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The Impact Of Hospital Services Towards Patients' Satisfaction In Henan Province Tertiary Hospitals: Patients' Expectation As A Mediator

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Abstract
China's ongoing healthcare reform has prompted tertiary hospitals to explore strategies for enhancing patient satisfaction within the new healthcare framework while addressing medical conditions. The motivation of this study is to investigate the factors within hospital services that affect patients' expectations and satisfaction regarding treatments. Findings from the analysis is used to formulate strategies in enhance patients' expectations and satisfaction. Primary data were gathered within the province of Henan and gathered 300 respondents. The measuring tools were developed through a combination of empirical and normative research, with the data analyzed quantitatively. Findings from the analysis revealed that Patient satisfaction in hospitals relies heavily on communication and service attitude. Patients want their healthcare providers to be compassionate, respectful, and responsive. Patient satisfaction is heavily influenced by the communication skills and attitudes of healthcare practitioners. To satisfy patients, hospitalization costs must be fair. Patients are satisfied when they think they are receiving exceptional value and that their hospital stay is affordable. Excess healthcare expenses reduce patient satisfaction. Patient satisfaction correlates with nursing care quality and treatment efficacy. As previously stated, meeting patients' expectations promotes service satisfaction. Affordable hospitalization expenses impact patients' expectations and satisfaction. Finally, environmental factors affect patient expectations and satisfaction.
KeyWords: Hospital service, Patient expectation, Patient satisfaction, Tertiary Hospital

INTRODUCTION

With an area of 167,000 square kilometers, Henan Province lies in the heart of China. It is a very populous region and the birthplace of Chinese culture. There were 98.83 million people living there as of 2018, making up around 9.3 percent of the overall population. Of that number, 74.626 million, or 79.3 percent, lived in rural regions. There were 202,720,205 hospital admissions in Henan Province in 2020, total yearly health expenditures of 310 billion yuan (US$48.7 billion), and a regional GDP of 588.87 billion yuan (US$924.7 billion), making it a major economic development area in China. Despite steady progress in economic and social development and improved social security, several problems remain in Henan Province. A strong basis for health standards in Henan Province has been established by the rapid advancements in the health sector. The province now has 147 tertiary hospitals with more than 500 beds, 546 secondary hospitals with 100-499 beds, and 1,023 primary hospitals with less than 100 beds (China Health and Health Statistical Yearbook, 2020). Patient satisfaction increased significantly from 2017 to 2018 with a score of 76.8%, according to the 2018 report (Henan Provincial Health and Family Planning Commission, 2019). Healthcare services have not reached an acceptable state, even if the patient satisfaction level has increased. Two major tendencies, diversification and stratification, are emerging in the steadily improving quality and variety of hospital services. Competition among healthcare facilities has heated up since China joined the WTO. Both the provision of healthcare services and the

enhancement of service quality and overall competences are impacted by this competitiveness. Because of their massive size, tertiary hospitals are especially vulnerable to financial losses should patient satisfaction decline as a result of subpar care. On top of that, the idea of providing exceptional service has permeated every aspect of society. There has to be continuous study and improvement in the domestic assessment of hospital service quality because it is still in its early stages. There have been a number of problems with hospital management in the years after the pandemic. These include a lack of internal structure, an insufficient way to evaluate the quality of hospital services, and poor assessments of those services. Developing scientific evaluation methodology and tools, as well as establishing a reliable assessment system for the quality of hospital services, are three crucial concerns that must be addressed in current hospital service research. Within the medical field, research on patient happiness has always been a major area of focus (Panahi & Farrokh, 2025). A rising number of experts have begun to recognize the importance of patient satisfaction, leading to an explosion of research on the topic in recent years. The purpose of this research is to review the literature on patient satisfaction and the factors that influence it (Skaf, Eid, Thrassou, El Nemar & Rebeiz, 2024). Because it shows how happy people are with healthcare services, patient satisfaction research is important for healthcare organizations to improve the quality of their services (Brian Williams, 1994). In addition, healthcare firms may learn a lot about how to better meet customer requests and increase service efficiency by analyzing patient happiness. Patient satisfaction is influenced by several aspects, such as their socioeconomic and cultural origins, the quality of healthcare treatments, and the communication between themselves and their healthcare providers (Pakurár et al. 2019). Factors like as the patient's cultural and socioeconomic status, the standard of healthcare provided, and the ease of communication between doctor and patient all play a role in determining the level of satisfaction that patients report (Nessa, Sultana, & Hossain, 2025). As a concise evaluation of service quality from the users' point of view, patient satisfaction is a fundamental and widely used core measure in healthcare service evaluation (Wulandari, Doddy & Indaryani, 2024). Because of its theoretical and practical importance, it has been the focus of extensive study in academic circles across the world for a long time, with fruitful results. Patient satisfaction is positively and significantly impacted by each component of service quality, according to Nuryanti (2017). These components include tangible elements, reliability, responsiveness, assurance, and empathy. Everything from the admissions process to the medical staff, food, medications, tools, and even the architectural layout of the hospital may have an impact on how satisfied a patient is with their whole experience (Digby, Kramer, Yuan, Ozavci & Bucknall, 2024). When patients aren't happy with their experience at the hospital, it's usually because of the staff's attitude or actions. This includes things like when they are served, how difficult it is to find a doctor, how well doctors communicate and provide information, how long it takes to get admitted, and how clean and organized the hospital is (Elkefi & Asan, 2024). However, as the comprehensive analysis shows, the majority of the current studies on patient satisfaction in China are lacking.Second, there isn't a consistent and standardized method for measuring patients' happiness in China (Yang, Wei, Xiao, Wang, Wu, Li, ... & Zhang, 2024). Because most institutions choose or build their measurement equipment according to their own unique set of local circumstances, the procedure is extremely random and makes horizontal comparison of the data collected impossible. This is because there isn't a single, standardized evaluation tool available because most scales haven't undergone comprehensive psychometric testing (Patterson, 2025). Online surveys, electronic touch screens or assessors, mail-in questionnaires, and conventional hospital-based questionnaires are some of the methods and technologies used to collect data. Depending on social habits, cognitive capacities, and present conditions, the data obtained throughout time, even within the same institution, can be utterly contradictory and incomparable, thanks to the different

approaches and their respective constraints. Several patient satisfaction measurements have become little more than a formality due to the difficulty of doing horizontal and vertical comparisons (Nunes, 2024). Finally, research on patient satisfaction include limitations related to geography. As a result of the country's large population, medical practices and legislation vary greatly throughout China's many provinces (Qin, Qin, Hu, Wang, Yang, Li, ... & Xu, 2024). So, it's not uncommon for each province to run its own patient satisfaction survey, and every so often, a national survey will be carried out by randomly selecting certain medical facilities for testing and comparison. Some provinces have invested much in patient satisfaction research, while others have put very little resources into the field, all because of the differing priorities of their healthcare administrations (Li, Cui & Feng, 2024). Zhejiang Province, a more economically developed region, has an abundance of studies on satisfaction, in contrast to the little research reported in Henan Province, central China. From a macro perspective, this study evaluates the impact of health care features on patient satisfaction and investigates the factors that contribute to patient happiness in Henan Province, without discriminating between different types of illnesses (Li, Wang, Zhang, Yan, Chen, Jiang, ... & Guo, 2024). We hope to learn how different hospital services affect patients' expectations and overall happiness using our findings. We hope that by the end of this study, you will have a better understanding of how hospital services affect patients' expectations and satisfaction levels, what factors contribute to these levels, how different services affect patients' expectations and satisfaction, and how these factors relate to each other. We also hope that you will have some suggestions for how to improve patients' expectations and satisfaction levels.

EMPIRICAL REVIEW

Alibrandi et al. (2020) discovered that patient satisfaction was related to service involvement and that improving patient interaction improved patient satisfaction. Linder et al. (1982) found that people's desire for health affects patient satisfaction. Several studies have examined the factors and interrelationships of patient satisfaction. Alibrandi et al. (2020) discovered that patient satisfaction was related to service involvement and that improving patient interaction improved patient satisfaction. Linder et al. (1982) found that people's desire for health affects patient satisfaction. Several studies have examined the factors and interrelationships of patient satisfaction. Judge J. A. Laferton... Some evidence was discovered by et al. (2020) to suggest that healthcare providers should take patients' expectations into account when making clinical decisions and planning therapy.

RESEARCH METHODOLOGY

To determine how the variables affected one another, we utilized Smart-PLS to do a regression analysis between them. This study abides with the university's ethical standards in every way, from writing to questionnaire statistics to data analysis. The results of other people's study were not plagiarized or otherwise misrepresented in the thesis. The research subjects were asked to voluntarily participate in the survey by filling out an anonymous questionnaire. They were also given advance notice in the form of a written consent form. The data materials used in the study were fully protected from any third-party infringement and kept in the strictest confidence. The original data was used for all statistical and analytical purposes; no falsification, change, or manipulation of experimental data was done.The scale is based on the American Customer Satisfaction Index (ACSI), a model created by Fornell's team in 1994. The ACSI consists of four levels: the overall national satisfaction index, the sectoral satisfaction index, the industry satisfaction index and the company satisfaction index, and is the most widely used and influential theoretical model of national customer satisfaction in the current system. The cause variables

of customer satisfaction are customer expectations, perceived quality and perceived value; the outcome variables of customer satisfaction are customer complaints and customer loyalty. See Figure 1 for details:

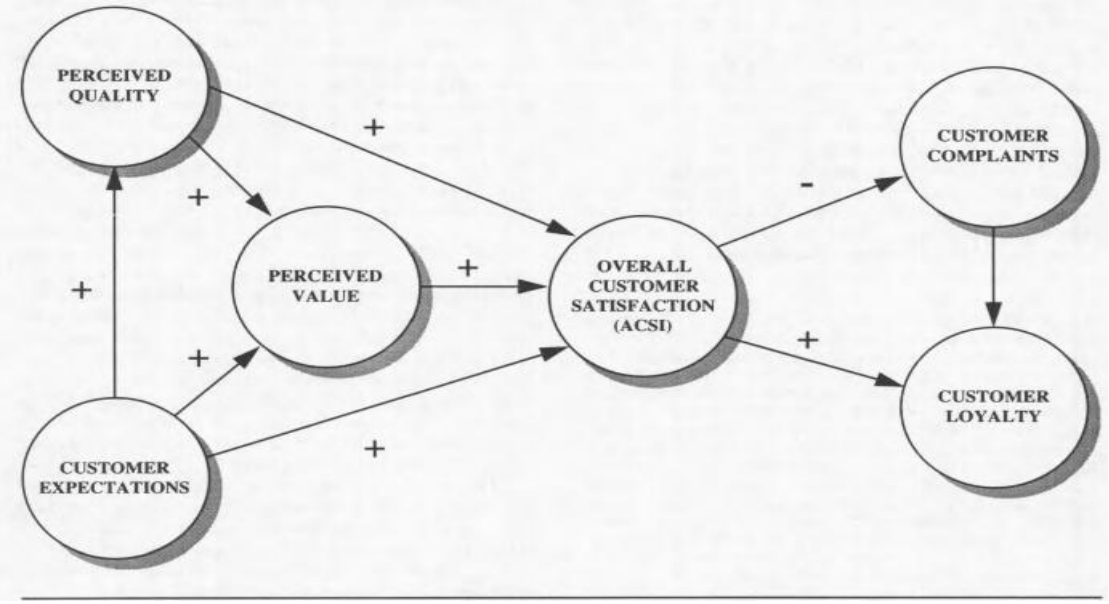
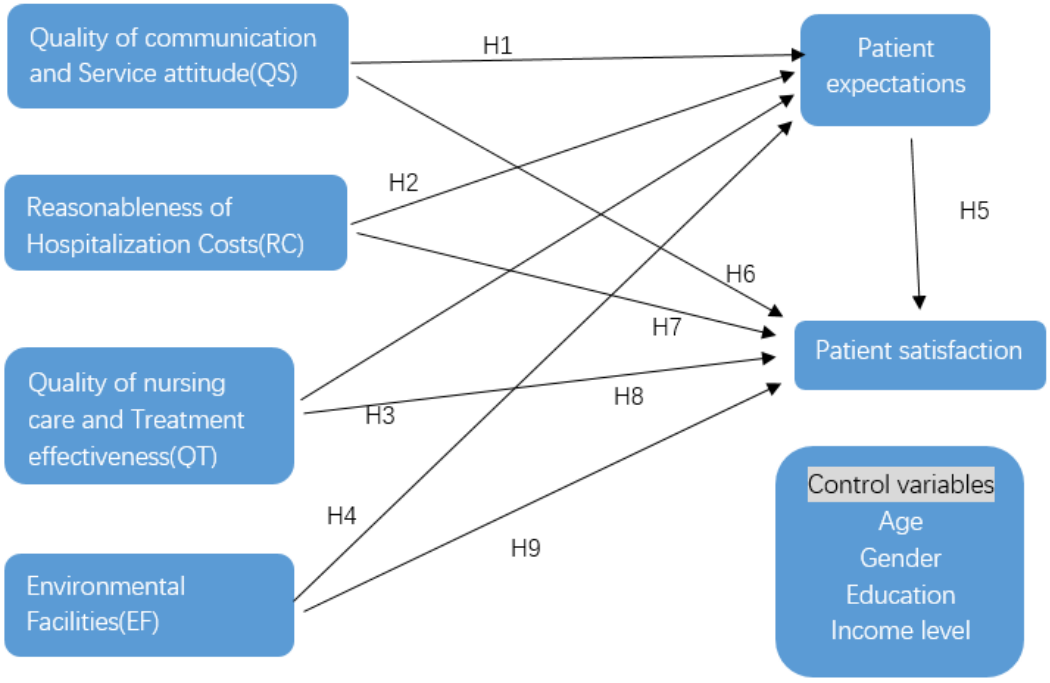


Figure 1 The American Customer Satisfaction Index

Hospital services are acquired by patients in the convenience and comfort of the consultation area, thus their experience with pricing is the most immediate reflection of their whole experience. To better understand patient behavior in China's public hospitals, we adapted the customer satisfaction model from the United States. The investigation's enhanced output model is shown in Figure 2.



Note: H10: (QS)→Patient expectations→Patient satisfaction
H11: (RC)→Patient expectations→Patient satisfaction
H12: (QT)→Patient expectations→Patient satisfaction
H13: (EF)→Patient expectations→Patient satisfaction

Figure 2 Patient satisfaction model

RESULTS AND DISCUSSION

This study utilised the common method of systematic review by searching databases by way of identifying keywords and conducting a literature search based on the criteria proposed by Liberati et al. and Tong et al. (2012). Based on the purpose of the study, the study searched for satisfaction measures (Measuring Satisfaction Method) patient satisfaction, (Patient expectations), quality of care, treatment effects (Treatment effects, Expectations and satisfaction, Communication and satisfaction, etc.). Positivism paradigm and the Likert scale was used to obtain patients' ratings of healthcare services. The quantitative analysis of the quality of health care services. Using the validated The Patient Judgments of Hospital Quality (PJHQ) scale (Mark Meterko et al, 1990), which consists of eight dimensions: 1. admissions (4 items) 2. daily hospital care (14 items) 3. medical care (5 items) 5. other Hospital staff (3) 6. Living arrangements and hospital environment (10 items) 7. Discharge from hospital (3) 8. Billing (2). When administering the 5-point Likert scale, the Hospital service quality was coded in the following manner, Excellent, Very Good, Good, Fair, Poor. The population chosen for this study was approximately 300 patients (ten times the number of questions on the scale) in Henan Province who were either in hospital or had been discharged for less than one month. Questionnaires distributed randomly to patients and collected as required immediately after completion of the questionnaire. All statistics are unmodified raw data. Table 1 presents information on each scale's internal consistency reliability and homogeneity. Reliability estimates (Cronbach's alpha) for eight of the nine scales were good or excellent. All satisfied the 0.50 minimum standard of reliability for group comparisons suggested by Helmstadter,66 and all but one scale (the two-item Overall Health Outcomes validity indicator) exceeded the minimum 0.70 criterion Nunnally36 recommended for measures in the early stages of research on a hypothesized construct. The six scales that measure discrete elements of hospital process had reliabilities ranging from 0.87 to 0.95, with four exceeding 0.90. Homogeneity estimates (i.e., the average inter-item correlation within each scale) for these same six process scales were all acceptable and ranged from 0.47 to 0.69. These results indicate that these measures of quality have sufficient internal consistency reliability for group comparisons. We did not assess test-retest reliability in this study.

TABLE 1 Reliability and Homogeneity Estimates for Hospital Process Scales and Validity Indicators

Scale	Number of Items	Reliability	Homogeneity
Hospital Process			
Nursing and daily care	9	0.95	0.68
Hospital environment and ancillary staff	13	0.92	0.47
Medical care	7	0.94	0.68
Information	4	0.89	0.66
Admissions	4	0.90	0.69
Discharge and billing	5	0.87	0.58
Validity Indicators			
Overall' quality of care and services	3	0.8	0.57
Recommendations and intentions	3	0.85	0.65
Overall health outcomes	2	0.66	0.50

Note: Reliability estimates based on internal consistency method, Cronbach's Alpha; homogeneity = average inter-item correlation.

The validity of the constructs was addressed by examining whether the scales were actually correlated with other variables representing the constructs they were supposed to be correlated with. Table 2 shows two types of correlations. 1) correlations between the six hospital process scales; and 2) correlations between the six hospital process scales and other variables with which they should be correlated, including ratings of overall quality, recommendations and intentions, and overall health outcomes. Internal consistency

TABLE 2 Correlations Among Hospital Process Scales and Correlations Between Hospital Process

Scale	Nur	Env	Med	Inf	Adm	Dis	OvQ	Rec	OvH
Hospital Process Scales									
Nursing	[.95]								
Hospital environment and ancillary staff	0.66	[.92]							
Medical care	0.58	0.58	[.94]						
Information	0.76	0.66	,.69	[.89]					
Admissions	0.54	0.5	0.44	0.56	[.90]				
Discharge and billing	0.62	0.66	0.57	0.63	0.53	[.87]			
Validity Indicators									
Overall quality of care and services	0.75	0.65	0.57	0.66	0.51	0.59	[.80]		
Recommendations and intentions	0.65	0.5	0.49	0.56	0.43	0.47	0.69	[.85]	
Overall health outcomes	0.50	0.50	0.57	0.52	0.39	0.49	0.51	0.49	[.66]

Note: This table shows the correlation coefficients among six hospital process scales and between the six hospital process scales and selected validity indicator variables. All correlations are positive and statistically significant. Diagonal entries in brackets are scale reliabilities (internal consistency).

estimates (Cronbach's alpha) for each scale are reported on the diagonal.

The pattern of relationships shown in Table 2 is consistent with what we would expect from a valid measure of the different elements of hospital care. Moderate to strong, positive and statistically significant correlations exist between the subscales, which are an assessment of the relevant but different characteristics of the hospital experience. Similarly, the correlations between the subscales and the validity indicator variables were moderate to strong, ranging from 0.39 to 0.75 (median r = 0.51). Again, we could predict this pattern of moderate to strong correlations between the different hospital process measures and the overall outcomes of hospital care. It is also noticeable that the correlations between scales (non-diagonal entries in Table 2 are much lower than the internal consistency reliability estimates (diagonal entries). If scale reliability did not exceed inter scale correlations, then the scales would be interchangeable (i.e., not measures of unique and distinguishable characteristics of the hospital experience).

More specifically, consider the ratio of the interscale correlations of the two scales with the highest overlap and the two scales with the lowest overlap to the reliability of the scales in question. The highest correlation between care and information was found for the hospital process scales (r = 0.76). The alpha coefficients for these scales were 0.95 and 0.89 respectively, indicating that approximately 80-85% of the variance of reliable measures was shared between these two constructs (0.76/0.95 = 0.80 and 0.76/0.89 = 0.85). The two scales with the least overlap were medical care and hospital admissions (r = 0.44, coefficients α = 0.94 and 0.90, respectively). Thus, approximately 48% of the variance of the reliable measures was shared by the two most independent constructs.

FINDINGS FROM THE PILOT STUDY

Based on the research objectives of this study, in order to ensure the validity of the questionnaire information. Firstly, a small number of patients and family members were selected for the pilot study. The study consisted mainly of demographic information and a questionnaire. and to test the reliability of the data collected.

Demographic Information Of The Pilot Study

All patients (30) who participated in the questionnaire completed a demographic information. This includes: gender, age, Education, Income level. all demographic information is at the front of the questionnaire and it is specified that if this information is not completed in full, the questionnaire will be considered ineligible.

TABLE 3 Patient Demographic Information

Variable	Number	Proportion(%)
Gender		
Male	16	53%
Female	14	47%
Education		
Lower Secondary Education or below	4	13.3%
High school diploma or equivalent	19	63.3%
Bachelor's degree or above	7	23.3%
Income level（RMB）		
5000		
5000-20000	8	27%
20000	15	50%
	7	23%

RELIABILITY OF THE MEASUREMENTS

The reliability test for this pilot study was to test the Cronbach's alpha value of the questionnaire by internal consistency. This was done by counting the questionnaires in Excel, collating and coding them into a simple scale coding sheet. The specific operation of SPSS is to open SPSS software and click Analyze>Scale>Reliability Analysis>select reliability test item>Model(Alpha)>Ok. After the reliability analysis of the pilot data by SPSS, all questionnaires had reliability values greater than 0.8. Therefore, the results of the pilot analysis can prove that the scales used can be used in this study.

CONCLUSION

China's continuing healthcare reform has spurred tertiary institutions to investigate techniques for improving patient satisfaction within the new healthcare framework while also treating medical issues. The purpose of this research is to investigate the factors within hospital services that affect patients' expectations and satisfaction regarding treatments; to investigate the influence of these connections on hospital services and to analyze the correlations between patient satisfaction and expectations; to assess the influence of different hospital services on patient expectations and satisfaction, and to evaluate the extent to which these services enhance the overall patient Employment history. Methodology: In Henan Province, researchers randomly selected 300 people aged 18 and above who were seeking medical care at a hospital from a population of hundreds of thousands. The measuring instruments were created using a

mix of empirical and normative research, with data processed statistically. Results: The researchers analyzed two data sets to determine the influence of health services on patient expectations and satisfaction, as well as proposed solutions to improve patient well-being. Patient satisfaction in hospitals relies heavily on communication and service attitude. Patients want their healthcare providers to be compassionate, respectful, and responsive. Patient satisfaction is heavily influenced by the communication skills and attitudes of healthcare practitioners. To satisfy patients, hospitalization costs must be fair. Patients are satisfied when they think they are receiving exceptional value and that their hospital stay is affordable. Excess healthcare expenses reduce patient satisfaction.

Hospital services, such as treatment efficacy and nurse care, influence patient happiness. High-quality nursing and therapy should benefit patients' health. Patients are delighted when they feel their nursing treatment was good. Environmental elements including as cleanliness, room comfort, and amenities all influence patient satisfaction. Medical facilities should be clean, comfortable, and well-maintained. Patients are happier when healthcare providers employ high-quality facilities. Patient expectations are crucial for patient satisfaction. The quality of hospital services influences patient satisfaction and expectations. Patients' expectations for hospital service quality are influenced by their prior experiences, what they hear from others, and how they view their providers. Patients feel more satisfied when their expectations are met or exceeded. Patient satisfaction is influenced by expectations and the quality of hospital services. Patient satisfaction correlates with nursing care quality and treatment efficacy. As previously stated, meeting patients' expectations promotes service satisfaction. Affordable hospitalization expenses impact patients' expectations and satisfaction. Finally, environmental factors affect patient expectations and satisfaction.

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