUAL evaluation model: a systematic review and meta-analysis. *Iranian Journal of Medical Sciences, 44*(4): 273-284. https://pubmed.ncbi.nlm.nih.gov/31439970/

Gregório, H., Santos, P., Pires, I., Prada, J., & Queiroga, F. L. 2016. Comparison of veterinary health service expectations and perceptions between oncologic pet owners, non-oncologic pet owners and veterinary staff using the SERVQUAL methodology. *Veterinary World, 9*(11): 1275-1281. https://pubmed.ncbi.nlm.nih.gov/27956781/

Hair, J. R., J. F., Black, W. C., Babin, B. J., & Anderson, R. E. 2013. Multivariate data analysis (7th ed.). *London, UK*: Prentice Hall. https://books.google.com.vn/books/about/Multivariate_Data_Analysis.html?id=VvXZnQEACAAJ&redir_esc=y

Han T, Han M, Moreira P, Song H, Li P and Zhang Z (2023) Association between specific social activities and depressive symptoms among older adults: A study of urban-rural differences in China. Frontiers in Public Health 11:1099260. DOI:

10.3389/fpubh.2023.1099260 .

ISO-10001. 2007. International standard: quality management- customer satisfaction- guidelines for codes of conduct for organizations (1st ed.). *Geneva, Switzerland*: ISO. https://www.iso.org/standard/38450.html

ISO-9000. 2015. International standard: quality management systems- fundamentals and. vocabulary (4th ed.). *Geneva, Switzerland*: ISO. https://www.iso.org/standard/45481.html

ISO-9001. 2015. International standard: quality management systems- requirements (5th ed.). *Geneva, Switzerland*: ISO. https://the9000store.com/iso-9001-2015-requirements/?msclkid=e7cd605ce0f01c8a6f3203f70d4e7505

Jacennik, B.; Zawadzka-Gosk, E.; Moreira, J.P.; Glinkowski, W.M. Evaluating Patients' Experiences with Healthcare Services: Extracting Domain and Language-Specific Information from Free-Text Narratives. Int. J. Environ. Res. Public Health 2022, 19, 10182. https://doi.org/10.3390/ ijerph191610182

Junior, L. R. B., Silva, L. G. C. E., & Gabriel, C. S. 2019. Quality as perceived by nursing professionals in an accredited specialized hospital. *Revista Brasileira de Enfermagem,* 72(suppl 1)(Suppl 1): 282-288. http://dx.doi.org/10.1590/0034-7167-2018-0151

Kehinde, O., Dixon-Lawson, K., & Mendelsohn, A. (2023). On Community Pharmacists and Promotion of Lifestyle Modification in Adults with Hypertension: Practice Protocol. International Healthcare Review (online). https://doi.org/10.56226/49

Konerding, U., Bowen, T., Elkhuizen, S. G., Faubel, R., Forte, P., Karampli, E., ··· Torkki, P. 2019. Development of a universal short patient satisfaction questionnaire on the basis of SERVQUAL: psychometric analyses with data of diabetes and stroke patients from six different European countries. *PLOS ONE, 14*(10): e0197924. https://doi.org/10.1371/journal.pone.0197924

Lei, H., Xia, X., Li, C., & Xi, B. 2012. Decomposition analysis of wastewater pollutant discharges in industrial sectors of China (2001-2009) using the LMDI I method. *International Journal of Environmental Research and Public Health, 9*(6): 2226-2240. https://pubmed.ncbi.nlm.nih.gov/22829800/

Li, N., GUO, M., YOU, S., & JI, H. (2022). On Patient Readiness for Hospital Discharge: an update on recent Evidence. International Healthcare Review (online). https://doi.org/10.56226/ihr.v1i2.30

Lin, D. J., Li, Y. H., Pai, J. Y., Sheu, I. C., Glen, R., Chou, M. J., & Lee, C. Y. 2009. Chronic kidney-disease screening service quality: questionnaire survey research evidence from Taichung city. *BMC Health Services Research, 9*(239): 239. https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-9-239

Lin, Y. H., Guo, J. L., Hsu, H. P., Yang, L. S., Fu, Y. L., & Huang, C. M. 2019. Does 'hospital loyalty' matter? Factors related to the intention of using a mobile app. *Patient Preference and Adherence, 13*: 1283-1294. http://doi.org/10.2147/PPA.S207031

Lloyd Williams, D. (2022). On Healthcare Research Priorities in the USA : From Long COVID to Precision Health, what else is new?. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.14

Marimon, F., Gil-Doménech, D., & Bastida, R. 2019. Fulfilment of expectations mediating quality satisfaction: the case of hospital service. *Total Quality Management and Business Excellence, 30*(1-2): 201-220. https://www.tandfonline.com/doi/full/10.1080/14783363.2017.1401458

Mohammadi-Sardo, M. R., & Salehi, S. 2019. Emergency department patient satisfaction assessment using modified servqual model; a cross-sectional study. *Advanced Journal of Emergency Medicine, 3*(1): e3. https://pubmed.ncbi.nlm.nih.gov/31388652/

Monachino, M. . (2022). On Healthcare Research for Disease Prevention: Critical Knowledge Gaps in European Public Health. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.6

Moreira, P. (2022). On New Clinical Research Methods and Technologies: From decentralised designs to Artificial Intelligence. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.11

Musafiri, J. J., & Daniels, F. 2020. Nursing students' perceptions of clinical learning opportunities and competence in administration of oral medication in the Western Cape. *Curationis*, *43*(1): e1-e9. https://curationis.org.za/index.php/curationis/article/view/2044

Nguyen, T. L. H. (2022). On Improving Healthcare with a world perspective: Evidence for Global Health Programs. International Healthcare Review (online), 1(1). https://doi.org/10.56226/ihr.v1i1.10

Rita, P., Oliveira, T., & Farisa 2019. The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon, 5*: 1-14. https://doi.org/10.1016/j.heliyon.2019.e02690

Romero, J., Benavides, E., & Meza, C. 2018. Assessing financial impacts of subclinical mastitis on Colombian dairy farms. *Frontiers in Veterinary Science, 5*(273): 273. https://www.frontiersin.org/articles/10.3389/fvets.2018.00273/full

Shahsavar, T., & Sudzina, F. 2017. Student satisfaction and loyalty in Denmark: application of.

Tavakoli, N., Yadegarfar, G., Bagherian, H., & Ghasri, F. 2019. Assessing the educational services quality of health information teachnology students. *Journal of Education and Health Promotion, 8*(168): 1-6. https://pubmed.ncbi.nlm.nih.gov/31867353/

Tian, M., Li , X., Zhou, F., Wang , Y., Wang, Q., Pan , N., & Ji , H. (2023). On the Psychological experiences of Hematopoietic stem cell donors: an update on International Evidence. International Healthcare Review (online). https://doi.org/10.56226/31

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. 2013. Sample size requirements for structural equation models: an evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement, 76*(6): 913-934. https://journals.sagepub.com/doi/10.1177/0013164413495237

Zarei, E., Daneshkohan, A., Khabiri, R., & Arab, M. 2015a. The effect of hospital service quality on patiet's trust. *Iranian Red Crescent Medical Journal, 17*(1): e17505. https://pubmed.ncbi.nlm.nih.gov/25763258/

Zarei, E., Daneshkohan, A., Pouragha, B., Marzban, S., & Arab, M. 2015b. An empirical study of the impact of service quality on patient satisfaction in private hospitals, Iran. *Global Journal of Health Science, 7*(1): 1-9. https://pubmed.ncbi.nlm.nih.gov/25560338/

Zhang, L., Lei, J., Zhang, J. et al. Undiagnosed Long COVID-19 in China Among Non-vaccinated Individuals: Identifying Persistent Symptoms and Impacts on Patients' Health-Related Quality of Life. J Epidemiol Glob Health (2022). https://doi.org/10.1007/s44197-022-00079-9

Zhang, L., Moreira, J. P., & Xi, Y. (2022). What is Long COVID-19? Clarifying Definitions and Symptoms. International Healthcare Review (online). https://doi.org/10.56226/ihr.v1i2.28

Zhong, Y., & Moon, H. C. 2020. What drives customer satisfaction, loyalty, and happiness in fast-food restaurants in China? Perceived price, service quality, food quality, physical environment quality, and the moderating role of gender. *Foods. MDPI, 9*(4): 1-19. https://pubmed.ncbi.nlm.nih.gov/32276425/